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A Comparison of Inpatient and Outpatient Treatment Programs for Bulimia Nervosa

Claudette M. Richter-Reno

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A COMPARISON OF INPATIENT AND OUTPATIENT
TREATMENT PROGRAMS FOR BULIMIA NERVOSA

by

Claudette M. Richter-Reno
Masters of Arts, University of North Dakota, 1988

A Dissertation

Submitted to the Graduate Faculty

of the

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in partial fulfillment of the requirements

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This Dissertation, submitted by Claudette M. Richter-Reno in partial fulfillment of the requirements for the Degree of Doctor of Philosophy from the University of North Dakota, has been read by the Faculty Advisory Committee under whom the work has been done and is hereby approved.

Alan K.
(Chairperson)

Jerry E. Holt

Thomas V. Petros

Jula E. Fabor

Janet Kelly Moew

This Dissertation meets the standards for appearance, conforms to the style and format requirements of the Graduate School of the University of North Dakota, and is hereby approved.

Harvey Knell
Dean of the Graduate School
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Date July 9, 1992

TABLE OF CONTENTS

LIST OF ILLUSTRATIONS	v
LIST OF TABLES	vi
ACKNOWLEDGEMENTS	viii
CHAPTER I INTRODUCTION	1
CHAPTER II METHOD	33
CHAPTER III RESULTS	46
CHAPTER IV DISCUSSION	72
REFERENCES	83

LIST OF ILLUSTRATIONS

Figure		Page
1.	Mean binge frequency per week as a function of treatment group and time	66
2.	Mean purge frequency per week as a function of treatment group and time	67
3.	Mean BDI scores as a function of treatment group and time	68
4.	Mean EDI Drive for Thinness subscale scores as a function of treatment group and time	69
5.	Mean EDI Interoceptive Awareness subscale scores as a function of treatment group and time	70
6.	Mean EDI Bulimia subscale scores as a function of treatment group and time	71

LIST OF TABLES

Table	Page
1. Mean age, mean weight, and mean height for subjects in each treatment group	47
2. Mean initial frequency of bingeing and purging per week for subjects in each treatment group	48
3. Mean initial and mean follow-up scores on the BDI for subjects in each treatment group	49
4. Mean initial and mean follow-up scores on EDI subscales: drive for thinness, bulimia, body dissatisfaction, and ineffectiveness for subjects in each treatment group	50
5. Mean Initial and mean follow-up scores on EDI subscales: perfectionism, interpersonal distrust, interoceptive awareness, and maturity fears for subjects in each treatment group	51
6. Mean scores on MMPI-2 subscales: depression (D), hysteria (Hy), psychopathic deviate (Pd), psychasthenia (Pt), and schizophrenia (Sc) for subjects in each treatment group	52
7. Mean age of onset of bingeing, mean age of onset of purging, and mean duration of illness (months) for subjects in each treatment group	53
8. Mean number of previous hospitalizations for eating disorders and mean number of miles to treatment center	54
9. Mean number of first degree relatives with bulimia nervosa, mean number of first degree relatives with anorexia nervosa, and mean number of first degree relatives with affective disorders for subjects in each treatment group	55
10. Mean number of first degree relatives who made suicide attempts, mean number of first degree relatives with alcohol abuse, and mean number of first degree relatives with drug abuse for subjects in each treatment group	56
11. Frequency data for religious affiliation for subjects in each treatment group	57
12. Frequency data for marital status for subjects in each treatment group . . .	57
13. Frequency data for present primary role for subjects in each treatment group	58

14.	Frequency data for current living arrangement for subjects in each treatment group	59
15.	Frequency data for education for subjects in each treatment group	60
16.	Frequency data for incidence of suicide attempts for subjects in each treatment group	61
17.	Frequency data for incidence of stealing food-related items for subjects in each treatment group	62
18.	Frequency data for types of previous psychiatric hospitalizations for subjects in each treatment group	63
19.	Stepwise discriminant analyses for group classification	65

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ABSTRACT

The current study was designed to investigate the effectiveness of an inpatient stay followed by outpatient treatment for bulimia nervosa, in comparison to an outpatient program only. It was hypothesized that bulimics in the inpatient/outpatient group would be receiving the combined benefits of both inpatient and outpatient treatment, thereby demonstrating greater changes in reduction of bulimic symptomatology than subjects in the less intensive outpatient treatment. Thirty-four, adult, caucasian females meeting the DSM-III-R criteria for bulimia nervosa served as subjects. Nineteen subjects received inpatient/outpatient treatment, while fifteen received outpatient treatment. Subjects completed an initial test packet, including the Beck Depression Inventory (BDI), the Eating Disorders Inventory (EDI), the Minnesota Multiphasic Personality Inventory-2 (MMPI-2), and the Diagnostic Survey for Eating Disorder-Revised (DSED-R). After six months of treatment, subjects were asked to complete all of the previously mentioned tests, excluding the MMPI-2, which was given only at initial testing.

Results of the present study indicated that the two groups were not significantly different at intake on symptom severity variables nor demographic variables. The outpatient group, however, had significantly more first degree relatives who abused alcohol and/or drugs than the inpatient/outpatient group.

Further analyses revealed that both groups significantly decreased their reported binge frequency, purge frequency, BDI scores, and EDI Drive for Thinness scores over time. A Time X Treatment Group interaction on the EDI Bulimia subscale revealed that the outpatient group had significantly decreased scores from intake to follow-up. There was a significant main effect for treatment group on the EDI Interoceptive Awareness subscale, indicating that the inpatient/outpatient group had higher scores than the outpatient group collapsed over time. A significant positive correlation between the MMPI-2 Psychopathic Deviate (Pd) subscale and change in reported binge frequency was found, indicating elevations on the Pd subscale were associated with decreases in reported binge frequency.

In summary, results of the current study indicated that the outpatient group demonstrated superior treatment gains in comparison with the inpatient/outpatient group. Based on the results of the current investigation, outpatient treatment of bulimia nervosa would be recommended for making the most treatment gains in a shorter period of time than inpatient/outpatient treatment.

CHAPTER I

INTRODUCTION

Dieting has become a way of life for many in our society today, struggling to attain our culture's exalted ideal of thinness. Perhaps at no other time in our history has thinness been so glorified and fatness so disdained. To better understand this intense drive for thinness, one must look at the sociocultural factors occurring presently and over the past several decades which have fostered this phenomena.

The beginning of the feminist movement brought about social change for young women and contributed to role and identity confusion, at least for a subpopulation of this group (Schwartz, Thompson & Johnson, 1982; Lewis & Johnson, 1985). Garner, Garfinkel, Schwartz and Thompson (1980) investigated several areas for evidence of society's changing expectations of ideal weight and body size for women, which tended to move toward greater slimness. As examples of prototypes of feminine beauty, data was gathered from Playboy magazine centerfolds, and contestants and winners of the Miss America pageants for the period of 1959-1978. Variations in size and measurements were examined among and between these cultural stereotypes of beauty and the population norms. Analyses of these contrasts indicated that ideal shapes for females had continued to become

progressively thinner over the twenty-year period. One interesting finding was that of no significant difference between the Miss America contestants and the winners until 1970, following which the winners' weights were less than the average weights of all the contestants.

When compared to the weights of women in the general population, these findings are startling. The actuarial norms from 1959, in contrast to those of 1979, indicate that the average weight of women under thirty (with height being statistically controlled) was a few pounds heavier in 1979 than 1959. Thus, the results of this study cannot be explained simply as a decrease in the mean body weights over this twenty year period.

In the same study, evidence was collected for a similar increase in society's interest in dieting. Articles on dieting in six popular women's magazines were reviewed during the same twenty years as the Playboy and Miss America surveys. Results of a regression analysis revealed a significant and progressive increase in the number of diet articles over this period. For the first decade the mean number of articles was 17.1, in comparison to 29.6 for the second decade, which indicated a significant rise in the number of diet articles in the last ten years.

Further support for the importance of sociocultural factors in the development of eating disorders was offered by Garner, Garfinkel and Olmstead (1983). In their review of the literature, a recent increase in the incidence of eating disorders was found for females and not males. Garner et al. (1983) speculated that the extreme pressure on females to meet progressively slimmer standards of beauty has fostered

the current drive for thinness in our society. The fashion industry and media have also played a part by inadvertently supporting the association of the slender shape with positive characteristics such as success, attractiveness, wealth and happiness. This association has occurred within the social milieu of changing feminine roles in which current expectations of women are superimposed upon more traditional values. In other words, contemporary women are faced with a society in transition that has expectations of traditional femininity and domesticity, in addition to more modern vocational and individual achievement expectations of females.

In a society where the accomplishment of thinness is a highly valued achievement, those that are even moderately obese find themselves the subjects of discrimination and stigmatization by others. Wooley and Wooley (1979) reviewed studies on obesity and challenged the belief that fatness is self-induced via overeating and that obese people would no longer be overweight if they stringently followed prescribed diets. They found that on the average, obese individuals do not consume more food than others, and that the single best predictor of obesity is parental weight problems. Forty percent of individuals with one obese parent become obese, and eighty percent of individuals with two obese parents become obese. Wooley and Wooley (1979) further reported that while dieting is frequently the primary treatment of choice for obesity, it often leads to a reduction in the metabolic rate thereby producing a decline in energy output. There is an almost inevitable weight gain following dieting due to the results of a slowed metabolism, and obesity is often seen as a gradually progressive process where weight losses and gains are alternated

(Rimm, Hartz, & Barboriak, 1978). Thus, the primary mode of treatment for obesity may also be the major cause of it.

Johnson, Lewis and Hagman (1984) noted that while the accomplishment of thinness in our society is often viewed as a worthy attainment and subject to the envy of others, the lack of weight control resulting in even mild degrees of heaviness leads to social discrimination, isolation and low self-worth. Allon (1975) observed that women participating in dieting groups frequently expressed feelings of self-hatred, despondency and low self-esteem. It would appear that in this achievement-oriented culture, pursuit of thinness through dieting is considered a means for women to compete and demonstrate self-control. Within this confusing societal context of changing expectations of women, this drive for thinness continues to be a socially acceptable route that consistently elicits praise and the associated enhancement of one's self-esteem (Johnson et al., 1984). Yet for some, this pursuit of thinness can become all-consuming and evolve into a potentially fatal eating disorder.

Eating disorders

Eating disorders are described as significant disturbances in accepted norms of eating behavior. The two most common eating disorders are bulimia nervosa and anorexia nervosa, with the former occupying the central focus of the present study. The most recent Diagnostic and Statistical Manual of Mental Disorders-Revised (DSM-III-R; American Psychiatric Association, 1987) defines bulimia nervosa as recurrent episodes of binge eating (rapid consumption of a large amount of food in a discrete period of time); a feeling of lack of control over eating behavior during the

eating binges; self-induced vomiting, the use of laxatives or diuretics, strict dieting or fasting, or vigorous exercise in order to prevent weight gain; an average of at least two binges per week for at least three months; and persistent overconcern with body shape and weight.

Side effects of bulimia nervosa. Complications of bulimia nervosa are numerous. Eating large amounts of food can result in acute gastric dilatation leading to pain, nausea and vomiting (Mitchell, Pyle and Miner, 1982). There have been several reported cases in which this acute gastric dilatation has caused gastric rupture and even death (Matikainen, 1979; Saul, Dekker and Watson, 1981). Unusual and unhealthy food selection can lead to nutritional deficiencies which can be associated with hair loss, brittle nails, fatigue, insomnia, weakness and mood changes. Dental cavities and erosion of tooth enamel related to frequent consumption of high carbohydrate foods and the regurgitation of gastric acid are also side effects of binge eating (Brady, 1980).

Many bulimics utilize vomiting as their primary means of purging after engaging in binge eating. Vomiting removes some of the ingested food, in addition to depleting the stomach acids and electrolytes (Harris, 1983; Mitchell, Pyle, Eckert, Hatsukami, & Lentz, 1983). The electrolytes are vital in maintaining the proper functioning of many systems within the body. The imbalances caused by lack of potassium, sodium and chloride can result in cardiac arrhythmias (Garfinkel & Garner, 1982). Muscle weakness, tiredness, constipation and depression can also result from electrolyte imbalances (Webb & Gehi, 1981). Fluid loss and dehydration

caused by vomiting leads the body to retaining excessive water resulting in edema (Fairburn, 1982). Salivary enlargement, usually of the parotid gland, seems to be a secondary effect of frequent stimulation from bingeing and vomiting (Levin, Falks & Dixon, 1980). The cheeks may appear puffy from frequent regurgitation, which usually does not cause serious medical problems, although it may be distressing to the individual. Esophagitis and ulceration of the esophagus may result from frequent exposure to the acidic stomach contents contained in the vomitus (Goode, 1985). Some patients who are unable to self-induce vomiting, therefore, they may resort to using syrup of Ipecac to induce regurgitation. Those who use syrup of Ipecac for this purpose are at increased risk for cardiac arrest and sudden death due to the active vomit inducing agents in Ipecac (Adler, Walinsky, Krall & Cho, 1980).

Another purgative method is laxative abuse, which is not very effective in preventing caloric absorption as these mainly affect activity in the colon. Most nutrients are absorbed in the small intestine, however, while fluid absorption occurs in the large intestine. In a study by Lacey and Gibson (1985), bulimics that vomited consumed significantly more calories, yet weighed less than the laxative abusers who ate less and weighed more. The laxative abusers controlled their weight primarily through dietary restraint, rather than through the pharmacological action of the laxatives. Another study demonstrated that purging via laxative abuse only produced a twelve percent reduction in energy absorption of food intake (Bo-Linn, Santa Ana, Morowski & Fordtran, 1983). Chronic laxative use may cause patients to lose normal bowel functioning and patients may become addicted to the laxatives, precipitating

constipation and withdrawal reactions when laxatives are discontinued (Russell, 1979). Normal bowel functioning usually returns when the patient stops using laxatives and maintains normal weight and eating behavior (Garner, Rockert, Olmstead, Johnson & Coscina, 1985).

Prevalence of bulimia nervosa. According to the DSM-III-R (1987) there is an estimated 4.5% of female college freshman and 0.4% of male college freshman that are bulimic. Other estimates of this disorder in high school and college aged students are 1% to 20% depending upon the diagnostic criteria utilized (Halmi, Falk & Schwartz, 1981; Johnson et al. 1984; Pyle, Mitchell, Eckert, Halvorson, Newman & Goff, 1983).

Some researchers believe that the prevalence of eating disorders is on the rise. Pyle, Halvorson, Newman and Mitchell (1986) surveyed 1389 college freshman from the same geographic area studied three years previously, and found that the percentage of female students who met DSM-III criteria for bulimia had increased from 1% to 3.2%. Szukler (1985) surveyed the existing literature on the incidence of eating disorders in case register studies, i.e., patients presenting to medical facilities. In examining the psychiatric case register of north-east Scotland during the period of 1978 to 1982, the incidence of anorexia nervosa was 4.06 per 100,000 population per year, which was significantly higher than the 1.60 per 100,000 in the period of 1966 to 1969.

It is evident by the existing research that eating disorders are serious problems affecting numerous individuals' lives. Bulimia nervosa can become a life-threatening

illness at the extreme and hazardous to one's psychological and physical health at a minimum. Not only is there concern about the current prevalence of this disorder, there is also concern that eating disorders are on the rise. Before looking at various treatments available for eating disorders, it is important to investigate how they may develop and identify risk factors.

The biopsychosocial model. One of the most widely accepted theories of the etiology of bulimia nervosa (Johnson and Connors, 1987) is referred to as the biopsychosocial model. It is hypothesized that bulimia nervosa may actually be an expressed symptom of an affective disorder. According to this model, bulimia begins with a child at risk for affective instability due to genetic loading. The second factor is the family environment, which is usually described as being conflictual, indifferent, neglectful and chaotic. These family characteristics frequently result in children feeling disorganized, unconnected, insecure and anxious. The next factor is the sociocultural context, which as previously mentioned is filled with confusing cultural and achievement expectations. The pursuit of thinness (via calorie restriction) is utilized as a vehicle to compete and earn social approval in an attempt to improve self-esteem. The fourth factor is the personality profile of the bulimic group. These individuals have low self-worth and feel ineffective and out of control in regard to their bodies.

Another common personality feature is the need to compete and to achieve goals. These factors have helped to mold an individual that essentially feels out of control of her internal life, resulting in her seeking external means (i.e., restrictive

dieting) to control this inner uncomfortableness. Society suggests to young females that achievement of thinness would be an avenue to enhance their self-worth and self-control. If the female is successful in attaining a weight close to the lower end of her set point range (menstrual threshold), a psychobiological impasse occurs. In essence, the person's chosen coping mechanism of restrictive dieting as a way to enhance esteem eventually conflicts with the body's physiological set point. This results in extreme hunger which is experienced by the bulimic as being out of control and thereby a threat to her fragile self-esteem. In turn, this will exacerbate her original problems and any stressful event will increase the likelihood of disinhibition in the form of bingeing. According to this model, the binge/purge behaviors may actually serve adaptive functions in ways such as regulating affect, impulse expression, self-nurturance and irritability expression.

Characteristics of Bulimics

Demographic profile. In a survey of 509 individuals seeking assistance and information on eating disorders, 316 respondents answered items on a questionnaire which supported DSM-III criteria for bulimia. The average age of this group was twenty-four and the reported mean duration of symptoms was five and one-half years with the average age of onset being eighteen years (Johnson, Stuckey, Lewis & Schwartz, 1983). Pyle, Mitchell and Eckert (1981) also reported demographic information on a group of thirty-four bulimics being treated on an outpatient basis. The average age at time of treatment was twenty-four years with a mean duration of symptoms being four years before seeking help and the mean onset of the eating

disorder was eighteen years. Similar demographic information was observed in another study of bulimics being treated as outpatients (Herzon & Kaufman, 1981). The mean age of the individuals at the time of treatment was twenty-five years and the average duration of their symptoms was over six years.

Clinical profile. The majority of the participants in the Johnson et. al (1983) survey were of normal weight for their height. The average height was 65.1 inches and the mean weight was 125.9 pounds. Based on the information they reported on the Eating Problems Questionnaire regarding symptoms of anorexia, 0.9% of the sample were currently anorexic and another 5.2% could be diagnosed as formerly anorexic. Binge eating behavior occurred at least once per day to more than daily by half of the sample. Seventy-eight percent of the sample indicated that the bingeing would last two hours or less per episode. Greater than two-thirds of this group engaged in self-induced vomiting, forty percent relied on laxatives for weight control and one-fourth used a combination of vomiting and laxatives.

Drug use. Less than ten percent of the Johnson et al. (1983) survey respondents reported daily use of alcohol or street drugs. The majority were nonsmokers, with only 11.6% smoking one or more packs of cigarettes daily. In contrast, Pyle et al. (1981) found a high rate of chemical dependency problems in their case study of thirty-four bulimics. Eight of the individuals had received chemical dependency treatment previously and seventeen reported alcoholism in at least one first degree family member. In another study data, collected from 275 bulimics revealed that over one-third (34.4%) of the individuals reported a history of

problems with alcohol or drugs and 17.7% indicated a prior history of treatment for chemical dependency (Mitchell, Hatsukami, Eckert & Pyle, 1985).

Personality and psychological characteristics. The bulimic participants from the Johnson et al. (1983) study were compared to five other groups, including restricting anorexics, bulimic anorexics, anxiety neurotics, depressive neurotics and normal controls using the Hopkins Symptom Checklist (HSCL). The bulimics scored significantly lower on all five subscales of the HSCL than the other four clinical populations. They were similar to the normal controls, with the only exceptions being greater interpersonal sensitivity and depression.

The degree and nature of depression in bulimic individuals continues to be a subject of investigation. In Johnson et al.'s (1984) survey of the literature, a number of studies were found that demonstrated significant levels of depression being reported by bulimics. In addition, the depression tended to focus on themes of learned helplessness, despair, pessimism, self-criticism and guilt. Another finding was that of affective instability in bulimics which may indicate the presence of a primary affective disorder. Further support for increased levels of depression in bulimics was found in a comparison of forty-four bulimic women with thirty-eight normal controls (Goebel, Spalthoff, Schulze & Florin, 1989). The bulimic group demonstrated significantly higher scores on the Beck Depression Inventory (BDI) in comparison to the controls, with a mean score indicative of moderately severe depression.

In a review of the literature on personality characteristics of normal weight bulimics, studies using the Minnesota Multiphasic Personality Inventory (MMPI)

reveal that bulimics experience difficulties with impulse control, depression, excessive guilt, low frustration tolerance and anxiety (Johnson et al., 1984). Other studies have found similar results (Prather & Williamson, 1988), in addition to symptoms of rumination and feelings of alienation (Pyle et al., 1981). Williamson et al. (1987) compared high frequency purging bulimics (more than three times weekly), low frequency purging bulimics (less than three times weekly) and normal controls on the MMPI and BDI. Analyses revealed that both bulimic groups had significantly higher elevations on the MMPI scale 2 (Depression) and on the BDI. High frequency purgers had higher elevations on scales 3 (Hysteria) and 4 (Psychopathic Deviate) than normals. In addition, low frequency purgers were found to have significantly lower scores on the MMPI scale 9 (Mania) than normals. The two bulimic groups did not differ significantly from one another on any MMPI subscale. Taken together, these studies suggest bulimic individuals feel depressed, anxious, isolated, self-critical, and experience difficulty in expressing emotions, particularly anger.

Personality disorders. The prevalence and role of personality disorders in people with eating disorders has been the subject of much consideration, however, few empirical studies have been conducted to investigate this association. Gartner, Marcus, Halmi and Loranger (1989) examined DSM-III-R personality disorders among thirty-five individuals with eating disorders. Fifty-seven percent of the patients met criteria for at least one personality disorder, fourteen percent met criteria for two or more personality disorders and six met the criteria for five or more. The most frequently assigned Axis II disorders (in descending order) included borderline,

self-defeating, avoidant, compulsive and dependent. The bulimic patients were two to three times as likely to get the diagnosis of self-defeating personality disorder than the other eating disordered patients.

Piran, Lerner, Garfinkel, Kennedy, and Brouillette (1988) used unstructured interviewing techniques and the Diagnostic Interview for Borderline Patients to assess the rates of personality disorders among patients with restricting anorexia nervosa and patients with bulimia. Results indicated that 86.7% of the anorexics and 97.4% of the bulimics met criteria for personality disorders. The most common diagnosis for the anorexics was avoidant personality disorder occurring in 60% of the patients. In contrast, the most common diagnosis in the bulimic group was borderline personality disorder occurring in 55% of the patients.

Yates, Sieleni and Bowers (1989) compared two groups of normal weight bulimics, one group of having personality disorders and the other group without Axis II disorders. Subjects completed the Eating Disorder Inventory (EDI; Garner, Olmstead & Polivy, 1983) and the Eating Attitudes Test (EAT; Garner, Olmstead, Bohr & Garfinkel, 1979). Significantly more subjects in the personality disordered group had a history of depression in comparison to the non-personality disordered group. The former group was also significantly more likely to have a history of suicide attempts. In addition, the EDI and EAT total scores were significantly higher among the personality disordered bulimics, indicating increased psychological distress and extreme attitudes regarding food and eating.

Further research is needed to better understand the nature of personality disorders in individuals with eating disorders. Some researchers have noted that following treatment, eating disordered patients meet fewer Axis II criteria. It has been suggested that what clinicians initially assess as personality disorders in these patients presenting for treatment, may be more a function of initial symptom severity and not Axis II symptomatology (Gartner et al., 1989).

Treatment of Bulimia

Psychotherapy treatment studies. Freeman, Barry, Turnbull and Henderson (1988) randomly assigned ninety-two bulimic women to a control group or one of three treatment conditions including cognitive-behavior therapy, behavior therapy or group therapy. These outpatient treatments consisted of fifteen, one-hour, weekly sessions. Individual therapy was conducted by one of two therapists following a structured format, which also allowed for some flexibility in meeting individual needs. The cognitive-behavior condition focused on the patients' dysfunctional beliefs and ruminations regarding food, eating, weight and shape. Patients were taught to identify and record negative thoughts, then evaluate them and produce alternative rational responses. The behavior treatment focused on establishing a normal eating pattern of three meals daily plus snacks with no bulimic eating behaviors. Only behavioral techniques were utilized, such as relaxation training, systematic modification of eating behaviors and teaching alternative coping strategies. The group therapy condition was supportive and educational in nature. The focus was on mutual support and providing information on bulimia nervosa. Each group session

was devoted to a specific discussion topic. The subjects in the control group were kept on a waiting list for this same fifteen week period. Analyses of the three treatments revealed that all were effective with regard to behavior change, with seventy-seven percent discontinuing their bingeing. Additionally, test scores on eating and depression questionnaires were reduced and self-esteem increased. Behavior therapy appeared to be the most effective in modifying eating disorder symptoms earlier than the other two treatments. The lowest drop out rate (17%) was also found in the behavior therapy condition. Group therapy was viewed as the least effective treatment as the drop out rate was the highest (37%) and overall improvement tended to be less than the other two treatments. At the one year follow up, only twenty-four of ninety-two subjects were available and of this group twenty-one were not bingeing and had maintained their improved scores on the psychological questionnaires.

Agras, Schneider, Arnow, Raeburn and Telch (1989) studied seventy-seven females that met DSM-III-R criteria for bulimia nervosa. These subjects were randomly assigned to one of four treatment conditions including: wait-list control, self-monitoring of caloric intake and purging behaviors, cognitive-behavioral treatment, and cognitive-behavioral treatment combined with response prevention. Each of the treatment conditions consisted of fourteen, one-hour, individual sessions over a four month period. In the self-monitoring condition, emphasis was on insight, understanding bulimia and self-disclosure. Subjects kept records of eating behavior and this was reviewed with the therapist each session to identify meaningful patterns

in these behaviors. Subjects in the cognitive-behavioral condition were also taught to self-monitor eating behaviors. In addition, the challenging of distorted perceptions, behavioral techniques, and stimulus control procedures were utilized during therapy. The response prevention condition employed cognitive-behavioral techniques, in addition to teaching procedures for preventing purging after bingeing. Cognitive distortions associated with bingeing were examined and challenged in therapy. The primary outcome measure was the frequency of bingeing and purging episodes. Psychological measures were also used, including the Beck Depression Inventory (BDI) and the Eating Disorders Inventory (EDI). Results of the study indicated that the cognitive-behavioral condition was the most effective with a seventy-seven percent reduction in purging. Also, fifty-six percent of the patients had discontinued bingeing and purging by the end of treatment. Only the cognitive-behavioral condition was superior to the wait-list control group. At the six months follow-up, there was an eighty percent decline in purging and fifty-nine percent were completely abstinent. A significant improvement in the level of depression, food preoccupation and interpersonal maturity was also observed.

In another study, two groups of ten female bulimics received identical, short-term, group therapy (Connors, Johnson & Stuckey, 1984). The groups were started three weeks apart in a multiple-baseline design, allowing for various time point comparisons without requiring a no-treatment period. These twenty women received a group treatment comprised of education, self-monitoring, goal setting, assertiveness training, relaxation and cognitive restructuring in twelve two-hour sessions. Results

of the treatment demonstrated an overall reduction of seventy percent in binge/purge frequency. Additional improvements were found in improved self-esteem, increased assertiveness, decreased depression and alterations in distorted attitudes toward eating. At follow-up, eighty-five percent of the subjects had decreased the frequency of binge/purge episodes in comparison to the pre-treatment levels.

Fairburn, Kirk, O'Conner, and Cooper (1986) randomly assigned twenty-four bulimic patients to either a short-term focal psychotherapy (STP) condition or a cognitive-behavioral (CBT) condition. These outpatient sessions were twice weekly for one month, then once weekly for the next two months, and once bi-weekly for the final six weeks. The CBT treatment was semi-structured, problem-oriented and dealt with current life problems. Initial emphasis was on establishing control over eating behaviors via behavioral techniques. The later focus in therapy was on problem solving and cognitive restructuring. The STP condition involved structured brief psychotherapy adapted for use with bulimic patients. The major goal of this treatment was to assist patients in gaining insight into their underlying problems and fostering their understanding of how their eating disorder served to cover up and possibly perpetuate their problems. Initially, treatment focused upon gaining awareness, identifying underlying problems and circumstances that exacerbated these difficulties. Following this phase, the identified problems and methods for change were the focus of therapy. Treatment outcome indicated that subjects' binge/purge frequency decreased significantly in both conditions. When comparing the two treatments, however, the CBT group improved more on measures of binge/purge frequency,

general psychopathology, social adjustment and the patients' assessment of their outcome. The improvements gained in the two treatments persisted throughout a twelve-month follow-up period.

Lacey (1983) studied thirty bulimic women that were alternately assigned to either an outpatient treatment condition or a non-treatment control condition. The eating behaviors and mood states of the patients were monitored by a daily symptom diary and mood state scales. The outpatient treatment consisted of one-half day per week for ten weeks, with an individual session followed by a group session. Individual therapy focused on behavioral and counseling techniques prior to psychodynamic therapy. The group therapy was also insight-oriented in nature. In the control condition, the patients were assigned to a waiting list for the same ten week period. Results of the study indicated that the control condition had no beneficial effects on eating behavior. In contrast, the treatment condition resulted in a significant decrease in the incidence of bingeing and vomiting. During the two weeks prior to treatment, an average of forty-seven binges and fifty-three purge episodes were reported. By the end of treatment, twenty-four (80%) of the patients had stopped these bulimic behaviors and another four patients quit within four weeks of treatment termination. Overall, there was a ninety-three percent success rate in the reduction of these eating disorder symptoms. A two year follow-up was conducted with twenty-eight of the patients. Twenty patients reported having no bingeing or purging episodes and the other eight had occasional episodes.

Cognitive therapy used with eight inpatient bulimics was compared with the nonspecific psychotherapy offered to six other inpatient bulimics (Bossert, Schnabel & Krieg, 1989). Both treatment conditions involved individual sessions, three times weekly for forty minutes. The nonspecific therapy did not utilize any self-control techniques, rather a supportive therapeutic atmosphere with emphasis on introspection and self-disclosure was provided. The cognitive therapy condition consisted of self-monitoring, training of alternative behaviors, a contract system, a self-administered response prevention and breaks from the hospital treatment. Results of this study revealed that the cognitive-behavior treatment was superior to the nonspecific psychotherapy treatment. Six of the eight patients in the former condition reported significantly fewer episodes of bingeing and purging during the hospitalization, whereas only two patients in the other group ceased these behaviors.

Swift, Ritholz, Kalin and Kaslow (1987) followed thirty female bulimics two to five years after their inpatient eating disorder treatment. Hospitalization focused on interrupting the binge-purge cycle, providing psychotherapy, education and rehabilitative services. The average duration of inpatient treatment was twenty-four days. Since discharge all thirty women had engaged in some type of outpatient treatment for bulimia and eight were still actively involved in therapy at the time of follow-up assessment. The follow-up evaluation consisted of semi-structured interviews and psychometric measures. The outcome of this assessment procedure showed that twenty-six (87%) of the 30 patients continued to meet DSM-III criteria for bulimia at the time of follow-up. Still, the severity of the bulimic

symptomatology had markedly decreased since hospitalization. The mean decrement in frequency of bingeing episodes per month from admission to follow-up was eighty-four percent and the mean decrement in vomiting was seventy-six percent. Level of depression as measured on the Beck Depression Inventory (BDI) was relatively insignificant at follow-up with ninety percent of the patients scoring in the normal range. Self-destructive and impulsive behaviors continued to be problematic, with four patients having attempted suicide and three having engaged in some form of self-injurious behavior during the three years following hospitalization. In sum, the data supported the assumption that bulimia is a chronic disorder insofar as symptomatology persisted throughout the interim. Yet, the data did not support the hypothesis that bulimia is an intractable disorder as there was significant improvement in bulimic symptoms.

In an uncontrolled study of treatment effectiveness, twenty-seven bulimics participating in an inpatient program and twenty-two in an outpatient program were assessed with psychometric instruments prior to treatment and at various other time points (Williamson et al., 1989). The average length of stay for inpatients was approximately five weeks and the outpatient program lasted fourteen weeks. Both cognitive-behavior treatments employed exposure with response prevention and cognitive restructuring. Group therapy was the primary mode of treatment for both inpatients and outpatients. The inpatients did have one to two hours of individual therapy weekly and some outpatients were also seen individually. Treatment outcome was evaluated by several measures of eating disorder symptomatology, depression and

personality characteristics. Test data revealed that both treatment programs resulted in significant improvements. There was more rapid improvement with inpatient treatment, with a trend toward relapse during the six month follow-up. The outpatient treatment, however, was correlated with more gradual improvement and was maintained at the three month follow-up. At the time of follow-up, the means for most of the dependent measures were approximately equivalent between groups. It is hard to draw conclusions from this comparative study, however, as there were no attempts made to control or match subjects. The subject pool was not homogeneous relative to sex or race. Completely separate staffs were used in the two treatments. At follow-up there was no assessment of symptom reduction, which is the most often used measure of improvement and the follow-up periods differed between the two groups.

Cox and Merkel (1989) located published articles from 1976 to 1986 on the psychosocial treatment of bulimia. Thirty-two outcome studies were located and fifteen of these employed group therapy, while seventeen employed individual psychotherapy. There was a dropout rate of 26.1% in the group therapy programs, while only a 7.5% dropout rate was found in individual therapy. Results of group therapy demonstrated that 40.4% were abstinent (no episodes of bingeing or purging) at treatment termination and 47.4% of patients in individual therapy were abstinent. Studies that offered a follow-up assessment revealed that 37.6% of patients in group treatment and 41.5% in individual treatment were abstinent. The reviewers noted a large variation in inclusion criteria across studies, which made generalizations

regarding treatment and comparisons among studies difficult. A recommendation for future research, therefore, was more restrictive inclusion criteria. Also suggested was controlling for frequency, age of onset and duration of symptoms.

In another survey of psychotherapy treatment literature of bulimia nervosa, ten studies were found that employed some form of control (Mitchell, Hoberman & Pyle, 1989). These treatment programs were time limited, lasting from six to eighteen weeks and emphasized cognitive restructuring and behavioral techniques. Every study employed some form of self-monitoring as this was typically stressed as an important therapeutic procedure. Another common element in these programs was modifying patients' eating behaviors through the reduction of bingeing and vomiting, with an emphasis on developing more balanced eating patterns. All focused on cognitive restructuring with regard to cultural preoccupation with thinness and its part in the development of eating disorders, body perceptions, dichotomous thinking, and the associations made between body weight and self-worth. Two other behavioral interventions commonly utilized were delay of vomiting and response prevention.

When surveying the results it was noted that most of the studies were fairly small, only four had thirty or more patients. Drop out rates varied considerably from zero percent to thirty-six percent. The data revealed very few patients were free of bingeing, vomiting and laxative abuse by the end of treatment. The majority of the programs, however, demonstrated marked reductions in patient symptomatology. Reported reductions were between forty percent and ninety-seven percent. In addition, rates of depression significantly decreased while self-esteem increased

following treatment. In sum, cognitive-behavioral techniques were emphasized as ways to modify bulimic symptoms and treatment outcomes can be interpreted positively if one sees the goal of treatment as symptom reduction and not complete abstinence.

Pharmacologic treatment studies. Research on the pharmacological treatment of bulimia nervosa has mainly focused on the use of anticonvulsants and antidepressants (Johnson & Connors, 1987; Garfinkel & Garner, 1987). Some researchers view bulimia nervosa as a neurological disorder with epileptic-like features. It has been suggested that there may be a certain portion of bulimics that have an underlying physiologic basis for their disorder. These bulimics will report periods of time-limited, ego-dystonic, uncontrolled eating typically preceded by aura-like sensations. Flashes of light, strange odors, and increased psychological tension prior to bingeing have been described. Frequently these episodes are associated with a sense of depersonalization while bingeing, followed by drowsiness, confusion and amnesia. These seizure-like observations have indicated the possible usefulness of anticonvulsant medications. Another body of psychopharmacologic literature has examined the possible relationship between bulimia nervosa and affective disorders. This appears to hold more promise than the anticonvulsant research. There are four hypotheses proposed, which include bulimia nervosa as a depressive disorder; bulimia nervosa resulting in a depressive disorder; depressive disorders leading to bulimia nervosa; or bulimia nervosa and depression as separate disorders coexisting together (Pryor, McGilley & Roach, 1990).

In a recent survey of the pharmacologic research on the treatment of eating disorders, thirteen articles were located that focused on bulimia nervosa (Pryor et al., 1990). The use of anticonvulsants was reviewed in studies employing double-blind, placebo-controlled conditions. Treatment with phenytoin was associated with moderate improvement in only half of the individuals receiving it. It would appear that phenytoin is only a weak antibulimic agent. Medication trials with carbamazepine, which has psychotropic and anticonvulsant properties, was associated with minimal or no response in the majority of the patients. The reviewers also looked at the research using controlled trials of antidepressants including tricyclics, bupropion, a tetracyclic, monoamine oxidase inhibitors (MAOIs), and fluoxetine. Treatment trials with imipramine led to a seventy percent reduction in bingeing in comparison to placebo. A reduction in reported depression was observed, which suggests a possible underlying affective disorder or the presence of secondary depressive symptoms. Medication trials of desipramine led to significant decrease in the frequency of bingeing and purging. Pryor et al. (1990) also reviewed research using another tricyclic, amitriptyline, to treat bulimia nervosa. It was noted that while patients' level of depression decreased on amitriptyline, disordered eating behaviors did not improve. In contrast, patients receiving placebo demonstrated improved bulimic behaviors and no decrease in levels of depression. The tetracyclic, mianserin, also proved to be rather ineffective in treating bulimics as no significant improvement in eating disorder symptoms was evidenced after a medication trial. The reviewers did note that the lack of improvement may have been due to inadequate

dosage. The MAOIs, phenelzine and isocarboxazid, have also been drugs used in the treatment of bulimia nervosa. Trials of these medications have resulted in ranges of fifty percent to one hundred percent decreases in binge episodes. In sum, the research involving antidepressant medications in the treatment of bulimia nervosa indicates these drugs are at least somewhat effective in symptom reduction. At this time, it is still not clear whether these drugs actually work as specific antibulimic agents or by alleviation of depressive symptomatology. A major weakness observed in these pharmacological studies was measuring improvement only via symptom change, with no assessment of psychological changes.

Side effects continue to be problematic with pharmacologic treatments of eating disorders. While tricyclic antidepressants and MAOIs have demonstrated positive therapeutic effects, some patients may not tolerate side effects such as dry mouth, blurred vision, hypotension, or insomnia. This has resulted in a search for new antidepressants that are effective and have a better toxicity profile. Fluoxetine may be the drug fitting this description (Nguyen, 1991).

As this is such a newcomer to the antidepressant family, very little research has been done to date. Mitchell, Pyle and Eckert (1989) conducted the first fluoxetine study. In an open-label, non-blind study, fifteen bulimics who had not demonstrated improvement while being treated with imipramine were given a trial of various other medications, decided upon by the patients' primary physicians. The alternative drugs included MAOIs, desipramine, nortriptyline, or fluoxetine. Once the patients reached a minimum dosage level, they were to have a treatment trial for

at least six weeks, and to be at the minimum acceptable dosage for at least four weeks. Subjects were also required to self-monitor their eating behaviors. Results of the study indicated that five of the eight patients on MAOIs showed at least a seventy-five percent decrease in bingeing and vomiting, while the other three showed a fifty to seventy-four percent reduction. Two of the three patients receiving desipramine were abstinent. The third patient and the one on nortriptyline demonstrated less than a twenty-five percent decrease in bulimic symptoms. One of the three individuals receiving fluoxetine was abstinent, one had at least a seventy-five percent decrease in bingeing, and the third was a nonresponder as there was a less than fifty percent reduction in bingeing. Thus, two of the three patients placed on fluoxetine after not responding to imipramine, demonstrated some improvement in bulimic symptoms.

In another open, uncontrolled study of fluoxetine in the treatment of bulimia, a group of ten females received sixty to eighty mg/d for four weeks (Freeman & Hampson, 1987). Psychometric instruments used for assessing changes included several self-report measures of depression and the Eating Disorders Inventory (EDI; Garner, Olmstead & Polivy, 1983). After the four week trial, there was a marked decrease in depression scores. Seven subjects stopped bingeing and vomiting after two weeks of treatment. Two of the remaining three patients evidenced a reduction in symptom frequency. The third patient, who was using more than two hundred doses of laxatives at the start of treatment, showed improvement in reported depression level, but not in her bulimic symptoms. Eight subjects continued fluoxetine treatment

for six to ten months. Four of the eight remained completely abstinent from symptoms. Two of the remaining four patients improved significantly with only occasional bingeing. The final two individuals required an appetite depressant in addition to fluoxetine. One of these two was still bingeing and had increased in weight, while the other was asymptomatic. There were decreases from baseline scores to termination on the EDI on the subscales of drive for thinness and bulimia. Thus, data showed that after six to ten months of treatment, fluoxetine controlled bulimic symptoms in some patients and also appeared to produce weight loss instead of weight gain. These two studies suggest that fluoxetine has the potential to be a possible alternative to MAOIs and tricyclics in treating bulimia nervosa because of its effectiveness in reducing binge episodes and its antidepressant effects.

Psychotherapy versus pharmacology treatment. Very little research has focused on the comparative effectiveness of psychotherapy and pharmacological treatments. Two studies were located to date and the second is an extension of the first. Female bulimics were randomly assigned to one of four conditions (Pyle, Eckert, et al., 1990). These treatments included antidepressant medication using imipramine hydrochloride, placebo treatment, antidepressant treatment combined with intensive outpatient group therapy, and placebo treatment combined with intensive outpatient group therapy. This short-term treatment program lasted twelve weeks. There was a dropout rate of 26.9%, leaving 125 patients that completed treatment. All three active treatments resulted in a significant reduction of bingeing and purging behaviors, with marked improvements in mood. The data also indicated that the

greatest improvements were seen with the group psychotherapy conditions versus the antidepressant medication condition. In addition, combining the antidepressant with group therapy did not produce a significantly improved outcome with regard to bulimic symptoms. Still, this combination resulted in greater improvement in symptoms of depression and anxiety. In the two psychotherapy conditions, there was an eighty-nine percent and ninety-two percent decrease in bingeing, and fifty-one percent of the subjects were free of these symptoms by treatment termination.

In a follow-up study, sixty-eight bulimics who had responded to intensive group therapy and imipramine or placebo or imipramine only, were assigned to a four month maintenance program (Pyle et al., 1990). This maintenance program involved weekly support groups and imipramine or imipramine only. The subjects were assessed six months after initially beginning treatment. Results of the follow-up evaluation indicated that relapse occurred in eleven (21%) of the fifty-two patients who had initially been treated with intensive group psychotherapy with or without imipramine, while seven (78%) of the nine initially treated with imipramine alone had relapsed. Neither attendance at the maintenance support groups nor maintenance with imipramine was associated with superior outcome. In preventing relapse, the most important factor was the intensive group psychotherapy regardless of the type of maintenance treatment. Again, psychotherapy is validated as an effective mode of treatment for bulimia nervosa.

The Present Study

Only recently has bulimia nervosa become recognized as a distinct disorder,

therefore, much is still to be learned. Typically studies investigating the treatment of bulimia nervosa have focused on outpatient programs. Very few studies have focused on inpatient treatment of this disorder. In addition, only one published study was located that even attempted to evaluate both an inpatient and an outpatient program. Yet, this is a potentially fatal disorder and it appears to be increasing in our society. The issue of how best to treat this disorder is of extreme importance, if bulimics are to survive and recover. While outpatient treatment may at first glance appear to be the most cost-effective treatment, it has drawbacks. There is frequently a relatively high attrition rate and in many studies, a fairly large number of only partially treated subjects (Rosen, 1987). While an inpatient stay involves a high cost, it has the benefit of providing a controlled environment allowing for more intense and frequent therapeutic contacts with staff. This may permit more rapid improvement and fewer treatment dropouts. Williamson et al. (1989) suggested that subjects receiving only an inpatient program displayed more rapid progress than those treated as outpatients, however, there was also a trend toward relapse with the inpatients.

The current study was an attempt to look at the effectiveness of an inpatient stay followed by outpatient therapy, in comparison to an outpatient program alone. It was speculated that individuals in the inpatient/outpatient group would be receiving the combined benefits of both inpatient and outpatient treatment for bulimia nervosa, while the other group would be receiving only a less intensive outpatient treatment. Thus, it was hypothesized that with treatment, the inpatient/outpatient group would demonstrate the greatest changes in symptom reduction, reported depressive

symptomatology, and eating disorder characteristics. Frequency of symptoms and psychological measures were taken at baseline and after six months of treatment to assess treatment effectiveness.

Experimental Hypotheses

Binging and Purging Frequency

1. The subjects in the inpatient/outpatient eating disorders group should exhibit the greatest change in reduction of binging and purging frequency at six months in comparison to the outpatient group.

Depth of Depression

2. At six months, the subjects in the inpatient/ outpatient eating disorders group should evidence the greatest change in reduction of reported depressive symptoms on the Beck Depression Inventory (BDI) in comparison to the outpatient group.

Drive for Thinness

3. At six months, the subjects in the inpatient/outpatient eating disorders group should display the greatest change in reduction of Drive for Thinness scores in comparison to the outpatient group.

Bulimia Subscale

4. At six months, the subjects in the inpatient/outpatient eating disorders group should display the greatest change in reduction of Bulimia subscale scores in comparison to the outpatient group.

Ineffectiveness

5. At six months, the subjects in the inpatient/outpatient eating disorders group should demonstrate the greatest change in reduction of Ineffectiveness scores in comparison to the outpatient group.

Interoceptive Awareness

6. At six months, the subjects in the inpatient/outpatient eating disorders group should exhibit the greatest change in improved scores of Interoceptive Awareness, followed by the outpatient group.

Body Dissatisfaction

7. At six months, the subjects in the inpatient/outpatient eating disorders group should display the greatest change in reduction of Body Dissatisfaction scores in comparison to the outpatient group.

Perfectionism

8. At six months, the subjects in the inpatient/outpatient eating disorders group should display the greatest change in reduction of Perfectionism scores in comparison to the outpatient group.

Interpersonal Distrust

9. At six months, the subjects in the inpatient/outpatient eating disorders group should display the greatest change in reduction of Interpersonal Distrust scores in comparison to the outpatient group.

Maturity Fears

10. At six months, the subjects in the inpatient/outpatient eating disorders group should display the greatest change in reduction of Maturity Fears scores in comparison to the outpatient group.

MMPI-2

11. Eating behavior changes (from intake) in bingeing and purging frequency found at the six month follow-up will be negatively correlated with MMPI-2 depression, hysteria, psychopathic deviate, psychasthenia and schizophrenia subscale elevations obtained at the beginning of treatment.

CHAPTER II

METHOD

Subjects

Thirty-four female bulimics evaluated at a Midwestern eating disorders facility, treating a large metropolitan and rural surrounding area, served as subjects for this study. All subjects met the revised third edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-III-R; APA, 1987) criteria for bulimia nervosa. Only bulimics that utilized vomiting as their primary means of purging were included in the study (i.e., bulimics that rely strictly on laxatives for purging were excluded). Bulimics that were treated solely on an outpatient basis formed one group (outpatient treatment condition, N=15). Bulimics receiving first inpatient treatment, then outpatient therapy at this eating disorders facility, formed the second group (inpatient/outpatient treatment condition, N=19).

Subjects in the outpatient group ranged in age from 18-35 years old (M=26.73, SD=5.62) and reported a duration of bulimia from 3 months to 20 years (M=6.93 years, SD=6.25 years). Subjects in the inpatient/outpatient group ranged in age from 17-35 years old (M=24.58, SD=6.01) and reported a duration of bulimia from 3 months to 21 years (M=4.62 years, SD=4.82 years).

Procedures

Initial Screening. Patients were referred to the eating disorders clinic through a number of sources including: family physicians, psychiatrists, psychotherapists, relatives, friends, former patients or self-referrals. Potential subjects were scheduled for a two hour clinical intake. The first hour consisted of a structured interview conducted by the director of the clinic, a Ph.D. level counseling psychologist and one of the clinic trainees (a predoctoral psychology intern or postdoctoral eating disorders fellow). Two interviewers were always present, one conducting the interview and the other transcribing the information onto paper. This structured interview covered the following areas: presenting problem, history of the problem, typical food day, weight history, family and social history, and medical history.

During the second hour of the intake, the individual met with the staff psychiatrist. The psychiatric interview involved a diagnostic assessment and addressed relevant medical issues. In addition, a Psychiatric Diagnostic Interview (PDI; Othmer, Penick & Powell, 1981) was administered during this portion of the intake.

Diagnoses were established independently by the psychiatrist, psychologist, postdoctoral fellow and predoctoral intern. Only those patients for which there was unanimous diagnostic agreement for bulimia nervosa were included in the study.

At the close of the intake, the patients were given a testing packet to complete. These tests were not used to determine inclusion in the study, rather, they were used as dependent measures. The testing packet included: the Beck Depression Inventory

(BDI, Beck, Ward, Mendelson, Mock & Erbaugh, 1961); the Eating Disorders Inventory (EDI; Garner, Olmstead & Polivy, 1983); the Minnesota Multiphasic Personality Inventory-2 (MMPI-2; Hathaway & McKinley, 1989) and the Diagnostic Survey for Eating Disorders-Revised (DSED-R; Johnson, 1984).

Assignment to condition. The two treatment conditions were inpatient, followed by outpatient treatment and outpatient treatment only. A wide range of factors were considered by the clinical team in determining patient assignment to treatment condition. The severity of bulimic symptoms, depressive symptomatology and duration of illness present obvious considerations, but other factors such as distance (miles) from the treatment facility, expense of treatment and insurance availability frequently determine the treatment modality selected as evidenced by the following pilot data.

A random sample of patient records evaluated at the Midwestern eating disorders facility during the past three years was examined. Attention was focused on females who received the diagnoses of bulimia nervosa (with vomiting as the primary means of purging), who met the criteria for major depressive episode, and who were between the ages of 18-35. T-tests were performed on outpatients (N=10) versus inpatients (N=10) on the following variables: duration of bulimic illness, number of bingeing episodes per week, number of purging episodes per week, and the presence/absence of prior eating disorder treatment. These variables were examined to assess the equivalency of groups with regard to severity of symptoms, or in other words to assess if one group was more "sick" than the other, prior to the initiation of

treatment. Two-tailed t-tests were conducted on the means of the inpatient and outpatient groups, setting alpha at .05. Significant differences were not found between the inpatient and outpatient groups on any of the critical variables examined regarding the severity of eating disturbance. These results seem to confirm the common knowledge of mental health care professionals in this area that treatment assignment is often determined by practical, rather than clinical selection factors.

Therapists' training. To assure relative uniformity in treatment, the therapists continued to receive similar training in the treatment of eating disorders by the director of the clinic. All therapists were either predoctoral psychology interns, postdoctoral psychology fellows or Ph.D. level psychologists. Therapists providing individual psychotherapy were required to attend the 10 week Basic Educational group (described below), as part of their training. There is also a one hour per week staffing attended by the staff psychiatrist, the consulting nutritionist, the occupational therapist, the director of the clinic and therapists on this service. This staffing was used to address therapy issues, medical concerns, dietary issues and other case management concerns for eating disordered patients.

Outpatient treatment condition. Subjects were seen once per week by an individual therapist. A cognitive-behavioral therapy approach was utilized emphasizing cognitive restructuring, education about bulimia nervosa, self-monitoring of eating behaviors, meal planning, assertiveness training and symptom control techniques. Subjects recorded their eating behavior and feelings each day in a dietary

diary (notebook). This was turned in each week to the therapist, who provided written feedback to the individual.

The subjects also attended a 10 week Basic Educational group. This was a once per week, one and one-half hour didactic, informational group. Each week there was a different speaker to present on a topic relevant to eating disorders.

Week one was an introduction session. A brief overview of the following issues were addressed: purpose of the group, structuring of the group meetings, definition of eating disorders, and a description of the clinic's treatment of eating disorders. A film on anorexia nervosa and bulimia nervosa was also presented. Week two was devoted to the topic of medical complications of eating disorders. This entailed a review of physiological effects of eating disorders, the relationship of depression to eating disorders and the use of medications. A film on nutrition was also viewed by the group members. Week three was on nutritional information. This included education on "set point;" faulty perceptions regarding body, weight, and food; importance of good nutrition to interrupt binge patterns; information about food intake and metabolism; and the effect of eating disorders on physiological functioning, electrolyte balance, and caloric intake. Week four focused on societal messages to women. This session addressed how the distorted cognitions about body image are learned. The development of eating disorders as a desperate attempt to control one's weight, in a society where low weight is closely connected to personal worth, was also discussed. A film on societal messages of depersonalization of the human body to an object, and the effect of this commercialism on women and men, was presented.

Weeks five and six were on the topic of family issues. This focused on the development, maintenance and treatment of eating disorders within the family context. Week seven's topic was on interrupting symptoms. This involved discussion of structuring activities incompatible with bingeing; use of the dietary diary for monitoring eating patterns and emotions; increasing increments of time to delay binges; limiting the length of binge; impulse control; relaxation techniques and guided imagery. Week eight included a presentation on assertiveness training. This was comprised of the following: learning how to identify the difference between passive, assertive and aggressive behaviors; how to get needs met in a direct and effective manner; and understanding the relationship between eating disorders and a non-assertive style of relating. Week nine looked at the process of recovery. Several patients who had been treated successfully for an eating disorder, described their experiences with recovery. Week ten was a closing session, providing a summary of the information presented in the previous group meetings. This final session also included: emphasis on the need for continued practice of techniques taught in the Basic Educational group; identifying issues that may be unresolved for group members and methods for continued treatment and support.

Inpatient/outpatient treatment condition. All inpatient individual therapy and groups were facilitated by eating disorders staff, as described above. Subjects that started with inpatient treatment saw a therapist for individual therapy for one-hour sessions, three times weekly. The subjects also attended group therapy with other inpatient eating disordered patients, which met for one hour, four times per week and

was facilitated by one of the aforementioned psychologists. There was a medical lecture group that the subjects attended for one hour, three times weekly, led by one of the therapists previously described. This was a discussion group supplemented with informational videotapes covering eating disorder related issues. Once per week the patients attended an activities group for one and one-half hours. This group focused on the patients' body images and self-identities. It was led by one of therapists on the eating disorders service. Patients planned and prepared a lunch or went out to lunch as a group, once per week. This activity was led by the occupational therapist. The subjects also attended the ten-week Basic Educational Group (as described in the outpatient condition). Individuals stayed as inpatients an average of twenty-four days ($M=24.37$, $SD=12.28$).

Following the inpatient stay, subjects continued treatment on an outpatient basis with the same therapist seen for individual therapy while hospitalized. The subject saw the therapist once per week for one-hour sessions. Subjects continued attending the Basic Educational group on an outpatient basis until they had attended all ten sessions.

Follow Up

Subjects were asked to fill out a packet of testing materials, once they had completed six months of treatment. If they had not completed the test packet within two weeks, they were reminded by their therapists or contacted by telephone to give them a reminder. The subjects were assured that this was strictly voluntary, and while their responses were greatly appreciated, they were under no obligation to

complete the testing. The packet contained the Beck Depression Inventory (BDI; Beck et al., 1961), the Eating Disorders Inventory (EDI; Garner, Olmstead & Polivy, 1983); and the Diagnostic Survey for Eating Disorders-Revised (DSED-R; Johnson, 1984). These were tests that had also been given to subjects at intake.

Dependent Measures

Beck Depression Inventory. The BDI is a self-report inventory frequently used for the assessment of depressive symptomatology (Beck & Beamsderfer, 1974). The concurrent validity of the BDI was exhibited in several studies that compared scores on the inventory with clinicians' global ratings of the degree of depression. The correlation was .65 in a study by Beck et al. (1961); it was shown to be .66 in a study by Nussbaum, Wittig, Hanlon, and Kurland (1963); and .62 in a study by Metcalfe and Goldman (1965). Concurrent validity has also been demonstrated through comparisons with other standardized measures of depression. Nussbaum et al. (1963) reported a .69 correlation with the MMPI D scale. Schwab, Bialow, and Holzer, (1967) found a correlation of .75 between the BDI short form and the Hamilton Rating Scale (Hamilton, 1960) for depression.

When the inventory is used as a screening device, the cut-off score of 13 for the detection of symptoms representative of depression has been suggested (Beck & Beamsderfer, 1974). The following cut-off scores have been recommended for the probable degree of severity of a patient's depressive symptomatology: 0-4, none or minimal; 4-7, mild; 8-15, moderate; 16 and over, severe (Beck & Beamesderfer, 1974).

Eating Disorder Inventory. The 64 item EDI is a self-report measure developed for the assessment of psychological and behavioral characteristics commonly seen in anorexia nervosa and bulimia nervosa (Garner, Olmstead & Polivy, 1983). It has the following eight subscales: Drive for Thinness, Bulimia, Ineffectiveness, Interoceptive Awareness, Body Dissatisfaction, Perfectionism, Interpersonal Distrust and Maturity Fears.

A brief description of the item content of the eight subscales follows. Drive for Thinness is an index of inordinate concern with dieting, rumination over weight and the entrapment in an excessive pursuit of thinness. The items indicate both a fervent desire to lose weight as well as a dread of gaining weight. The Bulimia subscale represents the proclivity toward periods of uncontrollable ingestion of food (binging) and may be accompanied by the impulse to engage in self-induced vomiting. The Body Dissatisfaction subscale assesses the conviction that certain parts of the body related to changes in shape at puberty are too big. The body parts typically viewed as too large include the buttocks, thighs, and hips. The Ineffectiveness subscale measures the feelings of overall inadequacy, insecurity, lack of worth and the feeling of being out of control of one's life. The Perfectionism subscale measures the unreasonably high expectations placed on oneself to achieve at a superior level. The Interpersonal Distrust subscale assesses the general feeling of isolation from others and an overall unwillingness to form interpersonal relationships. The Interoceptive Awareness subscale assesses one's lack of confidence in identifying and acknowledging emotions and sensations of hunger or fullness. The Maturity Fears

subscale reflects the person's desire to revert to the safety of childhood because of the excessive demands of adulthood.

Two groups of subjects participated in the cross-validation of the EDI. The criterion group consisted of anorexic patients, approximately half of which were of the "restrictor" subtype and the other half had bulimic behaviors. The female comparison group was comprised of female college students. The following are the reliability coefficients for each subscale. The Drive for Thinness subscale had a reliability coefficient of .85 for the anorexic group and .85 for the college group; Bulimia subscale had .90 for the anorexics and .83 for the college group; Body Dissatisfaction had .90 for the anorexic group and .91 for the college group; Ineffectiveness had .90 for the anorectics and .86 for the college students; Perfectionism had .82 for the anorexic group and .73 for the college group; Interpersonal Distrust had .85 for the anorexic group and .76 for the college group; Interoceptive Awareness had .85 for the anorexics and .66 for the college group; and Maturity Fears had .88 for the anorexic group and .65 for the college group.

Following initial scale validation, the test was administered to other comparison groups including bulimics, obese individuals, formerly obese subjects and second year college males. An attempt was made to establish criterion-related validity for subscales by demonstrating that the comparison groups scored in a theoretically expected manner on specific subscales. As predicted, the bulimic anorexic patients scored higher than the restrictor anorexic patients only on the Bulimia and Body Dissatisfaction subscales ($p < .01$). Also, as expected, the bulimic

comparison group had elevated Drive for Thinness and Bulimia scores, and were not significantly different from the bulimic anorexics on these dimensions.

Minnesota Multiphasic Personality Inventory-2.

Currently, there have not been studies published on bulimia using the MMPI-2. The original MMPI, however, has been used extensively as a self-report instrument for determining psychopathology (Dahlstrom, Welsh & Dahlstrom, 1988; Williamson, et al., 1989). Research on bulimics using the original MMPI revealed fairly consistent elevations on scales Depression (D), Hysteria (H), Psychopathic Deviate (Pd), Psychasthenia (Pt), and Schizophrenia (Sc) (Hatsukami, Owen, Pyle & Mitchell, 1982; Pyle et al., 1981; and Prather & Williamson, 1988; Williamson et al., 1989). The MMPI-2 is being included in this study as another instrument for evaluation of the association between general psychopathology and treatment outcome.

Diagnostic Survey for Eating Disorders-Revised. The DSED-R is a multi-item questionnaire that focuses on various aspects of anorexia nervosa and bulimia nervosa (Johnson, 1984). It is divided into twelve sections, which provide information on demographic variables, weight history, body image, dieting behavior, binge eating behavior, purging behavior, exercise, related behaviors, sexual functioning, menstruation, medical and psychiatric history, life adjustments, and family history. It is a self-report instrument completed by the subjects. The DSED-R was not constructed with the intention of developing a scaled instrument. The purpose, rather was to provide a standardized format for collecting relevant information that would

facilitate communication between various treatment centers regarding the description of different patient groups.

Only selected portions of the DSED-R, including demographic information, family psychiatric data, symptom frequency and bulimic history were used for the purposes of this study. Subjects were asked to report their religious affiliation (1=Protestant, 2=Catholic, 3=Jewish, 4=no affiliation, or 5=other); marital status (1=single, 2=married, 3=separated, 4=divorced, or 5=widowed); present primary role (1=wage earner, 2=housewife, 3=student, or 4=other); current living arrangement (1=with parents or relatives, 2=dorm or share apartment with a friend, 3=conjugal, or 4=alone); education level (1=completed post-graduate training, 2=some post-graduate training, 3=completed college, received four year academic degree, 4=some college, but did not receive four year academic degree, 5=completed high school; may have attended trade school or other non-academic training requiring high school completion, 6=some high school, 7=some grammar school, or 8=no schooling); current weight; height; age when began binge eating; age when first induced vomiting (purging); over the last month, the average number of times the subject had engaged in bingeing per week; over the last month, the average number of times the subject had engaged in vomiting (purging) per week; had they ever made a suicide attempt (1=no; 2=yes, 1-2 times; 3=yes, 3-5 times; 4=yes, more than 5 times); had they ever stolen items related to eating or weight (1=no; 2=yes, 1-2 times; 3=yes, 3-5 times; 4=yes, more than 5 times); if they had ever been hospitalized for eating or emotional problems, they were asked to specify the

primary reason for admission (1=bulimia, 2=anorexia, 3=chemical dependency, 4=depression, 5=psychotic disorder other than depression, or 6=other); and number of first degree relatives (which included children, brothers, sisters, and parents) that had any problems with depression, manic-depression, alcohol, drug abuse, bulimia nervosa, anorexia nervosa, or suicide attempts.

CHAPTER III

RESULTS

Individual Differences

Variables measuring symptom presentation, history of illness, mileage to the treatment center and familial psychiatric history were analyzed by means of a one-way between groups ANOVA. Kruskal-Wallis one-way ANOVA's by ranks were used to analyze categorical demographic data. Subsequently, a series of stepwise discriminant analyses evaluated conceptually related variables in order to identify relationships among optimal predictors of group assignment. Results from the discriminant analyses were consistent with the findings of the analyses of variance described below. Alpha was set at .05 for all analyses.

Age of the subjects, current weight and height, reported frequency of bingeing and purging per week, as well as the initial scores on the assessment instruments were used to measure symptom presentation at intake. The analysis on age of the subjects revealed no main effect for group, $F(1,32)=1.14$, $p=.29$. The subjects in the two groups did not significantly differ on current weight, $F(1,32)=3.34$, $p=.07$, or height, $F(1,32)=1.72$, $p=.20$. The means and standard deviations are presented in Table 1. For initial reported frequency of bingeing and purging per week there was no effect for group, $F(1,32) < 1$, $p=.88$ and $F(1,31) < 1$, $p=.44$, respectively.

Table 1

Mean Age, Mean Weight, and Mean Height for Subjects in Each Treatment Group

	Age	Weight	Height
Inpatient/Outpatient			
<u>M</u>	24.58	123.21	66.00
<u>SD</u>	6.01	28.56	2.91
Outpatient			
<u>M</u>	26.73	139.00	64.80
<u>SD</u>	5.62	19.50	2.27

One outpatient subject did not report her initial frequency of purging per week. The means and standard deviations are presented in Table 2.

Initial scores on the BDI, EDI subscales, and five MMPI-2 subscales were also analyzed using a one-way between groups ANOVA. Initial BDI scores did not differ between groups, $F(1,31)=1.06$, $p=.31$. The means and standard deviations are presented in Table 3. One subject from the outpatient group failed to complete an initial BDI. The analyses on the EDI subscales indicated no significant differences between groups: Drive for Thinness, $F(1,32)<1$, $p=.91$; Bulimia, $F(1,32)=2.60$, $p=.12$; Body Dissatisfaction, $F(1,32)<1$, $p=.70$; Ineffectiveness, $F(1,32)<1$, $p=.62$; Perfectionism, $F(1,32)<1$, $p=.86$; Interpersonal Distrust, $F(1,32)<1$, $p=.49$;

Table 2

Mean Initial Frequency of Binging and Purging Per Week for Subjects in Each Treatment Group

	Initial Frequency of Binging Per Week	Initial Frequency of Purging Per Week
Inpatient/Outpatient		
<u>M</u>	8.38	11.32
<u>SD</u>	9.04	11.47
Outpatient		
<u>M</u>	6.93	8.57
<u>SD</u>	6.30	7.40

Interoceptive Awareness, $F(1,32) < 1$, $p = .35$; and Maturity Fears, $F(1,32) < 1$, $p = .79$. Means and standard deviations are presented in Tables 4 and 5. The subjects in the two groups also did not differ on the five MMPI-2 subscales: Depression, $F(1,29) = 6.50$, $p = .98$; Hysteria, $F(1,29) = 1.21$, $p = .28$; Psychopathic Deviate, $F(1,29) < 1$, $p = .38$; Psychasthenia, $F(1,29) = 1.70$, $p = .99$; and Schizophrenia, $F(1,29) < 1$, $p = .55$. Three outpatient subjects failed to complete the MMPI-2. Means and standard deviations are presented in Table 6.

Table 3

Mean Initial and Mean Follow-up Scores on the BDI for Subjects in Each TreatmentGroup

	Initial BDI	Follow-up BDI
Inpatient/Outpatient		
<u>M</u>	26.11	18.47
<u>SD</u>	12.09	12.46
Outpatient		
<u>M</u>	22.29	11.73
<u>SD</u>	7.83	9.95

Age at onset of illness, duration of illness, and number of previous hospitalizations for eating disorders were recorded and analyzed to assess group differences in history of illness. These variables were analyzed with a one-way between groups ANOVA. There were no significant differences between the groups for age at onset of bingeing $F(1,32) < 1$, $p = .87$, or purging, $F(1,32) = 1.08$, $p = .31$. Duration of illness was not significantly different between groups, $F(1,32) = 1.49$, $p = .23$. Means and standard deviations are presented in Table 7. The two groups did not significantly differ on the number of previous eating disorder hospitalizations, $F(1,32) = 1.53$, $p = .23$. In addition, mileage to the treatment center was calculated

Table 4

Mean Initial (MI) and Mean Follow-up (MF) Scores on EDI Subscales: Drive for Thinness, Bulimia, Body Dissatisfaction, and Ineffectiveness for Subjects in Each Treatment Group

	Drive for Thinness		Bulimia		Body Dissatisfaction		Ineffectiveness	
	MI	MF	MI	MF	MI	MF	MI	MF
<u>Inpatient/Outpatient</u>								
<u>M</u>	14.79	12.95	6.89	4.74	18.63	18.16	11.16	9.26
<u>SD</u>	5.57	6.01	6.32	3.93	7.30	8.38	7.73	7.17
<u>Outpatient</u>								
<u>M</u>	15.00	8.87	10.07	3.07	19.60	15.20	10.00	5.87
<u>SD</u>	5.42	3.36	4.76	3.43	7.26	8.39	4.83	5.73

Table 5

Mean Initial (MI) and Mean Follow-up (MF) Scores on EDI Subscales: Perfectionism, Interpersonal Distrust, Interoceptive Awareness, and Maturity Fears for Subjects in Each Treatment Group

	Perfectionism		Interpersonal Distrust		Interoceptive Awareness		Maturity Fears		
	MI	MF	MI	MF	MI	MF	MI	MF	
Inpatient/Outpatient									
<u>M</u>	8.05	8.37	8.00	7.53	11.68	10.79	4.26	3.47	51
<u>SD</u>	5.53	4.35	4.41	4.85	7.15	6.92	4.20	4.07	
Outpatient									
<u>M</u>	7.73	5.13	6.80	4.47	9.53	4.80	3.93	2.40	
<u>SD</u>	4.30	2.92	5.66	5.78	5.66	4.83	2.69	2.13	

Table 5

Mean Initial (MI) and Mean Follow-up (MF) Scores on EDI Subscales: Perfectionism, Interpersonal Distrust, Interoceptive Awareness, and Maturity Fears for Subjects in Each Treatment Group

	Perfectionism		Interpersonal Distrust		Interoceptive Awareness		Maturity Fears	
	MI	MF	MI	MF	MI	MF	MI	MF
Inpatient/Outpatient								
<u>M</u>	8.05	8.37	8.00	7.53	11.68	10.79	4.26	3.47
<u>SD</u>	5.53	4.35	4.41	4.85	7.15	6.92	4.20	4.07
Outpatient								
<u>M</u>	7.73	5.13	6.80	4.47	9.53	4.80	3.93	2.40
<u>SD</u>	4.30	2.92	5.66	5.78	5.66	4.83	2.69	2.13

Table 6

Mean Scores on MMPI-2 Subscales: Depression (D), Hysteria (Hy), Psychopathic Deviate (Pd), Psychasthenia (Pt), and Schizophrenia (Sc) for Subjects in Each Treatment Group

	D	Hy	Pd	Pt	Sc
Inpatient/Outpatient					
<u>M</u>	73.53	65.21	65.63	71.05	64.58
<u>SD</u>	14.32	13.53	10.89	11.60	12.27
Outpatient					
<u>M</u>	73.67	70.67	69.00	71.00	67.03
<u>SD</u>	15.88	13.32	9.37	9.80	9.65

and analyzed using a one-way between groups ANOVA. No significant differences were found for mileage, $F(1,32)=3.13$, $p=.09$. Means and standard deviations are presented in Table 8.

A one-way between groups ANOVA was also conducted on the familial psychiatric data. The two groups did not significantly differ on the number of first degree relatives who were bulimic, $F(1,32)=2.75$, $p=.11$, or anorexic, $F(1,32)=1.66$, $p=.21$. Furthermore, the groups did not differ on the number of first degree relatives who reportedly had exhibited affective disorders, $F(1,32)=3.71$,

Table 7

Mean Age of Onset of Binging, Mean Age of Onset of Purging, and Mean Duration of Illness (Months) for Subjects in Each Treatment Group

	Age of Onset of Binging	Age of Onset of Purging	Duration of Illness (Months)
Inpatient/Outpatient			
<u>M</u>	19.00	17.37	55.47
<u>SD</u>	4.75	5.96	57.90
Outpatient			
<u>M</u>	19.27	19.40	83.27
<u>SD</u>	4.48	5.26	75.02

$p=.06$, or had made suicide attempts, $F(1,32)=2.75$, $p=.11$. A one-way between groups ANOVA revealed significant differences between groups on the number of first degree relatives who abused alcohol, $F(1,32)=8.29$, $p=.01$, and the number of first degree relatives who abused drugs, $F(1,32)=7.66$, $p=.01$. Means and standard deviations are presented in Tables 9 and 10.

Since there were an inadequate number of observations in the relatives abusing alcohol or drugs categories, assumptions of the mathematical model for analysis of covariance were violated. Consequently, analyses of variance were used to determine

Table 8

Mean Number of Previous Hospitalizations for Eating Disorders and Mean Number of Miles to Treatment Center

	Previous Hospitalizations for Eating Disorders	Mileage
Inpatient/Outpatient		
<u>M</u>	.63	62.21
<u>SD</u>	1.01	69.97
Outpatient		
<u>M</u>	.27	26.80
<u>SD</u>	.59	52.45

group mean differences based on reported number of first degree relatives who abuse alcohol and number of first degree relatives who abuse drugs. A 2 (Time) X 3 (Number of Alcohol Abusing Relatives) ANOVA and a 2 (Time) X 3 (Number of Drug Abusing Relatives) ANOVA were performed on reported binge frequency, reported purge frequency, BDI scores, and EDI subscales. No significant main effects or interactions were observed. Thus, although the treatment groups differed on number of first degree relatives who abuse alcohol and number of first degree relatives who abuse drugs, these two variables did not impact symptom variables.

Table 9

Mean Number of First Degree Relatives with Bulimia Nervosa, Mean Number of First Degree Relatives with Anorexia Nervosa, and Mean Number of First Degree Relatives with Affective Disorders for Subjects in Each Treatment Group

	Bulimia Nervosa	Anorexia Nervosa	Affective Disorders
Inpatient/Outpatient			
<u>M</u>	.00	.12	.42
<u>SD</u>	.00	.32	.51
Outpatient			
<u>M</u>	.13	.00	.87
<u>SD</u>	.35	.00	.83

Categorical demographic data including religious affiliation, marital status, present primary role, current living arrangement, education level, incidence of previous suicide attempts, incidence of stealing food-related items and type of previous psychiatric hospitalizations were analyzed using the Kruskal-Wallis one-way ANOVA by ranks to assess group differences. There were no significant differences between groups for religious affiliation, $\chi^2 (n=34) < 1, p = .71$. Marital status was not significantly different between groups, $\chi^2 (n=34) = 1.14, p = .32$, nor was present

Table 10

Mean Number of First Degree Relatives Who Made Suicide Attempts, Mean Number of First Degree Relatives with Alcohol Abuse, and Mean Number of First Degree Relatives with Drug Abuse for Subjects in Each Treatment Group

	Suicide Attempts	Alcohol Abuse	Drug Abuse
Inpatient/Outpatient			
<u>M</u>	.00	.16	.00
<u>SD</u>	.00	.37	.00
Outpatient			
<u>S</u>	.13	.87	.40
<u>MD</u>	.35	.99	.63

primary role, $\chi^2 (n=34) < 1, p = .97$. Subjects in the two groups did not differ on current living arrangement, $\chi^2 (n=34) < 1, p = .88$. There were no differences found between groups on education level, $\chi^2 (n=34) = 2.72, p = .12$. Incidence of previous suicide attempts did not differ between groups, $\chi^2 (n=34) < 1, p = .59$, nor did incidence of stealing food-related items, $\chi^2 (n=34) < 1, p = .82$. Analysis of types of previous psychiatric hospitalizations revealed no significant differences between groups, $\chi^2 (n=34) < 1, p = .69$. Frequency data for each categorical variable is presented in Tables 11-18.

Table 11

Frequency Data for Religious Affiliation for Subjects in Each Treatment Group

	Religious Affiliation			
	Protestant	Catholic	None	Other
Inpatient/Outpatient				
Frequency	12	3	3	1
Outpatient				
Frequency	8	4	3	1

Table 12

Frequency Data for Marital Status for Subjects in Each Treatment Group

	Marital Status			
	Single	Married	Separated	Divorced
Inpatient/Outpatient				
Frequency	11	4	1	3
Outpatient				
Frequency	5	7	0	3

Table 13

Frequency Data for Present Primary Role for Subjects in Each Treatment Group

	Primary Role			
	Wage Earner	Housewife	Student	Other
Inpatient/Outpatient				
Frequency	8	4	7	0
Outpatient				
Frequency	6	4	5	0

The stepwise discriminant analyses for group assignment with FE (F value to exclude)=1.00 and FR (F value to remove)=.90 revealed a model with three predictive variables entered in the following order: number of first degree relatives exhibiting alcohol abuse (ETOHREL), number of previous eating disorder hospitalizations (INPTNO), and number of first degree relatives exhibiting affective disorders (DEPREL). The Wilks Lambda for the model was $U=.69$, indicating that the model accounted for approximately 31% of the variance. The model correctly classified 78% of the cases in the inpatient/outpatient group and 81% of the cases in the outpatient group, with an overall correct classification of 78.8%.

In order to determine if the five MMPI-2 subscales (Depression, Hysteria, Psychopathic Deviate, Psychasthenia, Schizophrenia) were predictive of treatment outcome, a correlational matrix was constructed between mean subscale scores and

Table 14

Frequency Data for Current Living Arrangement for Subjects in Each TreatmentGroup

	Current Living Arrangement			
	With Parents or Relatives	Dorm or Shared Apartment with Friend	Conjugal	Alone
Inpatient/Outpatient				
Frequency	4	4	5	6
Outpatient				
Frequency	3	2	7	3

the change reported in bingeing and purging frequencies. Delta scores were calculated by subtracting the follow-up binge frequency from the initial binge frequency, and the follow-up purge frequency from the initial purge frequency. Subsequently, a Pearson r was calculated between the five MMPI-2 subscales and the delta scores. A significant correlation between the Psychopathic Deviate (Pd) subscale and change in reported binge frequency was found, $r = .45$, $p = .01$. In addition, the calculated correlation between the Pd subscale and the change in reported purge frequency revealed a nonsignificant correlational trend, $r = .34$, $p = .06$. Thus, this indicated a

Table 15

Frequency Data for Education for Subjects in Each Treatment Group

		Education					
		Postgraduate		Undergraduate		High School	
		Nondegree	Degree	Nondegree	Degree	Attended	Diploma
Inpatient/outpatient							
Frequency		0	0	11	1	1	6
Outpatient							
Frequency		1	1	5	4	1	3

Table 16

Frequency Data for Incidence of Suicide Attempts for Subjects in Each TreatmentGroup

	Suicide Attempts			
	None	1-2 Times	3-5 Times	More Than 5 Times
<u>Inpatient/Outpatient</u>				
Frequency	13	4	2	0
<u>Outpatient</u>				
Frequency	12	2	0	1

positive correlation between elevations on the Pd scale and decreases in symptoms.

No other significant correlations were found.

Treatment Outcome

Two (Time) X 2 (Treatment Group) analyses of variance were conducted on all treatment outcome variables. Alpha was set at .05. T-tests were used for further analyses of interactions.

Symptom Frequency. The analysis on binge frequency revealed a significant main effect for time, $F(1,64)=9.66$, $p=.003$, in that subjects reported lower binge frequencies at follow-up (See Figure 1). No main effect for treatment group was found, $F(1,64) < 1$, $p=.54$. The interaction was not significant, $F(1,64) < 1$, $p=.74$.

Table 17

Frequency Data for Incidence of Stealing Food-Related Items for Subjects in Each Treatment Group

	Incidence of Stealing Food Related Items			
	None	1-2 Times	3-5 Times	More Than 5 Times
<u>Inpatient/Outpatient</u>				
Frequency	11	5	2	1
<u>Outpatient</u>				
Frequency	10	2	1	2

The analysis on reported purge frequency yielded a significant main effect for time, $F(1,63)=5.92$, $p=.02$, indicating that subjects reported lower purge frequencies at follow-up (See Figure 2). There was no main effect found for treatment type, $F(1,63)=2.65$, $p=.11$. The time by treatment group was not significant, $F(1,63) < 1$, $p=.65$.

Beck Depression Inventory. A significant main effect for time was found, $F(1,63)=11.25$, $p=.001$, indicating that subjects reported fewer depressive symptoms at follow-up (See Figure 3). The main effect for treatment group, $F(1,63)=3.79$, $p=.06$, and the time by treatment type interaction, $F(1,63) < 1$, $p=.59$, were not significant.

Table 18

Frequency Data for Types of Previous Psychiatric Hospitalizations for Subjects in Each Treatment Group

	Types of Psychiatric Hospitalizations		
	None	Chemical Dependency	Depression
<u>Inpatient/Outpatient</u>			
Frequency	17	0	2
<u>Outpatient</u>			
Frequency	12	2	1

Eating Disorder Inventory. For the Drive for Thinness subscale, there was a significant main effect for time, $F(1,64)=7.80$, $p=.007$ (See Figure 4), suggesting a decrease in subjects' preoccupation with thinness at follow-up. No main effect for treatment group was shown, $F(1,64)=1.84$, $p=.18$. The interaction was not significant, $F(1,64)=2.26$, $p=.14$. Analysis on the Ineffectiveness subscale yielded no main effects for time, $F(1,64)=3.50$, $p=.07$, or treatment group, $F(1,64)=2.00$, $p=.16$. The interaction was not significant, $F(1,64)<1$, $p=.49$. For the Interoceptive Awareness subscale, there was no main effect of time, $F(1,64)=3.32$, $p=.07$. The analysis revealed a significant main effect for treatment group, $F(1,64)=6.96$, $p=.01$, indicating that the inpatient/outpatient group had higher scores than the outpatient group collapsed over time (See Figure 5). No interaction was

found, $F(1,64)=1.55$, $p=.22$. Analysis on the Bulimia subscale yielded no main effect for treatment group $F(1,64)<1$, $p=.52$. There was a significant main effect for time, $F(1,64)=15.21$, $p=.0002$, and a significant time by treatment group interaction, $F(1,64)=4.25$, $p=.04$ (See Figure 6). Subsequent t-tests revealed that outpatients had significantly decreased scores from intake to follow-up, $t(28)=4.62$, $p<.0001$. No other pairwise comparisons were significant. Analysis on the Body Dissatisfaction subscale yielded no main effects for time, $F(1,64)=1.61$, $p=.21$, or treatment group, $F(1,64)<1$, $p=.61$. The interaction was not significant, $F(1,64)=1.05$, $p=.31$. For the Perfectionism subscale, there was no main effect for time, $F(1,64)=1.10$, $p=.30$, and no main effect for treatment type, $F(1,64)=2.67$, $p=.11$. No significant interaction was observed, $F(1,64)=1.80$, $p=.19$. Analysis on the Interpersonal Distrust subscale yielded no main effects for time, $F(1,64)=1.25$, $p=.27$, or treatment group, $F(1,64)=2.88$, $p=.09$. The interaction was not significant, $F(1,64)<1$, $p=.46$. For the Maturity Fears subscale, there was no main effect for time, $F(1,64)=1.85$, $p=.18$, or treatment group, $F(1,64)<1$, $p=.41$. No interaction was found, $F(1,64)<1$, $p=.66$.

Table 19

Stepwise Discriminant Analyses for Group Classification

Step 1: Enter ETOHREL		
Wilks Lambda	F-Ratio	Significance
.8202	6.795	.0139

Step 2: Enter INPTNO		
Wilks Lambda	F-Ratio	Significance
.6875	4.394	.0115

Step 3: Enter DEPREL		
Wilks Lambda	F-Ratio	Significance
.6875	4.394	.0115

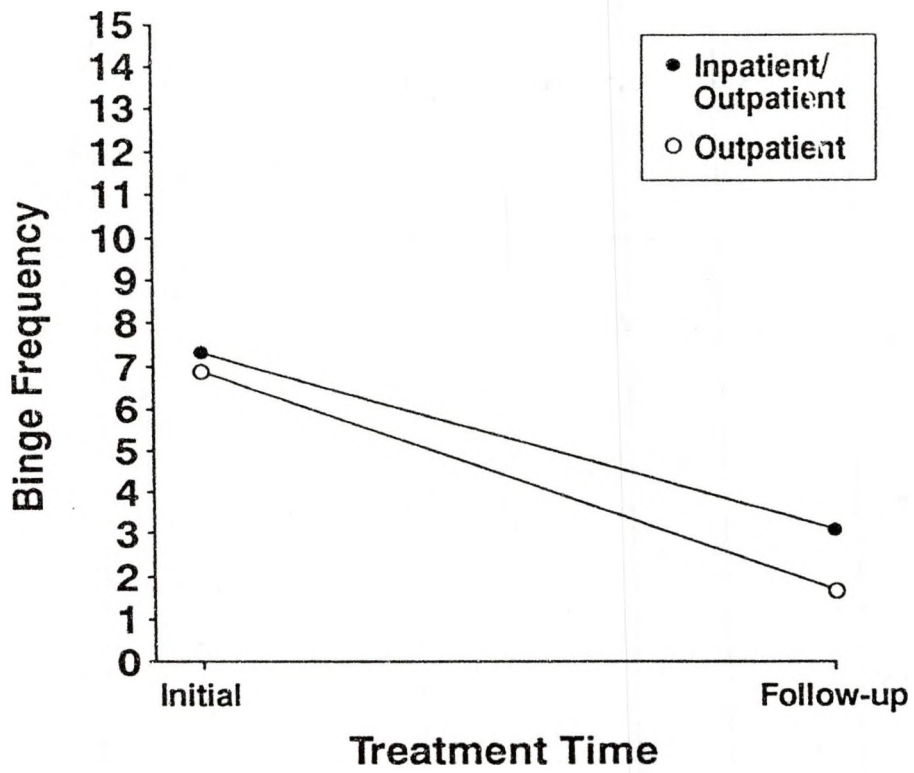


Figure 1. Mean binge frequency per week as a function of treatment group and time.

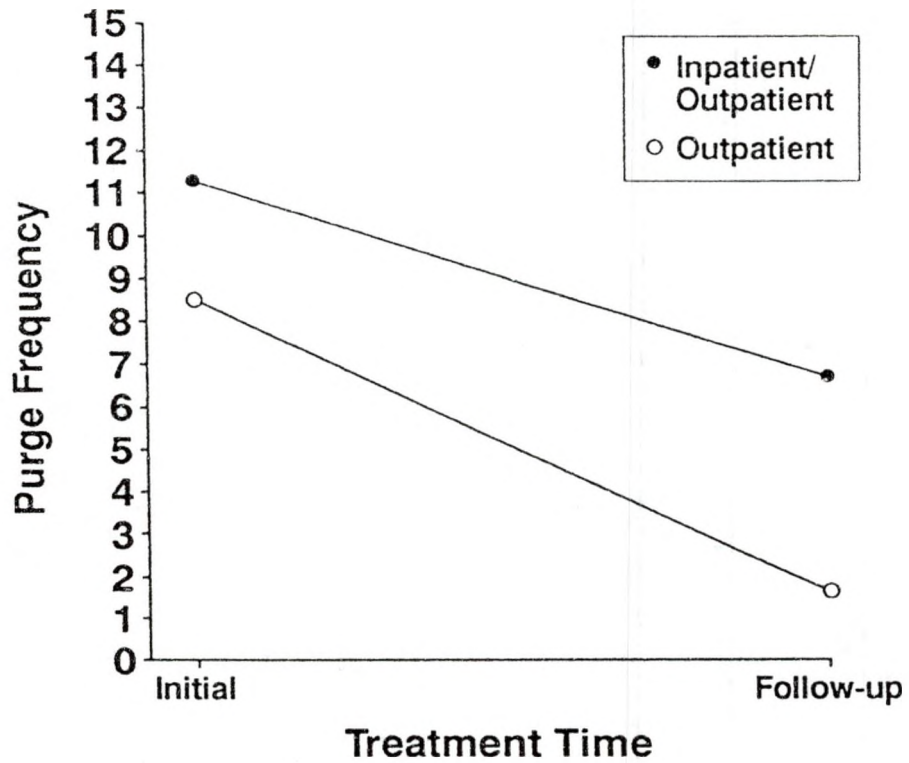


Figure 2. Mean purge frequency per week as a function of treatment group and time.

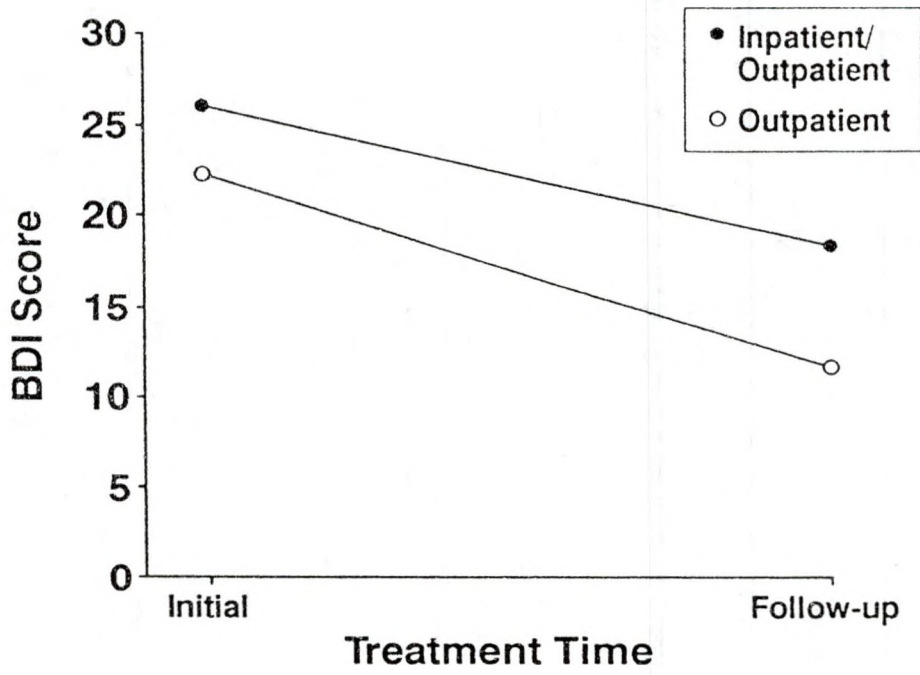


Figure 3. Mean BDI scores as a function of treatment group and time.

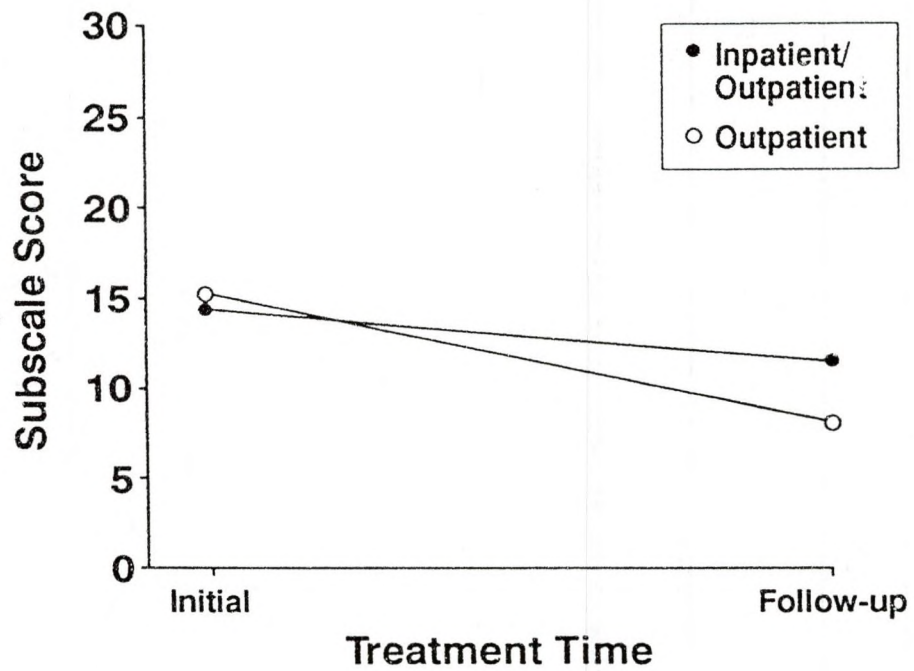


Figure 4. Mean EDI Drive for Thinness subscale scores as a function of treatment group and time.

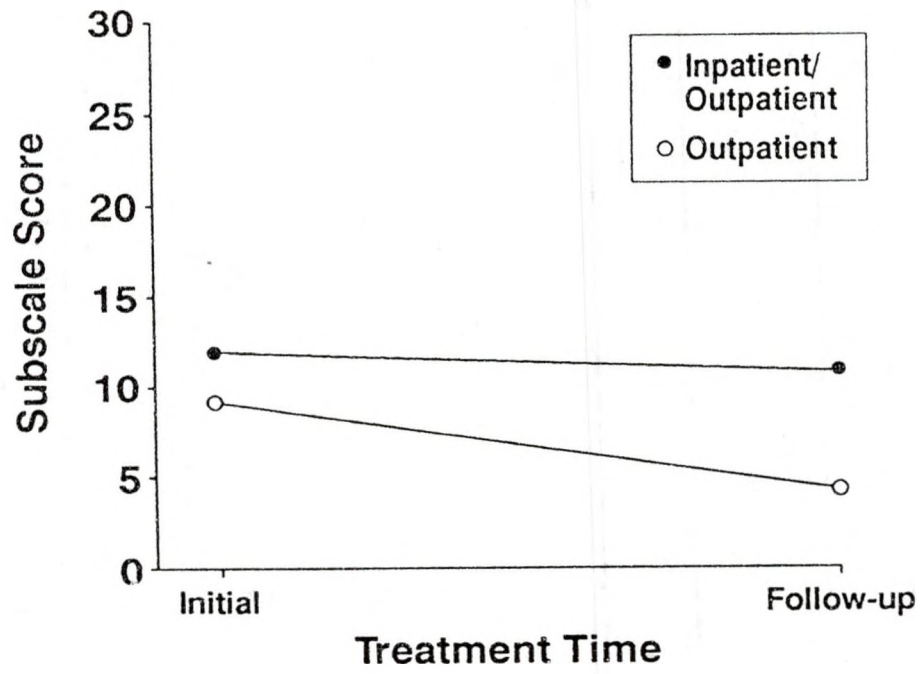


Figure 5. Mean EDI Interoceptive Awareness subscale scores as a function of treatment group and time.

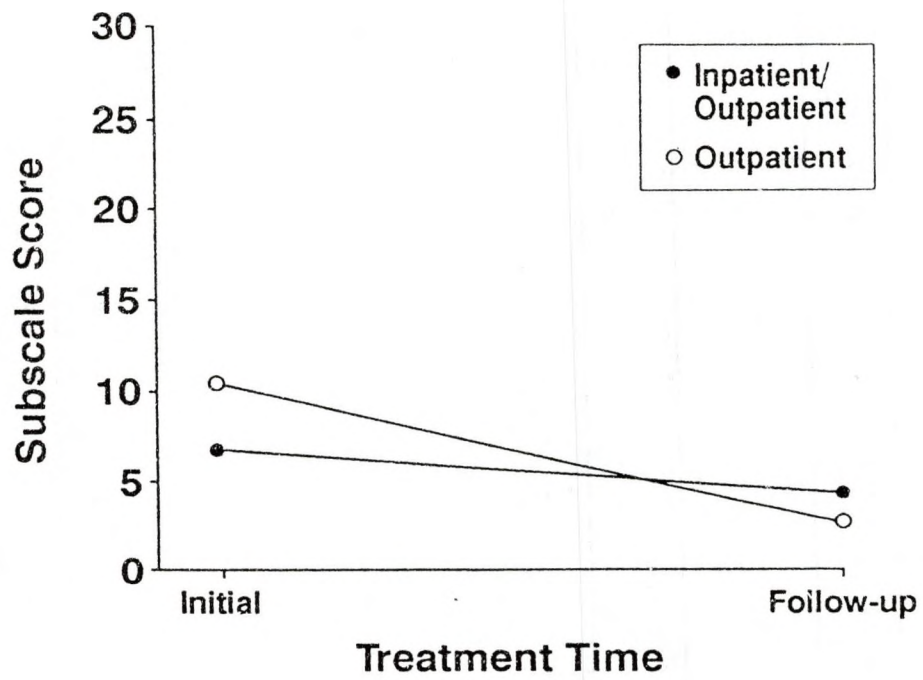


Figure 6. Mean EDI Bulimia subscale scores as a function of treatment group and time.

CHAPTER IV

DISCUSSION

The purpose of this study was to evaluate the comparative effectiveness of an inpatient stay followed by outpatient therapy versus outpatient therapy only in the treatment of bulimia nervosa. Treatment outcome was assessed through changes in symptom frequency and several measures of psychological change.

Intake Comparisons

The two groups did not initially differ on any of the demographic variables or symptom severity variables (i.e., frequency of reported bingeing or purging, duration of illness, age at onset of illness, previous hospitalizations for eating disorders, suicide attempts, height, current weight, BDI, EDI subscales and the five MMPI-2 subscales). The outpatient group did have significantly more first degree relatives who abused alcohol and/or drugs, and there was a trend toward the outpatients also having more depressed relatives. Subsequent analyses of these two collateral variables, however, failed to demonstrate significant effects on any of the major dependent measures examined in the present outcome study.

Treatment Outcome Review

While data analyses revealed significant treatment effects for both groups,

there was not support for the hypothesis proposing that the inpatient/outpatient group would demonstrate the most treatment gains. In fact, in many respects, the outpatient group achieved superior treatment progress.

Symptom Frequency. For both groups, there was significant decreases in reported frequency of bingeing and purging from intake to follow-up, with no differences between groups. Thus, both groups made significant progress while engaged in eating disorder treatment regardless of the treatment modality.

Beck Depression Inventory (BDI). While both groups evidenced significant decreases in BDI scores from intake to follow-up, the inpatient/outpatient group did not significantly differ from the outpatient group as had been hypothesized. Outpatients tended to have lower BDI scores initially and at follow-up, than subjects in the inpatient/outpatient group.

Eating Disorder Inventory (EDI). The Drive for Thinness subscale assesses extreme preoccupation with caloric restriction, weight gain and attempts to be thinner. A sample of the questions on this subscale includes: "I am preoccupied with the desire to be thinner," "I think about dieting," and "I am terrified of gaining weight." While there was a significant decrease in Drive for Thinness scores for both groups as a function of treatment, there were no differences between the two groups.

Interoceptive awareness can be described as a person's ability to correctly identify and label internal feeling states or emotions and sensations of hunger and satiety. This subscale includes such statements as: "I get confused about what emotion I am feeling," "I get confused as to whether I am hungry or not," and "I

have feelings I cannot quite identify." Analyses on the Interoceptive Awareness subscale revealed significant differences between the two treatment groups, with the outpatients having lower scores than the inpatient/outpatient subjects when collapsed over time. This result was again contrary to the original hypothesis, which suggested that the inpatient/outpatient group would exhibit the greatest change in reduction on this scale.

The Bulimia subscale measures the extent of bulimic behavior by such statements as: "I think about bingeing," and "I have gone on eating binges where I feel that I could not stop." Time X Treatment Group interaction occurred indicating that while the outpatient group started with a higher mean score than the inpatient/outpatient group, at follow-up the former group exhibited a lower mean score than the latter group. While the two groups did not significantly differ at intake or follow-up, the outpatient group exhibited a significant decrease on the Bulimia subscale as a function of treatment. Again, this result did not support the hypothesis that the inpatient/outpatient group would exhibit significantly more reduction on this subscale than the outpatient group.

Minnesota Multiphasic Personality Inventory-2 (MMPI-2). The only significant correlation between the MMPI-2 and reported decreases in bingeing and purging was between the psychopathic deviate (Pd) scale and reported binge frequency. Contrary to the prediction that decreases in symptom frequency would be negatively correlated with MMPI-2 subscale elevations, the Pd scale was positively correlated with decreases in reported binge frequency. There was also a trend for

elevations on the Pd scale to be positively associated with decreases in purge frequency. In other words, the higher the elevation was on the Pd scale at the initial testing, the greater the decrease in reported binge frequency at follow-up testing.

In summary, the results of the present investigation do not support any of the proposed hypotheses. Results from the current study indicated that the outpatient group achieved superior treatment gains in terms of decreased bingeing and purging frequencies, BDI scores and EDI subscale scores.

It was an unexpected finding that subjects assigned to the outpatient condition had significantly more alcohol and drug abusing first degree relatives than those in the inpatient/outpatient condition. It could be speculated that with increased incidence of chemical dependency in their relatives, these patients may have been from more chaotic and dysfunctional family systems where emotional and financial support for inpatient treatment may have been lacking. The chaos of such family systems may be all-too-familiar and while these outpatients may present with symptoms as severe as the inpatient/outpatient group they may tolerate their symptoms better as they have learned to live with more discomfort and chaos (Root, Fallon & Fredrich, 1986). Thus, they may appreciate and report more positive gains from intervention than those subjects exhibiting perhaps higher expectancies from caretakers in their lives. Consequently, subjects raised in more intact homes may find the symptoms of bulimia nervosa to be more debilitating and have higher expectancies for attention by family members and health care professionals. Conversely, the absence of intake group differences in global measures of psychopathology and psychological adjustment fail

to support the hypothesis that psychological differences between the groups at intake predispose superior gains by outpatient subjects on symptom reduction and measures such as the BDI and EDI.

Relationships between eating disorders and family and individual chemical dependency appear to be quite complex. Pyle et al., (1981) examined the incidence of chemical dependency in a group of bulimics and their first degree relatives and found that 24% of the bulimics were chemically dependent. In addition, 50% of these patients reported alcoholism in at least one of their first degree relatives.

Carroll and Leon's study (cited in Johnson and Conner, 1987) found in a group of thirty-seven bulimics that 61% of them abused alcohol and 46% abused drugs, and that 51% of them had at least one first degree relative diagnosed as chemically dependent.

Outcome Study Literature

Both treatment groups in the present study demonstrated reductions in reported bingeing and purging frequencies. In a review of psychotherapy treatment literature, it was found that in the controlled studies exhibiting treatment success there were a number of similar techniques employed (Mitchell, Hoberman and Pyle, 1989). Each study had goals of symptom reduction, self-monitoring of eating behaviors, cognitive restructuring, and an emphasis on developing balanced eating patterns. In the current study, both treatment modes incorporated these same therapeutic objectives and treatment techniques.

Symptom reduction has been one of the primary outcome measures in the

psychotherapy literature for eating disorders (Freeman et al., 1988; Agras et al., 1989; Connors et al., 1984; Fairburn et al., 1986). The majority of treatment studies define success as being significant decreases in symptom frequency and improved daily functioning, although it has been debated occasionally whether or not treatment success means total symptom abstinence. In the present study the outpatient group had a 75% decrease in reported binge frequency and a 79% decrease in reported purge frequency, while the inpatient/outpatient group had a 57% decrease in reported bingeing and a 41% decrease in reported purging.

Both groups also demonstrated a significant reduction in depression as measured by the BDI. Reduction in depressive symptoms (Mitchell, Hoberman and Pyle, 1989) and BDI scores (Agras et al., 1989; Swift, et al., 1987) are a frequently documented success of both inpatient and outpatient treatment. In a study by Keller et al. (1989), 59% of depressed bulimics had symptom remission at a fifty-three week follow-up, however, the probability of relapse into another depressive episode was 43%. The present study compares favorably by demonstrating mean reductions in BDI scores from 22.29 to 11.73 and 26.11 to 18.47 for the outpatient and inpatient/outpatient groups, respectively.

On the EDI, both groups demonstrated significant reductions at follow-up on the Drive for Thinness subscale. One of the primary goals of treatment is to change patients' distorted cognitions particularly with regard to our culture's unhealthy preoccupation with thinness and the role this has in the development of eating disorders, body perception, and beliefs which associate shape and weight with

self-worth (Mitchell, Hoberman and Pyle, 1989). Results of the current investigation indicate that the present programs were equally effective in achieving significant decreases by both groups in their Drive for Thinness scores.

Bruch (1962) first hypothesized the primary role of interoceptive awareness in the development of eating disorders. Three characteristics of anorexia nervosa were originally hypothesized including disturbance in interoceptive awareness, distorted body image, and extreme feelings of inadequacy. Bruch speculated that anorexics are unable to accurately identify and respond to feelings and internal states of satiety and hunger as a result of early mother-child dysfunctional interactions. The present results suggest that patients may gain symptom control while still failing to have developed the ability to differentiate feeling states. The inpatient/outpatient group had significantly higher scores than the outpatient group on the Interoceptive Awareness subscale collapsed over time. Johnson and Connors (1987) noted that bulimics report more problems with interoceptive awareness than do restricting anorexics, a negative prognostic indicator, possibly due to increased generalized intrapsychic disorganization in comparison to anorexics. The results of the present study appear to reflect the relative difficulties of the inpatient/outpatient subjects in making positive modifications in interoceptive awareness and their difficulty in identifying physical and emotional states which may mediate behavioral control over consummatory behaviors.

Results on the Bulimia subscale demonstrated that outpatients achieved greater improvement over time, perhaps because these subjects were required to practice the

learned skills of symptom control from the beginning of treatment in the actual high-risk situations. This practice in symptom interruption may have fostered a sense of greater internal control over their disorder, whereas the inpatient/outpatient subjects had their symptoms being controlled for them via the hospital staff. Thus, they may attribute credit for their symptom reduction to the structure of the hospital environment rather than themselves. In addition, these subjects may have not learned as quickly as the outpatients how to identify feelings and cues which precipitate symptoms because they have been in a controlled environment without exposure to their routine daily stressors. Then, when discharged they are not as likely as the outpatient group to have developed a sense of mastery over their symptoms.

The finding that higher elevations of the MMPI-2 psychopathic deviate (Pd) subscale were positively associated with decreased binge frequency was another unexpected result of the current investigation. It may be that individuals with higher elevations on the Pd subscale may have less difficulty in being assertive with others in attempting to satisfy personal needs. Typically, bulimic individuals are very sensitive to the needs of others, exhibiting self-sacrificing and non-assertive behaviors (Conners et al., 1984; Johnson, Stuckey, Lewis & Schwartz, 1982; and Pyle et al., 1981). Bulimic symptoms may reflect an indirect expression of feelings and needs that the bulimic is unable to express directly (Johnson & Conners, 1987). Learning to be more assertive with others is often one of the goals of treatment to foster the person's ability to express her needs openly. Higher Pd elevations may reflect higher

assertiveness potential, accounting for the positive relationship found between the Pd scale of the MMPI-2 and treatment outcome.

Limitations

The major limitation of this study is the inability to control for assignment to treatment conditions. Nevertheless, examination of hospital admissions criteria for treatment of bulimia nervosa suggests that assignment to the inpatient or outpatient treatment groups reflects a process which is largely random in terms of illness severity. For example, extensive analyses of intake group differences support a conclusion that the two groups were comprised of equally disordered individuals at intake. Factors such as insurance availability, employment considerations, distance from treatment, and family wishes seem to strongly influence admission judgment as a result of the vacuum created by an absence of conclusive treatment outcome studies to guide the decision-making process. The present results should be generalized most appropriately to other mid-western treatment programs in moderately sized or smaller towns. Bulimics coming from other parts of the country or large metropolitan areas may present with different dynamics and prognostic factors. The current study employed a relatively small number of subjects, therefore, this may not have allowed for the statistical power necessary to identify findings that existed but were not detected due to a comparatively small sample size. It should be noted, however, that the majority of studies cited in the literature had sample sizes of thirty or less subjects. The clinical nature of the sample of subjects investigated in the present study and the fact that all the subjects were involved in ongoing treatment programs

means that inevitably, there is some degree of variability in the treatment received on a session to session basis. Thus, the variability in the exact treatment received and exact interval of data collection is greater than in a research study in a more controlled setting. However, the present results may also generalize more reliably to patients in typical treatment programs, and the present study represents one of the only studies ever conducted which offers a direct comparison of inpatient and outpatient treatment modalities. Future studies investigating whether or not treatment gains are maintained at longer follow-up periods would be an important area for further research.

Conclusion

Outpatient treatment appeared to provide the patients in the present study with a greater sense of mastery over their bulimic symptoms at a treatment outcome follow-up. Findings of the present investigation would also support the importance of having outpatient treatment following eating disorder hospitalization, if hospitalization was deemed medically necessary. Outpatient treatment of bulimia nervosa seems to provide the most treatment gains in a shorter period of time. This study represents the first efforts at making a comparison between inpatient and outpatient components of treatment for bulimia nervosa. Further research will be needed to replicate these findings, an essential step given the absence of random assignment to treatment modalities. The theoretical benefits of such research can be extensive to practicing clinicians, program directors and clinical researchers, while the practical implications for the funding of psychotherapy treatment programs are noteworthy.

REFERENCES

- Adler, A. G., Walinsky, P., Krall, R. A., & Cho, S. Y. (1980). Death resulting from ipecac syrup poisoning. Journal of the American Medical Association, 243, 1927-1928.
- Agras, W. S., Schneider, J. A., Arnow, B., Raeburn, S. D., & Telch, C. F. (1989). Cognitive-behavioral and response-prevention treatments for bulimia nervosa. Journal of Consulting and Clinical Psychology, 57, (2), 215-222.
- Allon, N. (1975). Latent social services in group dieting. Social Problems, 32, 59-69.
- American Psychiatric Association. (1987). Diagnostic and statistical manual of mental disorders (3rd ed. revised). Washington, DC: Author.
- Beck, A. T., & Beamesderfer, A. (1974). Assessment of depression: The depression inventory. In P. Pichot (Ed.), Psychological measurements in psychopharmacology. Paris: Karger, Basel.
- Beck, A. T., Ward, C. H., Mendelson, M., Mock, J., & Erbaugh, J. (1961). An inventory for measuring depression. Archives of General Psychiatry, 4, 53-63.
- Bo-Linn, G. W., Santa Ana, C. A., Morowski, S. G., & Fordtran, J. S. (1983). Purging and calorie absorption in bulimic patients and normal women. Annals of Internal Medicine, 99, 14-17.

- Bossert, S., Schnabel, E., & Krieg, J. C. (1989). Effects and limitations of cognitive behavior therapy in bulimia inpatients. Psychotherapy and Psychosomatics, 51, 77-82.
- Brady, W. F. (1980). The anorexia nervosa syndrome. Oral Surgery, 50, 509-516.
- Bruch, H. (1962). Perceptual and conceptual disturbances in anorexia nervosa. Psychosomatic Medicine, 24, 187-194.
- Conners, M. E., Johnson, C. L., & Stuckey, M. K. (1984). Treatment of bulimia with brief psychoeducational group therapy. American Journal of Psychiatry, 141, (12), 1512-1516.
- Cox, G. L., & Merkel, W. T. (1989). A qualitative review of psychosocial treatments for bulimia. Journal of Nervous and Mental Disease, 177 (2), 77-84.
- Dahlstrom, W., Welsh, G., & Dahlstrom, L. (Eds) (1978). An MMPI handbook, (rev. ed.). Minneapolis: University of Minnesota Press.
- Fairburn, C. G. (1982). Binge-eating and bulimia nervosa. London: Smith, Kline, & French.
- Fairburn, C. G., Kirk, J., O'Conner, M., & Cooper, P. J. (1986). A comparison of two psychological treatments for bulimia nervosa. Behavioral Research Therapies, 24, (6), 629-643.
- Freeman, C. P., Barry, F., Turnbull, J. D., & Henderson, A. (1988). Controlled trial of psychotherapy for bulimia nervosa. British Medical Journal, 296, 521-525.

- Freeman, C. P., & Hampson, M. (1987). Fluoxetine as a treatment for bulimia nervosa. International Journal of Obesity, 11 (3), 171-177.
- Garfinkel, P. E., & Garner, D. M. (1982). Anorexia nervosa: A multidimensional perspective. New York: Brunner/Mazel.
- Garfinkel P. & Garner, D. (1987). Introduction. In: Garfinkel, P., & Garner, D., eds. The Role of Drug Treatment for Eating Disorders. New York: Brunner & Mazel.
- Garner, D. M., Garfinkel, P. E. & Olmstead, M. P. (1983) An overview of sociocultural factors in the development of anorexia nervosa. In: Darby, P. L., Garfinkel, P. E., Garner, D. M. & Coscina, D. V. Anorexia Nervosa: Recent Developments in Research. New York: Alan R. Liss, Inc.
- Garner, D. M., Garfinkel, P. E., Schwartz, D., & Thompson, M. (1980). Cultural expectations of thinness in women. Psychological Reports, 47, 483-491.
- Garner, D. M., Olmstead, M. P., Bohr, Y., & Garfinkel, P. E. (1979). The eating attitudes test: An index of the syndrome of anorexia nervosa. Psychological Medicine, 9, 273-279.
- Garner, D. M., Olmstead, M. P., & Polivy, J. (1983). Development and validation of a multidimensional eating disorder inventory for anorexia nervosa and bulimia. International Journal of Eating Disorders, 2 (2), 15-34.
- Garner, D. M., Rockert, W., Olmstead. M. P., Johnson, C., & Coscina, D. V. (1985). Psychoeducational principles in the treatment of bulimia and anorexia nervosa. In D. M. Garner and P. E. Garfinkel (Eds.), A handbook of

- psychotherapy for anorexia and bulimia, (513-572). New York: Guilford Press.
- Gartner, A. F., Marcus, R. N., Halmi, K., & Loranger, A. W. (1989). DSM-III-R personality disorders in patients with eating disorders. American Journal of Psychiatry, 146, (12), 1585-1591.
- Goebel, M., Spalthoff, G., Schulze, C., & Florin, I. (1989). Dysfunctional cognitions, attributional style, and depression in bulimia. Journal of Psychosomatic Medicine, 33 (6), 747-752.
- Goode, E. T. (1985). Medical aspects of the bulimic syndrome and bulimarexia. Transactional Analysis Journal, 15, 4-11.
- Halmi, K. A., Falk, J. R. & Schwartz, E. (1981). Binge-eating and vomiting: a survey of a college population. Psychological Medicine, 11 (4), 697-706.
- Hamilton, M. (1960). A rating scale for depression. Journal of Neurology, Neurosurgery, and Psychiatry, 23, 55-61.
- Harris, R. T. (1983). Bulimarexia and related serious eating disorders with medical complications. Annals of Internal Medicine, 99, 800-807.
- Hathaway, S.R. & McKinley, J.C. (1989). Minnesota Multiphasic Personality Inventory-2. Minnesota: The University of Minnesota Press.

- Hatsukami, D., Owen, P., Pyle, R. & Mitchell, J. (1982). Similarities and differences on the MMPI between women with bulimia and women with alcohol or drug abuse problems. Addictive Behavior, 7, 435-439.
- Herzon, F. S., & Kaufman, A. (1981). Vomiting and parotid enlargement. Southern Medical Journal, 74, 251.
- Johnson, C. (1984). The initial consultation for patients with bulimia and anorexia nervosa. In D.M. Garner and P.E. Garfinkel (Eds.), Handbook of psychotherapy for anorexia nervosa and bulimia, 19-51. New York: Gilford Press.
- Johnson, C., & Conners, M. E. (1987). The etiology and treatment of bulimia nervosa: A biopsychosocial perspective. New York: Basic Books, Inc.
- Johnson, C., Lewis, C., & Hagman, J. (1984). The syndrome of bulimia: review and synthesis. Psychiatric Clinics of North America, 7 (2), 247-273.
- Johnson, C. L., Stuckey, M. K., Lewis, L. D., & Schwartz, D. M. (1982). Bulimia: A descriptive survey of 316 cases. International Journal of Eating Disorders, 2 (1), 3-18.
- Johnson, C. L., Stuckey, M. K., Lewis, L. D., & Schwartz, D. M. (1983). In: Darby, P. L., Garfinkel, P. E., Garner, D. M., & Coscina, D. V. Anorexia nervosa: Recent developments in research. New York: Alan R. Liss, Inc.
- Keller, M.B., Herzog, D.B., Lavori, P.W., Ott, I.L., Bradbury, I.S. & Mahoney, E.M. (1989). Archives of General Psychiatry, 46, 480-481.

- Lacey, J. H. (1983). Bulimia nervosa, binge eating, and psychogenic vomiting: a controlled treatment study and long term outcome. British Medical Journal, 286, 1609-1613.
- Lacey, J. H. & Gibson, E. (1985). Does laxative abuse control body weight? A comparative study of purging and vomiting bulimics. Human Nutrition: Applied Nutrition, 39, 36-42.
- Levin, P. A., Falks, J. M., & Dixon, K. (1980). Benign parotid enlargement in bulimia. Annals of Internal Medicine, 93, 827-829.
- Lewis, L., & Johnson, C. (1985). A comparison of sex role orientation between women with bulimia and normal controls. International Journal of Eating Disorders, 4, 247-257.
- Matikainen, M. (1979). Spontaneous rupture of the stomach. American Journal of Surgery, 138, 451-452.
- Metcalfe, M., & Goldman, E. (1965). Validation of an inventory for measuring depression. British Journal of Psychiatry, 111, 240-242.
- Mitchell, J. E., Hatsukami, D., Eckert, E. D., & Pyle, R. L. (1985). Characteristics of 275 patients with bulimia. American Journal of Psychiatry, 142, 482-485.
- Mitchell, J. E., Hoberman, H., & Pyle, R. L. (1989). An overview of the treatment of bulimia nervosa. Psychiatric Medicine, 7 (4), 317-332.
- Mitchell, J. E., Pyle R. L., & Eckert, E. D. (1989). Response to alternative antidepressants in imipramine nonresponders with bulimia nervosa. Journal of Clinical Psychopharmacology, 9, 291-293.

- Mitchell, J. E., Pyle, R. L., Eckert, E. D., Hatsukami, D., & Lentz R. (1983). Electrolyte and other physiological abnormalities in patients with bulimia. Psychological Medicine, 13, 273-278.
- Mitchell, J. E., Pyle, R. L., Eckert, E. D., Hatsukami, D., Pomeroy, C., & Zimmerman (1990). A comparison study of antidepressants and structured intensive group psychotherapy in the treatment of bulimia nervosa. Archives of General Psychiatry, 47, 149-157.
- Mitchell, J. E., Pyle, R., Elke, D. E., & Hatsukami, D. (1990). The influence of prior alcohol and drug abuse problems on bulimia nervosa treatment outcome. Addictive Behaviors, 15, 163-173.
- Mitchell, J. E., Pyle, R. L., & Miner, R. A. (1982). Gastric dilatation as a complication of bulimia. Psychosomatics, 23, 96-99.
- Nguyen, T. (1991). Fluoxetine in bulimia. DICP, The Annals of Pharmacotherapy, 25 (3), 254-256.
- Nussbaum, K., Wittig, B. A., Hanlon, T. E., & Kurland, A. A. (1963). Intravenous nialamide in the treatment of depressed female patients. Comprehensive Psychiatry, 4, 105-116.
- Othmer, E., Penick, E. & Powell, B. (1981). Psychiatric Diagnostic Interviews (PDI). Los Angeles, CA: Western Psychological Services.
- Piran, N., Lerner, P., Garfinkel, P.E., Kennedy, S. H., & Brouillette (1988). Personality disorders among anorexic patients. International Journal of Eating Disorders, 7, (5), 589-599.

- Prather, R. C., & Williamson, D. A. (1988). Psychopathology associated with bulimia, binge eating, and obesity. International Journal of Eating Disorders, 7, (2), 177-184.
- Pryor, T., McGilley, B., & Roach, N. E. (1990). Psychopharmacology and eating disorders: Dawning of a new age. Psychiatric Annals, 20 (12), 711-722.
- Pyle, R. L., Halvorson, P.A., Newman, P. A., & Mitchell, J. E. (1986). The increasing prevalence of bulimia in freshman college students. International Journal of Eating Disorders, 5 (4), 631-647.
- Pyle, R. L., Mitchell, J. E., & Eckert, E. D. (1981). Bulimia: A report of 34 cases. Journal of Clinical Psychiatry, 42, (2), 60-64.
- Pyle, R. L., Mitchell, J. E., Eckert, E. D., Halvorson, Neuman, & Goff, G. M. (1983). The incidence of bulimia in freshman college students. International Journal of Eating Disorders, 2, (3), 75-85.
- Pyle, R. L., Mitchell, J. E., Eckert, E. D., Hatsukami, D., Pomeroy, C., & Zimmerman, R. (1990). Maintenance treatment and 6-month outcome for bulimic patients who respond to initial treatment. American Journal of Psychiatry, 147 (7).
- Rimm, A. A., Hartz, A. & Barboriak, P. (1978). Natural history of obesity in 6957 women between 50-59 years of age. In Bray, G. A. ed. Recent Advances in Obesity Research. Newman Ltd, London.
- Root, M.P., Fallon, P. & Fredrich, W. (1986). Bulimia: A systems approach to treatment. New York: Norton Books.

- Rosen, J.C. (1987). A review of behavior treatments for bulimia nervosa. Behavior Modification, 11, 464-486.
- Russell, G. (1979). Bulimia nervosa: an ominous variant of anorexia nervosa. Psychological Medicine, 9 (3), 429-448.
- Saul, S. H., Dekker, A., & Watson, C.G. (1981). Acute gastric dilatation with infarction and perforation: Report of a fatal outcome in a patient with anorexia nervosa. Gut, 22, 978.
- Schwab, J. J., Bialow, M., & Holzer, C. E. (1967). A comparison of two rating scales for depression. Journal of Clinical Psychology, 23, 94-96.
- Schwartz, D. M., Thompson, M. G., & Johnson, C. L. (1982). Anorexia nervosa and bulimia: The socio-cultural context. International Journal of Eating Disorders, 1, (3), 20-36.
- Swift, W. J., Ritholz, M., Kalin, N. K., & Kaslow, N. (1987). A follow-up study of thirty hospitalized bulimics. Psychosomatic Medicine, 49, (1), 45-55.
- Szmukler, G. E. (1985). The epidemiology of anorexia nervosa and bulimia. Journal of Psychiatry Residents, 19, (2/3), 143-153.
- Webb, W. L., & Gehi, M. (1981). Electrolyte & fluid imbalance: Neuropsychiatric manifestations. Psychosomatics, 22, 199-202.
- Williamson, D. A., Prather, R. C., Bennett, S. M., Davis, C. J., Watkins, P. C. & Grenier, C. E. (1989). An uncontrolled evaluation of inpatient and outpatient cognitive-behavior therapy for bulimia nervosa. Behavior Modification, 13, (3), 340- 360.

- Williamson, D. A., Prather, R. C., Upton, L., Davis, C. J., Ruggiero, L., & Van Buren, D. (1987). Severity of bulimia: Relationship with depression and other psychopathology. International Journal of Eating Disorders, 6 (1), 39-47.
- Wooley, S. C., & Wooley, O. W. (1979). Obesity and Women: A closer look at the facts. Women's Studies International Quarterly, 2, 69-79.
- Yates, W. R., Sieleni, B., & Bowers, W. A. (1989). Clinical correlates of personality disorder in bulimia nervosa. International Journal of Eating Disorders, 8, (4), 473-477.