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# Two Emotional Factors and Weight Loss Among Females Attending a Weight Control Class

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# TWO EMOTIONAL FACTORS AND WEIGHT LOSS AMONG FEMALES ATTENDING A WEIGHT CONTROL CLASS

by

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Each person whose signature appears below certifies that he has read this thesis and that in his opinion it is adequate, in scope and quality, as a thesis for the degree of Master of Science.

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## LIST OF ABBREVIATIONS

1. TSCS: Tennessee Self-Concept Scale
2. SSTAI: Spielberger State-Trait Anxiety Inventory
3. A-State: Spielberger State-Trait Anxiety Inventory
4. A-Trait: Spielberger State-Trait Anxiety Inventory
5. ns: not significant at the P = .05 level

# Chapter 1

## THE PROBLEM, NEED AND RESEARCH DESIGN

### INTRODUCTION

In 1970, it was estimated that fifty million persons in the affluent American society were overweight (Payne, I., 1970). Of these, many persons attempted weight reduction, many persons experienced deepening frustration from failure, and a few succeeded in losing weight. While there was apparent motivation to attempt weight reduction, few were rewarded by their efforts. We believed there were certain factors, other than mere desire to lose weight, that were associated with successful weight reduction. As Community Health Nurses, we wanted to identify some factors associated with weight loss that would be of value in working with overweight persons and of help in preventing the problem.

### STATEMENT OF THE PROBLEM

Obese persons have difficulty losing weight and maintaining ideal body weight. Though there are many diet plans available, few individuals are successful in reaching and maintaining weight goals. There are certain emotional factors that might be identified by which a health worker may associate success in weight reduction.

## PURPOSE OF THE STUDY

The purpose of this study was to examine levels of self-esteem and anxiety in relation to attainment of weight loss by females voluntarily attending a weight-control class. This study was to provide new direction for implementation in nursing practice, and to evaluate the effectiveness of the scientific and spiritual principles and approaches that are unique to the weight-control program conducted at Loma Linda University Medical Center.

## NEED FOR THE STUDY

Today Americans are becoming increasingly health conscious, especially in the area of weight reduction. The numerous diet plans, diet foods, and exercisers commercially available indicate this trend. Dwyer and Mayer, in a 1966 national opinion poll, found that of those adults polled, 43 percent actively engaged in some kind of dieting (Dwyer, 1970).

Perhaps this preoccupation with weight control was stimulated from recent medical research which has revealed that myocardial infarctions, cerebrovascular accidents, hypertension, diabetes and degenerative diseases are major dangers associated with overweight. J. Howard Payne (1970) reported that persons 20 percent overweight had a "greater than 40 percent chance of dying of heart disease in any given year, greater than 30 percent chance of dying of coronary artery disease, a greater than 50 percent death rate from cardiovascular disease." In addition, other conditions such as cirrhosis of the liver, varicose veins, gallstones, exertional dyspnea, and ankle edema occur more

frequently (Payne, J., 1970; Mobbs, 1970). No less important were the psychological aspects, which will be discussed further in the chapter.

## Physiological Causes of Overweight and Obesity

It was generally assumed that "fatness" was a result of overeating. Other factors were present such as constitutional, dietary, exercise, psychological, hypothalamic influences, and environmental and social factors (Bryans, 1967).

There was some disagreement as to whether overeating was stimulated by internal or external cues. Bryans (1967) believed excessive weight was due to internal constitutional factors instead of environmental (external) factors. On the other hand, Schachter's (1971) experiments showed that "eating by the obese seems unrelated to any internal, visceral state, but is determined by external, food-relevant cues such as the sight, smell, and taste of food." The analyst, Hilde Bruch, made the observation that obese persons did not discriminate between psychological hunger and externally induced states of fear, anger and anxiety (Schachter, 1968).

## Psychological Theories (Implications) Relating to Weight Problems

In childhood, fundamental tasks to learn were control of limbs, body (physiological) functions, and behavior. When the individual lost control, he had increased feelings of helplessness, inadequacy, and anxiety (Kornhaber, 1970; Rubin, R., 1966; Salzman, 1970). Similarly, Vernon Rees, a chaplain at the Loma Linda University Medical Center in an interview in September, 1971, expressed the belief that the American society is production oriented, and that when a person felt he had not maintained control or produced according to his own and other

people's demands, he had feelings of worthlessness. Detrimental methods of coping helped allay feelings of inadequacy and helplessness and restored a sense of being in control of his surroundings (Salzman, 1970; Wittkower, 1971).

Anxiety

Every person, at one time or another, experiences anxiety-producing conflicts, tensions and frustrations (Rubin, T., 1970). People with overweight problems cope with these anxieties by overeating. Freed found that 72 percent of 500 overweight persons studied said they ate more when they were nervous or worried (Meyer, 1968). This only complicated their anxieties because their conspicuous condition was often met with criticism and ridicule in our culture. Dieting further increased anxiety as it denied them their method of coping (Kornhaber, 1970; Roche, 1965). A study by W. G. Shipman (1968) found that people with high anxiety levels infrequently followed the dieting regime, and were unsuccessful in losing weight. In comparison, those with low anxiety levels were the most successful in weight reduction. Mander and Watson concluded that "if the organism has some control over the onset and offset of potentially stressful stimuli, or even if it simply expects to have such control, there is likely to be less anxiety or arousal" (Bowers, 1968).

Ironically, the overweight person often fails in his efforts to reduce due to subconscious reasons such as self-punishment, prevention of close interpersonal relationships, to remain dependent or to hurt significant persons (Roche, 1965).

Self-esteem

The way a person saw himself and was seen by others largely determined his feelings of self-esteem. The overweight person, in a culture whose ideal is to be thin, is not looked upon favorably. Failure to achieve the ideal produces feelings of worthlessness and self-hate (Rubin, T., 1970). A person's self-esteem is based on what he thinks of himself, what he believes other people think of him, and the interpersonal feelings that are communicated (Kajita, 1968). The findings by Silverman suggested "a tendency for individuals to be more receptive to feedback which is consistent in favorability with their general level of self-evaluation" (Shrauger, 1970). However, in a study measuring characteristics of obese university females, those who successfully lost weight felt that they were more responsible, while ironically females who were unsuccessful felt they liked themselves better and felt better able to establish meaningful relationships (Payne, I., 1970). Obese persons had mental images of themselves that were consistent with their actual body dimensions. In a study by Bailey (1970), obese persons drew significantly larger pictures of themselves than normal or underweight persons. Self-reproach from having a distorted body image and its accompanying social disapproval was more intense in persons who were formerly thin. "In fact: those who became fat in puberty and postpuberty suffer most and those who show definite distortion of the body image have become obese before maturing" (Meyer, 1968).

Weight History

Success in weight reduction seems to be associated with the

time of onset of the weight problem. Rosenstock (1969) stated: "For most people the patterns that develop tend to remain fairly constant throughout life." It was believed that the majority of people who were overweight as children became overweight adults. A long term prospective study showed that 80 percent of overweight children grew into overweight adults (Mobbs, 1970). Their prognosis for weight reduction was generally poor, depending on the length and severity of the condition (Bryans, 1967). Stockdale, a psychiatrist at Loma Linda University Medical Center in an interview in September, 1971, stated his belief that 98 percent of the people who were obese since childhood would not achieve permanent success in reducing. Dr. S. L. Hammar found "that the production of fat cells occurs more rapidly in early life and that chronically obese adults have fat cells that are both larger and more numerous than those of persons of normal weight" (Tuthill, 1971).

Nursing Implications

In reviewing the need for this study, we, as Community Health Nurses, concluded that the current theories and research regarding emotional factors on obesity and weight loss had implications for nursing practice. We felt that nurses should have a definite responsibility and role in the prevention and treatment of weight problems, beginning in early life. The following were ways in which nurses needed to intervene in this problem area.

Understand the patient and his problem. Not only did the nurse need to understand the dynamics of the weight problem, but each individual's potential for success in dieting (Shipman, 1968). A person

with a poor chance to succeed in weight reduction needs to be spared further discouragement and loss of self-esteem. The nurse needs to understand that even the mildly obese person may not be able to overcome his problem by mere resolve and determination (Salzman, 1970). Those with a potential for success need empathetic encouragement, support, and counsel, in order to gain increased insight and self-awareness, and emotional growth (Rubin, T., 1970; Salzman, 1970; Shipman, 1968). "Understanding is the prelude to change, not change itself" (Salzman, 1970).

Positive feedback. In order to progress towards a goal, most people needed to experience feelings of success and satisfaction. This was especially important for persons losing weight. To affect this progress, the nurse needs to foster these feelings by giving positive feedback. Shrauger (1970) found that positive evaluations enhanced subsequent performance while negative evaluations interfered.

Reduce external stimuli. If we accept the theory of Schachter (1971) that overeating is stimulated by external cues, the nurse needs to suggest ways to reduce the stimulus to overeating. Some possible suggestions included: shop after mealtime, avoid buying prepared foods, and avoid situations where food is readily available.

Teach child rearing practices. Prevention and treatment of obesity begin with the child. The myth that fat children are healthy children is not true. Fat children are wheezier, have a slower recovery from respiratory infections, have a slowed motor development, and are often knock-kneed due to their extra weight. In addition,

teasing and discrimination by peers lead to emotional difficulties ("Fat," 1970; Mobbs, 1970). Sue Tuthill (1971) reported a study conducted at the University of Washington Adolescent Clinic which revealed that "mothers of obese teenagers had introduced solid food to their youngsters at age six weeks to two months, while the mothers of children of normal weight had waited until the third or fourth month." Nurses need to teach mothers to: (a) help children distinguish between hunger and arousal states of fear and anxiety (Schachter, 1968); (b) help children develop self-control (Rosenstock, 1969); (c) reward children by means other than food; (d) provide balanced nutritional meals, decrease accessibility to sweets, and discourage eating between meals ("Fat," 1970; Mobbs, 1970); and (e) seek guidance regarding the feeding of their infants (Mobbs, 1970; Tuthill, 1971).

Develop community weight control programs. Many persons unable to lose weight by self-administered efforts found success in a group setting, where mutual understanding and support was given. The Community Health Nurse was in a unique position to organize or aid in the development of such a program (Dwyer, 1970).

## HYPOTHESES

We hypothesized that levels of self-esteem and anxiety are associated with weight loss among females voluntarily attending a weight-control class. More specifically, we hypothesized that:

1. Females with weight problems have lower than normal self-esteem levels and higher than normal anxiety levels.

2. Females attending a weight-control class who lose at least

one pound per week will show an increase in self-esteem and a decrease in anxiety after seven weeks of class attendance.

## METHODOLOGY

### Definitions

1. Self-esteem: A person's estimation of his worth.

2. Anxiety: A state of psychological discomfort that results from internal conflict with environmental demands.

3. Weight problem: Weight in excess of the medium frame standards for age, height and body build as stated in the Metropolitan Life Insurance policy (Proudfit, 1961).

(a) "overweight": 10 percent above accepted weight.

(b) "obese": 20 percent above accepted weight (Mobbs, 1970).

4. Weight-control class: A weekly educational program designed to aid individuals in weight reduction and control over a period of six months.

5. Weight loss: Loss of one pound per week.

### Assumptions

We assumed that:

1. Overeating is a method of coping with anxiety.

2. Participants honestly answered the information, weight history questionnaire sheet, and testing materials.

3. Everyone has a self-image that influences his feelings of self-worth.

4. Self-esteem and anxiety levels can show some degree of change over a seven week period of time.

5. Each participant in the group was willing to take some action to lose weight at the time of class registration.

Setting

The study was conducted during regular sessions of the weight-control class sponsored by the Health Education Department of the Loma Linda University Medical Center. This weekly class, covering a six month period, was a community service available to all interested persons, on an outpatient basis, for a fee of $10.00. Each attender was required to bring a note from his private physician in order to join the class. The class was taught by a highly qualified staff which included a physician, dietitian, health educator, physical therapist and chaplain. Part of the weekly sessions included a type of group psychotherapy conducted by the chaplain in which the members expressed their feelings toward daily stresses which contributed to a pattern of overeating. Belief in God as a source of power for meeting life's challenges was brought out in these sessions. Thus, not only was this program started to aid people in weight reduction and control, but to direct the public to a fuller spiritual dimension in life. The program was based on the following seven nutritional principles:

1. Cut out snacks.
2. Cut down on empty and refined calories.
3. Cut down on saturated fats.
4. Use a variety of fresh vegetables and fruits.
5. Exercise.
6. Eat two meals a day (breakfast and lunch).
7. Fast one day a week.

## Sample

The sample consisted of twenty-four 18 to 69-year-old females who attended the Loma Linda University Medical Center Weight-Control Class and gave permission to be included in the study. The class, though not randomly selected from other weight control classes in the geographical area, was selected from convenience as well as being considered to be typical of other similar classes in regard to nature, purpose and advertising. Since advertising was not directed at any particular segment of the public, we believed that the sample was valid in terms of comparison to the populations in other similar weight-control programs.

## Variables

The variables consisted of:

1. Age.
2. Education.
3. Race.
4. Admission weight.
5. Onset of weight problem.
6. Occupation.
7. Years attempting weight loss.
8. Parents and siblings with weight problems.
9. Degree of weight problem.
10. Pounds lost during collection of data.
11. Individual test scores.

## Procedure

This was a descriptive study. The following procedure was

developed for data collection.

Pretest. Step 1. Data collection commenced at the initial meeting of the weight-control class.

Step 2. As each person entered the class, his weight and body measurements were obtained and recorded on an individual progress card by a member of the class team.

Step 3. After welcoming remarks and introduction of the researchers by Joyce Lim, class coordinator, one researcher stated the following: "To better evaluate this program and make it more effective for you, we're asking that you participate by filling out an information sheet and some questionnaires."

Step 4. After distribution of materials, the following instructions were stated: "Let's go over the contents together."

(a) Permission sheet: "The first sheet is a permission sheet; please read it and then sign your name."

(b) Information sheet (giving identifying data): "Please fill out the information sheet."

(c) Two questionnaires (Spielberger Anxiety Test and Tennessee Self-Concept Scale): "Just put your name on the information sheet; you need not sign your name on the questionnaires. Please read the directions carefully and if you have any questions, raise your hand and one of us will come to you. Be sure to answer each question."

Step 5. Upon individual completion of folder contents, the materials were returned to the researchers who thanked them for their participation and inspected the forms for completeness. Each person was then directed to an adjoining room where the class program was

held. A Loma Linda University psychologist supervised the test activities.

Posttest. Seven weeks after the pretest the posttest was given. Two weeks prior to the posttest, a letter was sent to each class member stating the date of the second class evaluation. See Appendix E, page 50. The pretest procedure was followed for the posttest except that no information sheet was necessary.

## Research Tools

The following research tools were tested in the pilot test to assess the type of answers that the questions on the Information Sheet elicited, and to refine the administration procedure of the questionnaires.

Information sheet. This tool was devised by the researchers to obtain data about each person in the sample.

Question one, "How long have you been trying to lose weight?" was needed to assess the length of time the individual had attempted weight reduction without success. Since Rubin (1970) stated that the "loss-gain cycle" often caused demoralizing effects such as self-hate and hopelessness, we felt that test scores for self-esteem might possibly be compared with the length of time an individual attempted weight loss.

Question two, "Which person(s) in your family have a weight problem?" was asked to obtain information about familial tendencies toward weight problems. We believed, from personal observation, that a weight problem may be common among members within a family.

Question three, "At what time did you first become overweight?" asked for information by which we determined the stage in the development process that the weight problem began. A study by Mobbs (1970) showed that 80 percent of overweight children grew into overweight adults.

Other identifying information included: name, age, weight, height, marital status, occupation and education. This information was obtained for possible correlation with individual success in the class, determination of degree of weight problem, and possible future study by the Health Education Department of the Loma Linda University Medical Center. Address and telephone numbers were included for class follow-up.

Spielberger State-Trait Anxiety Inventory. The Spielberger State-Trait Anxiety Inventory (SSTAI) was chosen because it is easy to administer, relatively simple to process the data, the testing time is of short duration, and it reveals the individual's general and present feelings of anxiety.

This test, developed in 1964 by C. D. Spielberger, R. L. Gorsuch, and R. Lushene, has a high A-trait scale test-retest reliability, and a lower A-state scale reliability which is not unusual for a test designed to be influenced by situational factors (Spielberger, 1970). The A-Trait Anxiety Inventory measures "relatively stable individual differences in anxiety proneness," while the A-State Anxiety Inventory measures the "transitory emotional state or condition of the human organism" in "normal (nonpsychiatrically disturbed) adults" (Spielberger, 1970).

This test consisted of two parts: (1) the A-trait scale of twenty statements that asked the person to describe his general feelings; (2) the A-state scale of twenty statements that asked the person to describe his feelings at the moment of testing. We wanted to show whether high levels of trait and state anxiety were associated with weight loss.

Tennessee Self-Concept Scale. When the Tennessee Self-Concept Scale (TSCS) was compared with the Carl Rogers Q-Sort and the Ziller Self-Social Construct Scale we found that the TSCS lended itself to group testing with a minimum of time, materials and data analysis. The TSCS was developed in 1965 by William H. Fitts, Ph.D. who in his test manual reported a high test-retest reliability (Fitts, 1965). In this test, self-esteem is believed to be measured by numerically rating the subject's responses to self-descriptive statements. Thus the person's view of himself can be tabulated as high or low depending on the responses to the statements. The following responses: "Completely False"; "Mostly False"; "Partly True and Partly False"; "Mostly True"; and "Completely True" are given the consecutive values of 1 to 5. The person with high self-esteem scores tend to like themselves and have feelings of worth, while persons with low scores seem to doubt their worth and experience negative feelings about themselves.

The scale, which consists of 100 self-descriptive statements, determines how the individual perceives himself, and is a useful tool for "counseling, clinical assessment and diagnosis, research in behavioral science, personnel selection" (Fitts, 1965). Although eighteen variables could have been measured, we were interested only in the

total P score which reflects the over-all level of self esteem (Fitts, 1965). We felt this test would show how self-esteem is associated and effected by weight loss.

Procedure of Data Analysis

We obtained correlation coefficients between weight loss and pre and posttest scores for self-esteem and anxiety in the total sample. We also correlated weight loss with the difference between the pre and posttest scores. In analyzing the data, we also compared weight loss, self-esteem and anxiety levels with weight history (onset of weight problem in childhood or after 18 years of age). We obtained other information such as age, marital status, ethnic group, and income for possible future use by the Health Education Department of Loma Linda University Medical Center.

Limitations of the Study

For the purpose of this study, the following limitations were in effect:

1. The sample was dependent upon class attendance.

2. Plateaus (periods without weight loss) may have been present in the individual weight pattern during the data gathering period.

3. Test scores may have been influenced by the class setting, and individual emotional states at the time of testing.

4. Self-esteem and anxiety scores were dependent upon the reliability of the chosen tests.

## PILOT TEST

The pilot test was conducted on January 18, 1972, at the evening weight-control class held at Loma Linda University Medical Center. This class had been in progress since August, 1971. The purpose of doing the pilot study was to refine the methodology and administration of the research tools.

The coordinator for the evening introduced us, and we proceeded with the methodology as previously stated.

The director of the program asked on January 11, 1972, for volunteers to help participate in an evaluation of the program during the following class.

We found from this pilot test that the following improvements were necessary:

1. Provide lap boards and pencils.
2. Prepare a verbatim introduction.
3. Number all folder contents.
4. Keep permission sheets with the folders rather than collecting prior to taking of tests.
5. Secure an adjoining room where upon completion of the tests, the persons in the sample could wait for the remaining portion of the program.
6. Examine folder contents for completeness as they were handed back to researchers.

The sample consisted of 15 women and 2 men. The total duration of the pilot test was forty-five minutes.

## COLLECTION OF DATA

### Pretest

On January 24, 1972, at 12 o'clock noon, the pretest was conducted as described in the Methodology and Procedure. The class met in the Fellowship Hall of the University Church. Forty-four persons were present during the pretest, 39 of whom were women and 5 men. Thirty-seven women consented to participate, and completed the forms satisfactorily; another woman consented, but did not complete the forms, and one woman left all forms unanswered. To involve the entire class, so as to avoid lengthy explanation, the five men present were encouraged to participate. They completed the forms, but were not included for data analysis. The duration of the pretest was one hour.

### Posttest

The form letter was sent to each class member on March 1, 1972. The posttest was conducted seven weeks from the pretest, on March 14, 1972, at 12 o'clock noon, in a classroom of the University Medical Center. The posttest was administered as described in the research procedure. There was a total of 29 class members present, 26 women and 3 men. Eleven women out of the thirty-seven who took the pretest dropped out of the class, or at least chose not to be present on the day of the posttest. All willingly participated except for one woman who had taken the pretest, but chose not to participate in the posttest. One woman who took the posttest had not completed the pretest. Total test time was fifty minutes. Sample size consisted of females who had willingly completed both the pre and posttests making a total of 24 women. Of this total, one woman did not complete the A-State Anxiety

Test, but was included on the A-Trait Anxiety and the Tennessee Self-Concept Scale.

## Chapter 2

## ANALYSIS AND INTERPRETATION OF DATA

Once the data was collected, we compiled all the information and test scores in order to identify any similarities, trends or significant relationships between the presenting factors. Some rather interesting group characteristics were noted in the sample. The data was grouped and analyzed in three ways: total sample, those who lost one or more pounds per week and those who did not, and those with the onset of a weight problem before and after 18 years of age. Due to the small sample size, more extensive analysis of self-esteem and anxiety test scores with such variables as age, admission weight, years attempting weight loss, degree of weight problem, et cetera, was not attempted.

## DESCRIPTION OF THE SAMPLE

The sample size which consisted of twenty-four females had the following characteristics.

1. The average age was 46 years.
2. The mean years of education was 13.7.
3. Most had attempted weight loss for over ten years.
4. Fourteen were housewives, two were retired, seven were employed, and one was unemployed.
5. Twenty-one were obese and three were overweight.
6. Thirteen had a weight problem after the age of 18 and

eleven before or at 18 years of age.

7. The average age of onset of weight problem was between 19 and 30 years of age.

8. Seventeen were married, two were widowed, two were single, and three were divorced.

9. The sample had an average of fifty-nine pounds overweight on admission.

10. Eighteen of the twenty-four reported weight problems in parents and siblings; mothers and sisters were mentioned twice as often as fathers and brothers.

11. Average weight loss during the seven weeks was six pounds; 12 reached the goal of seven pounds lost (one pound per week), nine lost less than one pound a week, and three gained weight.

12. Twenty-three were Caucasian and one was black.

13. Range of heights was: 4'10" - 5'10"; admission weights ranged from 146 - 302 pounds, while the pounds overweight on admission ranged from 13 - 163 pounds.

14. Ranges of the following pretest scores on admission were: TSCS, 280 - 389; A State anxiety, 21 - 73; A-Trait anxiety, 22 - 69.

15. Ranges of the posttest scores after seven weeks were: TSCS, 282 - 393; A-State anxiety, 21 - 52; A-Trait anxiety, 22 - 55.

16. For individual data, the reader is referred to Appendix G, page 54.

## TREATMENT OF THE DATA

After the collection of the data, the questionnaires were scored twice to minimize the chance of error. Classification of weight

problem (whether overweight or obese) and pounds overweight on admission to class was determined from the median value of the medium frame weight standard published by the Metropolitan Life Insurance Company (Proudfit, 1961). See Appendix F, page 52. This data and that obtained from the Information Sheet was entered on a Data Sheet (see Appendix G, page 54) and keypunched onto IBM cards for computer analysis.

## PRESENTATION AND DISCUSSION OF THE DATA

The data was analyzed for mean, $\bar{x} = \frac{\sum X}{N}$, and standard deviation, $s = \sqrt{\frac{\sum_{J-i}^{N} (Xj-a)^2}{N}}$. A T-test, $t = \frac{\bar{x}_1 - \bar{x}_2}{Sp\sqrt{\frac{1}{n_1} + \frac{1}{n_2}}}$ where $Sp^2$ is the pooled variance was computed to determine whether there was significant differences between pretest and posttest scores. Significance was determined at the $P < .05$ level. The data was grouped and examined according to onset of weight problem and pounds lost during the seven week period. The total sample mean scores on the A-State, A-Trait, and TSCS were compared with norm means as stated in the test manuals (Spielberger, 1970; Fitts, 1965).

On the anxiety tests, two types of norms were available for comparison with test scores obtained in this study: (1) based on male and female high school and college students; and (2) based on neuropsychiatric, general medical and surgical patients, and all male young prisoners. The people in our study sample did not exactly fit either norm group. However, our sample had an average of 13.7 years of education, and because of this, we chose to match on educational level

(using norm of freshman college females) rather than on age, since there was a negative correlation between trait scores and educational level (Spielberger, 1970).

The norm of the TSCS was based on a broad sample which represented many variables, thus eliminating the need to establish separate norms by race, age, sex or others (Fitts, 1965).

Table 1, "Pretest Anxiety and Self-Esteem Mean Scores of Twenty-Four Females Attending a Weight-Control Class Compared With Standard Norms," showed no significant difference between the pretest sample mean scores and the standard norms. While there was a difference between the means, the difference was not significant. This showed that the study sample did not have lower than normal self-esteem levels and did not have higher than normal anxiety levels. These findings caused us to reject Hypothesis No. 1 which states: "Females with weight problems have lower than normal self-esteem levels and higher than normal anxiety levels."

Twelve out of the twenty-four females in the sample lost seven or more pounds which met the criteria stated in Hypothesis No. 2. Table 2, "Comparison of TSCS, A-State and A-Trait Anxiety Pretest and Posttest Mean Scores on Sample of Twelve Out of Twenty-Four Females Attending a Weight-Control Class Who Lost Seven or More Pounds," showed that those who lost at least one pound per week significantly increased in self-esteem at the $P < .05$ level. There was also a significant decrease in A-State and A-Trait anxiety at level $P < .05$. The findings from this study sample supported Hypothesis No. 2, and therefore we accepted this hypothesis which states: "Females attending a weight-control class who lose at least one pound per week will show an

Table 1

Pretest Anxiety and Self-Esteem Mean Scores of Twenty-Four Females Attending a Weight-Control Class Compared With Standard Norms

| | Standard Mean | Total Sample Mean Score | Difference | Level of Significance |
|---|---|---|---|---|
| Self-Esteem Pretest | 345.6 | 334.6 | 11.0 | n.s. |
| A-State Pretest | 39.4 | 37.3 | 2.1 | n.s. |
| A-Trait Pretest | 38.2 | 42.7 | -4.5 | n.s. |

Table 2

Comparison of TSCS, A-State and A-Trait Anxiety Pretest and Posttest Mean Scores on Sample of Twelve Out of Twenty-Four Females Attending a Weight-Control Class Who Lost Seven or More Pounds

| | Pretest | Posttest | Mean Difference | Standard Error of Mean Difference | Level of Significance |
|---|---|---|---|---|---|
| Self-Esteem | 342.4 | 354.6 | +12.08 | 5.339 | $P < .05$ |
| A-State | 36.8 | 28.3 | -8.42 | 3.456 | $P < .05$ |
| A-Trait | 36.7 | 31.5 | -5.17 | 2.007 | $P < .05$ |

increase in self-esteem and a decrease in anxiety after seven weeks of class attendance." It was interesting to note that upon similar analysis of the group who did not lose seven or more pounds, there was no significant increase in self-esteem or decrease in anxiety at the $P = .05$ level.

Since half of the sample (12) had not satisfied the criteria for the second hypothesis, we compared their TSCS, A-State and A-Trait Anxiety mean scores with the mean scores of those that had met the criteria. It was observed that the pretest mean scores between the two groups showed no significant difference; but the posttest mean scores of those who had lost seven pounds or more had a significant increase in self-esteem at the $P < .07$ level, and a significant decrease in anxiety at $P < .02$ on A-State and $P < .03$ on A-Trait. While the $P < .07$ for self-esteem did not meet the criteria of $P < .05$ for significance, it revealed a definite trend in this direction. See Table 3, "Comparison of TSCS, A-State and A-Trait Anxiety Mean Scores Between the Twelve Females in the Sample Who Lost Less Than Seven Pounds and the Twelve Females in the Sample Who Lost Seven or More Pounds."

We also looked at the test scores in relation to onset of weight problem. The sample was divided into three groups (the total sample, those who had the onset of the weight problem before 18 years of age, and those with onset of weight problem after 18 years of age) and found that the three groups were not significantly different with respect to the level of concern ($P = .05$).

Table 3

Comparison of TSCS, A-State and A-Trait Anxiety Mean Scores Between the Twelve Females in the Sample Who Lost Less Than Seven Pounds and the Twelve Females in the Sample Who Lost Seven or More Pounds

| | Less Than Seven Pounds Mean | S.D. | More Than Seven Pounds Mean | S.D. | Difference of Means | Level of Significance |
|---|---|---|---|---|---|---|
| Self-Esteem | | | | | | |
| Pretest | 326.8 | 34.4 | 342.4 | 28.4 | Increase of 15.6 | n.s. |
| Posttest | 329.6 | 34.8 | 354.6 | 28.6 | Increase of 25.0 | .07 |
| A-State | | | | | | |
| Pretest | 37.8 | 12.1 | 36.8 | 13.2 | Decrease of 1.0 | n.s. |
| Posttest | 36.7 | 9.0 | 28.3 | 6.6 | Decrease of 8.4 | .02 |
| A-Trait | | | | | | |
| Pretest | 41.0 | 13.3 | 36.7 | 12.2 | Decrease of 4.3 | n.s. |
| Posttest | 39.1 | 9.1 | 31.5 | 6.3 | Decrease of 7.6 | .03 |

# Chapter 3

## SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

### SUMMARY

The purpose of this study was to examine the levels of self-esteem and anxiety in relation to standard norms and attainment of weight loss by females voluntarily attending a weight control class.

Obesity is becoming a major health problem in our American society. This chronic condition predisposes the obese to degenerative diseases, cardiac malfunctioning and psychological disorders. Thus, we recognized the need for a study to identify the relationship of the emotional factors of self-esteem and anxiety to persons with weight problems. As community health nurses, concerned with prevention of disease as well as promotion of health, we wanted further informational data regarding this relationship in order to implement more effective interventions.

The accelerated pace of American life with its increase in stress and concern, has increased the need of persons to find outlets for relieving and coping with anxiety-producing stress. Overeating is one way of coping. The overweight person in a culture whose ideal is to be thin is often looked upon unfavorably by others which in turn contributes to his own self-image and may lead to a decrease in his self-esteem. From the review of literature we found differing theories as to the etiology of weight problems, but found that most authorities agreed that the self concept was negatively affected by a weight

problem and overeating was a method of coping with anxiety.

The pilot study, conducted on seventeen persons, enabled us to refine the procedure of administration, materials needed, and estimate the length of time needed for the sample to complete all the forms.

Of the thirty-seven females who took the pretest at the initial meeting of the weight-control class, twenty-four consented and completed the posttest which was given seven weeks later. Only those females who completed both the pretest and posttest were included in the study sample. After admission weights were recorded, a folder with permission sheet, information sheet and two tests was given to each person. Upon individual completion of test materials, the folder was received by the researchers, checked for completeness, and each person was then directed to an adjoining area where a planned activity was to begin. Total test time for each test period was approximately 50-60 minutes.

Data analysis included comparison of TSCS, A-State and A-Trait anxiety mean scores with standard norms, weight loss and onset of weight problem.

Findings of this study indicated that there was no significant difference between the initial levels of self-esteem and anxiety of the total sample and the standard norms. The sample showed that overweight persons did not have higher than normal anxiety levels and did not have lower than normal levels of self-esteem. Although we could not make any conclusions regarding the cause of weight problems, the study indicated that increased anxiety and decreased self-esteem were not associated with females who already had weight problems. Thus, for our study purpose, we rejected Hypothesis No. 1, "Females with weight

problems have lower than normal self-esteem levels and higher than normal anxiety levels." Those of the sample who lost one or more pounds per week showed an increase in self-esteem and a decrease in anxiety at the level of $P < .05$ significance during the seven week period between the pretest and posttest. This indicates that weight loss was associated with an increase in self-esteem and a decrease in anxiety. Therefore, we accepted Hypothesis No. 2, "Females attending a weight-control class who lose at least one pound per week will show an increase in self-esteem and a decrease in anxiety after seven weeks of class attendance."

Those in the sample who did not lose at least one pound per week showed no significant change in self-esteem and anxiety levels. Since those who lost one or more pounds per week also attended the classes, we could not determine whether the weight loss in itself led to the association between changes of self-esteem and anxiety. We also cannot say whether the weight loss caused the increase in self-esteem and decrease in anxiety, or if weight loss was affected by the increase in self-esteem and decrease of anxiety. Changes in levels of self-esteem and anxiety were not associated with class attendance alone, but an association was observed between changes in self-esteem and anxiety levels and class attendance and weight loss of one or more pounds per week. While our study showed significant changes in self-esteem and anxiety during a seven week period, we believe this showed a trend, that with continued weight loss, class attendance and passage of time, would lead to optimal changes in self-esteem and anxiety.

## CONCLUSIONS

The following conclusions were drawn from this study.

1. Levels of self-esteem and anxiety were affected by weight loss.

2. Beginning levels of self-esteem and anxiety of females attending a weight-control class did not significantly differ from standard norms.

3. Beginning levels of self-esteem and anxiety did not predict success or failure in weight loss.

4. After weight loss of at least one pound per week and class attendance, levels of self-esteem were significantly increased, and levels of anxiety were significantly decreased.

5. Self-esteem and anxiety levels, when grouped by onset of weight problem, showed no significant difference.

6. There appears to be no significant increase or decrease in self-esteem and anxiety levels in those of the sample who did not lose one pound per week.

## RECOMMENDATIONS

We make the following recommendations.

1. A similar study should be conducted on a larger scale in order to control for age, degree of weight problem, and other variables.

2. Similar studies should be conducted on the following samples: men, adolescents, between groups of men and women, and ages within these groups.

3. Similar studies should look at self-esteem and anxiety in

relation to onset of weight problem, and familial tendencies toward weight problems.

4. A follow-up study should be conducted on those persons who discontinued class attendance in order to ascertain weight loss, self-esteem and anxiety scores for comparison with those who remained in the class.

5. A future similar study should be conducted to obtain standard norms from a matched control group in the geographical area of the weight control class for comparison of test results.

6. This study sample should be retested after a period of one year for current weight, self-esteem and anxiety data to determine the changes effected by time.

7. A study should be conducted on compulsive eaters and those grossly obese to determine self-esteem and anxiety levels for comparison with norms of overweight, obese and normal weight persons.

8. A similar study should be conducted with the exception that the posttest be postponed until the closing session of the weight-control program.

9. A similar study should be conducted on a larger sample in order to group individual self-esteem and anxiety test scores into classifications of high, normal and low levels, for comparison with weight loss and changes in self-esteem and anxiety within these categories.

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# APPENDIX A

## CONSENT FORM FOR SAMPLE

Date _____

I hereby give my permission to be included in this study. It is my understanding that all information will be held in the strictest of confidence. Identifying personal information will not be included in any reports made to the health professions.

Signature _____

# APPENDIX B

## INFORMATION SHEET

INFORMATION SHEET

Name _____

Address _____

Telephone _____

Height _____ Weight _____ Age _____ Marital status _____

Education completed _____

Occupation _____

* * * * *

On the following questions, please circle ONE answer, unless otherwise indicated.

1. How long have you been trying to lose weight?

    a. 0-1 years
    b. 2-5 years
    c. 6-10 years
    d. 11+ years

2. Which person(s) in your family have a weight problem? (circle which ones)

    a. mother
    b. father
    c. brother
    d. sister
    e. none

3. At what time did you first become overweight?

    a. early childhood (0-5 years)
    b. childhood (6-11 years)
    c. adolescence (12-18 years)
    d. ages 19-30
    e. ages 31-40
    f. ages 41-50
    g. ages 50+

# APPENDIX C

## SPIELBERGER SELF-EVALUATION QUESTIONNAIRE

# SELF-EVALUATION QUESTIONNAIRE

Developed by C. D. Spielberger, R. L. Gorsuch and R. Lushene

**STAI FORM X-1**

NAME _____ DATE _____

DIRECTIONS: A number of statements which people have used to describe themselves are given below. Read each statement and then blacken in the appropriate circle to the right of the statement to indicate how you *feel* right now, that is, *at this moment*. There are no right or wrong answers. Do not spend too much time on any one statement but give the answer which seems to describe your present feelings best.

| | NOT AT ALL | SOMEWHAT | MODERATELY SO | VERY MUCH SO |
|---|---|---|---|---|
| 1. I feel calm | ① | ② | ③ | ④ |
| 2. I feel secure | ① | ② | ③ | ④ |
| 3. I am tense | ① | ② | ③ | ④ |
| 4. I am regretful | ① | ② | ③ | ④ |
| 5. I feel at ease | ① | ② | ③ | ④ |
| 6. I feel upset | ① | ② | ③ | ④ |
| 7. I am presently worrying over possible misfortunes | ① | ② | ③ | ④ |
| 8. I feel rested | ① | ② | ③ | ④ |
| 9. I feel anxious | ① | ② | ③ | ④ |
| 10. I feel comfortable | ① | ② | ③ | ④ |
| 11. I feel self-confident | ① | ② | ③ | ④ |
| 12. I feel nervous | ① | ② | ③ | ④ |
| 13. I am jittery | ① | ② | ③ | ④ |
| 14. I feel "high strung" | ① | ② | ③ | ④ |
| 15. I am relaxed | ① | ② | ③ | ④ |
| 16. I feel content | ① | ② | ③ | ④ |
| 17. I am worried | ① | ② | ③ | ④ |
| 18. I feel over-excited and rattled | ① | ② | ③ | ④ |
| 19. I feel joyful | ① | ② | ③ | ④ |
| 20. I feel pleasant | ① | ② | ③ | ④ |

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## SELF-EVALUATION QUESTIONNAIRE

### STAI FORM X-2

NAME _____ DATE _____

DIRECTIONS: A number of statements which people have used to describe themselves are given below. Read each statement and then blacken in the appropriate circle to the right of the statement to indicate how you *generally* feel. There are no right or wrong answers. Do not spend too much time on any one statement but give the answer which seems to describe how you generally feel.

| | ALMOST NEVER | SOMETIMES | OFTEN | ALMOST ALWAYS |
|---|---|---|---|---|
| 21. I feel pleasant | ① | ② | ③ | ④ |
| 22. I tire quickly | ① | ② | ③ | ④ |
| 23. I feel like crying | ① | ② | ③ | ④ |
| 24. I wish I could be as happy as others seem to be | ① | ② | ③ | ④ |
| 25. I am losing out on things because I can't make up my mind soon enough | ① | ② | ③ | ④ |
| 26. I feel rested | ① | ② | ③ | ④ |
| 27. I am "calm, cool, and collected" | ① | ② | ③ | ④ |
| 28. I feel that difficulties are piling up so that I cannot overcome them | ① | ② | ③ | ④ |
| 29. I worry too much over something that really doesn't matter | ① | ② | ③ | ④ |
| 30. I am happy | ① | ② | ③ | ④ |
| 31. I am inclined to take things hard | ① | ② | ③ | ④ |
| 32. I lack self-confidence | ① | ② | ③ | ④ |
| 33. I feel secure | ① | ② | ③ | ④ |
| 34. I try to avoid facing a crisis or difficulty | ① | ② | ③ | ④ |
| 35. I feel blue | ① | ② | ③ | ④ |
| 36. I am content | ① | ② | ③ | ④ |
| 37. Some unimportant thought runs through my mind and bothers me | ① | ② | ③ | ④ |
| 38. I take disappointments so keenly that I can't put them out of my mind | ① | ② | ③ | ④ |
| 39. I am a steady person | ① | ② | ③ | ④ |
| 40. I become tense and upset when I think about my present concerns | ① | ② | ③ | ④ |

# APPENDIX D

## TENNESSEE SELF-CONCEPT SCALE

TENNESSEE SELF-CONCEPT SCALE

by

William H. Fitts, Ph.D.

Instructions:

The statements on the following pages are to help you describe yourself as you see yourself. Please respond to them as if you were describing yourself to yourself. Do not omit any item! Read each statement carefully. Then select one of the five responses listed below. Put a circle around the response you choose. If you want to change an answer after you circled it, erase, and then circle the response you want.

When you are ready to start, find the line on page 45 marked time started and record the time. When you are finished, record the time finished on the line on page 49.

Remember, put a circle around the response number you have chosen for each statement.

| | Completely false | Mostly false | Partly false and Partly true | Mostly true | Completely true |
|---|---|---|---|---|---|
| Responses - | 1 | 2 | 3 | 4 | 5 |

You will find these response numbers repeated at the bottom of each page to help you remember them.

| | | Circle One |
|---|---|---|
| 1. | I have a healthy body . . . . . | 1 2 3 4 5 |
| 2. | I am an attractive person . . . . . | 1 2 3 4 5 |
| 3. | I consider myself a sloppy person . . . . . | 1 2 3 4 5 |
| 4. | I am a decent sort of person . . . . . | 1 2 3 4 5 |
| 5. | I am an honest person . . . . . | 1 2 3 4 5 |
| 6. | I am a bad person . . . . . | 1 2 3 4 5 |
| 7. | I am a cheerful person . . . . . | 1 2 3 4 5 |
| 8. | I am a calm and easy going person . . . . . | 1 2 3 4 5 |
| 9. | I am a nobody . . . . . | 1 2 3 4 5 |
| 10. | I have a family that would always help me in any kind of trouble . . . . . | 1 2 3 4 5 |
| 11. | I am a member of a happy family . . . . . | 1 2 3 4 5 |
| 12. | My friends have no confidence in me . . . . . | 1 2 3 4 5 |
| 13. | I am a friendly person . . . . . | 1 2 3 4 5 |
| 14. | I am popular with men . . . . . | 1 2 3 4 5 |
| 15. | I am not interested in what other people do . . . | 1 2 3 4 5 |
| 16. | I do not always tell the truth . . . . . | 1 2 3 4 5 |
| 17. | I get angry sometimes . . . . . | 1 2 3 4 5 |
| 18. | I like to look nice and neat all the time . . . . | 1 2 3 4 5 |
| 19. | I am full of aches and pains . . . . . | 1 2 3 4 5 |
| 20. | I am a sick person . . . . . | 1 2 3 4 5 |
| 21. | I am a religious person . . . . . | 1 2 3 4 5 |
| 22. | I am a moral failure . . . . . | 1 2 3 4 5 |

Time Started: _____

| Responses - | Completely false | Mostly false | Partly false and Partly true | Mostly true | Completely true |
|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 |

| | | Circle One |
|---|---|---|
| 23. | I am a morally weak person . . . . . | 1 2 3 4 5 |
| 24. | I have a lot of self control . . . . . | 1 2 3 4 5 |
| 25. | I am a hateful person . . . . . | 1 2 3 4 5 |
| 26. | I am losing my mind . . . . . | 1 2 3 4 5 |
| 27. | I am an important person to my friends and family . . . . . | 1 2 3 4 5 |
| 28. | I am not loved by my family . . . . . | 1 2 3 4 5 |
| 29. | I feel that my family doesn't trust me . . . . . | 1 2 3 4 5 |
| 30. | I am popular with women . . . . . | 1 2 3 4 5 |
| 31. | I am mad at the whole world . . . . . | 1 2 3 4 5 |
| 32. | I am hard to be friendly with . . . . . | 1 2 3 4 5 |
| 33. | Once in a while I think of things too bad to talk about . . . . . | 1 2 3 4 5 |
| 34. | Sometimes, when I am not feeling well, I am cross . . . . . | 1 2 3 4 5 |
| 35. | I am neither too fat nor too thin . . . . . | 1 2 3 4 5 |
| 36. | I like my looks just the way they are . . . . . | 1 2 3 4 5 |
| 37. | I would like to change some parts of my body . . . | 1 2 3 4 5 |
| 38. | I am satisfied with my moral behavior . . . . . | 1 2 3 4 5 |
| 39. | I am satisfied with my relationship to God . . . . | 1 2 3 4 5 |
| 40. | I ought to go to church more . . . . . | 1 2 3 4 5 |
| 41. | I am satisfied to be just what I am . . . . . | 1 2 3 4 5 |
| 42. | I am just as nice as I should be . . . . . | 1 2 3 4 5 |
| 43. | I despise myself . . . . . | 1 2 3 4 5 |

| | Completely false | Mostly false | Partly false and Partly true | Mostly true | Completely true |
|---|---|---|---|---|---|
| Responses - | 1 | 2 | 3 | 4 | 5 |

| | | Circle One |
|---|---|---|
| 44. | I am satisfied with my family relationships . . . | 1 2 3 4 5 |
| 45. | I understand my family as well as I should . . . . | 1 2 3 4 5 |
| 46. | I should trust my family more . . . . . | 1 2 3 4 5 |
| 47. | I am as sociable as I want to be . . . . . | 1 2 3 4 5 |
| 48. | I try to please others, but I don't overdo it . . | 1 2 3 4 5 |
| 49. | I am no good at all from a social standpoint . . . | 1 2 3 4 5 |
| 50. | I do not like everyone I know . . . . . | 1 2 3 4 5 |
| 51. | Once in a while I laugh at a dirty joke . . . . . | 1 2 3 4 5 |
| 52. | I am neither too tall nor too short . . . . . | 1 2 3 4 5 |
| 53. | I don't feel as well as I should . . . . . | 1 2 3 4 5 |
| 54. | I should have more sex appeal . . . . . | 1 2 3 4 5 |
| 55. | I am as religious as I want to be . . . . . | 1 2 3 4 5 |
| 56. | I wish I could be more trustworthy . . . . . | 1 2 3 4 5 |
| 57. | I shouldn't tell so many lies . . . . . | 1 2 3 4 5 |
| 58. | I am as smart as I want to be . . . . . | 1 2 3 4 5 |
| 59. | I am not the person I would like to be . . . . . | 1 2 3 4 5 |
| 60. | I wish I didn't give up as easily as I do . . . . | 1 2 3 4 5 |
| 61. | I treat my parents as well as I should (use past tense if parents are not living) . . . . . | 1 2 3 4 5 |
| 62. | I am too sensitive to things my family say . . . . | 1 2 3 4 5 |
| 63. | I should love my family more . . . . . | 1 2 3 4 5 |
| 64. | I am satisfied with the way I treat other people . . . . . | 1 2 3 4 5 |

| | Completely false | Mostly false | Partly false and Partly true | Mostly true | Completely true |
|---|---|---|---|---|---|
| Responses - | 1 | 2 | 3 | 4 | 5 |

| | | Circle One |
|---|---|---|
| 65. | I should be more polite to others . . . . . | 1 2 3 4 5 |
| 66. | I ought to get along better with other people . . | 1 2 3 4 5 |
| 67. | I gossip a little at times . . . . . | 1 2 3 4 5 |
| 68. | At times I feel like swearing . . . . . | 1 2 3 4 5 |
| 69. | I take good care of myself physically . . . . . | 1 2 3 4 5 |
| 70. | I try to be careful about my appearance . . . . . | 1 2 3 4 5 |
| 71. | I often act like I am "all thumbs" . . . . . | 1 2 3 4 5 |
| 72. | I am true to my religion in my everyday life . . . | 1 2 3 4 5 |
| 73. | I try to change when I know I'm doing things that are wrong . . . . . | 1 2 3 4 5 |
| 74. | I sometimes do very bad things . . . . . | 1 2 3 4 5 |
| 75. | I can always take care of myself in any situation . . . . . | 1 2 3 4 5 |
| 76. | I take the blame for things without getting mad . | 1 2 3 4 5 |
| 77. | I do things without thinking about them first . . | 1 2 3 4 5 |
| 78. | I try to play fair with my friends and family . . | 1 2 3 4 5 |
| 79. | I take a real interest in my family . . . . . | 1 2 3 4 5 |
| 80. | I give in to my parents (use past tense if parents are not living) . . . . . | 1 2 3 4 5 |
| 81. | I try to understand the other fellow's point of view . . . . . | 1 2 3 4 5 |
| 82. | I get along well with other people . . . . . | 1 2 3 4 5 |
| 83. | I do not forgive others easily . . . . . | 1 2 3 4 5 |
| 84. | I would rather win than lose in a game . . . . . | 1 2 3 4 5 |

| | Completely false | Mostly false | Partly false and Partly true | Mostly true | Completely true |
|---|---|---|---|---|---|
| Responses - | 1 | 2 | 3 | 4 | 5 |

| | | Circle One |
|---|---|---|
| 85. | I feel good most of the time . . . . . | 1 2 3 4 5 |
| 86. | I do poorly in sports and games . . . . . | 1 2 3 4 5 |
| 87. | I am a poor sleeper . . . . . | 1 2 3 4 5 |
| 88. | I do what is right most of the time . . . . . | 1 2 3 4 5 |
| 89. | I sometimes use unfair means to get ahead . . . . | 1 2 3 4 5 |
| 90. | I have trouble doing the things that are right . . | 1 2 3 4 5 |
| 91. | I solve my problems quite easily . . . . . | 1 2 3 4 5 |
| 92. | I change my mind a lot . . . . . | 1 2 3 4 5 |
| 93. | I try to run away from my problems . . . . . | 1 2 3 4 5 |
| 94. | I do my share of work at home . . . . . | 1 2 3 4 5 |
| 95. | I quarrel with my family . . . . . | 1 2 3 4 5 |
| 96. | I do not act like my family thinks I should . . . | 1 2 3 4 5 |
| 97. | I see good points in all the people I meet . . . . | 1 2 3 4 5 |
| 98. | I do not feel at ease with other people . . . . . | 1 2 3 4 5 |
| 99. | I find it hard to talk with strangers . . . . . | 1 2 3 4 5 |
| 100. | Once in a while I put off until tomorrow what I ought to do today . . . . . | 1 2 3 4 5 |

Time finished: _____

| | Completely false | Mostly false | Partly false and Partly true | Mostly true | Completely true |
|---|---|---|---|---|---|
| Responses - | 1 | 2 | 3 | 4 | 5 |

# APPENDIX E

## REMINDER LETTER

Karen Carrigg
Eileen Wangerin
P. O. Box 833
Loma Linda, California 92354

Dear

On the initial meeting of the Weight Control Class at Loma Linda University, you were invited to help us evaluate the effectiveness of this program by completing the Self-Evaluation Questionnaire and the Tennessee Self-Concept Scale. At that time, Joyce Lim stated that it would be important to repeat the questionnaires within two months, and your participation is needed.

The second evaluation will be held on Tuesday, March 14, 1972, during the regular 12 - 2 PM session. We are sending notice to you ahead of time, so that you may arrange your schedules if necessary and plan to attend on March 14th.

We appreciate your willing participation in helping us evaluate this program. Thank you.

Most sincerely,

Karen Carrigg, Graduate Student

Eileen Wangerin, Graduate Student

# APPENDIX F

## DESIRABLE WEIGHTS FOR WOMEN

DESIRABLE WEIGHTS FOR WOMEN OF AGES 25 AND OVER * **

Weight in Pounds According to Frame (In Indoor Clothing)

| HEIGHT (with shoes on) 2-inch heels Feet | Inches | MEDIUM FRAME |
|---|---|---|
| 4 | 10 | 96-(101)-107 |
| 4 | 11 | 98-(104)-110 |
| 5 | 0 | 101-(107)-113 |
| 5 | 1 | 104-(110)-116 |
| 5 | 2 | 107-(113)-119 |
| 5 | 3 | 110-(116)-122 |
| 5 | 4 | 113-(120)-126 |
| 5 | 5 | 116-(123)-130 |
| 5 | 6 | 120-(127)-135 |
| 5 | 7 | 124-(131)-139 |
| 5 | 8 | 128-(135)-143 |
| 5 | 9 | 132-(139)-147 |
| 5 | 10 | 136-(143)-151 |
| 5 | 11 | 140-(147)-155 |
| 6 | 0 | 144-(151)-159 |

*Metropolitan Life Insurance Company, New York.
**For girls between 18 and 25, subtract 1 pound for each year under 25.

(Proudfit, 1961)

# APPENDIX G

# DATA SHEET

DATA SHEET

| Sample | Admission Weight (Pounds) | Occupation | Classification of Weight Problem | Marital Status |
|---|---|---|---|---|
| 1 | 164 | Registered Nurse | Obese | M |
| 2 | 146 | Retired | Overweight | W |
| 3 | 154 | Retired RN | Obese | M |
| 4 | 167 | Registered Nurse | Obese | M |
| 5 | 302 | Housewife | Obese | D |
| 6 | 169 | Housewife | Obese | M |
| 7 | 158 | Housewife | Obese | M |
| 8 | 200 | Registered Nurse | Obese | M |
| 9 | 196 | Housewife | Obese | M |
| 10 | 186 | Housewife | Obese | M |
| 11 | 160 | Housewife | Obese | M |
| 12 | 273 | Nurse aid | Obese | S |
| 13 | 229 | Housewife | Obese | W |
| 14 | 200 | Unemployed | Obese | D |
| 15 | 207 | Property Manager | Obese | D |
| 16 | 188 | Housewife | Obese | M |
| 17 | 217 | Housewife | Obese | M |
| 18 | 207 | Housewife | Obese | M |
| 19 | 182 | Housewife | Obese | M |
| 20 | 172 | Bookkeeper | Obese | M |
| 21 | 167 | Housewife | Overweight | M |
| 22 | 137 | Housewife | Obese | M |
| 23 | 149 | Registered Nurse | Overweight | S |
| 24 | 156 | Housewife | Obese | M |

DATA SHEET (continued)

| Sample | Years of Education | Age | Pounds Overweight on Admission | Pounds Lost or Gained |
|---|---|---|---|---|
| 1 | 17 | 35 | 44 | 13 |
| 2 | 11 | 66 | 13 | 11 |
| 3 | 16 | 71 | 31 | 4 |
| 4 | 14 | 54 | 49 | 11 |
| 5 | 13 | 27 | 163 | 19 |
| 6 | 12 | 50 | 42 | 12 |
| 7 | 12 | 25 | 38 | 11 |
| 8 | 14 | 54 | 84 | 2 |
| 9 | 12 | 49 | 57 | 0 |
| 10 | 15 | 44 | 59 | 4 |
| 11 | 15 | 56 | 40 | 5 |
| 12 | 11 | 18 | 127 | +3 |
| 13 | 10 | 57 | 96 | 0 |
| 14 | 15 | 48 | 67 | +2 |
| 15 | 16 | 40 | 80 | 5 |
| 16 | 14 | 48 | 61 | 8 |
| 17 | 16 | 39 | 86 | 17 |
| 18 | 14 | 48 | 72 | 8 |
| 19 | 13 | 47 | 55 | 9 |
| 20 | 12 | 69 | 41 | 3 |
| 21 | 17 | 36 | 22 | 8 |
| 22 | 12 | 45 | 30 | 6 |
| 23 | 15 | 25 | 13 | 15 |
| 24 | 12 | 50 | 49 | +2 |

DATA SHEET (continued)

| Sample | Onset of Weight Problem--Before or After 18 Yrs. | Onset of Weight Problem | Identified Parents and/or Siblings with Weight Problems | Years Attempted Weight Loss |
|---|---|---|---|---|
| 1 | After | 19-30 | mo/sis | 6-10 |
| 2 | Before | 12-18 | none | 11+ |
| 3 | After | 41-50 | none | 11+ |
| 4 | Before | 12-18 | sister | 11+ |
| 5 | Before | 0-5 | mo/fa | 11+ |
| 6 | Before | 6-11 | mo/sis | 11+ |
| 7 | After | 19-30 | none | 2-5 |
| 8 | Before | 6-11 | mo/bro | 11+ |
| 9 | After | 31-40 | none | 11+ |
| 10 | After | 31-40 | mo/sis | 11+ |
| 11 | Before | 12-18 | sister | 11+ |
| 12 | Before | 6-11 | mother | 11+ |
| 13 | After | 31-40 | sister | 6-10 |
| 14 | After | 41-50 | fa/bro | 6-10 |
| 15 | After | 31-40 | none | 6-10 |
| 16 | After | 31-40 | mother | 2-5 |
| 17 | Before | 6-11 | mo/fa/sis | 11+ |
| 18 | Before | 0-5 | sister | 11+ |
| 19 | After | 31-40 | mother | 2-5 |
| 20 | After | 19-30 | none | 11+ |
| 21 | After | 19-30 | mo/fa | 6-10 |
| 22 | Before | 12-18 | mo/bro/sis | 11+ |
| 23 | Before | 12-18 | mother | 6-10 |
| 24 | After | 19-30 | sister | 11+ |

DATA SHEET (continued)

| Sample | Self-Esteem Scores (TSCS) | | A-State Anxiety Scores | | A-Trait Anxiety Scores | |
|---|---|---|---|---|---|---|
| | Pretest | Posttest | Pretest | Posttest | Pretest | Posttest |
| 1 | 343 | 376 | 29 | 27 | 31 | 27 |
| 2 | 389 | 393 | 28 | 26 | 24 | 22 |
| 3 | 323 | 347 | 64 | 33 | 69 | 46 |
| 4 | 373 | 386 | 36 | 25 | 35 | 31 |
| 5 | 356 | 386 | 22 | 21 | 26 | 24 |
| 6 | 344 | 355 | 46 | 31 | 45 | 35 |
| 7 | 343 | 369 | 29 | 25 | 33 | 33 |
| 8 | 283 | 282 | 39 | 39 | 33 | 33 |
| 9 | 314 | 316 | 50 | 43 | 42 | 43 |
| 10 | 326 | 326 | 45 | 52 | 42 | 49 |
| 11 | 280 | 284 | 38 | 42 | 44 | 42 |
| 12 | 268 | 281 | 31 | 26 | 54 | 55 |
| 13 | 381 | 384 | 31 | 39 | 22 | 29 |
| 14 | 377 | 370 | 26 | 21 | 30 | 27 |
| 15 | 340 | 355 | - | - | 41 | 33 |
| 16 | 290 | 339 | 35 | 22 | 38 | 29 |
| 17 | 340 | 334 | 36 | 33 | 28 | 31 |
| 18 | 294 | 296 | 73 | 31 | 69 | 45 |
| 19 | 354 | 344 | 39 | 31 | 30 | 29 |
| 20 | 379 | 356 | 31 | 33 | 31 | 33 |
| 21 | 328 | 330 | 28 | 23 | 36 | 33 |
| 22 | 334 | 336 | 21 | 31 | 29 | 31 |
| 23 | 355 | 347 | 40 | 45 | 45 | 39 |
| 24 | 317 | 318 | 40 | 45 | 55 | 48 |

LOMA LINDA UNIVERSITY

Graduate School

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# TWO EMOTIONAL FACTORS AND WEIGHT LOSS AMONG FEMALES ATTENDING A WEIGHT CONTROL CLASS

by

Karen Lynn Carrigg

Eileen Rae Wangerin

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An Abstract of a Thesis

in Partial Fulfillment of the Requirements

for the Degree Master of Science

in the Field of Nursing

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May 1972

ABSTRACT

A descriptive study was conducted on twenty-four females attending a weight control class to discover the effect of weight loss upon levels of self-esteem and anxiety, as an understanding of the relation of these factors to reduction and control of weight would prove helpful to community health nurses in counseling with overweight and obese persons in the community.

The entire sample was tested for self-esteem (TSCS) and A-State and A-Trait anxiety levels at the initial class of the weight control program sponsored by the Health Education Department of Loma Linda University Medical Center, and again after seven weeks of class attendance. There were no separate control and experimental groups as each person's mean scores representing levels of self-esteem and anxiety of the posttest after the seven-week period and recorded weight loss was compared to the pretest mean scores and standard norms. It was found that levels of self-esteem and anxiety in females attending a weight control class did not significantly differ from standard norms, which led to rejection of Hypothesis No. 1, "Females with weight problems have lower than normal self-esteem levels and higher than normal anxiety levels."

Half of the sample achieved the desired weight loss of one or more pounds per week. The self-esteem levels of this group were found to have increased at the $P < .05$ level of significance and the anxiety levels had decreased at the $P < .05$ level of significance for both A-State and A-Trait anxiety whereas those who did not lose seven or

more pounds showed no significant change, thus supporting Hypothesis No. 2 in this study, "Females attending a weight-control class who lose at least one pound per week will show an increase in self-esteem and a decrease in anxiety after seven weeks of class attendance."