THE NEED FOR CONTROL IN ANOREXIA NERVOSA

A Thesis

by

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ABSTRACT

THE NEED FOR CONTROL IN ANOREXIA NERVOSA (November 1981)

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The purpose of this investigation was to study the need for control in anorexia nervosa by looking at anorectics' manipulative, controlling behavior. Additionally locus of control, personality characteristics, and compulsive eating were studied. Subjects were 97 females, 20 of whom were overweight, 42 average weight, 24 underweight, and 11 anorectic. Eighty-six of the females came from psychology classes at Appalachian State University, and the anorectics were referred from various institutions in North and South Carolina.

The Control scale from the MMPI as well as the entire MMPI, Rotter's Locus of Control Scale, the Eysenck Personality Inventory, the Compulsive Eating Scale, and a questionnaire were administered to each subject. It was found that anorectic subjects scored significantly higher on the Control scale than average weight and underweight subjects. Overweight subjects scored significantly higher than underweight subjects. Anorectics scored significantly higher on the Conversion Hysteria Depression scales than all other

groups. Anorectics significantly differed from underweights on the Psychopathic Deviate scale. Although there were not significant differences on the other scales of the MMPI, in many cases anorectics had the highest average scores. Overweight subjects scored significantly more externally on Rotter's Locus of Control Scale than all other groups. No significant differences were found on the Eysenck Personality Inventory or on the Compulsive Eating Scale. The questionnaire revealed that the anorectics studied demonstrated traits common to the disorder.

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DEDICATION

I wish to dedicate this research to my parents, Griff and Imogene Williams, without whose love, support, and constant faith this would have never come about.

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Anorexia nervosa is an eating disorder in which self-starvation is the primary symptom. The syndrome is characterized by a refusal to eat resulting in a loss of 20 percent or more of total body weight in the absence of physical disease (Bruch, 1977a; Liebman, Minuchen, and Baker, 1974). The plight of anorectics is an apparent contradiction for they starve themselves when there is an abundance of food and appear emotionally empty while their families seem warm and concerned (Hamilton, 1975).

Background

Over 100 years ago, William Gull (1964) coined the term anorexia nervosa. He felt that the loss of appetite was due to disturbances in the central nervous system. About the same time in France, Lasegue (1964) was documenting what he called hysterical anorexia. Lasegue described the disorder as hysterical in nature resulting in disturbances in the digestive tract.

In the 1930's and 1940's, anorexia nervosa was seen as a psychosomoatic disorder. The orientation of the day was psychoanalytical; therefore, anorexia nervosa was considered to be brought on by fantasies of oral impregnation by the father (Walker, Kaufman, and Deutsch, 1964).

Today, anorexia nervosa is seen as being one of two types, atypical or primary. Weight loss comes as a result of hysteria, depression, or schizophrenia in atypical anorexia nervosa. Primary

anorexia nervosa is seen as a fear of becoming fat accompanied by disturbances in personality (Bruch, 1979).

Anorectics' fear of gaining weight and their need for thinness are the dominant factors in primary anorexia nervosa (Bruch, 1977a, 1979; Russell, Campbell, and Slade, 1975). The term itself is a misnomer for anorectics do not lose their appetites but rather misinterpret hunger signals. Primary anorexia nervosa is frequently preceded by behavioral and mood changes occurring a year or two before the disorder itself appears (Bruch, 1977a, 1979). There seem to be two critical periods of onset: puberty and 18 years of age (Bruch, 1977a; Russell et al., 1975; Slade and Russell, 1973; Thoma, 1967). The overwhelming majority of anorectics are females with estimates as high as 95 percent (Russell et al., 1975; Slade and Russell, 1973; Thomas, 1967).

Bruch (1973, 1977a, 1978, 1979) divides the clinical picture into three areas: misperception of body image, misperception of bodily functions, and sense of ineffectiveness. Anorectics will defend their thinness even though they are seriously emaciated. There is steadfast denial of any problem. Frequently, anorectics were of normal weight before they began to diet, and occasionally they were already thin. In approximately 15 to 20 percent of the cases, anorectics were formerly obese. They have difficulty in dealing with the new curves that appear with the onset of puberty and misinterpret them as their putting on too much weight. Anorectics do not see their bodies as their own; their bodies are something separate from themselves. They often see the illness as something that merely

happened to them and not as something they did to themselves by curbing their ingestion of food. It appears that they are unaware that they are starving themselves to death. A relapse will occur if anorectics' body images do not become realistic. Total recovery depends on acquiring a realistic body image and an interest in keeping the body healthy.

In terms of misperception of bodily functions, the refusal to eat is the most distrubing symptom (Bruch, 1973, 1977a, 1978, 1979; Thoma, 1967). Anorectics do not seem to recognize hunger signals, and they deny the pangs of hunger they do feel. They believe that they do not need to eat, and in the late stages of starvation there may be a true loss of appetite. Many anorectics, after recovery, admit that they did feel hunger but turned it into a pleasant feeling rather than an uncomfortable one. One fear most anorectics hold is that they will not be able to stop eating once they start. In addition, there is a great deal of guilt associated with gaining any weight. Commonly, anorectics demonstrate bizarre eating habits. They eat mainly proteins and avoid all fats and carbohydrates. Anorectics have been known to carefully calculate food intake; however, they have difficulty determining how much food is in their stomachs (Bruch, 1973, 1977a, 1978, 1979; Russell et al., 1975). Approximately 25 percent of anorectics binge eat, following such behavior by self-induced vomiting (Bruch, 1973, 1977a, 1978, 1979; Thoma, 1967). To keep themselves from becoming too fat, anorectics will employ the use of laxatives, diuretics, and enemas, all of which can cause a dangerous imbalance of electrolytes in the body. Anorectics treat

their eating with great secrecy and tend to eat very slowly. Late night eating is frequent so that being able to go to sleep soon thereafter can reduce feelings of guilt at having eaten. Finally, anorectics seem to be preoccupied with food and will talk about it incessantly, collect volumes of recipes, and prepare meals for others while refusing to eat the food themselves.

There are other bodily function misperceptions that can be included here. One of these is hyperactivity. Anorectics will deny fatigue and will exercise for hours on end trying to burn off every excess calorie. Also, they may work diligently on school matters and on other areas of interest. This can continue until the disorder is far advanced. In addition to all of these misperceptions, it seems that anorectics have difficulty in perceiving, identifying, and interpreting emotional states. Very often, they are unaware of feelings of anxiety and may mask severe depression. Amenorrhea is almost always present. The absence of sexual feelings and sexual behavior is noted. Anorectics appear to be indifferent to changes in temperature, and their bodies seem to judge pain incorrectly (Bruch, 1973, 1977a, 1978, 1979; Russell et al., 1975; Thoma, 1967).

The third area of concern is the overwhelming sense of ineffectiveness anorectics feel. They act in certain ways because other people expect them to act in those ways. They have always done what they were supposed to do. Anorectics are often seen as model children who never presented their parents with any trouble while growing up. One of the problems is that anorectics never seem to develop full independence from their parents. They appear to be unable to

rely on themselves in any way. On the surface, anorectics appear quite conforming and compliant. They become very adept at covering up their feelings of helplessness and ineffectiveness. This facade is quickly unmasked when one begins treatment. These individuals are almost always stubborn and negativistic and exhibit a morbid fear of losing control over their bodies (Bruch, 1973, 1977a, 1978, 1979).

Another important facet of this baffling disorder is the role of the family. Most families of anorectics describe themselves as happy but are often revealed to be malfunctioning systems. Anorectics tend to come from stable, upper-class families of small size, and they are usually one of the first two daughters born. Mothers of anorectics are described as conscientious, submissive, and disrespectful towards their husbands. Fathers of anorectics are frequently quite successful men who harbor feelings of inferiority and who often expect a great deal from their children (Bruch, 1973, 1977a, 1977b, 1978, 1979).

Personality Characteristics

Over the last ten years, much research has been done in the area of exploring personality variables associated with anorexia nervosa. Various methods have been employed to study the disorder using anorectics, anorectics in different stages of recovery, and individuals of normal weight.

Halmi (1974) did a comprehensive study on the records of 94 anorectics from 1920 to 1972. The records included all medical, psychiatric and social service interviews, progress notes, laboratory

studies, discharge summaries, and transcripts of interviews with patients. It was found that 41 percent had obsessive-compulsive traits, 79 percent had depressive traits, and 71 percent showed anxiety. Hyperactivity was shown in 33 percent of the anorectics, and 62 percent had above-average intelligence. As for premorbid personality traits, 21 percent of the anorectics were described as shy, three percent were described as obsessive-compulsive, and seven percent were described as normal. Halmi compared her percentages with those of other researchers and found that her results, for the most part, were in congruence with theirs. She had no direct dealing with anorectics themselves but with the records of patients who had been hospitalized as far back as 50 years prior to the beginning of the research. Halmi compared her findings with those of other researchers; however, there was no comparison of anorectics with normals.

Halmi, Brodland, and Loney (1973) examined the records of 42 anorectics who met all the criteria for the diagnosis of this disorder and who had follow-up information included in their records. Thirty-six of the 42 subjects were studied. The anorectics were divided into two groups: good prognosis and poor prognosis. The good prognosis group included those who had regained their original weight or the appropriate weight for their height and who had had no relapse one year after their last examination. The poor prognosis group included those who had shown no improvement one year after their last examination. Fourteen of the 15 in the poor prognosis group showed depressive symptoms as compared to seven of 19 in the

good prognosis group. There was no difference in terms of overactivity. The poor prognosis patients showed more obsessive-compulsive traits than the good prognosis patients. Both groups showed moderate to severe anxiety. They found that the premorbid personalities of both groups were similar. Ten of the 21 of the good prognosis group were described as shy, 12 as anxious, and 14 as obsessive-compulsive. Of the 15 with poor prognosis, six were described as shy, eight as anxious, and 11 as obsessive-compulsive. This study looked again at records rather than current anorectics. A comparison was made in terms of a good prognosis group versus a poor prognosis group; however, a comparison with a normal group might have revealed interesting results.

Pierloot, Wellens, and Houben (1975) did a similar study in which they looked at 32 female anorectic subjects admitted to the hospital to receive medical and psychotherapeutic treatment between 1967 and 1973. The status of each patient was determined by four criteria: symptomatology; attitude toward the disorder, body, sex, and parents; social interactions; and treatment needs. The subjects were divided into three groups: cured, improved, and unimproved. The cured group included 16 anorectics who evidenced no symptomatology, whose attitudes were appropriate, who functioned well socially, and who needed no treatment. The improved group included five subjects who scored negatively on one or two of the criteria. The unimproved group included 11 subjects who scored negatively on more than two of the criteria. These groups were then compared on three variables: clinical factors, family context and interactions, and

personality characteristics. In terms of clinical factors, it was found that the earlier the age of onset and the shorter the duration of the illness, the better the outcome. Impulsive behavior and suicide attempts indicated poor prognosis. The authors were unable to identify specific factors that affect outcome in terms of the family.

Several tests were given to the subjects to measure personality characteristics. The Amsterdam Biographic Questionnaire, a Dutch personality inventory, was administered and it was found that neuroticism was significantly higher in the unimproved group and that self-defensiveness was higher in the cured group. Subjects were given the MMPI on which it was found that the Schizophrenia scale yielded the most interesting results, with five of nine in the unimproved group scoring their highest scores on this scale. Two of the improved group scored their highest scores on this scale, and none of the cured group scored their highest scores here. The TAT was administered also. Activity and passivity were specifically looked at, with the cured group scoring significantly higher on activity than the other two groups.

The authors themselves listed the drawbacks of their study. These included: 1) prognosis was defined in terms of one kind of treatment; 2) follow-up consisted of only a few years (one to six); 3) in all probability, the group of anorectics did not reflect the general disorder of anorexia nervosa, which is a curious statement since the subjects studied seemed to be classic anorectics.

Wilbur (Note 1) compared 34 anorectic females and six anorectic males to two control groups. A control group of subjects matched on

sex. age. IQ score, residential status, and family intactness was employed. Each anorectic female (males were excluded due to the limited number of subjects) was matched with a patient from the Residential Treatment Unit (RTU) of the Mayo Clinic on the above stated criteria. An unmatched control group included all female patients receiving treatment at the RTU whose diagnoses were neither psychotic nor organic. The subjects were given the MMPI, the DAB (Devereux Adolescent Behavior Scale), and a survey of descriptors filled out by staff members on a daily basis. There were no T scores above 70 on the MMPI for anorectic subjects, which showed less psychological disturbance for this group than for the control groups. On scales F, Pd, Pa, and Sc, anorectics scored significantly different from unmatched controls. Anorectics differed significantly on the Pd scale from matched controls. Anorectics showed fewer signs of psychosis or character disorder than the control groups composed of psychiatric patients. Both anorectics and controls showed moderate depression. The behavioral ratings and the DAB indicated that anorectics were more different physically and socially, uninterested in the opposite sex, withdrawn, unduly concerned with physical matters, unhappy, and more passive-aggressive than controls. This study was well controlled but used psychiatric patients compared to anorectics to study personality characteristics when a comparison to normals might have been more helpful.

Hamilton (1975) did a comprehensive study on a group of 12 anorectics and a group of 12 patients with psychoneurotic illness. She found that anorectics were more out-going, more relaxed, showed

less psychological symptomatology, and were more dependent than those with psychoneurotic illness. The author stated that through starvation the anorectics may have been able to carry off the semblance of normality they displayed; therefore, the results may be misleading. The exact method used to assess these individuals was unclear. How the author arrived at her conclusions was vague as well.

Smart, Beumont, and George (1976) assessed a group of 22 anorectics and a group of normals using among other tests, the Eysenck Personality Inventory. They found that the anorectics were significantly more neurotic and less extraverted than normals. A comparison of these scores with those of a group of mixed neurotics revealed no significant differences. This was a well conducted study that compared anorectics, normals, and neurotics on different measures.

Stonehill and Crisp (1977) looked at psychoneurotic characteristics of anorectics before and after treatment. They used normal controls as well as psychiatric out-patients with depressive and phobic disorders. Subjects were given the Eysenck Personality Inventory. Anorectics scored significantly higher on the N scale (Neuroticism) and lower on the E scale (extraversion) than the normal controls. The anorectics scored significantly lower on the E scale when compared to the neurotics, and there was no significant difference on the N scale. After treatment, anorectics scored significantly higher on the E scale and significantly lower on the N scale than they had previously.

Garner, Garfinkle, Stancer, and Moldofsky (1976) studied body image disturbance in anorectic and obese patients. Among other measures, the authors administered the EPI to 18 anorectics, 16 obese patients, 16 thin normals, 16 average normals, and 16 nonpsychotic psychiatric patients. The test indicated that the anorectic group was more introverted than all other groups. This was a significant difference with all groups except thin normals. The psychiatric patients scored significantly higher than the normals on the N scale; the anorectics and obese patients fell between those two groups. The control methods employed in this study were well executed; however, results were vague and not easily understood.

Control

The issue of control is a central one in the study of anorexia nervosa. According to Crisp (1980), the anorectic's need for control stems from strivings for independence and autonomy. Related to this as well is a need to control the environment. To control one's weight is to possibly control one's relationships with others and to achieve dominance. The issue of control, therefore, is seen both as an internal and an external need.

Locus of control refers to one's perception of reinforcement in the environment (Rotter, 1966). If an event is perceived to be dependent on one's behavior, the person is internally controlled. If an event is perceived to depend not on one's actions but on luck or chance, the person is externally controlled.

Garner et al. (1976) administered Rotter's Locus of Control Scale to all five groups they studied. It was found that obese

subjects were significantly more externally controlled than normal control subjects. Obese and anorectic subjects did not differ from thin and patient controls.

Another aspect of control in anorexia nervosa takes place within the family. Many therapists have described the phenomenon but have as yet to empirically test it. The issue here appears to be a struggle for power within the family. The anorectic puts herself in direct conflict with her parents over the issue of eating (Barcai, 1971). According to Rosman, Minuchen, and Liebman (1975), one of the dominant factors concerning the family is the fact that a supposedly ill child is controlling and manipulating her omnipotent parents. In a study done by Halmi, Goldberg, Eckert, Casper, and Davis (1977), parents considered obsessive-compulsive traits associated with the disorder to be the most anxiety-provoking symptoms, followed by their daughters' industriousness and need to control. The anorectics were more concerned with problems in sleeping and depression. Families of anorectics put up a facade of happiness but are revealed to be divided by a power struggle pitting parents against their starving daughters. Finally Rosman, Minuchen, Baker, and Liebman (1977) cited a case in which an anorectic presented herself as totally helpless but who in reality was intimidating and manipulating her parents.

Liebman, Minuchen, and Baker (1974) worked with four anorectics and their families. The families were described as maladaptive systems in which the parents were divided and in which there was no chance for independence and individuality. Halmi (1974) found that

36 percent of the anorectics she studied had family conflicts and that 18 percent of them came from broken homes.

Parents seem to be overly concerned about the child eating enough and become anxious over the refusal to eat (Dally, 1969; Perlman and Bender, 1975). This is where the struggle begins. Blitzer, Rollins, and Blackwell (1961) studied 15 anorectics and their families and found a power struggle between the girls and their parents with food as the object of conflict. They also found that the girls tried to set up dissension between staff members and therapists during their periods of hospitalization. Lucas, Duncan, and Piens (1976) had the patients they studied fed by only one staff member to avoid such manipulation by them.

Minuchen (1974) has stated that parents tend to feel manipulated by their anorectic daughters, thus leaving them with feelings of helplessness. In a case study Caille, Abrahamsen, Girolami, and Sorbye (1977) described a particular anorectic who was trying to manipulate her father so as to bring her parents closer together.

The majority of studies dealing with family transactions, particularly those dealing with the subject of the child controlling her parents, have been case studies done during the course of therapy that described the therapeutic process. No empirical evidence has actually been presented in these studies to confirm or deny the statement that anorectics control their parents and those in their environment more so than normals.

Statement of the Problem

This study looked at the need for control in anorexia nervosa. Case studies have demonstrated the fact that anorectics control and manipulate others in their environments, yet this phenomenon has not been empirically verified. In order to test this phenomenon, several measures were employed to determine whether anorectics differ significantly from overweight, average weight, and underweight subjects. Measures of extraversion and neuroticism were obtained from the Eysenck Personality Inventory (Eysenck and Eysenck, 1963). A measure of compulsive eating was obtained from the Compulsive Eating Scale (Dunn and Ondercin, Note 2). Locus of control was measured by Rotter's Locus of Control Scale (Rotter, 1966). Controlling the behavior of others, particularly the parents, was measured by the Control scale from the MMPI (Cuadra, 1956). To obtain the most accurate interpretation of this scale, the entire MMPI was administered (Hathaway and McKinley, 1967).

Hypotheses were as follows:

1. There will be no significant differences among weight groups on the Control scale from MMPI as well as on the entire MMPI.
2. There will be no significant differences among weight groups on Rotter's Locus of Control Scale.
3. There will be no significant differences among weight groups on the Compulsive Eating Scale.

4. There will be no significant differences among weight groups on the Eysenck Personality Inventory.

METHOD

Subjects

Eighty-six female subjects from Appalachian State University had the opportunity to participate in this experiment for extra credit through their psychology classes. Eleven anorectic subjects participated in this study. Two anorectics were referred from the Psychological Services and Counseling Center at Appalachian State University, three anorectics were referred from Greer Mental Health Clinic, Greer, South Carolina, one anorectic was referred from the Counseling Center at the University of North Carolina at Asheville, two anorectics were referred from the Medical University of South Carolina, and three anorectics were referred from Furman University in Greenville, South Carolina.

Subjects were given a questionnaire dealing with height, weight, body frame, age, and history of eating disorder, if any. Subjects were then put into weight classifications from this information (La Place, 1976). Anorectic subjects were diagnosed as such by the proper staff at each referral source and were placed in the anorexia nervosa category. There were 20 overweight subjects, 42 average weight subjects, 24 underweight subjects, and 11 anorectic subjects.

Weight Classification

The classifications of overweight, average weight, and underweight were determined from a weight chart, and each subject was placed accordingly (La Place, 1976). The information from the questionnaire made the classification possible. If there had been an indication of current problems with anorexia nervosa on the questionnaire, subjects would have been appropriately placed in the anorexia nervosa category.

Weight Deviation

Weight deviation was calculated for each subject. The average weight in the subject's weight classification was subtracted from the subject's weight to obtain this measure.

Instruments

A questionnaire, the Eysenck Personality Inventory, the Compulsive Eating Scale, Rotter's Locus of Control Scale, and the Control Scale from the MMPI as well as the entire MMPI were administered to each subject.

Questionnaire

A questionnaire was developed to assess in which weight classification subjects belonged. In addition, information as to dieting practices, birth order, sexual activity, and exercise practices was obtained (Appendix A).

Eysenck Personality Inventory

The EPI measures personality along two dimensions, extraversion-introversion and neuroticism-stability. Extraversion as opposed to introversion involves the carefree, outgoing, easygoing aspects of a

person. Neuroticism as opposed to stability involves emotional overactivity, and persons who score high on this scale are supposedly predisposed to emotional disturbance under stress. The scales are seen as independent of each other. A Lie Scale has been included to detect false responses. The total inventory consists of 57 items. There are 24 each on the E and N scales and nine items on the Lie Scale (Appendix B).

Compulsive Eating Scale

The Compulsive Eating Scale is a revision of an experimental scale developed by Ondercin (1979). It is a self-report questionnaire composed of 32 items of which 16 are discriminatory to detect levels of compulsive eating. Subjects whose score is 30 or below are considered low in compulsive eating, and subjects whose score is 58 or above are considered high in compulsive eating (Dunn and Ondercin, Note 2) (Appendix C).

Rotter's Locus of Control Scale

Locus of control refers to the amount of influence a person perceives that she has in obtaining reinforcement from the environment. When an event is perceived to not be entirely contingent on one's behavior but under the control of powerful others or fate, the person believes in external control. Internal control refers to one's belief that events are contingent upon her own behavior or characteristics. Rotter's Scale is a forced-choice, 29-item scale that measures whether a person is external or internal control (Rotter, 1966). For the purposes of this study, the scale was scored internally (Appendix D).

Control Scale from the MMPI

The Control scale (Cn) is one of the newer scales developed from the MMPI. If the Cn scale is elevated along with other elevated scales, the person is likely to control her behavior and to let others see what she wants them to see. If the Cn scale is elevated above the normal range (55^{+}), and there are no elevations above 70 on other scales, the person may seem unemotional and reticent. If the person has a low score on this scale, she typically exhibits the behavior indicated by other scale elevations. An elevation on the Cn scale along with elevations on the K, 3, and R (Conscious Repression) scales suggests a very constricted person; therefore, it is important to look at the Cn scale in conjunction with the other clinical scales.

The 50 items on this scale developed by Cuadra (1956) to measure personality control can be divided into seven groups. An acknowledgement of one's impulses comprises the first group of items. The second group of items indicates whether or not the person is experiencing uncomfortable feelings. Mania is reflected in the third group of items along with items dealing with religion making up the fourth category. Denial is the main component of the fifth group of items, and the sixth group of items deals with the family life of the person. The seventh group is composed of items dealing with one's expectations of others (Duckworth, 1979). The logic for using this scale for anorexia nervosa is that anorectics control their behavior by not eating which causes conflict in the family

thereby controlling and manipulating the family members. This scale may emphasize this behavior (Appendix E).

Design

This study employed a 1 X 4 factorial design. The independent variable was weight with four levels employed: overweight, average weight, underweight, and anorexia nervosa. The dependent variables included measures from the questionnaire, the Eysenck Personality Inventory, the Compulsive Eating Scale, Rotter's Locus of Control Scale, and the Control scale from the MMPI backed by the entire MMPI.

Procedure

Female psychology students were obtained through sign-up sheets in the psychology department designating certain meeting times and places and through specific psychology classes at Appalachian State University. The experiment was explained to subjects by telling them it was a study dealing with how women feel about themselves and others and especially dealing with how women feel about dieting. They were told that the study involved filling out several surveys that would take approximately two hours to complete. Subjects were free to pick up test packets and to fill them out at their leisure. Packets were to be returned by a specified date or extra credit would be withheld. Anorectic subjects referred from various institutions were given the same information and were asked to fill out the surveys and return them by a specified date. All subjects were required to sign an informed consent form (Appendix F). Each subject was told that all information obtained would be confidential

and that they would receive a report on the results of the study in the mail (Appendix G). In addition, they were told that they could discontinue with the experiment at any time.

RESULTS

Control Scale from the MMPI

An analysis of variance revealed a significant difference on this scale ($F(3,93) = 3.75$, $p < .05$). An analysis of group differences using comparison of means (Bruning and Kintz, 1977) showed a significant difference between overweight subjects and underweight subjects on the Cn scale (critical difference at the .05 level = 7.38) with overweight subjects scoring significantly higher. Anorectic subjects scored significantly higher on this scale than both average weight and underweight subjects (critical difference at the .05 level = 6.43 and 7.99, respectively). (This analysis along with means and standard deviations can be found in Appendix H, Table I, p. 67.)

MMPI

There were no significant differences found on the L, F, or K scales although anorectics did score the highest on the F scale ($\bar{X} = 59.18$). (See means and standard deviations in Appendix H, Table II, p. 68.) A significant difference was found on the Hypochondriasis scale ($F(3,93) = 4.81$, $p < .05$). An analysis of group differences using t-test comparison of means (Bruning and Kintz, 1977) revealed that anorectics scored significantly higher than all other groups (critical difference at the .05 level = 12.81 for overweights, 10.12 for average weights, and 9.58 for underweights).

(This analysis combined with means and standard deviations can be found in Appendix H, Table III, p. 69.) Additionally, a significant difference was found on the Depression Scale ($F(3,93) = 6.71$, $p < .05$). An analysis of group differences using t-test comparison of means (Bruning and Kintz, 1977) showed a significant difference between anorectics and all other groups (critical difference at the .05 level = 14.55 for overweights, 13.05 for average weights, and 15.05 for underweights). (Analysis of the data and means and standard deviations can be found in Appendix H, Table IV, p. 70.) There was a significant difference found on the Psychopathic Deviate scale ($F(3,93) = 2.89$, $p < .05$). An analysis of group differences using t-test comparison of means (Bruning and Kintz, 1977) revealed a significant difference between anorectic and underweight subjects with anorectics scoring significantly higher (critical difference at the .05 level = 10.16). (See an analysis of the data with means and standard deviations in Appendix H, Table V, p. 71.)

There were no significant differences found in any of the other scales. It was interesting to note, however, that the anorectics had the highest average scores on the Conversion Hysteria scale, the Paranoia scale, the Psychasthenia scale, the Schizophrenia scale, and the Social Introversion scale ($\overline{X}$ = 62.45, 63.82, 62.45, 63.36, and 56.00, respectively). Anorectics showed the lowest average score on the Masculinity-Femininity scale ($\overline{X}$ = 42.91). Overweight subjects scored the highest on the Hypomania scale ($\overline{X}$ = 66.25) followed closely by anorectics ($\overline{X}$ = 65.91), underweights ($\overline{X}$ = 64.21), and

average weights ($\overline{X}$ = 63.43). (See means and standard deviations in Appendix H, Tables VI and VII, pp. 72 and 73.)

On the newer scales, no significant differences were found except on the Cn scale as mentioned earlier. However, some interesting trends were found using some of the scales. Overweight subjects had the highest score on the Dependency scale ($\overline{X}$ = 65.00) followed by anorectics ($\overline{X}$ = 55.18). On the Dominance scale, overweight subjects scored the lowest ($\overline{X}$ = 51.50) immediately followed by anorectics ($\overline{X}$ = 52.82). Average weight subjects scored the highest on the Conscious Repression scale ($\overline{X}$ = 50.82). Anorectic subjects scored highest on the Conscious Anxiety scale ($\overline{X}$ = 56.45) followed by overweight subjects ($\overline{X}$ = 54.30). On the Ego Strength scale, average weight subjects scored the highest ($\overline{X}$ = 53.55) while anorectic subjects scored the lowest ($\overline{X}$ = 49.55). (See means and standard deviations in Appendix H, Tables VIII and IX, pp. 74 and 75.)

Rotter's Locus of Control Scale

An analysis of variance indicated a significant difference between groups on this scale ($F(3,93) = 3.00$, $p < .05$). An analysis of group differences was performed using a t-test comparison of means (Bruning and Kitz, 1977). Results revealed a significant difference between overweight subjects and average weight, underweight, and anorectic subjects on locus of control with overweights scoring more externally (critical difference at the .05 level = 2.79, 2.94, and 2.47, respectively). (The analysis of this data along with means and standard deviations can be found in Appendix H, Table X, p. 76.)

Compulsive Eating Scale

There was no significant difference between groups on the CES. A trend was noted in the results, however. Anorectics had the highest average score at 50.55 with overweight subjects following them at 48.90. Average weight subjects scored $\overline{X}$ = 45.05, and underweight subjects scored $\overline{X}$ = 42.79. (See means and standard deviations in Appendix H, Table XI, p. 77.)

Eysenck Personality Inventory

An analysis of variance on this data showed no significant difference between groups on any of the three scales of the EPI. Although there were no significant differences, average weight subjects averaged the highest score on the E scale ($\overline{x}$ = 13.07) followed by overweight subjects ($\overline{X}$ = 13.00), underweight subjects ($\overline{X}$ = 12.42), and anorectics ($\overline{X}$ = 10.91). Anorectics had the highest average score ($\overline{X}$ = 14.91) on the N scale followed by overweight subjects ($\overline{X}$ = 12.80), underweight subjects ($\overline{X}$ = 11.29), and average weight subjects ($\overline{X}$ = 11.12). Overweight subjects had the highest average score ($\overline{X}$ = 2.30) on the L scale followed by average weight subjects ($\overline{X}$ = 2.62), underweight subjects ($\overline{X}$ = 2.17), and anorectics ($\overline{X}$ = 2.00). (Means and standard deviation can be found in Appendix H, Table XII, p. 78.)

Questionnaire

Of the 97 participants in this study, 21 percent were overweight, 43 percent were average weight, 25 percent were underweight, and 11 percent were anorectic. The average age for subjects was 19.26 years. Anorectics were the oldest subjects with an average

age of 21.45 years, and average weight subjects were the youngest with an average age of 18.64 years. Overweight and underweight subjects fell in between with average ages of 19.25 and 19.33 years, respectively. Subjects stood an average height of 65.07 inches. Underweight subjects were the tallest with an average height of 66.29 inches, and overweight subjects were the shortest with an average height of 63.50 inches. Average weight and anorectic subjects fell in between with average heights of 65.10 and 65.18 inches, respectively. The women who participated in this study weighed an average of 123.41 pounds. Overweight subjects were the heaviest with an average weight of 142.45 pounds. Average weight subjects were next with an average weight of 124.43 pounds, underweight subjects averaged 116.83 pounds, and anorectics weighed the least with an average of 99.27 pounds (Appendix H, Table XIII, p. 79).

Thirty-eight percent of the subjects were sophomores in college, 33 percent were freshmen, 11 percent were juniors, nine percent were seniors, two percent were graduate students, and six percent checked "other." Forty-five percent of the anorectic subjects checked "other" on the questionnaire in terms of class standing. The majority of overweight (65%) and average weight (40%) subjects were sophomores. The majority of underweight subjects (46%) were freshmen (Appendix H, Table XIV, p. 80). Twenty-two percent of the participants said they had small body frames, 64 percent said they had average body frames, and 14 percent said they had large body frames. Fifty-five percent of the anorectics said they had average body frames, and 45 percent said they had small

body frames. The majority of overweight (65%), average weight (71%), and underweight (54%) subjects said they had average body frames (Appendix H, Table XV, p. 81). Forty-four percent of the subjects considered themselves to be average weight, five percent considered themselves to be underweight, and one percent gave no response. Thirty-six percent of the anorectics considered themselves to be average weight, 27 percent considered themselves to be underweight, and one percent gave no response. The majority of overweight subjects (80%) considered themselves to be overweight. The majority of average weight subjects (50%) and underweight (79%) considered themselves to be average weight (Appendix H, Table XVI, p. 82).

Twenty percent of the subjects said they used laxatives, and 80 percent said they did not use them. Fifty-five percent of the anorectics said they employed the use of laxatives. Seventeen percent of these said they used them at least once a day, 33 percent used them once a week, 17 percent used them once a month, and 63 percent checked "other" (Appendix H, Table XVII, p. 83). Twelve percent of all subjects said they employed the use of diurectics while 88 percent denied their use. Eighteen percent of the anorectics admitted that they used diuretics. Fifty percent of those who used them took diurectics once a month, and 50 percent checked "other" (Appendix H, Table XVIII, p. 84). Nineteen percent of the subjects said that they induced vomiting, 80 percent said they did not, and one percent gave no response. Sixty-four percent of the anorectics said they induced vomiting. Fourteen percent each said

they induced vomiting once a day, twice a day, three times a day, once a week, once a month, and 29 percent checked "other." One anorectic said she induced vomiting up to 20 times a day (Appendix H, Table XIX, p. 85).

Seventy-nine percent of all subjects reported that their periods were regular while 21 percent said theirs were not. Sixty-four percent of the anorectics reported that they had irregular periods. Fourteen percent stated that they had never had a period, 29 percent had periods at about six week intervals, and 57 percent checked "other" (Appendix H, Table XX, p. 86). Forty percent of the subjects reported sexual activity while 60 percent reported none. Forty-five percent of the anorectics reported sexual activity while 55 percent reported none. Of those who reported sexual activity, ten percent had sexual relations once a day, 36 percent had sex once a week, 26 percent had sex once a month, 26 percent checked "other", and one percent gave no response (Appendix H, Table XXI, p. 87).

The majority of subjects (75%) said that they exercised. Seventy-three percent of the anorectics reported engaging in exercise. The average number of hours spent exercising for all subjects was 1.01 hours per day. Overweight subjects averaged 1.10 hours per day, average weight subjects averaged .86 hours, underweight subjects averaged 1.29 hours, and anorectic subjects averaged .82 hours per day (Appendix H, Table XXII, p. 88). Thirty-four percent of the subjects said that they jogged. Thirty-six percent of the anorectics said that they jogged while 50 percent of the underweight subjects ran. The average number of miles for all subjects per week was 2.20

with anorectics averaging 4.82 miles per week. The average number of days per week subjects spent jogging was 1.44. Anorectics averaged 2.00 days per week jogging (Appendix H, Table XXIII, p. 89).

Twenty-seven percent of the subjects reported a busy social life, 64 percent reported a moderately active social life, seven percent reported a not very active social life, one percent reported an extremely limited social life, and one percent gave no response. All groups were very similar on this measure (Appendix H, Table XXIV, p. 90). Thirty-three percent of all subjects said they dated frequently, 24 percent dated often, 27 percent dated occasionally, 11 percent dated infrequently, two percent never dated, one percent checked "other," and two percent gave no response. Again, all groups were quite similar (Appendix H, Table XXV, p. 91).

Weight Deviation

A significant difference was found on weight deviation ($F(3,93) = 56.12$, $p < .05$). An analysis of group differences using t-test comparison of means (Bruning and Kintz, 1977) revealed that overweight subjects weighed significantly more than all groups (critical difference at the .05 level = 24.98 for average weights, 37.16 for underweights, and 48.86 for anorectics). The t-test also showed that average weight subjects weighed significantly more than anorectics (critical difference at the .05 level = 23.89). (Analysis of this data along with means and standard deviations can be found in Appendix H, Table XXVI, p. 92.)

DISCUSSION

The hypothesis that anorectic subjects would score significantly different than the other weight groups on the Control scale from the MMPI was supported in this study. The two extreme groups on this scale, anorectics and overweights, had the highest scale scores indicating unemotional persons who tend to hide feelings (Duckworth, 1979). This information may demonstrate, more for anorectics than for overweights, the manipulative behavior that has so characterized anorectic patients in the past. By controlling themselves perhaps they do indeed control those around them. Although this scale is not the best measure for studying controlling and manipulative behavior, it does suggest that this trait is present in both groups, particularly the anorectics.

Some interesting findings emerged from the clinical scales of the MMPI. Anorectics scored significantly higher on the Hypochondriasis scale suggesting more of a concern with physical health than the other weight groups studied. Similarly, anorectics were significantly more depressed than other weight groups. Also, a difference was found between anorectics and the underweight group on the Psychopathic Deviate scale with anorectics scoring significantly higher than underweights. The elevated score indicates some sort of a struggle, most likely with the parents, occurring in a

situational crisis (Duckworth, 1979). These results on the Pd scale concur with those found by Wilbur (Note 1).

Wilbur (Note 1) found that anorectics differed significantly on scales F, Pa, and Sc as well. Although the results of this study did not show significant differences on these scales, anorectics scored higher than the other groups on these as well as on scales Si, Hy, and Pt. These results showed anorectics to be more prone to denial, and to be more worried, confused, sensitive, anxious, and withdrawn than the other groups. On the Mf scale, anorectics had the lowest scores indicating more passivity than the other groups (Duckworth, 1979).

In terms of the newer scales on the MMPI, no significant differences were found, but it was suggested that overweight subjects were the most dependent followed closely by anorectics. Additionally, overweight subjects scored lowest on the Dominance scale, followed by anorectics showing both groups to be passive. Average weight subjects scored the highest on the Conscious Repression scale while anorectics fell in the middle. Anorectics scored highest on the Conscious Anxiety scale, which would be expected. Lastly, anorectics scored lowest on the Ego Strength scale, which indicates difficulty in dealing with problems (Duckworth, 1979). These findings support, for the most part, the general personality profile of the anorectic. Also, it is interesting to note that anorectics scored the highest on nearly all the scales of the MMPI with overweight subjects following closely behind them.

The hypothesis that there would be a significant difference on Rotter's Locus of Control Scale was supported. Actually, a significant difference was found between the overweight group and all other groups including the anorectics. Overweight subjects were revealed to have a more external locus of control than the other groups. These results confirm the findings of Garner et al. (1976).

There were no significant differences found on the Compulsive Eating scale. However, some trends were found which indicated that anorectics had the highest scores followed by overweights.

Similarly, no significant differences were found on the EPI, although again some important trends were found. Anorectics scored the lowest on the E scale and the highest on the N scale, a finding which is consistent with results by Smart et al. (1976), Stonehill and Crisp (1977), and Garner et al. (1976). The small sample size in this investigation may account for the results showing trends and not significance.

The results from the questionnaire reflected some of the general characteristics of anorectics. Anorectics were the oldest of all groups; however, this was most likely due to one anorectic studied who was 28 years of age. Anorectics were of average height and, of course, weighed the least of all groups. They considered themselves to have average body frames and to be of average weight. More anorectics used laxatives and diuretics, and more anorectics induced vomiting than any of the other groups. Anorectics more often said that their periods were not regular. In terms of sexual activity, more overweight subjects reported no activity while

underweight subjects reported the most activity with average weight and anorectic subjects falling in between the two. Oddly enough, anorectics reported the least amount of physical activity while they were in the middle range of those who jogged. This is interesting because anorectics are generally quite active in spite of their emaciated condition. Anorectics reported a moderately active social life and dated occasionally. In terms of weight deviation, anorectics had the highest deviation which one would expect since they scored lowest in weight.

In summary, this study yielded some interesting results in terms of personality characteristics, locus of control, compulsive eating, and the need for control in anorexia nervosa. Continued study of manipulative and controlling behavior in this disorder seems worthwhile with a larger and more homogeneous group of anorectics and with a more precise measure of this behavior. A hospitalized group of anorectics evaluated using a survey of descriptors filled out on a daily basis by staff members such as the one employed by Wilbur (Note 1) would appear to be the most effective means of measuring such a variable.

The present data support the general personality profile that anorectics exhibit. The fact that the anorectics in this study scored significantly higher on the Control scale than all other groups supports the heretofore unvalidated premise of other researchers in their various case studies that anorectics control and manipulate others in their environments. The data confirm Crisp's (1980) statement that for the anorectic to control her weight is to control her

relationships with others. For the anorectic, starvation gives her a sense of control and confidence which she feels she lacks otherwise. Unfortunately, the results of such attempts at control are often devastating and at times fatal.

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APPENDIX A

Questionnaire

Questionnaire

Please fill out the following questionnaire:

1. Your name _____

2. Your address _____

   _____

3. Your phone number _____

4. Your age _____

5. Are you: Freshman Sophomore Junior Senior Graduate Student

   Other (specify) _____

6. What is your height? _____

7. What is your weight? _____

8. Do you have: Small frame Average frame Large frame

9. Do you diet frequently? Yes No

10. Do you consider yourself: Overweight Average Weight Underweight

11. In the past, what prompted you to start dieting? _____

    _____

12. Have you ever had any history of eating disorders? Yes No

    If so, what? _____

13. Please check any of the following diets you have tried in the past.

    _____ Carbohydrate Diet
    _____ Banana Diet
    _____ Weight Watcher's Diet

_____ Citrus and Protein Diet
_____ Scarsdale Diet
_____ Counting Calories
_____ Redbook Wise Woman's Diet
_____ Mayo Clinic Diet
_____ Liquid Diet
_____ Liquid Protein Diet
_____ The Air Force Diet
_____ Stillman Quick-Weight Loss Diet
_____ The Atkins Diet
_____ DuPont Diet
_____ Please list any other diets you have tried

_____

14. Do you ever use laxatives: Yes No

    If so, how often? Once a day Once a week Once a month

    Other (specify) _____

15. Do you ever use diuretics? Yes No

    If so, how often? Once a day Once a week Once a month

    Other (specify) _____

16. When was your last period? _____

17. Are your periods regular? Yes No

    If not, how variable are they? Never Every 6 weeks

    Every 10 weeks Every 12 weeks

    Other (specify) _____

18. Have you ever induced vomiting? Yes No

    If so, how often? Once a day Twice a day

    Three times a day Once a week Once a month

    Other (specify) _____

19. Are you sexually active? Yes No

    If so, how frequently do you have intercourse? Once a day

    Once a week Once a month

    Other (specify) _____

20. Do you exercise? Yes No

    If so, how many hours a day do you spend exercising? _____

21. Do you jog? Yes No

    If so, how far do you jog per week? _____

    How often do you jog? _____

22. How would you describe your social life? Very busy

    Moderately active Not very active Extremely limited

23. Do you date? Frequently Often Occasionally

    Infrequently Never

24. What is your GPA? _____

25. What were your SAT scores? _____

26. How many brothers and sisters do you have? _____

    List names and ages below.

    _____

    _____

    _____

    _____

APPENDIX B

Eysenck Personality Inventory

Eysenck Personality Inventory

1. Do you often long for excitement? . . . . . Yes No
2. Do you often need understanding friends to cheer you up? . . . . . Yes No
3. Are you usually carefree? . . . . . Yes No
4. Do you find it very hard to take no for an answer?. . Yes No
5. Do you stop and think things over before doing anything? . . . . . Yes No
6. If you say you will do something do you always keep your promise no matter how inconvenient it might be to do so? . . . . . Yes No
7. Does your mood often go up and down?. . . . . Yes No
8. Do you generally do and say things quickly without stopping to think? . . . . . Yes No
9. Do you ever feel "just miserable" for no good reason? . . . . . Yes No
10. Would you do almost anything for a date?. . . . . Yes No
11. Do you suddenly feel shy when you want to talk to an attractive stranger? . . . . . Yes No
12. Once in a while do you lose your temper and get angry? . . . . . Yes No
13. Do you often do things on the spur of the moment? . . Yes No

14. Do you often worry about things you should not have done or said? . . . . . Yes No

15. Generally do you prefer reading to meeting people?. . Yes No

16. Are your feelings rather easily hurt? . . . . . Yes No

17. Do you like going out a lot? . . . . . Yes No

18. Do you occasionally have thoughts and ideas that you would like other people to know about? . . . . . Yes No

19. Are you sometimes bubbling over with energy and sometimes very sluggish? . . . . . Yes No

20. Do you prefer to have few but special friends? . . . Yes No

21. Do you daydream a lot? . . . . . Yes No

22. When people shout at you, do you shout back? . . . . Yes No

23. Are you often troubled about feelings of guilt? . . . Yes No

24. Are all your habits good and desirable ones? . . . . Yes No

25. Can you usually let yourself go and enjoy yourself a lot at a gay party? . . . . . Yes No

26. Would you call yourself tense or "highly-strung"? . . Yes No

27. Do other people think of you as being very lively?. . Yes No

28. After you have done something important, do you often come away feeling you could have done better? . Yes No

29. Are you mostly quiet when you are with other people?. Yes No

30. Do you sometimes gossip? . . . . . Yes No

31. Do ideas run through your head so that you cannot sleep? . . . . . Yes No

32. If there is something you want to know about would you rather look it up in a book than talk to someone about it? . . . . . Yes No

33. Do you get palpitations or thumping in your heart?. . Yes No

34. Do you like the work that you need to pay close attention to? . . . . . Yes No

35. Do you get attacks of shaking or trembling? . . . . . Yes No

36. Would you always declare everything at the customs even if you knew that you could never be found out? . Yes No

37. Do you hate being with a crowd who play jokes on one another? . . . . . Yes No

38. Are you an irritable person? . . . . . Yes No

39. Do you like doing things in which you have to act quickly? . . . . . Yes No

40. Do you worry about awful things that might happen? . Yes No

41. Are you slow and unhurried in the way you move? . . . Yes No

42. Have you ever been late for an appointment or work? . Yes No

43. Do you have many nightmares? . . . . . Yes No

44. Do you like talking to people so much that you would never miss a chance of talking to a stranger? . Yes No

45. Are you troubled by aches and pains? . . . . . Yes No

46. Would you be very unhappy if you could not see lots of people most of the time? . . . . . Yes No

47. Would you call yourself a nervous person? . . . . . Yes No

48. Of all the people you know are there some whom you definitely do not like? . . . . . Yes No

49. Would you say you were fairly self-confident? . . . . Yes No

50. Are you easily hurt when people find fault with you or your work? . . . . . Yes No

51. Do you find it really hard to enjoy yourself at a lively party? . . . . . Yes No

52. Are you troubled with feelings of inferiority? . . . Yes No

53. Can you easily get some life into a rather dull party? . . . . . Yes No

54. Do you sometimes talk about things you know nothing about? . . . . . Yes No

55. Do you worry about your health? . . . . . Yes No

56. Do you like playing pranks on others? . . . . . Yes No

57. Do you suffer from sleeplessness? . . . . . Yes No

APPENDIX C

Compulsive Eating Scale

Compulsive Eating Scale

1. Please circle the number on the scale which best describes you for each question.

1	2	3	4	5
never or rarely	occasionally	sometimes	frequently	almost always

a. I get pleasure just thinking about food or eating. 1 2 3 4 5

b. I eat when I'm not hungry. 1 2 3 4 5

c. Eating seems to calm me down or make me feel better. 1 2 3 4 5

d. I think about food. 1 2 3 4 5

e. I spend time preparing and planning things to eat. 1 2 3 4 5

f. My eating habits are the same whether I'm alone or with others. 1 2 3 4 5

g. I feel guilty when I eat too much. 1 2 3 4 5

h. I've noticed that I eat when I'm:

1) tense or anxious 1 2 3 4 5

2) sad or depressed 1 2 3 4 5

3) lonely 1 2 3 4 5

4) sexually frustrated 1 2 3 4 5

5) busy 1 2 3 4 5

6) with others 1 2 3 4 5

7) at a party 1 2 3 4 5

8) feeling great 1 2 3 4 5

9) angry with myself 1 2 3 4 5

10) angry with others 1 2 3 4 5

11) pleased with myself 1 2 3 4 5

12) bored 1 2 3 4 5

i. Other people are concerned about how much I weigh. 1 2 3 4 5

j. I am on a diet. 1 2 3 4 5

k. My weight varies and I am usually gaining or losing weight. 1 2 3 4 5

l. I go on eating binges (overeating to the point of stuffing myself and uncontrollable eating).

1-never, 2-few times a year, 3-once a month, 4-once a week, 5-more than once a week 1 2 3 4 5

m. I would label myself a compulsive eater.

1-no, 3-sometimes, 5-definitely 1 2 3 4 5

n. After binging or eating a lot, I

1-don't think about what I eat the next day.
2-think about what I eat, but don't really try to control it.
3-try to watch and moderately control what I eat.
4-go on a strict diet.
5-fast, until I'm back to my previous or lower weight. 1 2 3 4 5

o. I consider myself

1-moderately to very underweight
2-a little underweight
3-about right
4-a little overweight
5-moderately to very overweight 1 2 3 4 5

2. Please fill in as accurately as possible:

Height _____ Weight _____

Bone structure (small, medium, large) _____

3. Are you required to regulate your eating for any medical reason (diabetes, ulcers, etc)? _____

4. Over the past 6 months I have:

_____ a. lost 10 or more pounds
_____ b. gained 10 or more pounds
_____ c. both a. and b.
_____ d. none of the above

5. If you binge occasionally or more, what foods do you usually eat when binging? Check more than one if appropriate.

_____ a. sweets (i.e., candy, cake, ice cream)
_____ b. starches (i.e., bread, pasta)
_____ c. snack foods (i.e., potato chips, Fritos)
_____ d. fruit
_____ e. vegetables
_____ f. meat, fish, poultry
_____ g. dairy products (i.e., cheese, eggs)
_____ h. Other (please specify)_____
_____

APPENDIX D

Rotter's Locus of Control Scale

Julien Rotter's Opinion Survey

This is a questionnaire to find out the way in which certain important events in our society affect different people. Each item consists of a pair of alternatives lettered a or b. Please select one statement of each pair (and only one) which you more strongly believe to be the case as far as you are concerned. Be sure to select the one you actually believe to be more true rather than the one you would like to be true. This is a measure of personal belief; obviously there are no right or wrong answers.

Please answer these items carefully but do not spend too much time on any one item. Be sure to find an answer for every choice. Find the number of the item on the answer sheet and circle the letter a or b which you choose as the statement more true.

In some instances you may discover that you believe both statements or neither one. In such cases, be sure to select the one you more strongly believe to be the case as far as you are concerned. Also try to respond to each item independently when making your choice; do not be influenced by your previous choices.

1. a. Children get into trouble because their parents punish them too much.
   b. The trouble with most children nowadays is that their parents are too easy with them.

2. a. Many of the unhappy things in people's lives are partly due to bad luck.
   b. People's misfortunes result from the mistakes they make.

3. a. One of the major reasons why we have wars is because people don't take enough interest in politics.
   b. There will always be wars, no matter how hard people try to prevent them.

4. a. In the long run people get the respect they deserve in this world.
   b. Unfortunately, an individual's worth often passes unrecognized no matter how hard he tries.

5. a. The idea that teachers are unfair to students is nonsense.
   b. Most students don't realize the extent to which their grades are influenced by accidental happenings.

6. a. Without the right breaks one cannot be an effective leader.
   b. Capable people who fail to become leaders have not taken advantage of their opportunities.

7. a. No matter how hard you try some people just don't like you.
   b. People who can't get others to like them don't understand how to get along with others.

8. a. Heredity plays the major role in determining one's personality.
   b. It is one's experiences in life which determine what they're like.

9. a. I have often found that what is going to happen will happen.
   b. Trusting to fate has never turned out as well for me as making a decision to take a definite course of action.

10. a. In the case of the well prepared student there is rarely if ever such a thing as an unfair test.
    b. Many times exam questions tend to be so unrelated to course work that studying is really useless.

11. a. Becoming a success is a matter of hard work; luck has little or nothing to do with it.
    b. Getting a good job depends mainly on being in the right place at the right time.

12. a. The average citizen can have an influence in government decisions.
    b. This world is run by the few people in power, and there is not much the little guy can do about it.

13. a. When I make plans, I am almost certain that I can make them work.
    b. It is not always wise to plan too far ahead because many things turn out to be a matter of good or bad luck anyhow.

14. a. There are certain people who are just no good.
    b. There is some good in everybody.

15. a. In my case getting what I want has little or nothing to do with luck.
    b. Many times we might just as well decide what to do by flipping a coin.

16. a. Who gets to be the boss often depends on who was lucky enough to be in the right place first.
    b. Getting people to do the right thing depends upon ability; luck has little or nothing to do with it.

29. a. Most of the time I can't understand why politicians behave the way they do.
    b. In the long run the people are responsible for bad government on a national as well as on a local level.

Answer sheet for Opinion Survey

1. a b
2. a b
3. a b
4. a b
5. a b
6. a b
7. a b
8. a b
9. a b
10. a b
11. a b
12. a b
13. a b
14. a b
15. a b
16. a b
17. a b
18. a b
19. a b
20. a b
21. a b
22. a b
23. a b
24. a b
25. a b
26. a b
27. a b
28. a b
29. a b

APPENDIX E

Control Scale of the MMPI

Control Scale of the MMPI

1.	I like to read newspaper articles on crime.	T	F
2.	My sex life is satisfactory.	T	F
3.	At times I feel like swearing.	T	F
4.	As a youngster I was suspended from school one or more times for cutting up.	T	F
5.	Everything is turning out just like the prophets of the Bible said it would.	T	F
6.	I wish I could be as happy as others seem to be.	T	F
7.	I sometimes tease animals.	T	F
8.	I would like to be a nurse.	T	F
9.	I have very few quarrels with members of my family.	T	F
10.	Sometimes when I am not feeling well I am cross.	T	F
11.	I have never done anything dangerous for the thrill of it.	T	F
12.	I enjoy a race or game better when I bet on it.	T	F
13.	At times my thoughts have raced ahead faster than I could speak them.	T	F
14.	At times I feel like picking a fist fight with someone.	T	F
15.	I resent having anyone take me in so cleverly that I have had to admit that it was one on me.	T	F

16. It wouldn't make me nervous if any members of my family got into trouble with the law. T F
17. I am not afraid to handle money. T F
18. I have never had a fainting spell. T F
19. When I get bored I like to stir up some excitement. T F
20. I loved my mother. T F
21. I gossip a little at times. T F
22. I brood a great deal. T F
23. I have periods of such great restlessness that I cannot sit long in a chair. T F
24. I believe I am no more nervous than most others. T F
25. I believe there is a Devil and a Hell in after life. T F
26. I don't blame anyone for trying to grab everything he can get in this world. T F
27. Once in a while I laugh at a dirty joke. T F
28. At one or more times in my life I felt that someone was making me do things by hypnotizing me. T F
29. I have periods in which I feel unusually cheerful without any special reason. T F
30. The man who provides temptation by leaving valuable property unprotected is about as much to blame for its theft as the one who steals it. T F
31. Most people inwardly dislike putting themselves out to help other people. T F
32. I feel anxiety about something or someone almost all the time. T F

33. Almost every day something happens to frighten me. T F
34. I do not like to see women smoke. T F
35. I wish I could get over worrying about things I have said that may have injured other people's feelings. T F
36. It makes me feel like a failure when I hear of the success of someone I know well. T F
37. At times I think I am no good at all. T F
38. People generally demand more respect for their own rights than are willing to allow for others. T F
39. It makes me nervous to wait. T F
40. I do not try to correct people who express an ignorant belief. T F
41. I enjoy gambling for small stakes. T F
42. I am often inclined to go out of my way to win a point with someone who has opposed me. T F
43. I have used alcohol moderately (or not at all). T F
44. Christ performed miracles such as changing water into wine. T F
45. I pray several times every week. T F
46. I feel sympathetic towards people who tend to hang on to their griefs and troubles. T F
47. The members of my family and my close relatives get along quite well. T F
48. I would like to wear expensive clothes. T F
49. I never attend a sexy show if I can avoid it. T F
50. I sometimes feel that I am about to go to pieces. T F

APPENDIX F

Informed Consent Form

Informed Consent Form

This is a study concerned with avid dieters and their attitudes toward themselves and others. The materials involved include four surveys and a questionnaire. They will take approximately two hours to fill out. All data obtained are confidential. You may discontinue with this study at any time. A report of the results from this study will be mailed to you.

Your signature _____

Date _____

APPENDIX G

Report of Results

Report of Results

November 1, 1981

Dear _____,

The results from the study you participated in have been compiled. Each person was placed in an overweight, average weight, underweight, or anorectic group. These groups were compared on several measures. Each person took the Minnesota Multiphasic Personality Inventory, Rotter's Locus of Control Scale, the Eysenck Personality Inventory, and the Compulsive Eating Scale.

I was interested in seeing how those with anorexia nervosa would compare to the other weight groups. Particular emphasis was given to a new scale on the MMPI called the Control scale. Indeed, I found that anorectics scored higher on this scale than the other groups as well as on several other scales from the MMPI. The results showed that overweight subjects had an external locus of control whereas the other groups had a more internal locus of control. There were no differences found on the EPI or on the CES.

If you would like further information on the results obtained, you can either write to me at 110-F Woodbridge Apartments, Greenville, South Carolina 29607, or you can call me at (803) 235-3699. Thank you for your participation and cooperation in helping me to complete this project.

Sincerely,

Pamela Williams

APPENDIX H

Tables

TABLE I

ANOVA SUMMARY TABLES AND MEANS AND STANDARD DEVIATIONS

FOR THE CONTROL SCALE OF THE MMPI

a. ANOVA Summary

Source	DF	Mean Square	F
Between Groups	3	320.18	3.75*
Within Groups	93	85.48	
Total	96	92.81	

*p < .05

b. Means and Standard Deviations

Group	Mean	Standard Deviation
Overweight	57.30	10.11
Average Weight	51.48	9.56
Underweight	49.92	10.11
Anorexia Nervosa	57.91	10.11
Total	53.02	9.63

TABLE II

MEANS AND STANDARD DEVIATIONS FOR THE

L, F, AND K SCALES OF THE MMPI

Group	L	F	K
Overweight	46.00 (4.85)	57.05 (8.70)	49.90 (8.83)
Average Weight	46.76 (6.19)	55.90 (8.98)	52.50 (7.65)
Underweight	46.13 (5.28)	53.04 (6.78)	53.71 (8.15)
Anorexia Nervosa	45.09 (3.94)	59.18 (10.14)	50.27 (7.03)
Total	46.26 (5.44)	55.80 (8.64)	52.01 (7.97)

(Standard deviations in parentheses)

TABLE III

ANOVA SUMMARY TABLES AND MEANS AND STANDARD DEVIATIONS

FOR THE Hs SCALE OF THE MMPI

a. ANOVA Summary

Source	DF	Mean Square	F
Between Groups	3	409.04	4.81*
Within Groups	93	85.13	
Total	96	95.25	

*p < .05

b. Means and Standard Deviations

Group	Mean	Standard Deviation
Overweight	50.10	7.11
Average Weight	52.79	6.66
Underweight	53.33	9.14
Anorexia Nervosa	62.91	17.93
Total	53.52	9.76

TABLE IV

ANOVA SUMMARY TABLES AND MEANS AND STANDARD DEVIATIONS

FOR THE D SCALE OF THE MMPI

a. ANOVA Summary

Source	DF	Mean Square	F
Between Groups	3	656.26	6.71*
Within Groups	93	97.82	
Total	96	115.27	

*p < .05

b. Means and Standard Deviations

Group	Mean	Standard Deviation
Overweight	51.00	11.34
Average Weight	52.50	8.63
Underweight	50.50	7.36
Anorexia Nervosa	65.55	15.35
Total	53.18	10.74

TABLE V

ANOVA SUMMARY TABLES AND MEANS AND STANDARD DEVIATIONS

FOR THE Pd SCALE OF THE MMPI

a. ANOVA Summary

Source	DF	Mean Square	F
Between Groups	3	295.16	2.89*
Within Groups	93	102.29	
Total	96	108.31	

*p < .05

b. Means and Standard Deviations

Group	Mean	Standard Deviation
Overweight	62.30	8.52
Average Weight	60.02	8.68
Underweight	56.29	11.73
Anorexia Nervosa	66.45	13.72
Total	60.30	10.41

TABLE VI

MEANS AND STANDARD DEVIATIONS FOR THE Hy, Pa, Pt, AND Sc SCALES OF THE MMPI

Group	Hy	Pa	Pt	Sc
Overweight	53.60 (5.99)	56.90 (10.08)	57.85 (11.12)	59.75 (10.67)
Average Weight	56.52 (7.57)	57.19 (9.52)	57.86 (9.22)	59.10 (10.53)
Underweight	56.19 (8.99)	57.12 (9.21)	55.25 (8.77)	56.83 (7.64)
Anorexia Nervosa	62.45 (14.40)	63.82 (13.72)	62.45 (9.00)	63.36 (14.72)
Total	56.54 (8.85)	57.88 (10.16)	57.73 (9.58)	59.15 (10.48)

(Standard deviations in parentheses)

TABLE VII

MEANS AND STANDARD DEVIATIONS FOR THE

Si, Mf, AND Ma, SCALES OF THE MMPI

Group	Si	Mf	Ma
Overweight	56.65 (11.82)	49.60 (11.77)	66.25 (11.06)
Average Weight	52.19 (10.86)	48.50 (8.78)	63.43 (10.95)
Underweight	50.58 (7.24)	48.17 (9.11)	64.21 (11.42)
Anorexia Nervosa	56.00 (12.14)	42.91 (8.29)	65.91 (9.10)
Total	52.32 (10.41)	48.01 (9.54)	64.48 (10.80)

(Standard deviations in parentheses)

TABLE VIII

MEANS AND STANDARD DEVIATIONS FOR THE

Dy, Do, AND R SCALES OF THE MMPI

Group	Dy	Do	R
Overweight	56.00 (10.09)	51.50 (9.96)	46.85 (7.87)
Average Weight	53.64 (7.02)	53.79 (7.36)	52.21 (7.55)
Underweight	53.67 (10.09)	55.75 (9.49)	50.13 (8.61)
Anorexia Nervosa	55.18 (11.02)	52.82 (8.51)	50.82 (7.67)
Total	54.31 (8.90)	53.69 (8.58)	50.43 (8.04)

(Standard deviations in parentheses)

TABLE IX

MEANS AND STANDARD DEVIATIONS FOR THE

A AND Es SCALES OF THE MMPI

Group	A	Es
Overweight	54.30 (10.66)	52.95 (10.67)
Averageweight	51.57 (7.53)	53.55 (7.48)
Underweight	50.50 (7.55)	53.04 (9.31)
Anorexia Nervosa	56.45 (5.30)	49.55 (12.46)
Total	52.42 (8.19)	52.85 (9.21)

(Standard deviations in parentheses)

TABLE X

ANOVA SUMMARY TABLES AND MEANS AND STANDARD DEVIATIONS

FOR ROTTER'S LOCUS OF CONTROL SCALE

a. ANOVA Summary

Source	DF	Mean Square	F
Between Groups	3	41.84	3.00*
Within Groups	93	13.94	
Total	96	14.81	

*p < .05

b. Means and Standard Deviations

Group	Mean	Standard Deviation
Overweight	9.35	3.27
Average Weight	12.14	3.84
Underweight	12.29	3.68
Anorexia Nervosa	11.82	4.24
Total	11.57	3.85

TABLE XI

MEANS AND STANDARD DEVIATIONS FOR THE

COMPULSIVE EATING SCALE

Group	Mean	Standard Deviation
Overweight	48.90	9.80
Average Weight	45.05	10.39
Underweight	42.79	10.33
Anorexia Nervosa	50.55	14.75
Total	45.91	10.98

TABLE XII

MEANS AND STANDARD DEVIATIONS FOR THE

EYSENCK PERSONALITY INVENTORY

Group	EPIE	EPIN	EPIL
Overweight	13.30 (3.54)	12.80 (5.69)	2.30 (1.17)
Average Weight	13.07 (3.98)	11.12 (5.18)	2.26 (1.38)
Underweight	12.42 (3.34)	11.29 (4.65)	2.17 (1.31)
Anorexia Nervosa	10.71 (3.67)	14.91 (4.55)	2.00 (1.26)
Total	12.71 (3.67)	11.94 (5.17)	2.22 (1.29)

(Standard deviations in parentheses)

TABLE XIII

MEAN AGES, HEIGHTS, AND WEIGHTS FOR ALL GROUPS

Group	Mean Age	Mean Height	Mean Weight
Overweight	19.25	63.50	142.45
Average Weight	18.65	65.10	124.43
Underweight	19.33	66.29	116.83
Anorexia Nervosa	21.45	65.18	99.27
Total	19.26	65.07	123.41

TABLE XIV

DISTRIBUTION AND PERCENTAGES OF CLASS STANDING

Group	Freshman	Sophomore	Junior	Senior
Overweight	4(20)	12(60)	4(20)	0(0)
Average Weight	16(38)	17(40)	3(7)	4(10)
Underweight	11(46)	5(21)	4(17)	4(17)
Anorexia Nervosa	1(9)	3(27)	0(0)	1(9)
Total	32(33)	37(38)	11(11)	9(9)

Group	Graduate Student	Other
Overweight	9(0)	0(0)
Average Weight	1(2)	1(2)
Underweight	0(0)	0(0)
Anorexia Nervosa	1(9)	5(45)
Total	2(2)	6(6)

(Percentages in parentheses)

TABLE XV

DISTRIBUTION AND PERCENTAGES OF PERCEPTION OF BODY FRAME

Group	Small	Average	Large
Overweight	4(20)	13(65)	3(15)
Average Weight	6(14)	30(71)	6(14)
Underweight	6(25)	13(54)	5(21)
Anorexia Nervosa	5(45)	6(55)	0(0)
Total	21(22)	62(64)	14(14)

(Percentages in parentheses)

TABLE XVI

DISTRIBUTION AND PERCENTAGES OF PERCEPTION OF WEIGHT

Group	Overweight	Average Weight	Underweight	No Response
Overweight	16(80)	4(20)	0(0)	0(0)
Average Weight	20(48)	21(50)	1(2)	0(0)
Underweight	4(17)	19(79)	1(4)	0(0)
Anorexia Nervosa	3(27)	4(36)	3(27)	1(9)
Total	43(44)	48(49)	5(5)	1(1)

(Percentages in parentheses)

TABLE XVII

DISTRIBUTION AND PERCENTAGES OF LAXATIVE USE AND FREQUENCY

a. Laxative Use

Group	Yes	No
Overweight	4(20)	16(80)
Average Weight	6(14)	36(86)
Underweight	3(13)	21(88)
Anorexia Nervosa	6(55)	5(45)
Total	19(20)	78(80)

(Percentages in parentheses)

b. Frequency of Laxative Use

Group	1/Day	1/Week	1/Month	Other
Overweight	0(0)	0(0)	0(0)	4(100)
Average Weight	0(0)	0(0)	1(17)	5(83)
Underweight	0(0)	0(0)	2(67)	1(33)
Anorexia Nervosa	1(17)	2(33)	1(17)	2(33)
Total	1(5)	2(11)	4(21)	12(63)

(Percentages in parentheses)

TABLE XVIII

DISTRIBUTION AND PERCENTAGES OF DIURETIC USE AND FREQUENCY

a. Diuretic Use

Group	Yes	No
Overweight	3(15)	17(85)
Average Weight	7(17)	35(83)
Underweight	0(0)	24(100)
Anorexia Nervosa	2(18)	9(82)
Total	12(12)	85(88)

(Percentages in parentheses)

b. Frequency of Diuretic Use

Group	1/Day	1/Week	1/Month	Other
Overweight	1(33)	0(0)	1(33)	1(33)
Average Weight	1(14)	1(14)	1(14)	4(57)
Underweight	0(0)	0(0)	0(0)	0(0)
Anorexia Nervosa	0(0)	9(0)	1(50)	1(50)
Total	2(17)	1(8)	3(25)	6(50)

(Percentages in parentheses)

TABLE XIX

DISTRIBUTION AND PERCENTAGES OF INDUCING

VOMITING AND FREQUENCY

a. Inducing Vomiting

Group	Yes	No	No Response
Overweight	3(15)	17(85)	0(0)
Average Weight	5(12)	37(88)	0(0)
Underweight	3(13)	20(83)	1(4)
Anorexia Nervosa	7(64)	4(36)	0(0)
Total	18(19)	78(80)	1(1)

(Percentages in parentheses)

b. Frequency of Inducing Vomiting

Group	1/Day	2/Day	3/Day	1/Week	1/Month	Other
Overweight	0(0)	0(0)	0(0)	0(0)	0(0)	3(100)
Average Weight	0(0)	0(0)	0(0)	0(0)	0(0)	5(100)
Underweight	0(0)	0(0)	0(0)	0(0)	0(0)	3(100)
Anorexia Nervosa	1(14)	1(14)	1(14)	1(14)	1(14)	2(29)
Total	1(6)	1(6)	1(6)	1(6)	1(6)	13(72)

(Percentages in parentheses)

TABLE XX

DISTRIBUTION AND PERCENTAGES FOR REGULAR

PERIODS AND FREQUENCY

a. Regular Periods

Group	Yes	No
Overweight	18(90)	2(10)
Average Weight	36(86)	6(14)
Underweight	19(79)	5(21)
Anorexia Nervosa	4(36)	7(64)
Total	77(79)	10(21)

(Percentages in parentheses)

b. Frequency of Irregular Periods

Group	Never	6 Weeks	10 Weeks	12 Weeks	Other
Overweight	0(0)	1(50)	0(0)	0(0)	1(50)
Average Weight	0(0)	1(17)	1(17)	0(0)	4(67)
Underweight	1(20)	2(29)	0(0)	0(0)	4(57)
Anorexia Nervosa	1(14)	2(29)	0(0)	0(0)	4(57)
Total	2(10)	4(20)	1(5)	1(5)	12(60)

(Percentages in parentheses)

TABLE XXI

DISTRIBUTION AND PERCENTAGES OF SEXUAL

ACTIVITY AND FREQUENCY

a. Sexual Activity

Group	Yes	No
Overweight	4(20)	16(80)
Average Weight	19(45)	23(55)
Underweight	11(46)	13(54)
Anorexia Nervosa	5(45)	6(55)
Total	39(40)	58(60)

(Percentages in parentheses)

b. Frequency of Sexual Activity

Group	1/Day	1/Week	1/Month	Other	No Response
Overweight	0(0)	1(25)	2(50)	1(25)	0(0)
Average Weight	1(5)	6(32)	6(32)	5(26)	1(5)
Underweight	3(27)	5(45)	1(9)	2(18)	0(0)
Anorexia Nervosa	0(0)	2(40)	1(20)	2(40)	0(0)
Total	4(10)	14(36)	10(26)	10(26)	1(13)

(Percentages in parentheses)

TABLE XXII

DISTRIBUTION AND PERCENTAGES OF EXERCISE

AND MEAN HOURS PER DAY

a. Exercise

Group	Yes	No
Overweight	15(75)	5(25)
Average Weight	32(76)	10(24)
Underweight	18(75)	6(25)
Anorexia Nervosa	8(73)	3(27)
Total	73(75)	24(25)

(Percentages in parentheses)

b. Mean Hours Per Day

Group	Mean Hours
Overweight	1.10
Average Weight	.86
Underweight	1.29
Anorexia Nervosa	.82
Total	1.01

TABLE XXIII

DISTRIBUTION AND PERCENTAGES FOR JOGGING, MEAN MILES PER WEEK, AND MEAN DAYS PER WEEK

a. Jogging

Group	Yes	No
Overweight	5(25)	15(75)
Average Weight	12(29)	39(71)
Underweight	12(50)	12(50)
Anorexia Nervosa	4(36)	7(64)
Total	33(34)	64(66)

(Percentages in parentheses)

b. Mean Miles Per Week and Mean Days Per Week

Group	Mean Miles	Mean Days
Overweight	.65	.65
Average Weight	2.29	1.06
Underweight	2.13	1.33
Anorexia Nervosa	4.82	2.00
Total	2.20	1.14

TABLE XXIV

DISTRIBUTION AND PERCENTAGES FOR DESCRIPTION

OF SOCIAL LIFE

Group	Very Busy	Moderately Active	Not Very Active	Extremely Limited	No Response
Overweight	5(25)	12(60)	3(15)	0(0)	0(0)
Average Weight	12(29)	29(69)	1(2)	0(0)	0(0)
Underweight	7(29)	14(58)	2(8)	0(0)	1(4)
Anorexia Nervosia	2(18)	7(64)	1(9)	1(9)	0(0)
Total	26(27)	62(64)	7(7)	1(1)	1(1)

(Percentages in parentheses)

TABLE XXV

DISTRIBUTION AND PERCENTAGES FOR DATING ACTIVITY

Group	Frequently	Often	Occasionally
Overweight	6(30)	2(10)	6(30)
Average Weight	15(36)	15(36)	8(19)
Underweight	10(42)	6(25)	6(25)
Anorexia Nervosa	1(9)	0(0)	6(55)
Total	32(33)	23(24)	26(27)

Group	Infrequently	Never	Other	No Response
Overweight	4(20)	1(5)	0(0)	1(5)
Average Weight	3(7)	0(0)	0(0)	1(2)
Underweight	1(4)	1(4)	0(0)	0(0)
Anorexia Nervosa	2(27)	0(0)	1(9)	0(0)
Total	11(11)	2(2)	1(1)	1(2)

(Percentages in parentheses)

TABLE XXVI

ANOVA SUMMARY TABLES AND MEANS AND STANDARD DEVIATIONS

FOR WEIGHT DEVIATION

a. ANOVA Summary

Source	DF	Mean Square	F
Between Groups	3	74279.862	5.6118*
Within Groups	93	1323.6395	
Total	96	3603.5219	

*p < .05

b. Means and Standard Deviations

Group	Mean	Standard Deviation
Overweight	126.28	22.99
Average Weight	151.25	3.81
Underweight	163.44	6.49
Anorexia Nervosa	175.14	8.30
Total	151.82	18.98

VITA

Pamela Williams was born in Statesboro, Georgia on December 19, 1956. She attended elementary school and junior high school in Greenwood, South Carolina. She attended Greenwood High School and was graduated in June, 1975. In September of that year, she entered Clemson University majoring in Psychology and minoring in French. She was graduated with a B.A. degree in 1979 and immediately entered Appalachian State University to begin work on her M.A. degree in Clinical Psychology. This degree is to be awarded in December, 1981.

While attending college, Ms. Williams was a member of Psi Chi, Pi Delta Phi, Sigma Tau Epsilon, Alpha Lambda Delta, and Phi Kappa Phi. Additionally, she is a student member of the American Psychological Association.

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