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BEHAVIOR CONTROL TECHNIQUES IN CLIENT-CENTERED
WEIGHT LOSS GROUPS

by

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TABLE OF CONTENTS

	Page
LIST OF TABLES AND FIGURES	vi
ABSTRACT	vii

Chapter

1. INTRODUCTION.	1
STATEMENT OF THE PROBLEM.	3
NEED AND PURPOSE FOR THE STUDY.	3
QUESTIONS TO BE ANSWERED.	4
PROCEDURE	4
LIMITATIONS	5
DELIMITATIONS	6
DEFINITION OF TERMS	6
SUMMARY	7
2. REVIEW OF LITERATURE.	8
PSYCHOTHERAPY	8
BEHAVIOR THERAPY.	10
Stimulus Control.	11
Aversive and Counter Conditioning	13
Self-reward	15
Contingency Contrasting	16
BODY IMAGE.	16
SUMMARY	19

Chapter	Page
3. PROCEDURES.	21
POPULATION DESCRIPTION AND SAMPLE PROCEDURE	21
CATEGORY DEFINITIONS.	22
EXPERIMENT DESIGN AND TREATMENT	23
CONTAMINATING VARIABLES	25
METHOD OF COLLECTING DATA	26
STATISTICAL HYPOTHESES.	26
SUMMARY	27
4. ANALYSIS OF DATA.	29
QUESTIONS TO BE ANSWERED.	31
SUMMARY	37
5. SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS	38
SUMMARY	38
CONCLUSIONS	39
RECOMMENDATIONS	43
CITED REFERENCES.	45
APPENDICES.	51
A. Body Attitude Scale Questions	52
B. Body Attitude Scale Answer Sheet for Two Questions.	54

LIST OF TABLES

Table	Page
1. Means and Standard Deviations for Weight Losses at Posttreatment and Follow-up for Three Groups	31
2. <u>t</u> -test and Significant <u>p</u> Values for Two Weight Losses. . .	32
3. Pearson <u>r</u> Correlations of Three Factors of the Posttreatment Body Attitude Scale to Two Weight Losses	32
4. Mean Scores and Standard Deviations of the Three Factors of the Body Attitude Scale at Pretreatment by Groups . . .	33
5. Mean Scores and Standard Deviations of the Three Factors of the Body Attitude Scale at Posttreatment by Groups. . .	34
6. Correlation of Seven Variables and Three Weight Losses . .	35
7. Partial <u>r</u> Values for Seven Variables at Three Weight Losses	36

LIST OF FIGURES

Figure	Page
1. Weight Losses by Treatment Group	30

ABSTRACT

This study investigated the efficacy of adding the techniques of behavior control to client-centered weight loss groups to increase weight loss. The study also attempted to determine the effects of weight loss on the Kurtz Body Attitude Scale (BAS), and to pinpoint those biographical variables which would predict weight loss. A client-centered (CC) and a behavior control (BT) group were organized through the Focus on Women Office at Montana State University. Twenty-six women responded to the publicity by signing up for one of the two groups according to their treatment and meeting time preference. Those who signed up after the group had been filled were asked to wait for treatment. The only difference in format between the two treatment groups was the 15 minute lecture on the behavior control of eating given at the end of the BT group meeting. At the initial meeting, the subjects were asked to supply biographical information and find a diet of their choice to follow for the duration of treatment. The two treatment groups met for one hour each week for 10 weeks. The Kurtz BAS was administered pre- and posttreatment. Four weeks after the end of treatment, follow-up weights were taken.

The results showed no statistical difference between the client-centered group which had been taught the self-control techniques of behavior therapy and the client-centered group which had not. The client-centered group (CC), however, showed the largest loss through treatment, and the largest loss through follow-up. The Kurtz Body Attitude Scale scores showed no statistical change through treatment, with most scores showing a slight decrease from pre- to posttreatment. The biographical information showed no correlation to weight loss, showing that those variables under investigation in this study could not be used to predict weight loss.

CHAPTER 1

In 1967, the United States Department of Health, Education and Welfare estimated that there were between 40 and 80 million obese Americans, depending on the criterion used to define obesity. As a result, the average American goes on at least one diet each year (Mahoney, 1974). Through the years, the dilemma has been to reduce body weight, usually through reduced calorie intake, without causing the discomfort of hunger, states of deprivation, or depression.

In the quest for a cure for obesity, different therapies have developed a variety of theories on the etiology of overeating. Although there appears to be no single etiological position which explains obesity for everyone, three major approaches in group therapy have been psychotherapy, behavior therapy, and self-help.

Psychotherapy, traditionally, has depended on the interaction between client and therapist for success in weight loss. There was, then, heavy reliance on the therapist's ability to accurately interpret the client's problem. Thus, the therapist was facilitating the change in the client, rather than the client attempting to change him or herself. Psychotherapy, while attempting to untangle the emotions which surround and promote eating, is not notably effective in assuring a substantial sustained weight reduction.

Behavior therapy increases weight loss dramatically by focusing on self-defeating eating habits. This therapy restores the

facilitation of weight change to the client by teaching the individual self-control techniques. Individuals learn constructive eating habits and eliminate destructive ones.

The outlook for weight control therapy was grim, if not impossible, before the advent of behavior therapy. Penick, Fillion, Fox, Stunkard (1971), sum up the prevalent pessimistic attitude when they stated, "Most people will not stay in treatment for obesity. Of those who stay in treatment, most will not lose weight and of those who do lose weight, most will regain it."

Another very popular method of weight control is the self-help group such as Weight Watchers, TOPS (Take Off Pounds Sensibly) and Overeaters Anonymous. The groups are not notably effective longitudinally because members tend to put back on the pounds once off the program. Yet, members do lose weight in a program which combines dieting and social pressure (Wollersheim, 1970).

Finally, a very serious problem in weight loss programs is serial weight losing and gaining. Only recently has even the revolutionary behavior therapy shown weight stabilization at a one year follow-up (Mahoney, 1974). Every diet can result in weight loss through the simple manipulation of calories and exercise, but other affective and learning factors must be included in any weight reduction program if individuals are to maintain weight loss after treatment. An example of this problem

was in a letter to the editor in a reducing magazine.

I need your help. I joined Weight Watchers some time ago and went down to 120 lbs. With only 6 lbs. of ugly fat left on me, I felt pretty good. Well, for reasons I don't know, I quit. As you can guess, I have gained all my weight back. (Weight Watchers, 1977)

Effective changes, both within the person and in eating habits are slow to come and slow to integrate. In many instances a dieter must change a lifetime of destructive eating habits during a program which lasts only months. Dieting is not a simple process. Few people are successful at sustaining and maintaining significant weight loss.

This study has attempted to combine psychotherapy and behavior therapy in a pilot program on the Montana State University campus to augment the weight losses of its participants. The elements deemed most desirable in both therapies were, 1) the techniques used to restore self-control to a dieter and 2) the opportunity to work through weight related emotional problems in a supportive atmosphere.

STATEMENT OF THE PROBLEM

The problem of this study was to determine the effectiveness of including the techniques of behavior therapy in a client-centered therapy group for weight control.

NEED AND PURPOSE FOR THE STUDY

Currently, behavior therapy and self-help are the prevalent

styles in group weight control. Neither are effective longitudinally, and one reason may be that they do not deal with the emotional reasons for eating. Therefore a need was seen to develop a program which would combine elements of psychotherapy, behavior therapy and self-help in weight loss groups. This learning-based client centered therapy attempted to restore dieting self control to its participants through behavior management and to reconstruct a socially supportive atmosphere for pursuing weight related emotional concerns. This study also examined the changes in body attitude which accompanied weight loss.

QUESTIONS TO BE ANSWERED

The primary question to be answered is:

1. Does the addition of behavior control techniques to a client-centered weight-loss group increase weight loss?

The secondary questions are:

1. Does body attitude, as measured by the Kurtz Body Attitude Scale, change with weight loss?
2. Do the factors of age, pretreatment weight, base weight, desired loss, occupation, and years of education, influence weight loss?

PROCEDURE

Two client-centered weight loss groups were coordinated through the Focus on Women Office on the Montana State University campus. Subjects signed up for the groups according to the convenience of

the meeting times and the type of therapy in the group.

One group was entirely client-centered in approach to weight loss (CC). The second group was also client-centered but in addition received training in behavior therapy techniques (BT). A third group constituted a control group and was asked to wait for treatment (NT). At the first meeting all participants were administered the Kurtz Body Attitude Scale and weighed. The two therapy groups met for one hour a week for treatment. At the end of 10 weeks all three groups were retested for changes in body attitude.

All subjects in the treatment groups were asked to select a diet of their choice to follow for 9 weeks. A sample diabetic diet from the Montana State University Health Center was made available. The subjects were weighed prior to each meeting and their weights were recorded. No social pressure was applied to induce a greater loss. At the first meeting, the CC group had nine members, the BT ten, and the control seven. All members were women.

LIMITATIONS

1. This study was limited by the use of volunteers, and therefore not generalizable to the entire population.
2. This study was limited by the inexperience of the experimenter (see contaminating variables).

DELIMITATIONS

1. This study was delimited by the lack of randomization in the assignments of subjects to groups.
2. This study was delimited by the brief treatment period of 10 weeks and brief follow-up period of 4 weeks.
3. This study was delimited to those female respondents to a newspaper advertisement or flier, and further delimited to those respondents available during the noon hour or at 7 p.m. for a weekly meeting.

DEFINITION OF TERMS

Desired loss. The number of pounds a subject wishes to lose regardless of the feasibility.

Base weight. The weight a subject should reach to be totally free of fat, as calculated by multiplying a subjects height by 3.5 and then subtracting 110 from the result (Mahoney and Mahoney, 1976).

Posttreatment weight. The last weight reached while in the program and weighed on the experimenter's scales.

Follow-up weight. The subject's weight at the end of the four weeks follow-up, weighed on the subject's own scales.

Body attitude. As measured by the Kurtz Body Attitude Scale, hereafter referred to as the BAS.

Serial weight loser. The process of regaining lost weight and then dieting, repeated over and over.

Percentage overweight. As computed by dividing the current weight by the base weight and multiplying by 100.

SUMMARY

The origins of obesity as we understand it are highly complex and individualized. The most popular methods of controlling obesity combine dieting and therapy. The three major types of therapy used are psychotherapy, behavior therapy and group self-help.

The psychotherapy group provides an opportunity for the dieter to work through weight related emotional problems under the guidance of a trained therapist. Behavior therapy teaches the dieter the techniques of self-control by reinforcing specific eating habits. Lastly, the self-help group provides the social check of weighing and discussion of a variety of dieting interests.

Alone, each therapy lacks a vital element to the dieter. Combined, these therapies show promise for a more satisfying program.

CHAPTER 2

REVIEW OF LITERATURE

This chapter reviews the two major categories of therapy, psychotherapy and behavior therapy. Self-help groups are included as therapy groups without a professionally trained therapist. Relevant information concerning body image is also reviewed.

PSYCHOTHERAPY

Commonly, psychotherapy focuses on anxiety, guilt, frustration, hostility, and the blocks to emotional, sexual, and social maturity (Cappon, 1972) (Craddock and Livingstone, 1969) to promote personal growth in the dieter. Again, it is this individualized humanized element which is the asset in psychotherapy. It is the active interest in the dieter which helps him or her develop feelings of greater self identity; it is the reassurance and support which the dieter needs (DHEW, 1966).

Without emphasizing weight loss, Flack and Grayer (1975), directed a consciousness-raising group for obese women. Their group tried to illuminate what it was like to be fat in America, to raise self-esteem and decrease self-punishment, and to provide unconditional positive regard for all members no matter what the choice about their weight. They felt that diets requiring willpower fed the low-esteem of overweight women and that it led to self-hatred, anger and resentment. They found that the fat woman, as a social deviant,

learned a set of special responses, and that her whole life was organized around this deviance.

Participants lose weight in a psychotherapy group, but the program can be an inefficient use of the analyst's time (Cappon, 1972). Holt and Winick (1961) found that after twenty-two weeks of two hour sessions twice weekly, the mean weight loss was only 4.3 pounds, and that the last four sessions had seen a tendency to gain weight. Shumway and Powers (1973), after four months in a hypertension clinic, reported that the greatest loss for an individual was only 10.75 pounds.

Although comparisons of psychotherapy groups to groups using other methods tend to be unreliable because of the inconsistency in statistical information and lack of follow-up Kelly and Curran (1976) found that whereas the self-control group lost significantly more weight at the end of treatment, the affect group continued to lose in the follow-up. This would tend to validate what psychotherapy proponents have said for years, that to sustain a meaningful weight loss, the emotional components must be worked through throughout the diet. (Bruch, 1948) (DHEW, 1966).

The third type of weight loss group is the voluntary and commercialized self-help group like TOPS (Take Off Pounds Sensibly). Two studies (Jordan and Levitz, 1973) (Levitz and Stunkard, 1975) concurred that the effectiveness of these groups has yet to be proven longitudinally, and that self-help group members often gain weight after leaving the organization. It may be concluded that self-help is not very helpful. Their popularity is based on the need for dieters to seek support from other dieters (Glass, 1969), to seek attention from the leader (Thorn and Bondewys, 1976), and time to discuss relevant dieting problems. Discussion time was reported by London and Schreiber (1966) to be the deciding variable in their study which compared drug, diet and discussion groups. By adding discussion time, they increased the mean weight loss from 8.1 pounds to 16.1 pounds, and decreased attrition from a loss of 78 members to a loss of 33 in three groups.

BEHAVIOR THERAPY

Penick, Fillion, Fox and Stunkard (1971) termed behavior modification a "significant advance in treatment of obesity." Stuart (1967, 1971), Stunkard (1973), Hagen (1974), Harris (1969), and Wallersheim (1970) concurred on the superiority of behavior control. Stuart (1967) reported that 80% of his subjects lost 20 pounds and 30% lost more than 40 pounds using behavior change. This compared to earlier medical

findings which reported that only 25% of obese subjects entering treatment lost 20 pounds, and only 5% as much as 40 pounds (Penick, Fillion, Fox, and Stunkard, 1971). Behavior therapy techniques have been categorized as stimulus control, aversive and counter-conditioning, self-reward and contingency contracting.

Stimulus Control

The Penick, Fillion, Fox, and Stunkard (1971) program was typical of the "therapeutic potpourri" (Paulson and Kohrs, 1976) of behavior control programs based on operant conditioning (Stuart and Davis, 1972) and included four steps.

Step 1 included describing the behavior to be controlled, and consisted of recording in diary form the amount, time, and circumstances of their eating. Step 2 was the modification and control of external stimuli which cued eating behavior. This step attempted to limit cues by creating a new cue to eat, that of a special place setting, mat and napkin. It was required that all eating take place at that special setting. Step 3 included techniques to control the actual act of ingesting food. This step regulated the number of mouthfuls of food taken at a meal, and the number of pauses between bites. Step 4 brought a reward for adhering to the techniques of the first three steps. Points were earned which were converted into money and given to the group as a whole for disbursement.

Variations on this theme include combining behavior description and social pressures (Jordan & Levitz, 1973). All subjects lost weight, but

part of the success was thought to be due to the novelty of the program in which subjects were encouraged to call each other on the phone when overeating was anticipated.

Wollersheim (1970) compared a behavior change, (Focal) group with a positive expectation social pressure (SP) group, and a no treatment control group. The social pressure group was patterned after TOPS, and included a weekly weigh-in, and designation as pig, a gain for the week; a turtle, maintained weight; or a star, a loss for the week. The non-specific group utilized ritual, faith, expectation, insight into why people eat, relaxation and games. The focal group emphasized learning principles, behavior change, and deep relaxation to counter 'eating' tension. The focal group had the greatest weight loss and was considered the best treatment.

Thorn and Bondewys (1976) divided 80 students into a behavior therapy group, rational therapy group, a self-directed discussion group and a nontreated control group. The rational therapy group discussed the irrational statements made to convince the dieter to break a diet and the group discussed ways to refute those irrational thoughts. In the discussion group, the group determined their own direction and developed their own weight loss concepts. There was minimum counselor intervention. Again, the behavioral group lost significantly more weight than the other groups.

Aversive and Counter Conditioning

The aversive consequences of overeating were employed by Harris (1969), O'Leary and Wilson (1975), and Ferster, Nurnberger and Levitt (1973) with mixed results. In a pilot study, Harris (1969) broke behavior therapy down into 1) analysis of eating habits, 2) aversive conditioning, 3) weakening the chains of eating, and 4) relaxation exercises as an alternative to eating, depression and boredom. The subjects lost weight but Harris did admit that the "crucial test is the permanence of changes." O'Leary and Wilson (1975) used four areas of behavior therapy to change the inappropriate food habits resulting in obesity. The areas were, 1) description of the behavior to be controlled, 2) modification of the stimulus control of eating, 3) modification of actual eating behavior, 4) reinforcement of self controlling behavior by emphasizing the aversive consequences and the choice of eating.

Ferster, Nurnberger and Levitt (1973) recognized that the ultimate aversive consequences (UAC) were postponed in obesity and used UAC to enhance self-control. This was done by, 1) determining the variables that influence eating, 2) determining how to manipulate the variables, 3) identifying an individual's UAC, and 4) arranging a method of developing self-control. They also amplified the aversive consequences by increasing the subject's awareness of the

calorie content of food by comparing a piece of pie to a potato, butter and steak, both 400 calories.

One interesting study utilizing relaxation techniques (Bornstein and Sippelle, 1973) investigated the effects of Induced Anxiety (IA) in the treatment of obesity. The induced anxiety group was correlated to a no treatment group and a deep relaxation therapy group. The relaxation therapy group was shown techniques to use to control unpleasant body sensations that usually accompany anxiety, and it was suggested that the subjects use these techniques in those situation where they felt anxious, notably those times they overate. The IA group received lots of attention. They spent 15-20 minutes weighing in, 20 minutes in IA and then followed with a 20 minute discussion. The 20 minutes of IA were broken down into five four minute sessions. Anxiety was induced for four minutes, after a four minute relaxation exercise, by instructing the subjects to concentrate on a small feeling of anxiety growing slowly inside them. Then the subjects were taught to relax for four minutes. Typically, the anxiety responses reached a plateau and the therapist switched contingencies and began instructing the subjects to progressively relax in the face of anxiety, and the associated thoughts, feelings, and images. Induced anxiety taught the subjects not to avoid anxiety, but how to cope with the internal sensations of anxiety, irrespective of the situational cues

associated with arousal. Induced anxiety differed significantly from the other types in the loss of weight, and the IA group showed no significant weight change after the end of treatment. Induced anxiety was shown to be highly effective when compared to the other groups which gained weight after treatment.

Hall (1972) also used behavior change, but emphasized the Emotional Response Routine (ERR), similar to the aforementioned induced anxiety, where the anxiety which acts as the stimulus to eat is reduced by repeating the reinforcing consequences. The manipulation of the ERR was combined with the manipulation of stimuli to narrow the stimulus control overeating, weakening the chains leading to eating, and the development of a prepotent repertoire or substitutes for eating. Again, the behavior therapy group lost weight.

Self-Reward

Mahoney (1974) attempted to reduce the probability of overeating by rewarding failing to eat.

He instructed three groups in the techniques of self-monitoring. He then instructed one group to self-reward for weight loss (S-R Weight) and another group to self-reward for habit improvement (S-R Habit). The third group continued self-monitoring but did not self-reward. He found that substantial improvement in weight loss resulted when self-reward was added to self-monitoring, but that superior

weight loss resulted in the S-R Habit when group eating habits improved. At a one year followup, 70% of the S-R Habit group had maintained or improved their weight loss.

Contradicting Mahoney's emphasis on self-control, Hall (1972) found that whereas both self-control and experimenter-controlled groups lost weight, the experimenter-control lost more. Hall, however, used volunteers from TOPS, a self-help group, for her study, thus irretrievably losing the long-term effects of weight loss when they returned to TOPS and biasing the study in favor of professionally trained therapist-leaders.

Contingency Contracting

Getting down to the bare essentials of weight control, Jeffrey and Christensen (1975) compared groups trying to lose weight by sheer willpower and by the techniques of behavior control. Again, behavior therapy performed better. Therefore, willpower and social pressure are not sufficiently reliable methods of weight control, but when used in conjunction with BT techniques, they can enhance weight loss results (Levitz and Stunkard, 1975).

BODY IMAGE

Body image has been defined as "a term which refers to the body as a psychological experience and focuses on the individual's feelings and attitudes toward his own body" (Fisher and Cleveland, 1968).

Distorted Body Image has been recognized as a common occurrence among obese individuals (Stunkard and Mendelson, 1967) (Stunkard and Burt, 1967) (Cappon and Banks, 1968). They tend to view their bodies as loathesome and with hostility and contempt. The body becomes a symbol of unhappiness and failure (Craddock, 1969) (Stunkard and Mendelson, 1967).

Studying the change in body image after weight loss, Leon (1975) reported that there was no difference in the "present" body image at pretreatment among individuals who had sustained at weight loss, individuals who had regained lost weight, and a group of controls. Glucksman and Hirsch (1969) found that after weight loss, obese subjects overestimated their body size, to the point of representing themselves at pre-loss size, whereas non-obese subjects underestimated their size during weight maintenance. This supports the concept of inaccurate body image among obesity prone individuals whether they are fat or thin. Indications are that to maintain weight loss, body image must be changed (Craddock and Livingstone, 1969).

Richard Kurtz developed a body attitude scale to measure three dimensions of body image. The first was the evaluative dimension or how positively or negatively the body is valued. The second was potency, or how weak or strong the body was experienced, and the third was activity, or whether the body and body build were considered active or

passive (Kurtz, 1968). He found that whereas men rated their bodies higher in potency, women tended to value their bodies more. Among women he found that large thin body-types like their bodies more than others liked theirs, but the broad-hipped, big breasted women viewed their bodies as more potent, though not as desirable as thin women. This may be an indication that obese women may lose the valuable asset of potency when they diet and may influence how fast they regain lost weight. Kurtz (1968) goes on to hypothesize that since his body attitude scale was administered to men and women only between the ages of 18 and 23, that middle-aged women might show lower ratings on potency and activity due to greater dissatisfaction with their appearance.

In a study which used physically ill women, Kurtz and Hirt (1970) found that although the subjects were experiencing pain and distress with their bodies, they tended to rate higher than normals on potency, than normal college females, while rating lower than normals on the evaluative and activity dimensions. Kurtz and Hirt suggested that these women were overcompensating for low potency bodies. On the other hand, they may be experiencing their body as more potent due to pain, distress, or attention they must give it. In a study correlating body attitude to self-esteem, Kurtz (1971) found that women showing high esteem scores showed lower potency

scores than did low-esteem scoring women. However, evaluative scores varied in a positive way to self-esteem. Again, this may indicate a relationship between potency and a healthy, fully-functioning individual, in which potency compensates for faltering physical and mental health by bolstering emotional security with strength and power (Conrad, 1954).

SUMMARY

Because no one has ascertained the sole etiological reason for obesity, and it may be that the origins are highly complex and varied. There is no simple answer for a permanent significant weight loss.

Psychotherapy has traditionally focused on the emotional motivations for overeating. It attempts to ascertain why an individual overeats. Behavior focuses on the habits of eating and attempts to change how a person overeats. It offers promising results when applied to weight control groups. But, it is unproven in longitudinal studies, and the losses accrued may be regained within a year or two. Neither is it equally effective for all subjects.

Self-help groups are popular methods of group weight control, but the results indicated that members tend to regain lost weight once they stop attending meetings. Group support alone is not associated with large weight losses, but the lack of continuity in

follow-up statistics precludes judgement about weight maintenance.

One way to enhance weight loss groups is to combine psychotherapy behavior therapy and self-help groups. From psychotherapy would come professionals trained in dealing in complex emotions, from behavior therapy would come the principles of stimulus control and behavior management, and from self-help would come the supportive group camaraderie.

Finally, it is generally agreed that obese women have a distorted body image, and that the distortion is most evident in a high potency score as measured by the Kurtz Body Attitude Scale.

CHAPTER 3

PROCEDURES

The purpose of this study was to test the effectiveness of behavior control techniques in client-centered weight loss groups. Those participating in the program received the Kurtz Body Attitude Scale at pretreatment and posttreatment in order to note changes in body image. They were weighed weekly from pretreatment to posttreatment and at a four week follow-up.

The data were organized by weight loss, by scores on the three factors of the BAS, and by the dependent variables. The weight losses are reported at posttreatment at follow-up, and combined as a total loss where applicable. The three factors of the BAS, evaluative potency, and activity were reported at pre- and posttreatment scores. The variables were age, pretreatment weight, base weight, the difference between the two weights, or pounds overweight, occupation, years of education, and desired loss.

This chapter consists of a population description and sampling procedure, category definitions, experiment design and treatment, contaminating variables, method of collecting and organizing data, statistical hypothesis and precautions for accuracy. A short summary follows.

POPULATION DESCRIPTION AND SAMPLE PROCEDURE

The population of this study consisted of all female volunteer respondents to an advertisement for a weight loss program in the

Montana State University Staff Bulletin, Bozeman Daily Chronicle, or flier posted in buildings on the Montana State University campus. The respondents were organized into groups according to the convenience of two pre-set meeting times, noon or 7:00 p.m., and their interest in an individual-centered (CC) or combined individual-centered and behavior therapy (BT) group. Those who signed up after the groups were filled or who were unable to meet at the designated times were assigned to the control group (C) and asked to wait until summer for treatment. There were nine subjects in the CC group, meeting at noon, ten subjects in the BT group meeting at 7:00 p.m., and seven members in the control group which did not meet. There was no criterion for membership in the program except the desire to lose weight, and the agreement to meet for one hour weekly.

CATEGORY DEFINITIONS

This investigator was interested in four major areas.

The first area of interest was the efficacy of behavior therapy when combined with client-centered therapy in weight loss programs.

The second area of interest was the influence of pretreatment, base, ideal weight, and percent overweight on the number of pounds lost.

The third area was to create a profile of a successful dieter in this study based on age, pretreatment weight, base weight, the difference between the two weights or pounds overweight, occupation, and years of education.

The fourth area of interest was the quantification of the body attitude of a particular group of dieters, and the changes, if any, that occur after weight loss.

EXPERIMENT DESIGN AND TREATMENT

At the first meeting, both groups were instructed to follow a diet of their choice, and to begin keeping a diary of their food intake. The CC group was instructed to write about their feelings during eating. The BT was instructed to write about their feelings, but to also look for stimuli in their environment which were cues for them to eat. Examples of these were watching television, coming home from work, stopping at a restaurant for coffee, etc. Both groups were tested at this time.

Confidentiality and attendance were stressed to both groups at the second meeting. The groups then introduced themselves and told what they wanted to achieve from the group sessions. The BT group was instructed in the stimulus control of eating. They were to limit all eating, meals as well as snacks, to a specific area, i.e. the kitchen table, and to a specific placemat, plate, fork, napkin, and glass. They were asked not to eat in any other room, or during any other activity, i.e. studying, reading, watching television, etc., and to consume food only from those special utensils.

At the third meeting and all subsequent meetings, both groups were given time to discuss dieting highlights of the week. Sometimes these discussions centered around compliments, or insights, but often they centered around personal and interpersonal problems. The BT group was instructed in the techniques to modify the actual eating behavior. They were asked to take only one mouthful of food at a time, to count the number of times they chewed, and to swallow the contents of their mouth before taking another forkful of food into their mouth. They were asked to pause between bites and to lay down their fork during the pause, or while chewing.

During the fourth meeting, both groups engaged in a guided fantasy designed to tap the methods they used to begin any task. The BT group was instructed to include their family and friends in their dieting as social reinforcers.

The fifth meeting again focused on current feelings. The BT was instructed in several techniques of aversive conditioning and were asked to spend two minutes twice a day looking at themselves nude in front of a full-length mirror.

The sixth meeting was spent in a guided fantasy designed to experience the body and to get in touch with their physical ideal self.

The seventh meeting centered around dieting problems, including negative statements about their appearance. The BT group was instructed

in the use of reinforcements or self-rewards.

At the eighth meeting, recommendations were made for future groups. The BT group recapped the basic seven points of behavior change. The ninth meeting focused on what group members had learned about themselves, additionally the BT group discussed the techniques which had been most useful for them. The tenth and final meeting was used for retesting.

CONTAMINATING VARIABLES

One contaminating variable was the lack of group experience of the experimenter who led both groups. Two co-therapists were employed to aid the experimenter in the treatment groups.

Another contaminating variable proved to be the times of the meetings. The experimenter noted a real difference in the energy levels of the two groups. The evening group had a much higher energy level than the noon group and tended to discuss the social implications of dieting. The noon group used the time to relax from the pressures of their jobs, but tended to be more inner-directed.

Lastly, the subjects were aware of the different treatments of each group. Thus, there may be a motivational contamination, where choice may play an important role in motivation and satisfaction.

Notwithstanding the degree of contamination which these variables represent, it is believed that they reflect the realities of

experimental studies.

METHOD OF COLLECTING DATA

Weights were taken once weekly at the beginning of each session on Counselor bathroom scales. Personal histories were collected at the first session in response to a short questionnaire, and the Body Attitude Scale was also administered. Subjects were instructed at that time to begin a diet of their choice, and a diabetic diet recommended by the Montana State University Health Center was made available. After nine weeks of dieting, the subjects were retested.

METHOD OF ORGANIZING DATA

Data was organized by means on tables and graphs. Changes in pretreatment, posttreatment, and followup weights were recorded on a graph by groups. Scores on the BAS were recorded by pretreatment, posttreatment, and follow-up on tables.

Data was also organized by weight loss on tables to reflect changes in the BAS. Group scores were reported at pre- and post-treatment. Data was organized to reflect biographical information and to profile the successful and unsuccessful dieter using seven variables.

STATISTICAL HYPOTHESIS AND PRECAUTIONS FOR ACCURACY

The first hypothesis states that the addition of behavior control techniques increases weight loss in client-centered weight loss

groups. The first null hypothesis states that the mean weight loss is equal among groups.

The second hypothesis states that the greater the weight loss, the greater the posttreatment score on the Body Attitude Scale. The second null hypothesis states that there is no relationship between weight loss and Body Attitude Scale score.

The third hypothesis states that the greater the subject's age the less the weight loss. The third null states that there is no relationship between age and weight loss.

The fourth hypothesis states that non-housewives have greater weight losses than housewives. The fourth hypothesis states that there is no relationship between occupation and weight loss.

The fifth hypothesis states that the greater the subject's desired weight loss, the greater is the actual loss. The fifth null hypothesis states that there is no relationship between desired weight and actual weight loss.

The sixth hypothesis states that the greater the number of years of education, the greater the weight loss. The sixth null hypothesis states that there is no relationship between years of education and weight loss.

SUMMARY

This chapter included an explanation of procedures used to monitor the weight losses of three groups of women during an experiment at

Montana State University. The Kurtz Body Attitude Scale was administered to all three groups at pretreatment and at posttreatment. The data was organized to compare the mean weight losses of the groups at pretreatment, posttreatment, and follow-up. The mean scores of the BAS were compared at pretreatment and posttreatment. A profile of a successful dieter was also established.

CHAPTER 4

ANALYSIS OF DATA

Pearson product-moment correlations were computed using 21 variables in the total group ($N=20$), and in each sub-group ($BT=8$, $CC=5$, $C=7$). A multiple regression was run on 8 of the 21 variables. Means and standard deviations and t tests were computed to compare weight loss and scores on the Body Attitude Scale at pre- and post-treatment among the groups. Means and standard deviations for each variable were also computed by groups.

The data were computed electronically on each group separately, to compare the means of 21 variables by treatment, and then the data were reorganized to compare means by weight loss.

Because of the small number of subjects, significant findings which resulted from comparing treatment groups should not be considered valid conclusions.

Comparisons of $\bar{X}$ by groups, showed that the BT group had a $\bar{X}$ age of 39.375 years, a $\bar{X}$ pretreatment weight of 188.25 pounds, a $\bar{X}$ base weight of 119.375 pounds, and a $\bar{X}$ percentage overweight of 57.6. There were five non-housewives and three housewives, with a $\bar{X}$ of 14.5 years of education. The group began with ten members and ended with eight.

The CC group had an $\bar{X}$ age of 34.8 years, a $\bar{X}$ pretreatment weight of 159.000 pounds, a $\bar{X}$ base weight of 118.000 pounds, and a $\bar{X}$ percentage overweight of 34.9. They were all office workers at the university.

with a $\bar{X}$ of 12.800 years of education. The group began with nine members and ended with five.

The Control group had a $\bar{X}$ age of 30.143 years, a $\bar{X}$ pretreatment weight of 143.286 pounds, a $\bar{X}$ base weight of 113.857 pounds, and a $\bar{X}$ percentage overweight of 26.4. The majority were students, and had a $\bar{X}$ of 16.143 years of education. The group began with seven members and ended with six.

The following Figure shows weight change from pretreatment to followup for each treatment group.

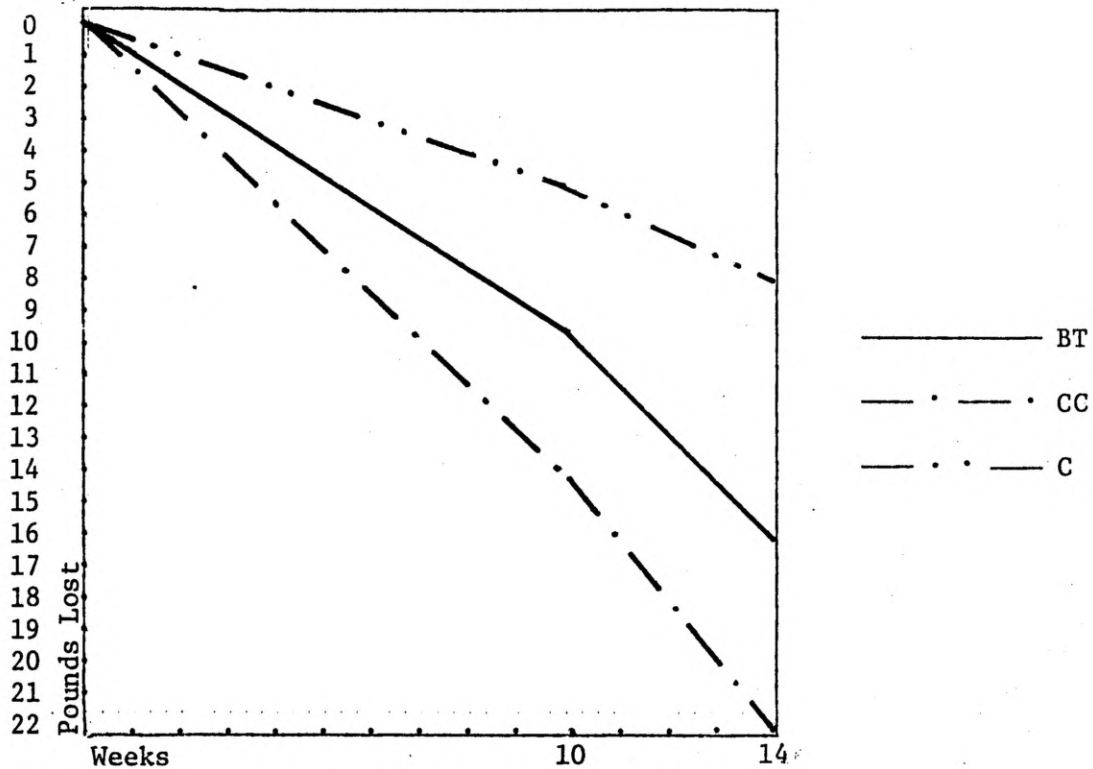


Figure 1. Weight Losses by Treatment Group.

QUESTIONS TO BE ANSWERED

The first question to be answered was: does the addition of behavior control techniques to a client-centered weight loss group increase weight loss? Means, standard deviations, t test scores and corresponding significant p values are found in Tables 1 and 2.

Table 1

Means and Standard Deviations for Weight Losses
At Posttreatment and Follow-up for Three Groups

Groups	Loss at Posttreatment		Loss at Followup	
	$\bar{X}$	S	$\bar{X}$	S
Behavior Therapy	9.8750	7.1000	6.5000	7.5033
Client-Centered	14.2500	1.7078	7.7500	4.5735
Behavior Therapy	9.8750	7.1000	6.5000	7.5033
Control	5.3333	1.3663	2.6667	1.5275
Client-Centered	14.2500	1.7078	7.7500	4.5735
Control	5.3333	1.3663	2.6667	1.5275

A significant difference in weight loss was found between the CC and Control groups at posttreatment. The BT and Control groups came close to showing a significant correlation. All other comparisons failed to show significance at the .05 level of a two-tailed test. The null hypothesis was retained.

Table 2

t-test and Significant p Values for Two Weight Losses

Comparison	Loss at Posttreatment		Loss at Follow-up	
	<u>t</u> -test	<u>p</u> <	<u>t</u> -test	<u>p</u> <
BT, CC	1.1881	n.s.	.2952	n.s.
BT, Control	1.5307	n.s.	.84787	n.s.
CC, Control	9.1879	.05	1.81256	n.s.

The second question to be answered was: does body attitude, as measured by the Kurtz Body Attitude Scale, change with weight loss? Pearson product-moment correlations are found in Table 3 to compare posttreatment and follow-up losses with the pre- and posttreatment scores on the three factors of the BAS.

Table 3

Pearson *r* Correlations of Three Factors of the
Posttreatment Body Attitude Scale to Two Weight Losses

Weight Loss	Evaluative Factor		Potency Factor		Activity Factor	
	Pre-treatment	Post-treatment	Pre-treatment	Post-treatment	Pre-treatment	Post-treatment
Post-treatment	.0068	-.0458	.02364	.0749	-.0128	-.1216
Follow-up	-.0441	-.1013	-.0413	.2013	-.1888	-.2318

Weight loss and the factors of the Body Attitude Scale showed slight correlation. None of the findings were significant; however, the slight negative correlations would indicate a tendency for scores to decrease as weight loss increased. The null hypothesis was retained.

The mean scores and standard deviations of each factor of the BAS for each treatment group are found on Tables 4 and 5. Table 4 is a comparison of scores by each group at pretreatment, and Table 5 is the same comparison of scores at posttreatment.

Table 4

Mean Scores and Standard Deviations of the Three Factors of the
Body Attitude Scale at Pretreatment by Groups

Pretreatment	BT		C-C		Control	
Factors	$\bar{X}$	S	$\bar{X}$	S	$\bar{X}$	S
Evaluative	349.125	24.339	359.399	27.210	351.571	37.256
Potency	428.125	21.210	395.199	28.049	410.714	26.432
Activity	337.375	30.004	331.399	53.804	341.143	26.042

All groups showed a $\bar{X}$ score change from pre- to posttreatment, or after weight loss. An improvement, or increase, in score was expected.

Table 5

Mean Scores and Standard Deviations of the Three Factors of the
Body Attitude Scale at Posttreatment by Groups

Posttreatment	BT		C-C		Control	
Factors	$\bar{X}$	S	$\bar{X}$	S	$\bar{X}$	S
Evaluative	341.125	21.964	343.599	23.332	348.428	35.081
Potency	417.500	38.895	410.000	35.504	397.571	34.237
Activity	336.875	15.597	324.399	56.025	347.286	36.746

In reality, all scores declined except the potency score for the Control group, which showed a slight rise. The changes were not significant and did not alter the retention of the null hypothesis for question 2.

The third question to be answered was: do the factors of age, pretreatment weight, base weight, the difference between the two weights or pounds overweight, occupation, and years of education, influence weight loss? Percentage overweight and desired loss are also included. Product-moment correlations were run between the six variables and the three weight losses at posttreatment, follow-up and the total loss. The results are reported on Table 6 with the significant p values.

Table 6

Correlation of Seven Variables and Three Weight Losses

Variables	Posttreatment Loss	$p <$	Follow-up Loss	$p <$	Total Loss	$p <$
Age	.56021	.05	-.15850		.35929	
Pretreatment Weight	.38704		.17347		.41843	
Base Weight	.48051	.05	-.05027		.20838	
Pounds Overweight	.24358		.19105		.36189	
Occupation	-.42101	.10	-.14660		-.41722	.10
Years of Education	-.34639		-.10263		-.32938	
Subjects Desired Loss	.15079		.30738		.35429	

It appeared that age and weight loss at posttreatment had a significant positive correlation. Thus, the older the subject the greater the weight loss at posttreatment. Base weight and loss at posttreatment also showed a significant degree of positive correlation. This was interpreted as the greater the base weight, or the greater the fat-free weight, the larger the loss expected. It also appeared that occupation had a negative correlation at the .10 level of significance at posttreatment and at total loss. Due to the computational

method, occupation was broken into three areas. Students were designated as 3, office workers as 2, and housewives as 1. Thus, weight losses had a tendency to be larger for office workers and housewives than for students.

However, a multiple regression was run among the six variables to ascertain the interaction effects of the variables. In every case, the relationship grew weaker, and so much so that age, base weight and occupation lost their significance. Table 7 contains these partial r correlations.

Table 7

Partial r Values for Seven Variables at Three Weight Losses

Variables	Posttreatment Loss	Follow-up Loss	Total Loss
Age	.1952	-.3675	-.0682
Pretreatment Weight	.1372	.3661	.2922
Base Weight	-.0328	-.4018	-.2454
Pounds Overweight	-.1104	-.3199	.2685
Occupation	-.3251	-.1249	-.2535
Years of Education	-.1671	-.0500	-.1386
Subject's Desired Loss	.1937	-.0353	-.0551

Multiple R=.7394 Multiple R=.6274 Multiple R=.6526

St. Error of St. Error of St. Error of
Estimate=5.4574 Estimate=5.5551 Estimate=9.6811

Since the multiple regression did not show a significant relationship between the variables and weight loss, the original significance was due to the interaction of two or more variables. Therefore, the null hypotheses were retained for age, occupation, desired weight loss, and years of education.

SUMMARY

Correlations were performed between each of the 21 variables by treatment groups and by the total group. Due to the small N involved, valid conclusion could not be made.

In answer to question 1, the techniques of behavior therapy did not increase the weight loss in client-centered weight-control groups. No significant difference in weight was found between the BT and CC groups. The first hypothesis was found to be null.

The second hypothesis stipulated that the scores on the three factors of the BAS would change after weight loss. No significant difference between pre- and posttreatment scores was found. The second hypothesis was found to be null.

The third question asked if a variety of variables based on weight and biographical information would correlate with weight loss. From those correlations, it was hoped that a profile could be drawn of a successful dieter. This question was broken into four hypotheses based on age, occupation, desired weight loss, and years of education. All four hypotheses were found to be null.

CHAPTER 5

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

SUMMARY

After reviewing the literature on weight-loss groups, it was found that Behavior Therapy, using a variety of techniques, had very good results when applied to weight-control. Behavior therapy was successful where other methods, psychoanalysis and self-help, were not. A pilot program for weight-loss combining behavior therapy and client-centered group counseling was initiated through the Focus on Women Office at Montana State University. Two groups were based on client-centered therapy, one of them, additionally, received training in the self-control techniques of behavior therapy. A third group was organized and asked to wait for treatment. All three groups were administered the Kurtz Body Attitude Scale at pre-treatment and again 10 weeks later at posttreatment. The subjects were asked to choose a diet to follow for 9 weeks and were weighed at the beginning of each weekly, one hour meeting. Biographical information was taken at the first meeting to correlate with weight loss. Attrition was quite high in the client-centered group with four of nine subjects dropping out before the end of treatment. The behavior therapy group lost two subjects, and the control group lost one. Four weeks after the end of the 10 week treatment period, follow-up weights were taken.

The results showed no statistical difference between the client-centered group which had been taught the self-control techniques of behavior therapy and the client-centered group which had not. The strictly client-centered group, however, showed the largest loss through treatment, and the largest loss through follow-up.

The Kurtz Body Attitude Scale scores showed no statistical change through treatment, with most scores showing a slight decrease from pre- to posttreatment. The biographical information showed no correlation to weight loss, showing that those variables under investigation in this study could not be used to predict weight loss.

CONCLUSIONS

It was concluded from this study that behavior therapy techniques did not increase the efficacy of client-centered weight-control groups. This finding may reflect motivational differences since most subjects knew that the meeting groups would have different formats. It may also reflect the determination of some dieters to stick with any weight-control group while other dieters, having failed at other weight-control programs, would sign up for the highly successful behavior therapy training. These attitudes of the subjects to the therapy may have influenced the results.

Another aspect which would account for the lack of difference between groups might have been the number of subjects which completed the treatment. Subjects who were not losing weight tended to drop out of both groups.

Four non-losers dropped out of the client-centered group, while only two dropped out of the behavior group. Also, one non-loser remained in the behavior group while none remained in the client-centered group.

The reasons that motivated this particular subject to attend meetings is difficult to ascertain, since subjects which do not lose weight tend to miss meetings and finally drop out altogether. The behavior training had an educational element which may have helped subjects justify attending meetings without losing weight.

Another factor to be considered is that students did not lose as much weight as housewives and office workers, and there were no students in the client-centered group to reduce the average loss.

An additional factor which could have influenced weight loss was the effect of the times of the meeting. The strictly client-centered group met during their lunch hour. This resulted in a low-keyed, more serious, and inner-directed group than the client-centered group which received behavior control training. The group receiving behavior training met at 7:00 p.m. and tended to be very talkative, bouncing from subject to subject, and very energetic, almost to the point of being rowdy. Strictly by observation, the noon-meeting appeared to take their diet more seriously.

Also it was concluded that the BAS scores did not change significantly with weight loss. Due to its unusual questions and format, the pretest may have influenced the posttest.

The instrument was very difficult for the subjects in this study to understand. The questions were obscure and numerous, and each one had six Likert scales reflecting the three factors of evaluation, potency, and activity. To compound the effect, each of the six scales had seven choices running from very positive to very negative. At posttest the center, or "equal" blank seemed to be the "no opinion" blank, and more subjects found it an easier choice than a stronger commitment. This may be an instance when pretest learning influenced posttest scores.

Norms for this scale were based on female college-age psychology students. The relevance of the scores to the predominantly middle-aged women in this study has yet to be proven. Of special consideration is the direction of fluctuation between pre- and posttest. Many scores decreased at posttest, but others increased. There is no information currently available on which to base conclusions about these slight changes. By groups, the mean evaluative score decreased from pre- to posttest. This could indicate that just going to a weight-control group for 10 weeks focuses an individual's attention on the bad aspects of his or her body. In fact, to stay on a diet at all might require a continued reevaluation, even during weight loss, that the body is still fat and still bad. Not losing weight, or waiting to lose weight, may have had the same effect on the control group.

Insufficient data were available to make an accurate analysis of inter-group changes in the three factors, but two interesting changes were noted. The strictly client-centered group showed an increase in potency after treatment, and was the group which spent much of their time discovering their own particular relationship to food. They had many more insights about their feelings and actions concerning food and their bodies. They, then, may have become more aware of the power their bodies exerted on their attitudes and feelings.

Another interesting change was noted in the activity score of the control group. Through the 10 weeks of this study, the seasons changed from late spring to early summer, and many more outdoor activities were undertaken. Because the treatment groups were dieting they may have been more engrossed in not eating than engaging in outdoor activities. The control group might not have experienced their diets this acutely.

The last conclusion drawn from this study was that no single variable could predict a dieter's success. The results did not prove conclusively that no variable, or that no assortment of variables could predict large weight losses. It may be that variables other than those listed in this study, such as attitudinal differences, are important predictors. In a very optimistic light, it may be tentatively concluded that the variables used in this study do not

predict who can or who cannot lose weight. It may also show that dieters of any age, weight, occupation, or years of education can lose weight if they so desire.

RECOMMENDATIONS

Future research in weight-control programs might reverse the treatment design of this study and add client-centered therapy to behavior therapy weight-control groups. Behavior therapy, although better than self-help and psychoanalysis, may not be significantly better than client-centered therapy, as this study supposed. Randomization of subjects into groups, uniformity of meeting's times and places, as well as a larger total number of subjects would make the statistical correlations more meaningful. Client-centered groups need to be small to be effective, so this may require twice the number of groups.

Another interesting aspect for research to pursue is the effect on weight loss of different techniques designed to increase body awareness. These techniques might include guided fantasies, movement therapy, yoga, or values clarification exercises.

An entire research study could be designed to norm the 3 factors of the Kurtz Body Attitude Scale to middle-aged women in general and to dieters, overweight non-dieters, and non-dieters, specifically.

Another possibility for research would be to control for the contamination of the pretest by testing a control group only once at posttreatment.

Finally, future research might attempt to tap motivational or attitudinal aspects of dieting. During this study, subjects requested nutritional information regarding diets several times. They may indicate an additional educational motivation to diet for health reasons.

The opinion of this researcher is not to develop a weight control program which is 100% effective for 100% of the population. It is, however, hoped that further research can refine the specific tools which will facilitate weight loss for the individuals within weight-control groups.

REFERENCES CITED

REFERENCES CITED

- Bornstein, P. H. & Sipprelle, C. N. Group treatment of obesity by induced anxiety. Behavior Research and Therapy, 1973, 11, 339-439.
- Bruch, H. Psychological aspects of obesity. Bulletin of the New York Academy of Medicine, 1948, 3, 73-86.
- Cappon, D. Eating, loving, and dying: A psychology of appetites. Toronto: University of Toronto Press, 1972.
- Cappon, D. & Banks, R. Distorted body perception in obesity. Journal of Nervous and Mental Disease, 1968, 146, 465-467.
- Conrad, S. W. Resistance of the obesese to reducing. Journal of the American Dietetic Association, 1954, 30, 581-588.
- Craddock, D. C. & Livingstone, L. D. Obesity and its management. Edinburgh: E. & S. Livingstone, 1969.
- Ferster, C. B., Nurnberger, J. I., & Levitt, E. E. The control of eating. In M. R. Goldfried & M. Merbaum (Eds.), Behavior change through self control. New York: Holt, Rinehart & Winston, Inc, 5, 1973.
- Fisher, S. & Cleveland, S. E. Body image and personality. New York: Dover Publications, Inc., 1968.
- Flack, R. & Grayer, E. D. A consciousness-raising group for obese women. Social Work, 1975, 20, 484-487.
- Glass, S. D. The practical handbook of group counseling. Baltimore: BCS Publishing Co., 1969.

- Glucksman, M. L. & Hirsch, J. The response of obese patients to weight reduction. Psychosomatic Medicine, 1969, 31, 1-7.
- Hagen, R. L. Group therapy vs. bibliotherapy in weight reduction. Behavior Therapy, 1974, 5, 222-234.
- Hall, S. M. Self-control and therapist control in the behavioral treatment of overweight women. Behavior Research and Therapy, 1972, 10, 59-68.
- Harris, M. B. Self-directed program for weight control: a pilot study. Journal of Abnormal Psychology, 1969, 74, 263-270.
- Holt, H. & Winick, C. Group psychotherapy with obese women. Archives of General Psychiatry, 1961, 5, 156-168.
- Jeffrey, D. B. & Christensen, E. R. Behavior therapy vs. "will power" in the management of obesity. Journal of Psychology, 1975, 90, 303-311.
- Jordan, H. A. & Levitz, L. S. Behavior modification in a self-help group. Journal of the American Dietetic Association, 1973, 62, 27-29.
- Kelly, A. H. & Curran, J. P. Comparison of a self-control approach and an emotional coping approach to the treatment of obesity. Journal of Consulting and Clinical Psychology, 1976, 44, 683.
- Kurtz, R. M. Body image - male & female. Trans-action, 1968, 25-27.

- Kurtz, R. M. Attitude and self-esteem. Proceedings of the APA annual convention, APA, 1971, 467-468.
- Kurtz, R. M. & Hirt, M. Body attitude and physical health. Journal of Clinical Psychology, 1970, 26, 149-151
- Letters to Jean, Weight Watchers, February, 1977, 8, 52.
- Leon, G. Personality, body image, and eating pattern changes in overweight persons after weight loss. Journal of Clinical Psychology, 1975, 21, 618-623.
- Leon, G. Current directions in the treatment of obesity, Psychological Bulletin, 1976, 83, 557-578.
- Levitz, L. S. & Stunkard, A. J. A therapeutic coalition for obesity: Behavior modification and patient self-help. Journal of Clinical Psychology, 1975, 31, 103-107.
- London, A. M. & Schreiber, E. D. A controlled study of the effects of group discussions and an anorexiant in outpatient treatment of obesity. Annals of Internal Medicine, 1966, 65, 80-92.
- Mahoney, M. J. Self-reward and self-monitoring techniques for weight control. Behavior Therapy, 1974, 5, 48-57.
- Mahoney, M. J. & Mahoney, K. Fight fat with behavior control. Psychology Today, February 1976 pp. 39-43, 92-94.
- O'Leary, K. D. and Wilson, C. T. Behavior Therapy: Application and Outcome. Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1975.

- Paulson, B. K. & Kohrs, M. B. Weight loss resulting from two behavior modification with nutritionists as therapists. Behavior Therapy, 1976, 7, 283-291.
- Penick, S. B., Fillion, R., Fox, S. & Stunkard, A. J. Behavior modification in the treatment of obesity. Psychosomatic Medicine, 1971, 33, 49-55.
- Shumway, S. & Powers, M. The group way to weight loss. American Journal of Nursing, 1973, 73, 269-272.
- Stuart, R. B. Behavioral control of overeating. Behavior Research and Therapy, 1967, 5, 357-365.
- Stuart, R. B. A three dimensional program for the treatment of obesity. Behavior Research and Therapy, 1971, 9, 177-186.
- Stuart, R. B. & Davis, B. Slim change in a fat world: A behavioral control of overeating. Champaign, Illinois: Research Press, 1972.
- Stunkard, A. J. New therapies for the eating disorder: Behavior modification of obesity and anorexia nervosa. Archives of General Psychiatry, 1973, 26, 391-398.
- Stunkard, A. & Burt, V. Obesity and the body image: II Age at onset of disturbances in the body image. American Journal of Psychiatry, 1967, 123, 1443-1447.
- Stunkard, A. & Mendelson, M. Obesity and the body image: I Characteristics of disturbances in the body image of some obese persons. American Journal of Psychiatry, 1967, 123, 1296-1300.

Thorn, M. E. & Boudewys, P. A. A behaviorally oriented weight loss program for counseling centers. Journal of Counseling Psychology, 1976, 23, 81-82.

U.S. Department of Health, Education, and Welfare. Obesity and health, a source book of current information for professional health personnel. Washington, D.C.: U.S. Government Printing Office. No. 1485, 1966.

Wollersheim, J. P. Effectiveness of group therapy upon learning principles in the treatment of overweight women. Journal of Abnormal Psychology, 1970, 76, 462-474.

APPENDIX

APPENDIX A

BODY ATTITUDE SCALE QUESTIONS

1. Color of my hair.
2. Size of my hands.
3. Shape of my fingers.
4. Size of my ears.
5. Shape of my ankles.
6. Shape of my head.
7. My profile.
8. Width of my shoulders.
9. Size of my bust.
10. Size of my hips.
11. Shape of my legs.
12. Size of my feet.
13. My posture.
14. My weight.
15. Texture of my hair.
16. My facial complexion.
17. Distribution of hair on my body.
18. Size of my waist.
19. Shape of my ears.
20. Length of my neck.
21. My body build.

22. My height.
23. Size of my arms.
24. Appearance of my facial features.
25. Texture of my skin.
26. Appearance of my teeth.
27. Shape of my knees.
28. My gait.
29. Back view of my head.
30. Color of my skin.

APPENDIX B

BODY ATTITUDE SCALE ANSWER SHEET FOR TWO QUESTIONS

Question 1

Good : : : : : : : Bad
 Weak : : : : : : : Strong
 Active : : : : : : : Passive
 Awkward : : : : : : : Graceful
 Hard : : : : : : : Soft
 Cold : : : : : : : Hot
 Beautiful : : : : : : : Ugly
 Thin : : : : : : : Thick
 Fast : : : : : : : Slow

Question 2

Good : : : : : : : Bad
 Weak : : : : : : : Strong
 Active : : : : : : : Passive
 Awkward : : : : : : : Graceful
 Hard : : : : : : : Soft
 Cold : : : : : : : Hot
 Beautiful : : : : : : : Ugly
 Thin : : : : : : : Thick
 Fast : : : : : : : Slow