

VARIABLES PREDICTIVE OF SUCCESS IN TREATMENT
OF OBESITY BY GROUP HYPNOTHERAPY

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Variables Predictive of Success in Treatment of Obesity by Group Hypnotherapy

Obesity has long been recognized as a psychological problem as well as a physiological one. Bruch (1973) treats obesity as a complex condition determined by many simultaneously interacting factors. In her opinion obesity is a provocatively complex clinical entity in which genetic, anatomic, endocrine, biochemical, neuro-regulatory, and nutritional factors play a distinct role, as well as psychologic, social, and cultural ones.

Kroger (1970) states that there is general agreement that obesity is a disease with mutually contradictory theories as to its causation, prevention, and effective therapy. Heredity, hypothalamic, metabolic, and endocrine factors, however, can satisfactorily account for only a small portion of the incidence of obesity. The disorder seems to be attributable primarily to emotional or psychologic factors, the exact nature of which is not at all clear.

Orthodox psychoanalytic writers have explained the obese patient's compulsive urge to overeat on the basis of fixation at or regression to the oral stage of psychosexual development. From clinical observations these patients are described as dependent, emotionally labile, insatiable, and prone to depression (Bychowski, 1950). Reviews of experiments inspired by psychoanalytic theory by Eysenck (1972) and Sears (1943)

conclude, however, that in general Freudian theory is not supported by experimental evidence.

Hilde Bruch, to whom much is owed of our understanding of the psychodynamics of obesity, has modified psychoanalytic concepts (Bruch, 1973) and hypothesized that the obese person has a deficit in perceptual and conceptual awareness of hunger. This hypothesis of Bruch, basically supported by Schachter (1967, 1968), that obese individuals are not aware of internal bodily sensations, provides an alternative explanation for the cause of obesity. She found that mothers of the young obese prone child compensate for feelings of marked ambivalence toward the child by overprotection and feeding it inappropriately without regard for its emotional and nutritional needs (Bruch, 1957; 1958; 1964). As a result, many children fail to distinguish between hunger, satiation, and other emotions, and later in life will overeat when faced with any emotional stress or frustration.

If this failure of confirmation of child initiated behavior is severe, the outcome will be an individual who lives chiefly by responding to stimuli coming from others and feels controlled by the outside world. People with these deficits lack a sense of self effectiveness and feel as if their center of gravity is not within. This distinction between inner and outer control which Bruch expresses resembles Schachter's (1971) conception of "external cue sensitivity" and is similar to the orientation of Rotter's Internal-External Locus of Control Scale (1966).

Bruch (1958) proposes that there are two types of obesity. The

predominant form of obesity of juvenile onset is "developmental" obesity, a condition associated with severe emotional and personality disturbances and resembling preschizophrenic development. The second type she calls "reactive," a situation in which there has been a wide range of normal development with obesity occurring only under the impact of severe stress.

Silverstone (1969) also attempts to classify obese subjects from a psychological point of view into three groups. The first group is designated as having "maturity-onset obesity" and includes those persons in whom obesity comes on gradually as they get older and who have little in the way of psychological disturbance. They form the larger proportion, perhaps two-thirds, of all obese patients and are more likely to be of lower socio-economic status. The second category is "reactive obesity" and refers to those patients who become obese in later life, but only in reaction to some severe stress situation. The third category is "early-onset neurotic obesity." It includes those who become obese earlier in life, who are of a vulnerable personality, and whose eating behavior is governed almost entirely by emotional, rather than physiological factors. In the third group psychological factors are of paramount importance in both etiology and treatment.

Other studies have found that rather than attending to inner physiological cues, obese persons eat in response to such non-visceral stimuli as sight, smell, taste of food, and knowledge of the time of day. The basic proposition of this research by Schachter (1971) is that obese individuals show virtually no relationship between internal

state and eating behavior because their eating behavior is in large part under the control of external environmental cues. Additionally, cognitive behavior among the obese appears to be strongly under external control.

The newer research findings of Penick and Stunkard (1970) have provided support for the concept that obesity is a disease of multiple etiology. Evidence has been developed for the (a.) influence of social factors upon the prevalence of obesity, (b.) the influence of situational determinants, (c.) distinctive characteristics of the physiology of adipose tissue, and (d.) disturbance in body image of some obese persons.

Social Factors It is reported that to a remarkable degree the prevalence of obesity in the general population is under the control of social factors. To a surprising extent, socioeconomic status, as defined by education and occupation, is inversely related to the prevalence of obesity, particularly in women. The first dramatic evidence of this fact came from the Midtown Manhattan study (Goldblatt, Moore, & Stunkard, 1965) of 1660 New York City residents analyzed for obesity. The data showed incidence of obesity among women of lower socioeconomic status was 30%, falling to 16% among those of middle status, and to only 5% in the upper status group. Prevalence of obesity in lower class women was thus six times that found in the upper class group. The socioeconomic status of the respondent's parents was also investigated. This relationship proved also to be inversely related to the subject's weight. Such association was almost as powerful as that between social class of

the respondents and their obesity.

Situational Determinants of Obesity As stated earlier, studies by Schachter and his students have demonstrated the surprising degree to which eating behavior is under environmental control. Experimental rats caused to be obese by hypothalamic lesions were characterized by an impairment in the mechanism of satiety and drive. Nisbett (1968) was the first to demonstrate in humans this same type of eating behavior. When provided relatively unlimited access to food, the obese persons ate considerably more than their normal weight controls. When an impediment was introduced, however, the food intake of obese subjects fell considerably below that of controls.

Physiologic Studies of Adipose Tissue A series of studies by Hirsch and his colleagues have suggested that early nutritional experiences may influence the development of obesity by establishing the fundamental characteristics of adipose tissue (Hirsch & Knittle, 1968; 1970). The fact that cell number does not change in adult life implies a critical period in human beings during which the number of adipose tissue cells is established for a lifetime. Persons who become obese during this period, perhaps in infancy, perhaps in childhood, may do so through hyperplasia (increase in number) of adipose tissue cells. A person with adult onset obesity (the hypertrophic type) could feasibly return to a normal weight simply by emptying his adipose tissue cells of their excessive load of fat. Patients with early onset obesity would experience greater difficulty in weight reduction because they would be dealing with the double burden of an increased number and an

increased size of adipose tissue cells. Clinical experience accords with these predictions that juvenile-onset obesity is more resistant to treatment than obesity beginning later in life.

Body Image Disturbance The term "body image" refers to the picture that the person has of the physical appearance of his body. Disturbance in body image is characterized by a feeling that one's body is grotesque and loathesome and is associated with self consciousness and greatly impaired interpersonal and heterosexual relationships. This disturbance is not affected by weight reduction, but has been favorably altered by long term psychotherapy. Unexpectedly, body image disturbances do not occur in all obese people. They do not occur in emotionally healthy obese persons and only in a minority of neurotic obese persons (Mendelson & Stunkard, 1964). They were found, almost exclusively, in patients who became obese in childhood or adolescence.

Eating Patterns Another line of research contributing to our knowledge of characteristics of obese patients has to do with their eating patterns. Deviant behavior in this area occurs in only a minority of persons, nevertheless they occur consistently in these individuals (Stunkard, Grace, & Wolff, 1955). The "night-eating" syndrome is characterized by morning anorexia, evening hyperphagia, and insomnia. These eaters are poor candidates for weight reduction. The "binge eating" syndrome tends to occur in periods of life stress and is characterized by ingestion of enormous quantities of food and large weight gain in a relatively short period of time.

In an exhaustive review of the literature Kaplan & Kaplan (1957)

conclude that while most investigators believe overeating to be a symptom of emotional disturbance, there is little agreement among them concerning the nature of this disorder. Glucksman (1972), while reviewing the psychological problems associated with obesity, concluded that a specific personality pattern or psychodynamic constellation among the obese did not exist.

Recent research on obesity has done far more than merely advance our understanding of this condition. It has also provided information upon which it may be possible for the first time to construct effective treatment programs.

One finds a review of evaluation of obesity treatments a most difficult task because of the lack of long-term studies, inappropriate controls, different modes of treatment, and the unscientific fashion with which results are reported. Jeffrey (1974) strongly recommends that standard improvement criteria need to be established so that studies can be meaningfully compared. He illustrates his point by stating, "it is difficult to compare directly a study that reports a behavior therapy group losing an average of 13 pounds with a study that reports 53% of the patients in a behavior therapy group losing more than 20 pounds."

The Stunkard-McLaren Hume study of 1959 is a classic in the area of evaluation of treatment. After conducting a survey of the literature over a 30-year period, they concluded that the ambiguity of reported results had obscured the relative ineffectiveness of such treatment and that the results of treatment for obesity were remarkably poor.

In their opinion most obese persons will not enter treatment; of those who do, most will not lose weight; and of those who lose weight, most will regain it.

In a more recent review of the effectiveness of various treatments, Gloria Leon (1976) concludes that treatment results with traditional weight loss procedures are no more effective now than they were 15 years ago. Behavior modification techniques have shown the most promising results in weight loss maintenance. Intestinal bypass surgery has produced substantial weight reduction, but the physical side effects and complications are many.

A review of the many varied treatment approaches follows, then special attention is devoted to studies that have been done on group therapy and the use of hypnotherapy.

The literature on psychoanalysis as a treatment for obesity consists primarily of case reports. Emphasis of exploration of the entire personality and focus on uncovering the conflicts assumed to have caused the symptoms of overeating. The clinical literature attests to the general ineffectiveness of conventional psychoanalysis in treatment of obesity, particularly in individuals where there is no significant indication of personality pathology (Wick, Sigman, & Kline, 1971).

Chlouverakis (1975) in a comprehensive review of dietary and medical treatments for obesity has analyzed and discussed published results of various studies. The methods used have included dietary control, fasting for the superobese, and medical treatments such as bulk

producing agents, medicinal and hormonal preparations (oral and injectable), exercise and surgical treatment (lipectomy and small bowel bypass). He views these treatment outcomes without much optimism and in conclusion states:

A more vigorous, aggressive, and optimistic psychotherapeutic approach employs techniques which have been derived from behaviorist learning theory, both "classical conditioning" developed by Pavlov and "operant conditioning" associated with B.F. Skinner. In behavior therapy or modification, the therapist is interested in the set of habits which contribute to excessive calorie intake and decreased energy expenditure and tries to modify them. Obesity is seen as a consequence of such observable habits, rather than as a symptom of some underlying psychologic abnormality which is usually inaccessible to immediate observation. (p. 10)

Lack of success with traditional approaches has prompted a rapidly increasing application of behavioral principles to weight control. Encouraging results have been produced with a variety of programs. The major form of behavior therapy has been to modify the balance of energy in the patient indirectly by altering the antecedent and consequent stimuli that control eating. Several recent reviews have concluded that behavior therapy is the most effective approach for treatment of obesity (Abramson, 1973, 1977; Bellack, 1975; Hall and Hall, 1974; and Stunkard, 1972). Although this conclusion is qualified, it is, however, positive and supported by a general comparison of behavioral and non-behavioral treatments.

In recent years hypnosis has emerged as a valuable treatment for obesity. Included in the many theories of hypnosis outlined succinctly by Wolberg (1962) are those based on psychoanalysis, physiology, and conditioning of reflexes. One type of therapy within the regimen of hypnosis attempts to combine the strengths of hypnosis with the

behavioral treatment that has already realized some success. This therapeutic approach involves reconditioning a patient's eating reflexes with the aid of hypnotic techniques.

Actually hypnosis and behavior therapy have a long-standing association. Upon examining Wolpe's early technique of reciprocal inhibition in which he first relaxes the patient and then presents stress images until the patient's anxiety response is diminished, one realizes that the method is quite similar to a hypnotic induction. So by looking more closely at Wolpe's "reciprocal inhibition" and "systematic desensitization," one may observe the injection of a hypnotic like trance into the very core of classic behavior and modification techniques.

Clinicians Crasilneck and Hall (1975) recognize that there is much similarity between some hypnotic phenomena and conditioned reflexes. In their experience, a strongly accepted post hypnotic suggestion behaves in a manner almost identical to a conditioned response.

Kroger (1970) states simply his treatment approach: behavior modification through conditioning under hypnosis. His *raison d'etre* for adjunctive use of hypnosis in psychotherapy is to enable the patient to transcend his normal volitional capacities and thus more effectively modify maladaptive behavior.

Kroger's "systems approach" for understanding obesity incorporates a physiological component as well as the psychological one. The recent findings that some portions of the autonomic nervous system (ANS) can be brought under volitional control support one of Kroger's

early theses: post-hypnotic suggestions to reduce eating have both cognitive and affective components and a psychophysiological basis, since hypothalamic centers in the ANS mediate hunger and satiety. *stop*

For the past 25 years Kroger's treatment method has emphasized interoceptive conditioning or internal inhibition under hypnosis to change eating patterns and produce weight loss. He has taught that by "inner speech" based on "scene visualization" of past experiences (sensory imagery conditioning), greater mastery of ANS functioning can be obtained. He used mental imagery and a "think thin" suggestion to stimulate the patient's emotions, which he believed could alter metabolic and endocrine activities. In phantom pregnancy the ANS "tricks" endocrine activities and body processes into responding with a weight gain on the basis of wishes for pregnancy. Therefore, it is conceivable that these neuro-humoral pathways could aid in weight loss with the proper inputs.

Maxwell Maltz (1967) is another well known promoter of mental imagery. According to his formulation, if the subconscious mind is provided with a target or desired goal, it will then direct the individual's behavior so the target will be achieved, often without any conscious effort on the part of the person concerned.

More recently Miller (1974) described a treatment approach which he says he designed based on the discovery that Pavlovian type conditioning can be tremendously speeded up and potentiated by means of hypnosis. This applies to both learning and relearning capabilities of a subcortical, reflex, automatic character. His study indicated that 49 out of

50 patients were successfully hypnotized and responded favorably to treatment in which aversion to high caloric foods was induced under hypnosis. The average weight loss was four pounds per week.

The relationship between learning theory, physiology, and hypnosis is intriguing and indeed promising for treatment of obesity. A consideration of the theories of hypnosis, however, would not be complete without examining the psychoanalytic view. It conceptualizes hypnosis primarily as a regressive phenomenon in which the subject reacts to the hypnotherapist as one might to a significant figure of one's past. Hypnosis seems to have an extraordinary impact on rapport, and in the trance state, the soothing support of an idealized parental figure, in the body of the therapist, may catalyze the therapeutic process (Crasilneck & Hall, 1975).

It has been demonstrated that hypnosis facilitates this transference phenomenon rapidly and also aids in the removal of resistance. Wolberg (1945) believes that when hypnosis is used for purposes of symptom removal and as an adjunct to palliative psychotherapy, it is usually inexpedient to analyze the transference. Indeed one strives to perpetuate in the patient the illusion of the therapist's protective powers. The relationship cloaks the hypnotist in a mantle of authority that instills faith in one's ideas and communications. Though rooted in dependency, this relationship may be utilized to encourage self development.

In recent years, work in hypnosis has indicated that it has possibilities as a much needed way to shorten traditionally lengthy psychotherapy. The hypnotic induction in itself often produces a

remarkable abatement of symptoms. Of all therapies, hypnosis is probably the most effective instrument in promoting acceptance of suggestion, direct or indirect. Hypnosis is an altered state of consciousness, and during the hypnotic trance, the subject is in a state of heightened susceptibility to suggestion.

More and more hypnosis is being seen as a valuable treatment modality rather than as a last-resort treatment to be used only in extreme situations. It is now accepted as the initial treatment of choice in some conditions such as obesity (Crasilneck & Hall, 1975).

Though the field is stabilizing, there is still disagreement concerning the technique of direct removal of symptoms. Critics of this method, such as Crasilneck and Hall (1975), insist that in current clinical practice the goal should always be treatment of the entire patient. Suppression of symptoms must be managed as part of the overall psychodynamic picture. Advocates of the direct suggestion method point out that it was the earliest form of hypnotherapy, pioneered by Franz Mesmer and Jean Charcot. While the oldest, it is still the most widely used technique (Tucky, 1921). "Directive hypnotherapy" involves application of hypnotic techniques for immediate distress. While discussing its effectiveness, Kline (1956) states that it is distinctly a symptom oriented therapy rather than an etiologically oriented one.

It is, of course, difficult to reconcile the different positions taken on the value of direct suggestion for removal of symptoms versus

the value of hypnoanalysis for the "whole person." Wick, Sigman, and Kline (1971) have comments to make, however, relating this problem to the area of obesity. They consider that there are two distinct groups within the population of obese individuals. In one group, obesity seems to be a symptomatic manifestation of underlying psychopathology. These patients require psychotherapy in addition to a direct attempt at weight control. In the second group, emotional distress seems to be a reaction to the presence of the overweight problem. This group needs only therapy directed specifically toward bringing their weight down. If these two groups could be delineated and assigned to treatment conditions accordingly, immense progress could be made in treatment of the obese.

Turning toward a review of studies using hypnosis as the treatment approach, one finds many case studies which concentrate on the specific techniques employed. Erickson (1960) reported on three successful cases and emphasized the need to center the therapeutic use of hypnosis around the individual personality needs and attitudes of the patient, whether they are reasonable or unreasonable, recognized or unrecognized. Kroger (1970) described his treatment technique and stated that a large percentage of his patients were able to maintain a weight loss over a period of years, but no specific weight reduction information was given.

Brodie (1964) suggested that the obese person become a gourmet as a way of learning new eating habits and patterns. Hershman (1955)

reported good results in three cases of obesity treated by hypnosis.

Stanton (1975) employed direct suggestive therapy, imagining of a desired goal, and ego-enhancing suggestions to promote positive thinking. He placed emphasis on the importance of the therapist-patient relationship and, in particular, fostering the expectation that treatment would be successful. He reported success with small numbers of individual patients and a two year followup of ten patients.

Crasilneck and Hall (1975) stress the necessity of a screening interview to assess the general emotional stability of the patient before acceptance for hypnotic treatment. They have found that the typical case of mild to moderate obesity seems largely a habit disturbance that is amenable to a relatively brief period of treatment. In 350 patients treated with hypnotherapy, they found the average weight loss to be 10 pounds per month in good subjects. They report that 80% of their patients lose weight permanently and have insight into coping with their compulsive eating habits. The 20% who fail to achieve their weight goal terminate treatment prematurely and fail to attain both emotional and intellectual insight concerning etiology of the disorder.

Group Treatment

While hypnotherapy has produced positive results in the treatment of obesity, the number of patients who are in a position to receive this or any other type of individual treatment constitute only a small minority of the obese population. The group approach to treatment has the advantages of reaching greater numbers of patients for the amount of therapist's time involved, with the result of lessened expense for

the patient. Kroger (1970) thinks that the group approach may be even more beneficial than individual sessions. He observes that group attendance is a form of behavior which substitutes for eating behavior and a source of companionship. There is the emotional contagion inherently present in any group, the desire to please the leader (the therapist), and the competitiveness. In addition, the increased socialization during and after the session is rewarding. Glomset (1957) points out that this form of treatment for obesity has the advantages that group therapy has for any other problem.

Chouverakis (1975) observes that the effectiveness of the psychotherapeutic group is largely influenced by both the structure of the group and the qualities of its leader. Consequently, the results of such techniques will be characterized by the same marked variation which has been observed with other methods.

Various types of groups have focused directly or indirectly on the issue of weight reduction. The group processes have included insight-oriented psychotherapy, emotional support, leader directed, and social pressure for self help.

Holt and Winick (1961) found that a group analytic approach appeared to offer an opportunity to explore the obese patient's defenses and group functioning in a depth not previously possible. Weight changes were minimal, however.

Successful weight reduction occurred in a group of seven women who discussed their diet problems in an emotionally supportive atmosphere (Kornhaber, 1968). However, Wick, Sigman, and Kline (1971) found

that obese women in a supportive group oriented around changing eating patterns and emotional ventilation made progress in weight reduction as long as sessions were held, but showed marked weight gains when the group was temporarily terminated.

Glomset (1957) uses the "Directive Group" approach in which the leader motivates patients toward specific ends. He stresses that this method does not result in basic intrapsychic change, rather it results in corrected attitudes and values, and an improved self awareness. It is an intellectual rather than an analytical form of therapy.

A number of voluntary and commercial self-help weight reduction groups have recently become popular. These organizations typically provide strong group pressure to lose weight by publicly announcing the member's weight status at each meeting. The TOPS CLUB, INC. (Take Off Pounds Sensibly) is the largest of these groups. It is an international organization with over 350,000 members. Clubs or chapters are formed with an average of 30 members per group. The members provide informal group "therapy" or support for each other at the weekly chapter meetings. A complex reinforcement system with monetary fines for weight gain is employed. There are slogans and songs, and local and national conventions.

Refractorily or irremediably obese women in the club are referred to as "R-TOPS." By contrast a number of women are designated as "KOPS" (Keep Off Pounds Sensibly) because they have reduced their weight to within 5% of their ideal body weight (IBW) and maintained this figure for at least six months. TOPS has its headquarters in Milwaukee, and

since 1967 has utilized the resources of the Deaconess Hospital and Medical College of Wisconsin for research. They are investigating psychological factors operative in obesity in an attempt to improve their management programs.

McCall (1977) tried to assess the effectiveness of local TOPS chapter meetings in helping members to achieve greater weight control. Nineteen TOPS chapters were rated on 18 scales. Results showed that concern of the leader for the members, the members' concern for each other, and the ability of the leader to deal with the problem of weight were factors more importantly related to the success of the chapter than emphasis on nutrition or exercise or various reinforcement devices and kinds of information provided by the chapter. Another important contribution to the differentiation of more successful from less successful chapters is the members' enthusiastic belief in the TOPS organization and its philosophy. Here again we see the relationship to the leader and the patient's expectancy emerging as very important factors in treatment outcome.

Stunkard evaluated the effectiveness of 22 TOPS chapters and found that the members (predominantly women) stayed in the group for an average period of 16-1/2 months. Mean weight loss was 15 pounds over that time period, and 28% of the members lost more than 20 pounds. A two-year follow-up of the same chapters indicated a change in the rank order of the effectiveness of the chapters, but the mean weight loss of 14.2 pounds across chapters was similar to the weight loss results found two years previously (Garb & Stunkard, 1974; Stunkard, 1972). However,

only 28% of the members remained in TOPS over the two-year period, and relatively heavier members who lost more weight tended to remain in the group for a longer period of time.

More recent research assessing the addition of behavior modification techniques to the TOPS format (Levitz & Stunkard, 1974) has demonstrated that TOPS groups instructed in behavior modification techniques by a professional had significantly lower attrition rates and significantly greater weight loss over a 12-week period (mean loss = 4.24 pounds) than TOPS groups using a lay person to teach behavior modification (mean loss = 1.90 pounds), nutrition education groups (mean loss = .25 pounds), and TOPS groups run in the traditional manner (mean weight gain = .71 pounds). Persons in the behavior modification group led by a professional also maintained their greater weight loss over a 12-month period (final mean weight loss = 5.8 pounds).

Leon (1976) observed that while addition of behavior modification techniques to the social pressure process of self-help groups was associated with a statistically significant weight loss, the actual mean weight loss maintained at follow-up was not very substantial. She did recognize, however, that the reporting of mean weights may obscure the possibility that these procedures were quite helpful for some individuals, but ineffective for others. In her review of various treatments, her general conclusion was that group support in and of itself was not associated with successful weight reduction. But the efficacy of group approaches is difficult to assess because in most studies, no follow-up information was presented and the majority did not report specific weight

loss statistics.

While such negative judgments are discouraging, other researchers can be found who have a more optimistic outlook. Perline (1968) says there is no reason to believe that the success reported in the literature with individual hypnotherapy cannot be had with group hypnotherapeutic sessions. While group therapy for obesity does have certain advantages cited earlier, it has also been observed that group hypnotherapy has additional advantages peculiar to that medium.

Therapists frequently say that there is much greater difficulty in establishing a strong transference relationship between the individual patient and the therapist when therapy is taking place in a group. So in a group process where the factor of a one-to-one relationship is eliminated, it is particularly meaningful to utilize mechanisms such as hypnosis that establish and intensify the strength of transference, since it is a significant factor in the process of therapeutic change.

It is generally the consensus that change in the area of the patient's self concept is particularly achieved by group process, as compared with individual therapy. This occurs as a consequence of the process of peer consensual validation.

On the negative side, resistance to the group as an invasion of privacy may be intensified in a hypnotherapy milieu.

The phenomenon of heightened suggestibility in groups should also be remembered. The existence of a group situation, by itself, is frequently a sufficient condition for heightened suggestibility to occur (Freud, 1922). Hence hypnotic induction may be a virtually

spontaneous occurrence. One encounters this phenomenon in a variety of other group situations, such as spontaneous mob action or mystical rites and celebrations.

Group Hypnotherapy for Treatment of Obesity To demonstrate what has been done with group hypnotherapy for treatment of obesity, some findings from the recent literature will be cited. Leo Wollman (1962) reported "noteworthy success" in 525 cases that he treated. He employed hypnosis for weight control as an adjunct therapy in his medical practice and saw practically no danger if it was used with ordinary medical judgment. His method was to give hypnotic suggestions in a directive manner to diminish or increase by any chosen fraction the food intake of the previous week. He usually treated groups of five using half of the hour session for informal discussion of individual problems and the other half hour to induce the trance state. Recording total weight loss for the entire group and making weekly comparisons provided an incentive for group loyalty and was effective in stimulating enthusiasm. From the results of his study he found there was an average 30 pound loss over a three month period, and for the same period, his underweight group gained 10 pounds.

Similar results were obtained by Glover (1961) with a smaller group of 27 nurses. According to Glover, the use of hypnosis is particularly effective for those who have tried other methods with little or no success. Hypnotic suggestions were given in a directive manner, and the average weight loss at the termination of therapy (four months) was 30 pounds.

Mann (1959) used a method in groups similar to that of Brodie (1964) by giving hypnotic instructions designed to convert the craving for large quantities of fattening food to an appreciation of the subtle flavors of small portions of nonfattening foods. He concluded that group hypnosis in the treatment of obesity is of tremendous advantage because it establishes an unusual kind of interpersonal relationship that is so well adapted to anxious, frustrated, despairing patients.

Hanley (1967) believes that hypnosis can be of great value in facilitating the acquisition of new eating patterns. He has treated groups of six to eight females ages 21-44. He spends one or two sessions training the patient to enter a hypnotic trance. The remainder of the sessions consist of group discussion of personal difficulties and feelings which provides mutual support and the interchange of helpful ideas. Then group hypnosis follows in which general suggestions are given. He cites that average weight loss is two to three pounds per week. In addition, his patients report that their outlook on life changes and that they improve in ways they had not expected.

Wick, Sigman and Kline (1971) successfully applied the constructs of hypnosis but without hypnotic induction in a group of 16 obese housewives. They used a program of therapeutic education with cognitive motivation. They believe that their format of group identification, group goals, and striving to understand the role that stress and deprivation play in eating behavior offers a dramatic and effective means of weight control for large numbers of the population.

Aja (1977) experimented with a brief treatment method of three

sessions for 40 subjects. A standard trance induction was followed by a series of behavior specific suggestions. Strong verbal reinforcement was provided for those clients reporting successful hypnotic experiences, increased relaxation, or dramatic changes in eating habits. The low average weight loss (12.6 lbs. three months following therapy for the 40 subjects responding) obtained, however, suggests that this technique provides an economical, but only moderately effective treatment strategy for weight loss.

Group hypnotherapy in a university counseling center in the form of specialized clinics was tried by Hartman (1969). The sessions, which were held weekly for eight weeks, contained five clients and included group discussion and lectures on good eating habits. Steady improvement was noted for all clients who regularly attended.

It is apparent from the studies cited that most of the research in the field of hypnotherapy to date is of a didactic and directive nature. In the future, however, work may move into more non-directive areas. Leon (1976), in her review of treatment methods, criticizes research in the field of hypnosis in general because the majority of reports are individual case histories or specific statistics on weight loss, and follow-up information is almost uniformly lacking. Because of these deficits, one cannot make a judgment about the effectiveness of hypnosis as a technique in comparison to other procedures for modification.

Methodological Issues in Research on Obesity

It would seem appropriate at this point to consider some of the methodological issues in research on obesity and the evaluation of its treatment. D. Balfour Jeffrey has investigated and reviewed this area

with great thoroughness (Jeffrey, 1974, 1975). His findings will be presented below. It is his belief that if clinicians are to achieve their goal of developing effective treatment, their programs must be based on empirical, methodologically sound research. In view of the repeated findings that a number of different treatment programs can be used to facilitate weight loss, it appears that therapists and researchers should now move on to more perplexing and productive issues, such as patient dropouts, standardized improvement measures, long-term maintenance, cost-effectiveness analysis of treatment, research strategies, the development of behavioral predictors, and an analysis of both successes and failures.

Many issues are involved in determining whether treatment for any inappropriate behavior is successful. Some of these issues are generalization across time, standardized improvement criteria, cost-effectiveness, and clinical significance. Obviously the first phase of a treatment program must demonstrate a reduction in weight before the issue of maintenance becomes important. But the history of research in obesity indicates there is still insufficient follow-up data to determine the durability of the behavioral changes, i.e., generalization across time.

Before addressing Jeffrey's issue of "standardized improvement criteria," it would be appropriate to discuss various definitions of obesity (Leon & Roth, 1977). What is the criteria used in labeling an individual "obese," and what are the measuring procedures employed in determining the degree of obesity in relation to some type of standard? The most commonly used measures of obesity in the psycho-

logical literature are the Metropolitan Life Insurance tables of ideal or desirable weights and the triceps skinfold thickness measurement, which determines the amount of subcutaneous fatty tissue. Seltzer and Mayer (1965) reported that the measurement of skin-fold thickness, particularly at the triceps, is the most accurate method of defining obesity and determining its extent. The ponderal index (cubic root body weight/body length or height) has also been used as an index of relative weight. The major disadvantage of using tables of ideal weight (divided according to height, sex, and frame size) is that there is no accepted system for choosing frame size. The Metropolitan Life Insurance tables also range between 6 and 22 pounds within a particular frame size for a given sex and height category. Further, the table norms begin at age 25 for men and at age 18 for women. Another difficulty with the various height-weight standards in designating degree of obesity is that these tables do not take into consideration weight due to body fat as compared to lean body mass. Sex differences are another important variable to consider in defining obesity since females have a higher proportion of body mass made up of fat than do males. A precise definition of "obesity" may appear to be unimportant if one is choosing massively obese individuals for subjects in a psychological experiment. However, a large number of studies use the cutoff point of 15% above ideal body weight as the criterion for obesity. Given the range of error possible in the ideal weight tables, this percentage may fall within the error variance of the table. Therefore, Leon and Roth (1977) think it is crucial that the lower limit of obesity be defined and measured as accurately as

possible.

Another area in which little uniformity exists is in the criteria which are used for evaluating weight loss. Bray (1973) reviewed the several criteria which have been proposed, all of which use some measure of body weight. Feinstein (1959) also discussed the merits of various indices such as pounds lost and percentage successful. He concluded by recommending a new index called the weight-reduction index (RI), which is equal to the percent of excess weight lost X relative initial obesity.

$$RI = (W_l/W_s) (W_i/W_t) \times 100$$

Where: W_l = weight loss; W_s = surplus weight; W_i = initial weight;

W_t = target weight according to height

This index takes into account weight, height, amount overweight, goal, and pounds lost. The reduction index will usually provide a value between 0 (no weight lost) and 200 (a large weight loss). Jeffrey suggests the use of this index as a standard for reporting weight loss because of the convenience it affords in comparing different weight reduction treatments for effectiveness, regardless of their rationale or procedure.

Jeffrey also points out that successful therapy should not only demonstrate effectiveness, but also efficiency. A treatment program which is effective, but costs inordinate amounts of time and money, has little relevance to clinical practice. There is a clear mandate to develop interventions which not only have effects and persist, but which also are feasible in terms of cost. If obesity treatment studies reported how much time was spent per session and total time with each

patient, an efficiency measure could be calculated. He suggests that one cost effectiveness index might be the mean weight-reduction index of Feinstein divided by the mean treatment time.

$$\text{Cost-Effectiveness Index} = \frac{\text{Mean weight-reduction index}}{\text{Mean treatment time per patient}}$$

Jeffrey's final issue in evaluating successful treatment is that it be not just statistically significant, but clinically significant as well. Again, the criterion to use is not easy to determine. He states, however, that most obese patients and health professionals involved with treatment of obesity would probably say that a patient needs to achieve a substantial part of his/her weight goal and maintain that weight loss for at least six months to a year before they would consider the finding clinically significant.

Another important issue in research concerns the number of people dropping out of treatment prematurely. The higher the attrition rate, the more difficult it is to interpret results of the study. Since dropouts also constitute treatment failures, it seems advisable for some studies to investigate systematically what factors contribute to patients dropping out of treatment.

Fortunately, research methodology employed in recent obesity studies has improved over previous research. Although it is essential to establish methodological rigor and statistical significance, by themselves they are insufficient criteria to evaluate the total significance of a study. The ultimate criterion is whether an investigation contributes to the understanding of obesity and to the development

of effective treatment programs. Since over eight good experimental studies have included either a no-treatment control or a waiting list control group and have found a weight change of no more than ± 2 pounds, the question is raised of whether any useful information can now be gained by including any more such standard control groups (Jeffrey, 1974).

The issue of symptom substitution has divided psychodynamic and behavior therapists around the results of treating the "symptoms" rather than the "underlying cause." Traditional psychodynamic approaches are based on personality systems in which the symptom is seen as the expression of deep underlying psychological conflicts. It is assumed that if the symptom is eliminated without treating the "underlying cause," the formation of a new symptom will occur. Newer behavior therapy approaches consider symptoms as behaviors which are acquired and maintained by learning principles just as any other behavior is acquired and maintained. Cahoon (1968) argues that symptom substitution (a maladaptive behavior) can occur within any therapeutic approach, and whether it actually occurs is an empirical rather than a theoretical matter. If substitution can occur with any therapeutic technique, it is important to include multiple dependent measures in order to assess whether symptom substitution or adverse side effects are present. Collecting data on such possible side effects as depression, anxiety, or occurrence of emotional illness is important, so this question can be continually answered by empirical facts rather than by theoretical fiat.

Jeffrey's final methodological issue is the consideration of

patient and therapist variables. Abramson (1977) also speaks to this issue stating that perhaps the most significant problem in obesity research is the tremendous variation in subjects' responses to treatment. He found that even in the most effective programs with impressive average weight losses, there are inevitably several participants who did not lose weight. It is clear that there are great individual differences in patient improvement. Likewise, there has been considerable variation between the effectiveness of therapists using the same techniques.

Non-Specific Factors in Treatment A large body of theoretical literature has evolved around non-specific factors in treatment such as the patient's expectancy, motivation, and faith in the therapist; as well as the therapist's reputation, his interpersonal skills and attitudes, and the patient-therapist relationship.

The idea that patients bring certain expectations with them to therapy and change in accordance with those expectations has been gaining popularity. In fact, Lazarus (1973) would argue that the particular technique used is virtually irrelevant. What is important is the belief of the therapist in what is being done and the belief of the patient that this therapist using this technique will be helpful. The interaction here resembles the self-fulfilling prophecy syndrome (Rosenthal & Jacobson, 1968) where a person who expects to achieve a certain outcome enhances the possibility of doing so simply through the positive power of one's expectation. Kroger (1970) states that since he has a reputation for successful treatment of obesity with hypnosis,

his patients come in with a favorable mental set which promptly establishes good rapport. Crasilneck and Hall (1975) concur with this view and recognize that the expectancy factor is only one of many obstructions that impose themselves on attempts to establish empirical platforms for psychotherapy.

The need for objective and quantitative measures of the patient's attitudes toward treatment is certainly indicated. Attempts have been made (Reznikoff, Brady, & Zeller, 1959), but as yet the results are still experimental and administered only individually using projective material.

The relationship between the therapist and patient is recognized in all therapy modes as a curative factor. Gurman (1977) reviews evidence in support of the importance in individual therapy of a patient's perception of the quality of the therapeutic relationship, rather than a judgment by the therapist or third party rater. Frank (1961) emphasized the effect on the patient of the therapist's qualities of dominance, charisma, and "mystical healing" power. Again, the development of instruments for measuring this nonspecific factor is in its early stages. The Relationship-Inventory of Barrett-Lennard (1962) which treats the patient's perception of the therapy relationship is perhaps the best known instrument to date, but it is still in the experimental stages and pertinent only to clients in individual therapy.

One last nonspecific factor in treatment to be considered is that of patient variability. Since obesity is not a unitary condition with a unitary prognosis, it is not surprising that there is great

variability in patient response to treatment programs. Although many cases of obesity do not respond to treatment, it is well to remember that there are some obese patients who do manage successfully to lose weight. According to Mendelson (1964) the task of the physician is to learn to distinguish the patients with a good prognosis from those patients with a probable poor prognosis. Jeffrey sees "prediction" as one of the tasks of the researcher of the future. This would involve developing good predictors to identify the individuals who would have the highest probability of success in a given type of therapy program. It seems likely that certain patients could be treated more effectively in one type of therapy than in another.

Current Study The methodological issues in research on obesity have been reviewed in depth with the purpose of incorporating current ideas, if they are feasible, into the construction of this research project. Considering the scope of the study, long term follow-up to see if weight loss has been maintained for six months to a year is not possible. Therefore, the issues of long term maintenance and clinical significance cannot be addressed fully. Nor is it possible to assess such non-specific factors as the patient's expectancy, his motivation, faith in the therapist, the therapist's reputation, or the patient-therapist relationship. Instruments to measure such variables have not been constructed for group use, and even the ones that are available are still in the experimental stage.

Other issues can be addressed, however. One is systematic reporting of subjects dropping out of the study and investigation of what

factors contribute to this fact. Another is reporting the results of weight loss in the form of a standardized improvement criteria, and compiling information on the cost effectiveness of treatment. It is feasible to gather pretest data from patients in an attempt to determine what variables are predictors of success in treatment. Follow-up data can also be collected on successful subjects in order to address the issue of symptom substitution or occurrence of adverse side effects as a result of treatment.

Prediction Since a major thrust of this study is identification of whatever variables seem to predict success or failure in treatment, a survey of the available literature may permit rejection of untenable hypotheses and allow the research to focus on those variables which appear to be most promising. Results of inquiry in the field of predictability are generally equivocal. Bruch (1957) has said that little is known about what enables some people to reduce and to stay at the lower weight level. There is no meaningful analysis of factors that make for success or failure. Hall and Hall (1974) observe that though many demographic, test, and life history variables have been hypothesized to predict treatment outcome, few have been found to be useful.

The many independent variables studied have included demographic characteristics (age, sex, marital status, education, occupational and social class, family history of obesity); personal weight history (previous diets, chronicity of condition, and eating patterns); physiological variables; age of onset of obesity; and test variables (I.Q. and personality measures).

Stunkard has been the principal investigator of personal weight history. In 1955, Stunkard, Grace & Wolff identified three criteria that they found to be predictive of successful weight loss. The first criterion was simply whether a person had ever successfully reduced before. The second criterion was whether the patient felt good during the first few days of his diet. The third criterion involved the pattern of a patient's eating. When he had a "night-eating syndrome" which consisted of morning anorexia, evening hyperphagia, and insomnia, he would also have a great deal of difficulty losing weight. Therefore, if patients had lost weight before, if they felt well after starting their diet, and if they were not showing the night-eating syndrome, their chances of losing weight were good. However, in 1959, Stunkard and Hume reported the results of a study which reversed their previous findings since it provided no support for the "night-eating" syndrome as a predictor.

Many of the positive results which have been reported come from a study by Borden (1974) who administered a variety of measures to a group of 148 obese adults. She found that previous unsuccessful diet attempts were negatively related to weight loss at three and six month follow-ups, that subjects who reported more reasons for dieting lost more weight at those same periods, but that those who felt they were under a great deal of pressure to lose weight did less well.

Another factor which has been speculated to be a possible predictor of treatment success is the age of onset of obesity. According to Mendelson (1965), the easiest criterion for separating out patients

with the poorest prognosis is the age of onset of the obesity. Those patients with juvenile obesity who became overweight prior to adulthood are likely to have a poor body image, difficulty in interpersonal relations, lack of self esteem, and therefore a poor prognosis. Those patients who became obese during adulthood are more likely to feel merely that they should be getting rid of some weight.

McReynolds and Lutz (1974) correlated the age of onset and proportion of life overweight with weight loss among 54 females and found that both were significantly correlated with weight loss ($r = +.44$ and $r = -.47$ respectively, $p < .01$ in each case). Borden (1974) also found that age at which subjects became overweight was correlated with the number of pounds lost during treatment ($r = +.50$, $p < .05$), and at a six-month follow-up as well ($r = +.61$, $p < .02$). Silverstone and Cooper (1972) reported that of their early-onset (before age 30) subjects, 37% were successful (lost 5 kg. or more) compared to 47% of the mature-onset subjects. No test of significance was reported.

The results of present research generally support the hypothesis that juvenile-onset obesity is more difficult to treat than adult-onset obesity. Genetic influences, adipose hypercellularity (hypertrophic versus hyperplastic obesity), habit strength, psychological disturbance, and other causal explanations have been evoked. Age of onset has been found to be important, but the reason for this is unclear.

A number of other demographic variables have been postulated to be predictive of treatment success. Quereschi (1975) determined from a questionnaire he devised and administered to 180 TOPS members that

remediability was positively related to being married and the obese person's perception of the appropriateness of the culturally stereotyped, sex-related roles of their parents. An overweight mother was predictive of failure in the program.

Shipman and Plesset (1963) in a study of 120 cases found that a number of sociologic factors seemed to have predictive power. Socio-economic status, age, degree of obesity, marital status, race, and other medical disorders were investigated. Patients over 50 years old did poorly, as did those 60% or more overweight. Upper socio-economic status was predictive of success, and white people did proportionately much better than Blacks. Single women under 30 did very well, but those over 30 did poorly. Widowed, divorced, and separated women did quite poorly. Patients with many other medical conditions dieted less successfully. Shipman and Plesset concluded that negative factors in a person's life are an additional burden the person must carry during the diet, thus hindering a whole-hearted effort toward the goal.

Silverstone and Cooper (1972) also found that upper social class and younger age correlated with success in weight loss. While research on these demographic variables holds promise, there is lack of sufficient data from which to draw conclusions at this time.

Various personality measures have been utilized in the search for predictor variables, including standardized assessment instruments and specially designed measures. Positive results have been reported, such as Quereshi's (1975) findings on the Michill Adjective Rating Scale that members of the TOPS organization who had failed to lose weight

perceived their mothers as more productive and at a higher level of achievement than themselves. They either rejected emulation of their mother's achievement or considered it unattainable. The factors labeled as unhappiness and extraversion were also significantly higher in the irremediable group.

The Edwards Personal Preference Scale was administered by Payne, Rasmussen, and Shinedling (1970) to university females in group therapy. The successful dieters differed from unsuccessful ones only in the dimension of consistency, with the successful ones being less consistent than those who were unsuccessful.

Summerskill and Darling (1955) administered psychological tests to small groups of female undergraduates and found a positive relationship between above average emotional adjustment and dieting success. According to the Bell Adjustment Inventory, 78% of well adjusted individuals were independently rated as acceptable dieters whereas only 18% of the more poorly adjusted were so rated. Psychological adjustment scores from the Psychosomatic Inventory were in essential agreement with the Bell emotional scores and showed a similar positive relationship with dieting performance. There were no significant findings from administration of the MMPI.

Anxiety and depression were measured by the Taylor Manifest Anxiety Scale and depression items derived from the MMPI in 120 subjects (Shipman & Plesset, 1963). Low initial anxiety and depression scores were predictive of success for those subjects who dieted for four or more

visits. Shipman and Plesset interpreted their findings as a demonstration that successful dieting occurs only in a favorable emotional state.

Silverstone and Solomon (1965) found that women classified as "neurotic" on the basis of their score on the Cornell Medical Index lost less weight than those whose CMI score was normal. In 1972, Silverstone and Cooper used the N-score of the Eysenck Personality Inventory to define neuroticism, but unlike the positive results obtained with the CMI, they found no difference in successful weight reduction or dropout rate between neurotic and non-neurotic subjects.

The majority of studies, like that of Silverstone and Cooper, have not found a relationship between personality and successful weight reduction. There has been enough evidence to the contrary, however, that the emotional stability of the patient is often mentioned in the literature as an important treatment consideration. Mendelson (1964) even concluded that "there is a growing consensus that dieting programs are in Bruch's terms 'realistic' only in the presence of relative emotional stability whereas they tend to be unrealistic in obese patients who are emotionally unstable and in whom the hyperphagia represents a significant part of the life adjustment."

Instrumentation The MMPI (Minnesota Multiphasic Personality Inventory) is one of the most widely used instruments in practice, and research and is often employed to measure a person's emotional stability. It is a true-false test consisting of 566 statements describing attitudes and behaviors. The scoring yields three validity scales and 10

or more clinical scales chosen by the examiner. A T-score of 50 represents the mean score for the "normal" or base population on which the test was standardized. T-scores above 70 and below 30 represent two standard deviations from the mean and are considered to denote psychiatric dysfunction as indicated by the scale name.

The MMPI has been used extensively to determine personality characteristics of the obese population. Researchers have also attempted to find a relationship between a certain type of MMPI profile and successful weight loss. However, McLaren (1967) and Penick, Filion, Fox, and Stunkard (1971) found no apparent profile difference between the successful and unsuccessful subjects. Bolding and Willcutt (1970) administered the MMPI to 50 patients and looked at the variation between the 44% who dropped out of the program and those who stayed with it. The mean differences between the two groups were slight, but when the individual scores were considered, the variability in scores was much greater in the "drop" group than in the "stay" group, showing that they appeared to have more emotional conflicts and were poorer risks in a dieting program.

Studies on the TOPS group for weight control have been able to show that successful weight losers (KOPS) do differ in MMPI profiles from the irremediably or refractorily obese (R-TOPS). McCall (1973) found that a group of 81 previously obese women who successfully lost weight (KOPS) to an ideal level and maintained the weight loss had notably less deviant MMPI profiles (in nine out of 10 clinical scales and four research scales) than a matched group of 169 unremediated obese

women (R-TOPS). Only on the Si (Social Introversion) scale were the two groups indistinguishable. On four of the nine research scales KOPS were significantly less maladjusted with scores higher on Es (Ego Strength), and lower on R (Repression), Lb (Lower Back Pain), and Ca (Caudality). From the six scales on which relative differences were the greatest, we may infer that refractorily obese women compared to the remediated obese, exhibit more body overconcern (Hs), psychic hurting (D), somatization (Hy), rebelliousness (Pd), compulsive and ruminative tendencies (Pt), and bizarre or confused thinking (Sc). The refractorily obese are somewhat more femininely dependent (Mf), touchy (Pa), and psychologically restless (Ma). These results tend to support Quereshi's (1975) findings on the Michill Adjective Rating Scale that R-TOPS perceive themselves as more unhappy than do KOPS. The major limitation of McCall's study is that the subjects were administered the MMPI after treatment, therefore, no conclusion can be made about cause and effect. Were the R-TOPS psychologically disturbed because they were obese? Were the KOPS less psychologically disturbed because they had controlled their obesity, or had they controlled their obesity because they were less psychologically disturbed?

McCall (1974) divided 19 women into three groups: one whose profile resembled those of previously studied KOPS, a second with MMPI profiles like the R-TOPS, and a third group which fell in between the two. After 16 weeks of group therapy, the entire group moved generally toward the KOPS like profile on the clinical scales. But the obese women with the "worst" MMPI profiles (R-TOPS variety) tended to benefit

most from group therapy, both in pounds lost and profile improvement. They had significantly lower T-scores on seven out of 10 clinical scales showing a general level of improvement. In the original research (McCall, 1973), research scales Es and Ca elevation differentiated the remediated group from the resistively obese. In this study the R-TOPS were significantly different in the pre- and post-tests on six of 11 research scales (Anxiety, Ego Strength, Caudality, Dependency, Dominance, and Control). Changes were all in the desirable direction; all scales were raised with the exception of Control, which was lowered.

The TOPS research supports the fact that remediable and irremediable members do differ in MMPI profiles. It also shows that women both of R-TOPS and KOPS type MMPI profiles can benefit from intensive short-term group psychotherapy. Surprisingly, the more deviant the MMPI profile, the greater was the effect of group therapy, both with regard to weight control and approaching the "normal" MMPI.

The Mf scale on the MMPI has been of particular interest to researchers because denial of femininity and sex role confusion are consistently suggested, particularly in the psychoanalytic literature, as psychodynamic aspects of female obesity. Large body size may represent identification with the father and confirmation of the obese woman's conscious self image as a strong responsible person. Also, by making herself unattractive, she avoids the Oedipal threat of competition with other women and mature heterosexual confrontation. To date,

the few studies in which obese females have been tested objectively with measures using masculinity-femininity (M-F) data have tended to produce inconsistent results. Feiner (1954) found that obese subjects were significantly less feminine than nonobese controls on projective instruments, but significantly more feminine on the MMPI Mf scale, and defined this as an "overt-covert" discrepancy. The Herrick Weight Control Study (Suczek, 1957) demonstrated masculine identification on both overt and covert levels. Shipman and Plesset (1964) found that obese women identified with their fathers, in personality as well as physically. Lefley (1971) used the Terman-Miles scale and found the obese group had significantly higher mean femininity scores than the nonobese group. Levitt and Fellner's (1965) findings indicated significantly greater masculinity on the MMPI Mf scale among obese females with long duration and family history of obesity. McCall (1974) found no deviation from a normal population using the MMPI in women in a TOPS program. If lower Mf scores on the MMPI are characteristic of the obese, they may simply be representative of the stereotyped feminine attributes of passivity, dependency, and lack of self-assertiveness. In this case, assertiveness training as an aspect of treatment may be indicated. Evaluating the research findings and determining the meaning of this dimension is made more complex because of differences in what the Mf scale actually measures on various instruments.

One of the most widely administered psychological scales for its possible predictive ability has been Rotter's (1966) I-E Scale. Locus of control has appeal as a predictor of success in behavioral

weight reduction programs because such programs require modification of external stimuli that affect eating. Therefore, the internally oriented individual, conceived as one who is able to control important aspects of his life, would be expected to be more successful than the externally oriented individual who believes that luck or fate are important determinants of his life. Use of the I-E Scale is based on Schachter's work (1971) which has led to the conclusion that even the thinking behavior of obese subjects is more externally controlled, and that eating behavior is merely a specialized instance of this.

Jeffrey and Christensen (1975) found no significant differences between successful and unsuccessful subjects on the I-E Scale, within a behavior therapy treatment group. But in a "willpower" control group, subjects were significantly more internally oriented. They interpreted this as indicating that internal subjects would do best in a limited treatment program but that a behavior therapy program would override any existing internal or external orientation.

However, Balch and Ross (1975) reported that internal Rotter subjects' scores were significantly correlated with both completion and success in a behaviorally oriented group treatment program. Bellack, Rozensky, and Schwartz (1974) reported an absence of a relationship between the I-E Scale and weight loss. They have suggested that rather than using I-E scores to make a general prediction about weight reduction, I-E scores might differentiate subjects who would do best in a self-control program (internals) from those who would most profit from

a program with therapist control and contingencies (externals). Should this type of research produce positive results, two possible strategies might be employed. Subjects could be channeled into appropriate treatment programs based upon their locus of control, or remedial treatment (of the cognitive type) could be offered prior to a weight control program to alter the subject's perceived locus of control.

In his review of the research on predictive variables, Weiss (1977) concludes that neither demographic, personality, or personal weight history measures have been shown to possess much predictive validity for weight loss in general, with the possible exception of age of onset and locus of control. The possibility of complex interaction among variables makes generalization about any one predictor variable problematic. Interaction between the predictor variables and the treatment modality is also a real possibility. Often the search for predictor variables has been an afterthought, secondary to other issues involved in a research study. He suggests that it is time for investigators to concentrate on the predictor variables as the primary goal, utilizing few treatment groups (resulting in more subjects per group) and studying subjects high and low on a variable. The primary issue in finding predictor variables for weight control is not who will lose weight, but who will lose weight in what type of treatment.

Hypnotic Susceptibility An additional predictor of successful weight loss that must be considered **with** hypnosis is the subject's hypnotic susceptibility. This is, in fact, the major limitation of

hypnotic treatment, that it can be used successfully only on patients who have the ability to enter a sufficient trance state.

The observation of individual differences in hypnotic responsiveness has been made by everyone from Mesmer onward, but it became the object of serious theoretical attention only after it had been made the chief item of dispute in the Nancy-Salpetriere controversy. Scientists in the Salpetriere tradition held that hypnosis was pathological because they believed that only persons with hysterical predispositions could be hypnotized. Practitioners in the Nancy tradition held that hypnosis was a normal process because they believed that virtually everyone, under appropriate circumstances, would manifest some degree of suggestibility.

To codify their viewpoint the practitioners evolved scales in which various suggestibility phenomena were arranged by observed order of difficulty, from the simplest induced relaxation to the most profound amnesias and visual hallucinations. These graded scales enabled the skilled examiner to ascertain the depth of hypnosis in any given hypnotized individual. This clinical tradition for measuring hypnotic depth has continued with minor modifications into the present day.

Around 1930, various investigators began to develop standardized objective procedures for rating hypnotic depth in terms of outwardly observable behavioral criteria. This manner of measurement has continued, with various psychometric improvements, into the present day. The Barber susceptibility scale (Barber & Glass, 1962) and the Harvard Group Scale of Hypnotic Susceptibility (HGSHS), (Shor & Orne,

1962) are the two most frequently used group susceptibility scales. The HGSHS is an adaptation for group administration with self-report scoring of the original, individually-administered and objectively scored Stanford Hypnotic Susceptibility Scale, Form A (Weitzenhoffer & Hilgard, 1959). The Harvard scale was designed to be used for initial hypnotic testing. It contains 12 items of varying difficulty, scored on a pass-fail basis according to objectively defined criteria. After the examiner establishes rapport with the group, the main procedures can be administered by a tape recording. Fife and Thorne (1975) found support empirically for the conclusion that tape-recorded administrations of the Harvard scale do not affect the scale scores.

The fact that the subject scores the responses is a departure from the original method of having the examiner score what is observed, and moves the measurement of suggestibility into a different realm. It is Crasilneck and Hall's (1975) opinion on this subject that at the present stage of understanding hypnotic phenomena, it may well be true that the only test for distinguishing the truly hypnotized subject from those who are simulating trance are differences in the experience of the internal subjective state, a criterion that is open to all the difficulties of dealing with subjectivity. The differentiation then would essentially depend on the reliability of subjective reporting. As physiological correlates of hypnosis can be defined, the question may become clearer. Recent work in biofeedback moves in this direction, but this work reopens the danger of the measured variable omitting all phenomena of a purely subjective nature.

Whatever the advantages and disadvantages of this type of measurement, it is the only one that can be adapted to group administration at the present time.

In an interesting study entitled "Are 'Fat Girls' More Hypnotically Susceptible?" Thorne, Rasmus, and Fisher (1976) found that 258 girls who volunteered for a weight control program scored significantly higher on the HGSHS than other groups reported in the literature. They speculated that either a basic personality trait or the demand characteristics of the weight program contributed to the groups unusually high hypnotic susceptibility performance.

The many attempts to relate susceptibility to hypnosis to certain personality traits have produced varied and inconclusive results, however. Barber (1964), after reviewing close to 60 investigations which attempted to correlate personality characteristics and ability to be hypnotized, concluded that differences among individuals in suggestibility of hypnotizability are more closely related to interindividual differences in situationally-variable characteristics such as attitudes, expectations, and motivations with respect to the test situation rather than to differences among individuals in enduring personality traits.

Symptom Substitution Attention needs to be given to those patients who do successfully lose weight to determine if symptom substitution or development of another pathological behavior has occurred. Clinical observation and psychological testing prior to and following weight loss are the methods usually employed.

Stunkard (1957) and Bruch (1957) reported a high incidence of depression in the obese clinic population after prolonged dieting and weight loss. Stunkard documented a high incidence of psychopathological symptoms in 72 obese patients who lost weight (54% reported the presence of symptoms during reduction). In a detailed study of 25 obese women during weight reduction, nine developed psychopathologic reactions with predominantly depressive features. He suggested that these "dieting depressions" were dynamically related to the actual or symbolic termination of a pathologically dependent relationship with someone who was viewed as a source of security at the time of weight reduction.

Bruch also observed psychopathologic reactions in obese patients during weight reduction and suggested that they were primarily related to the irrational meaning that weight loss had for them; namely, that of fulfilling exaggerated daydreams of success and achievement. Since she believes that developmental obesity is an expression of serious personality disturbances, she looks at this patient's pattern of eating as a necessary adjustive technique which she advises should be accepted by the physician in the best interests of the patient. In the case of an obese young person, tampering with weight carries with it the danger of exposing the schizophrenic core of this development.

Psychoanalytic orientation holds that food deprivation is unconsciously equated with deprivation of nourishment, love, and security offered by parental figures, and that psychopathologic manifestations

observed during weight reduction are related to the interruption of oral gratification.

Mendelson (1964) reiterates that persons with juvenile-onset obesity seem more vulnerable to psychological complications of obesity. Brosin (1954) observes that it is not generally recognized that reducing regimens are often accompanied by anxiety, depressive, and other reactive states, sometimes with suicide attempts.

Glucksman and Hirsch (1968) report that behavioral changes in obese individuals during caloric restriction is greater in patients who have been obese since childhood. He describes four general categories: (1.) alteration in affect including increased anxiety, hostile-aggressive, and depressive symptoms; (2.) perceptual disturbances with persistent feelings of obesity even after weight reduction; (3.) sexual fantasies and activities increased; (4.) increase in hunger sensations and preoccupation with food.

The Minnesota study (Keys & Brozek, 1950) reported irritability, depression, social withdrawal, loss of sexual drive, increased preoccupation with food and marked changes in the behaviors involved in the ingestive process.

Mixed findings occurred in the Abram, Meitel, Webb, and Scott (1976) study of psychological adaptation to jejunoileal bypass procedures in 34 morbidly obese patients who were evaluated preoperatively and followed postoperatively for an average of 23 months. Preoperative emotional disturbances were mainly those of mild personality disorders. Following discharge from the hospital, nine patients (or 24%) developed

psychiatric difficulties, characterized by either increased neurotic symptoms and interpersonal problems, or the emergence of psychosis. The remaining patients expressed satisfaction with the operation and reported feeling more self confident and hopeful.

A theoretical explanation for profound psychological changes in patients who have attained ideal weight after a long period of obesity is suggested by Jordan (1973). It centers around the disturbances in interpersonal equilibria. Not only must the successful patient become accustomed to a different body, but most importantly, must adjust to different responses of persons in the environment. Not only is society at large apt to be more accepting of the thin than the obese, but more strikingly one's family and close friends are going to be disturbed by the different body contour.

A number of investigators, however, have observed few or no psychopathologic reactions among obese patients subjected to the stress of weight loss. In 1963 Shipman and Plesset made an effort to demonstrate changes in anxiety and depression levels in obese persons being treated as outpatients with low calorie diets. They studied a large series of these patients using a serially administered Anxiety-Depression Scale (ADS) which consisted of a 44 item questionnaire, the questions being taken from the MMPI. Using this instrument, they found that only a small proportion of their dieters showed significantly elevated scores on the ADS at the conclusion of their diets. Most of these individuals had demonstrated the elevated scores before the beginning of the diet. It was their feeling that hidden anxiety and depression

was not, in fact, present in obese persons, nor were such disturbances precipitated by the act of simple dieting. Furthermore, they presented a previously unreported finding, that people became less anxious and depressed while successfully losing weight.

Other authors, usually studying a few obese patients losing major amounts of weight under close supervision, have found that depression is uncommon. Biggers (1966) noted a decrease in anxiety and depression in 34 obese women during a 10-day fast.

Sixteen superobese individuals undergoing intermittent fasting in a hospital setting have been studied by Kollar and Atkinson (1966) and Kollar, Atkinson, and Albin (1969). The MMPI was given to all patients at the beginning of hospitalization, one or more times during treatment, and at discharge. Clinical observation and retest MMPI data indicated mobilization of affect and an increasing awareness of personal problems, as manifested by increase in irritability and expressions of hostility from the beginning to middle stages of treatment. This was quantified by a rise of Pd scores on the MMPI as treatment progressed. This was similar to reports of increased irritability in normal-weight subjects during food deprivation. However, the increasing depression reported by normal weight subjects was not noted in these obese subjects. Episodes of depression and anxiety observed were usually related to doctor-patient, ward milieu, or family interpersonal matters. The discharge profiles confirmed the clinical impression that major weight reduction did not result in increased manifest psychopathology. In

some cases there was distinct psychological improvement.

The conflicting results of these studies indicate that additional research is still needed on behavioral and personality changes associated with alterations of weight in obese patients.

Significance of the Problem of Obesity In summary, the complexity and extent of the problem of obesity and its treatment have attracted the attention of many researchers and writers. The concern is well taken, for in our present affluent society it is estimated that there are close to 80 million overweight individuals in the United States alone (Foreyt, 1977). Obesity is recognized not only as a physical and social problem, but as a psychological problem as well. Jean Mayer (1973) who organized the 1969 White House Conference on Food, Nutrition, and Health has called obesity our national problem, if not, indeed, national obsession.

At this time obesity is viewed as a multiphasic clinical problem with a wide range of etiological factors. The incidence in Western society continues to increase, and therapeutic or educational approaches directed toward either prevention or correction remain dramatically unsuccessful (Wick, Sigman, & Kline, 1971). Unfortunately only a small number of obese patients are able to lose weight, and an even smaller number are able to maintain the weight loss. Although many cases of obesity do not respond to treatment, it is well to remember that there are some obese patients who do manage successfully to lose weight.

There is certainly a need for a method to discriminate between those who will be successful in programs of weight reduction and those

who will not. Each new treatment method has had some remarkable success with some individuals; therefore, a pertinent question would seem to be whether certain patients could be treated more effectively in one type of therapy than in another.

Advancement of Research on Obesity A decade or two ago, research efforts were centered around questions of relatively meaningless generality, such as whether or not psychotherapy was effective. At the present time, research in the treatment of obesity has advanced to the degree that the primary issue in finding predictor variables for weight control is not who will lose weight, but who will lose weight in what type of treatment. In evaluating the effectiveness of hypnotic intervention, for example, the most useless question to ask would be, "Is hypnosis effective?" Effective for whom, for what, and under which particular conditions, would be an obvious retort (Lazarus, 1973). Wolberg (Crasilneck & Hall, 1975), among others, is convinced that different patients have an affinity for certain kinds of techniques which are apparently in greater harmony with their special learning needs and capacities.

The possibility of complex interaction among variables makes generalization about any one predictor variable problematic. Interactions between predictor variables and treatment modalities also needs systematic exploration.

Heilbrun (1974) and others have written about the importance of developing assessment instruments to identify those patients with a good prognosis for change. While the search for predictor variables and

their relationship to treatment has often been an afterthought, secondary to other issues in a research study, it was the primary goal of this study.

With knowledge of this kind for this treatment and others, it may be possible in the future to direct clients into the most appropriate treatment program for them. There is also the possibility of remedial efforts made prior to placement in a weight reduction program. In such a way treatment efforts could be made as effective and efficient as possible.

This research project was designed to incorporate the suggestions of D. Balfour Jeffrey (1974, 1975) who has extensively reviewed the current methodological directions in obesity research. He emphasized that development of effective treatment programs must be based on methodologically sound research. Jeffrey suggested the weight-reduction index of Feinstein (1959) as a standard for reporting weight loss because of the convenience in comparing different weight-reduction treatments. He was also interested in analysis of cost effectiveness since there appears to be a clear mandate to develop interventions that not only have effects and persist, but which also are feasible in terms of cost. In view of repeated findings that a number of different programs can be used to facilitate weight loss, he thought that therapists and researchers should now move on to the consideration of more productive and perplexing issues. This study concerns itself with the following methodological issues: results of weight loss are reported in the form of Feinstein's weight-reduction index in order to approach a standard

improvement measure; information on cost-effectiveness is reported; three groups are compared following treatment, thereby analyzing successes, failures, and dropouts; data was gathered in an attempt to determine what variables are predictors of success in treatment; and follow-up data collected to see if any symptom substitution or adverse side effects occurred as a result of treatment.

Drawing from a wide theoretical base, knowledge of characteristics of the obese, and research studies, it was determined which demographic data and personality testing would be employed in the study.

Purposes and Hypotheses The purpose of the present study was twofold. This study first proposed to differentiate those patients who would respond to group hypnosis for weight control from those who would not. A multiple prediction equation was derived from the best combination of variables that were investigated in order to predict raw score weight losses and weight reduction index scores. A multiple discriminate function analysis was also calculated to define what combination of variables would predict the patient's eventual membership in one of three groups: successful weight losers, unsuccessful weight losers who remain in treatment, and those patients who drop out of treatment prematurely.

Secondly, this study proposed to reexamine successful weight losers in order to determine what kinds of personality changes were correlated with weight loss. By examining these changes by means of multiple dependent measures, the study attempted to address the issue of symptom substitution and to determine empirically whether adverse side

effects of weight loss such as anxiety, depression, or occurrence of emotional illness were present. By use of the pretest-posttest method, i.e., retesting successful dieters, it may be possible to see how personality and emotional characteristics are related to weight loss. A follow-up questionnaire was also distributed to all of the original subjects whether they succeeded, failed, or dropped out of the program. Cause and effect, or directionality, has been a limitation of many previous studies. This study proposed to explore this aspect of obesity, and to investigate the very complex relationship between psychological disturbance and obesity. Do patients become less psychologically disturbed when they manage to control their obesity, or do they manage to control it because they are less psychologically disturbed?

The hypotheses of the study were:

1. For the multiple prediction equation used to predict the raw score weight losses and the weight reduction index:

The proportion of the variance in raw score weight losses and in weight reduction index scores predicted by the best combination of predictor variables equals zero.

2. For the raw score weight losses and the weight-reduction index scores:

The population average raw score weight loss and weight-reduction index score equals zero.

3. Once the three groups of successful, unsuccessful, and drop-out patients have been formed, to determine if the three groups differed

at the beginning of the study (on pretest scores) on each of the predictor variables:

There will be no significant differences between the successful, unsuccessful, and dropout groups on each of the predictor variables.

Predictor variables that were examined in this study are beliefs regarding locus of control of life events, feelings of depression and anxiety, masculine versus feminine identification, ego strength, and other variables tested by the following clinical and research scales of the Minnesota Multiphasic Personality Inventory: L, F, K, Hs, Pd, Mf, Pa, Pt, Sc, Ma, Si, Es, Nt, A, R, Lb, Ca, Dy, Do, Re, Pr, St, Cn, and So. Susceptibility to hypnosis, various demographic variables, and the patient's weight history were also investigated.

4. For the pretest and posttest measures on the predictor variables for the successful group, to determine if the participants changed on each of the predictor variables, during the study, which were possible to retest:

The population average difference (gain or loss) score equals zero for each of the predictor variables.

5. Numerous correlations between pairs of variables will be computed to explore relationships.

There will be tables of means and standard deviations for all variables. A complete list of raw data was placed in the appendices. Information on cost analysis of treatment was reported.

Method

Subjects

Two hundred and thirty-eight women patients at Weight Clinics of America in Richardson, Texas, served as subjects for this experiment. They were recruited as volunteers by the researcher. The clinic's patients range in age from 11 to 80 years old, vary widely in socioeconomic status, and include Blacks, Mexican-Americans, and Caucasians. About half of the population came from towns outside of the Dallas area. They were referred by physicians and other patients. The fact that the subject presented herself to the clinic was taken as an indication that she considered herself overweight. Her own evaluation served as the definition of obesity for the purposes of this study, rather than some external measure such as pounds or percentage of a standard ideal body weight.

Measures

All subjects were given a battery of personality measures, a form on which to answer questions concerning demographic data and weight history, and a consent form to act as a research volunteer. The personality measures consisted of Rotter's Internal-External Locus of Control (I-E scale), the Minnesota Multiphasic Personality Inventory (MMPI), and The Harvard Group Scale of Hypnotic Susceptibility, Form A (HGSHS:A). Questions concerning weight history and demographic data were compiled in a personal history instrument (Appendix A).

The I-E scale was selected to determine if overweight patients see themselves as having little or no control over their life

circumstances. It was developed by Rotter in 1966 and consists of 23 items including six filler items. It measures the degree to which a person expects to be in control of the consequences of his or her behavior. The internally oriented person believes one's rewards and punishment to be contingent on one's own behavior, while a person with external orientation believes these events to be due to outside factors such as chance, fate, or powerful others. There are well over 600 studies according to Rotter (1975) which deal with the I-E scale. Test data on the I-E scale have been obtained in a series of samples. Internal consistency estimates range from .65 to .79. Test-retest reliability of the scale is consistent and acceptable, varying between .43 and .84 for different samples and intervening time periods (Rotter, 1966; Hersch & Scheibe, 1967).

Considerable research on diverse populations has demonstrated the construct validity of the scale in a variety of experimental and field situations (Lefcourt, 1966; Rotter, 1966). Construct validity has been found to range from $-.07$ to $-.35$, using discriminant validity correlating the I-E scale with the Marlowe-Crowne Social Desirability Scale. Correlation with intelligence measures are virtually nil. The 23-item scale has been found to correlate significantly with a story-completion test involving externally imposed punishment (Adams-Webber, 1963). Cardi (1962) obtained a correlation of $.61$ between the I-E scale and a rated, semi-structured interview.

The Minnesota Multiphasic Personality Inventory (MMPI) is a standardized inventory designed to elicit a wide range of self descriptions from each test subject and to provide in quantitative form a set

of evaluations of personality status and emotional adjustment. The true-false test consists of 566 items. Standard scoring procedures generate a test profile composed of four validity indicators and ten clinical or personality scales which have come to be known both by abbreviations of the scale names and by code numbers, used interchangeably. Numerous special scales and indices are also available for scoring on the same test protocol. A T-score of 50 represents the mean score for the "normal" or base population on which the test was standardized. T-scores above 70 and below 30 represent two standard deviations from the mean and are considered to denote psychiatric dysfunction as indicated by the scale name.

The normative and reliability data remain unchanged since the 1951 revised edition of the manual. Test-retest stability coefficients reported range from .46 to .93 over periods of from three days to one year and cluster about a median of .76. Instead of treating the question of validity, the authors of the manual chose instead to provide figures as to the success of the scales in predicting the diagnosis of new psychiatric admissions, and 60 percent success is claimed.

To date there are well over 1000 references on the MMPI (Buros, 1965), a formidable amount of material covering almost every conceivable aspect of test construction, reliability, validity, and use.

In addition to the scales included in the original instrument, over 200 others have been developed in the last 20 years, qualifying the instrument as "multiphasic." Validities of many of these scales remain in doubt, but those that have held up in cross validation, like Barron's

ego strength scale and Welsh's factor scales A (Anxiety) and R (Repression), have added considerably to the power of the test.

The Harvard Group Scale of Hypnotic Susceptibility was devised by Shor and Orne (1962) as an administratively expedient substitute for the individually-administered, hypnotist-scored Form A of the Stanford Hypnotic Susceptibility Scale of Weitzenhoffer and Hilgard (1959). It is based upon self report scoring by each subject at the termination of a standardized induction procedure and yields a single score (from 0-12) of susceptibility.

Methodological attributes of the HGSHS:A were examined in a series of reports that appeared shortly after its publication (Bentler & Hilgard, 1963; Bentler & Roberts, 1963; Coe, 1964; Shor & Orne, 1963). The evidence of the early studies suggested that the self-report procedure of the HGSHS:A overestimates observed scoring only slightly, and that correlations between observed and self-report scoring generally fall in the .80 to .90 range. Bentler and Hilgard (1963) found that the score obtained in a group session correlates .74 with an observer's score in a subsequent individual session. Individual scores can be predicted from the group score with a standard error of estimate of 1.8. Correlations between the HGSHS:A scores and those of the Stanford Hypnotic Susceptibility Scale, Form C tend to fall in the .60 to .70 range, comparable to SHSS:A and SHSS:C correlations. It seems reasonable, therefore, to conclude that the HGSHS:A is a convenient, appropriate substitute for the SHSS:A.

Probably the most widely used measure of social class in current

research is the Two Factor Index of Social Position developed by Hollingshead (1957). In his method the occupation and education of the "head of the household" are rated on two different scales, and then combined with weightings of seven for occupation and four for education. The weighted sum of these two ratings is then used to assign the family to one of five social class categories. In this study Hollingshead's occupational scales (Appendix B) were used to classify the subject according to an occupational level. An additional category, number 10, was created for "housewife." The subject's educational level is measured by the number of years of formal education, a question asked on the demographic questionnaire.

Questions concerning weight history and demographic data are presented in the Personal History form (Appendix A). Variables include: marital status, race, educational level, family income per year, occupation, reason for wanting to lose weight, family history of obesity, age of onset of obesity, stress as a precipitator of weight gain, personal weight loss history, eating patterns, and patient's subjective opinion about success in the program. The degree of obesity was also calculated by the examiner from intake information in terms of percentage overweight.

Procedure

Subject Selection Before each patient entered treatment she was approached regarding participation in the study. The researcher spoke to each new patient who entered the weight control program at the time of the group orientation session. An oral description of the study was

given (Appendix C) in which the new patients were asked to go through the testing procedure with the understanding that in return they would receive an interpretation of the test results at no charge from one of the professional counselors on the clinic staff. Out of approximately 1000 patients, 238 volunteered for a research session conducted at the clinic by the researcher. These sessions extended over a period of two and a half months beginning the middle of February, 1979, and ending the first of May, 1979.

Administration of Measures As each subject reported for the research session, she was given the following materials: an informed consent form (Appendix D), a Personal History instrument for weight history and demographic data (Appendix A), the Minnesota Multiphasic Personality Inventory (MMPI), Rotter's Internal-External Locus of Control Scale (the I-E scale), and the Harvard Group Scale of Hypnotic Susceptibility (HGSHS:A). When the group convened, the researcher again briefly explained the purpose of the study and the precautions provided to assure the confidentiality of the participants. The subjects were then asked to sign the informed consent forms to act as a research volunteer, and instructions were given for the tests to be administered. Every attempt was made to control for uniform testing conditions. The HGSHS:A was presented to the group by a tape recording made by the psychologist who would later be administering the actual hypnotic treatment. The other measures were completed individually. Ample time was provided for each subject to complete the materials, and the testing room was controlled for noise. The average time to complete the testing was between two and

three hours.

Administration of Treatment The same therapist administered all group hypnosis sessions. He is a Ph.D. psychologist who has been in practice for 15 years. His group work for weight control began five years ago. The patient's first visit to the clinic served as an orientation session during which members of the clinic staff recorded the patient's height and weight and showed the group of incoming patients a videotape on which the psychologist in charge of treatment explained the theoretical principles underlying his treatment approach, discussed the factors involved in permanent weight loss, and explained the clinic's program.

Subjects were requested to have an initial laboratory evaluation and to follow this up with one each three months, if they were not already doing so through their physician. A manual of weight control procedures was distributed which contained the recommended 1000 calorie per day high protein, low carbohydrate, low fat diet with forms for recording daily caloric intake. Any diet their physician prescribed was given precedence, however. A vitamin supplement was recommended as well.

The patients were then taken through a short hypnosis session. Following this session each patient's ideal weight goal was set, and a weekly weight loss goal and target date for successful completion of the therapy program was projected. A computerized chart based on age, height, and body build was considered, but ultimately the weight goal was the result of a negotiation process between the patient and therapist which took into account the patient's desires and what the therapist thought was realistic.

The patient was then asked to make a decision to stay in the program until she reached her goal. If the answer was affirmative, she recorded the date upon which she would reach her goal and the date she would be stabilized, a year from the goal date, and signed the decision card or contract.

Recommended treatment consisted of three sessions the first week, two the second week, and one session each week thereafter. The standard format of each session consisted of the subject being weighed and having her current weight recorded in the clinic's office, then proceeding to the treatment room.

The treatment room was equipped for 90 patients per session with a comfortable reclining chair for each patient. A white sound generator was used to block out background noise and the lights dimmed by rheostat during the hypnotic induction. The therapist was seated in a chair on a platform at the front of the room. He used a microphone to communicate with the group.

The treatment combined hypnosis with nutritional instruction, stressing reconditioning of the patient's eating reflexes with the aid of hypnotic techniques. Mental imagery, scene visualization, and creation of a positive expectancy were employed to change the patient's self concept and help her stop responding to stress and other emotions by over-eating. The therapist attempted to stimulate laughter, clapping, and group spirit in each session, thereby fostering group support.

The charge for each treatment session was \$15. It lasted for one hour. The first part of the hour was spent in recognition of individual

weight losses, discussion of any problems, and asking for special requests for topics to be covered during the hypnosis induction that day.

The second half of the session involved performing the hypnotic induction followed by suggestions to foster positive goals. The transcript of a typical hypnotic induction used in treatment is recorded in Appendix E. At the end of the hour the therapist stood at the door as the patients were leaving, talking to each one briefly, and answering any personal questions. He considered this aspect to be a very important part of the treatment, during which he tried to make each person feel attended to, just as if she were an individual patient.

When the patient's weight goal was reached, her diet was changed to one designed for maintenance, which gradually added carbohydrates. For reinforcement, the patient was given a certificate from the clinic upon reaching her weight goal. If she maintained her new weight for two months, she received a plaque, and after a year, a trophy.

Administration of Posttest After the patients' initial testing, they were followed until they reached their weight goal or for four months, whichever occurred earlier. Dropout patients' weight was recorded at the time they ceased treatment. Those patients who met the criterion for success were readministered the Rotter I-E Locus of Control Scale, the MMPI, and a Follow-up Questionnaire for Successful Weight Losers (Appendix F). Subjects who were still in the program but failed to meet the criterion for success and those subjects who had dropped out of the program were administered a follow-up questionnaire (Appendix G).

Design and Analysis

Design Subjects were classified as being in the success, failure, or dropout group after four months of treatment. The variable used was the subject's Weight Reduction Index score (RI) which is equal to the percent of excess weight she lost times her relative initial obesity.

Little uniformity exists in the criteria which are used for evaluating successful weight loss. Stunkard evaluated the data from various trials in terms of the percent losing either 20 or 40 pounds (Stunkard & McLaren-Hume, 1959). However, this criterion failed to take into account the amount of weight lost in relation to initial weight. The criteria of Trulson, et al. (1947) and of Feinstein (1959) have introduced this kind of correction. Trulson (1947) subdivided her patients into various groups based on their initial weight. The amount of weight loss to be expected for each group increased with the amount of excess weight. The success rate was then expressed as a percentage of patients achieving each level of weight loss.

Feinstein improved this approach by proposing a weight reduction index (RI), which is equal to the percent of excess weight loss times relative initial obesity. This index takes into account weight, height, amount overweight, goal, and pounds lost.

$$RI = (W_l/W_s) (W_i/W_t) \times 100$$

Where: W_l = weight loss; W_s = surplus weight;

W_i = initial weight; W_t = target weight according to height

The reduction index usually provides a value between 0 (no weight loss)

and 200 (a large weight loss). For example, if a subject initially weighed 250 pounds, had a target weight of 150, had a surplus weight of 100 pounds, and lost 50 pounds, then her weight-reduction index would be

$$50/100 \times 250/150 \times 100 = 83$$

If she had lost 100 pounds, her weight-reduction index would have been 166, and if she had failed to lose any weight, her RI would be 0. The advantage of developing a standardized index for reporting weight loss is the convenience it offers in comparing the effectiveness of different weight-reduction treatments, regardless of theoretical orientation and procedures.

Considering that the length of this project was four months and that the average weight loss was approximately two pounds per week if the diet is strictly maintained, the criterion for "successful" weight loss was set at a RI of 50 or above. This is so that attainment of the criterion would be feasible for subjects with large amounts of weight to lose as well as smaller amounts.

For example: if a subject initially weighed 112 pounds, had a target weight of 100, and lost 6 pounds, then her RI would be 56. If she initially weighed 180, had a target weight of 130 pounds, and lost 18 pounds, her RI would be 50. If the 250 pound subject mentioned above with the target weight of 150 lost 32 pounds, her RI would equal 53.

Statistical Analysis To test the hypothesis that the proportion of the variance in weight-reduction index scores predicted by the best combination of predictor variables equaled zero, an F test was used to

analyze the data and was printed in the output of the SPSS computer program Regression (Nie, Hull, Jenkins, Steinbrenner, & Bent, 1975). The discriminant analysis for predicting group membership was performed by the SPSS computer program Discriminant.

Since the design was conceptually 0 T 0, a one sample t test was used to test the hypothesis that the population raw score weight losses and weight-reduction index score equals zero.

In order to test the hypothesis that there was no significant difference between the successful, unsuccessful, and dropout groups on each of the predictor variables, a one-way ANOVA F test was used and printed in the output of SPSS computer program ANOVA. A separate hypothesis for each of the predictor variables was generated and tested. A Chi-square analysis was performed on certain variables by SPSS program Crosstabs.

To treat the posttest measures on the predictor variables for the successful group, a t test for dependent samples was used to determine if the participants changed on any of the predictor variables during the study. The design was 0 T 0 for the data which tested the hypothesis that the population average difference (gain or loss) score equaled zero for each of the predictor variables.

To explain the relationships between pairs of variables, numerous correlations were tested for significance by referring to a table of critical values (Glass & Stanley, 1970). Tables for frequencies and proportions of certain demographic data were provided for descriptive purposes only.

Results

The 238 female subjects who volunteered to participate in the present study ranged in age from 12 through 73 years (mean = 40.4). Most subjects lived in the Greater Dallas area (75%) and were married (74%). The majority were Caucasian (98%), and the mean number of years of formal education was 13.8. The income level covered a wide range from \$2,000 to \$350,000 per year (mean = \$31,708, median = \$25,206). Ninety four of the subjects (39%) met the study's criterion for success. The dropout group numbered 105 (44%), and there were 31 (13%) in the failure group, those subjects who remained in the program but did not reach the weight reduction criterion. The records for eight of the original subjects were lost, making it impossible to place them in a group. These subjects were eliminated from the data analysis. Means and standard deviations of demographic variables and test scores of the subjects in the entire sample and in the three groups are described in Table 1 and Table 2. Chi-square contingency table analysis of demographic variables and personal history items are located in Appendix H.

Results of Statistical Tests of Hypotheses

The mean weight loss for the entire sample was 16.42 pounds. The null hypothesis that the population raw score weight loss was equal to zero was tested by using a one sample t test ($t=18.57$, $df = 230$, $p<.05$). For the entire group of subjects the mean raw score weight lost was significantly higher than zero; therefore the null hypothesis was rejected.

Table 1
Demographic and Weight History Variables

<u>Variable</u>	<u>Total Group</u>		<u>Success</u>		<u>Failure</u>		<u>Dropout</u>	
	<u>Mean</u>	<u>S.D.</u>	<u>Mean</u>	<u>S.D.</u>	<u>Mean</u>	<u>S.D.</u>	<u>Mean</u>	<u>S.D.</u>
Age	40.4	11.42	42.7	11.66	41.1	10.44	38.6	11.81
Income	31.7*	31.75	32.5	27.57	32.2	21.57	31.9	38.08
Education	13.9	2.27	14.1	2.31	14.2	2.14	13.6	2.31
Initial WT.	180.5	37.68	176.2	37.57	190.7	40.82	181.3	36.55
Goal WT.	126.8	12.81	128.8	13.33	128.9	13.83	124.5	11.70
Lbs. Overwt.	53.9	33.19	48.1	32.36	61.8	37.31	56.8	32.13
Percentage Overwt.	28.6	12.55	25.9	13.02	30.3	12.19	29.9	11.28
Final WT.	164.1	34.92	149.8	28.81	180.2	41.00	172.1	33.63
R.I.	48.8	34.94	81.3	29.93	30.2	16.69	25.2	13.57

*The 31.7 is \$31,700

Table 2

Descriptive Information on Test Score Variables

<u>Variable</u>	<u>Total Group</u>		<u>Success</u>		<u>Failure</u>		<u>Dropout</u>	
	<u>Mean</u>	<u>S.D.</u>	<u>Mean</u>	<u>S.D.</u>	<u>Mean</u>	<u>S.D.</u>	<u>Mean</u>	<u>S.D.</u>
Int. Lc.	14.2	3.57	14.0	3.58	13.9	3.57	14.6	3.55
Ext. Lc.	8.8	3.54	9.1	3.54	9.1	3.38	8.3	3.56
Hyp. Susc.	7.0	2.85	6.6	2.74	6.8	2.78	7.3	2.85
L	50.0	3.93	49.8	4.05	49.3	3.99	50.3	3.81
F	53.4	5.62	52.9	5.09	53.0	5.11	54.0	6.10
K	51.3	8.38	51.2	8.13	52.4	8.47	50.9	8.68
Hs	56.6	8.99	55.7	8.13	56.7	8.45	57.4	9.96
D	58.4	10.49	58.1	9.99	56.7	12.08	59.4	10.65
Hy	59.5	9.41	58.7	8.59	59.3	8.20	60.6	10.51
Pd	60.9	11.42	58.3	10.65	59.8	10.46	63.5	11.77
Mf	46.4	10.47	46.8	10.40	44.9	10.23	46.5	10.77
Pa	57.2	10.42	55.3	8.90	57.8	6.65	58.5	12.24
Pt	58.1	9.90	57.7	9.23	56.0	11.22	59.1	9.99
Sc	59.7	12.43	58.7	10.20	59.1	11.74	60.9	14.29

Table 2 (continued)

<u>Variable</u>	<u>Total Group</u>		<u>Success</u>		<u>Failure</u>		<u>Dropout</u>	
	<u>Mean</u>	<u>S.D.</u>	<u>Mean</u>	<u>S.D.</u>	<u>Mean</u>	<u>S.D.</u>	<u>Mean</u>	<u>S.D.</u>
Ma	58.5	10.69	58.3	10.30	57.8	10.68	59.1	10.75
Si	54.9	10.07	55.9	10.42	53.2	8.39	54.8	10.23
Es	52.1	9.41	52.3	9.18	52.1	9.56	51.9	9.41
Nt	77.0	8.42	76.7	8.27	75.9	7.93	77.4	8.56
A	51.1	9.54	50.8	9.41	49.9	9.86	51.9	9.51
R	46.7	8.68	48.0	9.37	46.7	7.35	45.6	8.55
Lb	55.9	9.86	54.9	9.85	58.5	6.76	56.4	10.69
Ca	52.9	11.10	52.3	10.52	51.1	10.98	54.3	11.60
Dy	51.1	9.63	51.1	9.67	50.0	9.93	51.5	9.50
Do	55.2	9.06	55.5	8.18	56.8	8.98	54.7	9.58
Re	48.8	8.91	50.2	8.56	49.0	8.77	47.5	9.18
Pr	48.3	8.15	48.0	8.03	46.9	7.88	49.1	8.21
St	57.4	8.95	56.7	9.17	58.1	7.70	57.7	9.25
Cn	54.0	10.72	51.9	11.35	53.9	10.77	55.8	10.11
So	38.3	7.91	38.9	7.04	39.4	7.77	37.3	8.62

The null hypothesis that the population weight reduction index score was equal to zero was also tested by a one sample t test ($t = 21.19$, $df = 230$, $p < .05$). For the whole group of subjects the mean weight reduction index score was 48.81 which was significantly higher than zero; therefore the null hypothesis was rejected.

To test the hypothesis that there would be no significant differences between the successful, unsuccessful, and dropout groups on each of the predictor variables, or pretest measures, a one-way Anova F test was used. Variables tested were: times subject has successfully lost weight before, initial weight, pounds overweight, goal weight, percentage overweight, Internal Locus of Control score, External Locus of Control score, Harvard Test of Hypnotic Susceptibility score, MMPI scale scores L, F, K, Hs, Pd, Mf, Pa, Pt, Sc, Ma, Si, Es, Nt, A, R, Lb, Ca, Dy, Do, Re, Pr, St, Cn, and So. These variables with their computed F values and significance levels are listed in Table 3. A conservative procedure for controlling for the Type I error rate (Harris, 1975) was used. The post hoc univariate critical F value for the large number of variables tested ($F_{critical} = 31.45$) was so high that it is not possible to say that any of the univariate F values are statistically significant. MMPI score Pd ($F(2,227) = 5.54$) is the one variable closest to being significant.

When analysis of individual MMPI scale scores did not yield significance, because of the MMPI "code type" tradition, an additional analysis was performed. It is not uncommon to analyze relationships or "configural" relations, reflecting interactions among MMPI scales with

Table 3

Results of One-Way Anova Tests on Rotter's I-E Scores,
HGSHS:A Score, MMPI Scale Scores,
and Weight History Variables

Source of Variation	F	Source of Variation	F
Internal	.936	Lb	1.650
External	1.399	Ca	1.379
HGSHS:A	1.543	Dy	.280
L	1.163	Do	.669
F	1.115	Re	2.158
K	.498	Pr	1.001
Hs	.767	St	.419
D	.717	Cn	3.305
Hy	.895	So	1.414
Pd	5.544	Initial Weight	1.672
Mf	.376	Goal Weight	3.180
Pa	2.542	Pounds Overweight	2.699
Pt	1.365	Percentage Overweight	3.239
Sc	.767	Times Reached Goal	3.577
Ma	.273		
Si	.939	*Critical F = 31.45	
Es	.016		
Nt	.425		
A	.363		
R	1.634		

the highest T-score values. For example, if correlates of Scale 7 differ depending on the subject's scores on additional scales, say 2, 4, or 8, then the use of different code types such as 2-7, 4-7, 2-7-8, and so on, permits one to capitalize on these interactions (Butcher & Tellegen, 1978). Common code types were designated (see Appendix I) and the total group of subjects was analyzed for these code types by a specially devised computer program. In order that the number of configural patterns not become unmanageably large, a smaller set of possible configurations was focused on. The 34 code types were divided into three broader ones, which were categorized as characterological, neurotic, or psychotic in nature (Lachar, 1974). The three groups did not necessarily fall into these categories diagnostically because of the variation in their elevations, but this was the method used to name and code their configuration. The three groups were tested by the Chi-square statistic to see if the proportion that fell into the success, failure, or dropout group was significant. One analysis was performed by scanning the three highest T scores, no matter what their elevation (see Table 4). Two hundred twenty-one subjects were included in the analysis. Nine subjects could not be classified according to code type. No significant difference in the three groups was found ($\chi^2 = 3.09$, $df = 4$, $p < .52$).

Table 4

Chi-square Analysis of MMPI Code Types
and Therapy Result
(T scores = all ranges)

	Char. Dis. Type	Neurotic Type	Psychotic Type	
Success	f=27 p=32.5	f=35 p=45.5	f=26 p=42.6	f=88 p=39.8
Fail	f=12 p=14.5	f=9 p=11.7	f=8 p=13.1	f=29 p=13.1
Dropout	f=44 p=53	f=33 p=42.9	f=27 p=44.3	f=104 p=47.1
Total	f=83 p=37.6	f=77 p=34.8	f=61 p=27.6	f=221 p=100.0

A second analysis was performed only on those subjects who had one or more of the three highest T-scores at 70 or above. When this elevation restriction was added, only one hundred and one subjects remained in the analysis. There was no significant difference in the proportion of those subjects who fell into the success, failure, or dropout group (see Table 5). The Chi-square statistic was:

$$\chi^2 = .731, df = 4, p < .947.$$

Table 5

Chi-square Analysis of MMPI Code Types
and Therapy Results
(T scores = one or more over 70)

	Char. Dis. Type	Neurotic Type	Psychotic Type	
Success	f=11 p=32.4	f=14 p=40.0	f=13 p=40.6	f=38 p=37.6
Fail	f=5 p=14.7	f=5 p=14.3	f=5 p=15.6	f=15 p=14.9
Dropout	f=18 p=52.9	f=16 p=45.7	f=14 p=43.8	f=48 p=47.5
Total	f=34 p=33.7	f=35 p=34.7	f=32 p=31.7	f=101 p=100.0

The demographic variables and questionnaire items were tested using the Chi-square statistic (see Table 6). A significant difference exists on the question, "Have you tried medication for weight loss?" ($\chi^2 = 13.72$, $df = 2$, $p < .001$). The proportion of those saying "Yes" was significantly less in the success group (.43) than in the failure (.71) or dropout (.66) group when tested by a post hoc pairwise comparison procedure (Marascuilo & McSweeney, 1977).

The variable, "Do you ever overeat with binges?" was tested using the Chi-square statistic. It was found to be significant ($\chi^2 = 9.76$, $df = 2$, $p < .008$). The proportion saying "Yes" was less in the success

Table 6

Results of Chi-square Contingency Table Analysis of Demographic Variables and Personal History Questionnaire Items and Success, Failure, and Dropout Group Distribution

Source of Variation	χ^2	p
City subject lives in	2.82	.588
Marital status	11.07	.086
Race	.32	.850
Family income per year	14.79	.392
Occupation	18.32	.435
Reasons for losing weight		
For self	.93	.627
Pressure from significant others	.37	.831
Medical reasons	1.91	.385
Doctor's advice	1.70	.428
Ages when overweight		
Preadolescence	.06	.968
Adolescence	.27	.874
Between 20-30	1.27	.529
After 30	4.01	.134
Gained as reaction to stressful event	5.99	.049
Overweight family members		
Husband	5.52	.063
Mother	1.29	.525
Father	.10	.952
Brother or sister	.46	.795
No one	.77	.681

Table 6 (Continued)

Source of Variation	χ^2	p
Subject has tried to lose before	.30	.863
Successfully reached goal	8.44	.076
Methods of weight loss		
Specific diet plan	.67	.717
Medication	13.72	.001*
Weight Watchers	1.01	.604
Individual personal therapy	.55	.761
Other	.13	.935
Subject overeats with binges	9.76	.008*
Subject eats large amounts at night	3.73	.154
Subject eats because of time of day	.77	.681
Expectation of success in program	3.83	.148
How subject learned about program		
Physician	4.64	.098
Another patient	7.21	.027
Advertising	2.86	.239
Newspaper	.17	.920
Referrer's success in program		
Reached weight goal	1.73	.422
Noticed improvement	1.90	.386
Not lost noticeable amount	.60	.740

*Indicates a significant value at the $p < .01$ level

group (.71) than in the dropout group (.89) when tested by the pairwise comparison procedure. The proportion in the failure group was .74.

The three groups did not differ on the following variables: city subject lived in, marital status, race, occupation, family income per year, reasons for wishing to lose weight, periods of lifetime during which subject was overweight, family members who are overweight, whether subject had tried to lose weight before, whether she was successful in reaching her goal, whether a specific diet plan was used, weight watchers, or individual therapy. Other variables found to be nonsignificant were: whether subject eats large amounts at night, whether subject eats because it is time to do so, whether subject thinks she will reach her goal, whether subject learned about Weight Clinics of America through a physician, through advertising, or through a newspaper, or whether patient referring the subject to the clinic had lost weight or not.

To test the hypothesis that the proportion of the variance in raw score weight losses and weight-reduction index scores predicted by the best combination of predictor variables is equal to zero ($R^2 = 0.00$), an F test was used to analyze the data by means of a computer program. Two regression equations were formed to determine the best combination of variables to predict weight loss scores and weight reduction index scores. The program started with the following predictor variables: goal weight, age, educational level, Internal Locus of Control score, External Locus of Control score, Harvard Test of Hypnotic Susceptibility score, MMPI scale scores L, F, K, Hs, D, Hy, Pd, Mf, Pa, Pt, Sc, Ma, Si, Es, Nt, A, R, Lb, Ca, Dy, Do, Re, Pr, St, Cn, So. It stopped adding

variables to predict weight loss scores after Step 3 (see Table 7). The three variables in the equation were Initial Weight, MMPI score R, and MMPI score Pa. The $H_0: R^2 = 0.00$ was rejected with the multiple $R = .431$ and the $R^2 = .186$. The probability associated with the observed outcome was $p < .005$.

Table 7

Summary of Multiple Regression Analysis of
Raw Score Weight Loss

Analysis of Variance	df	ss	ms	F	p
Regression	3	7385.46	2461.82	16.38	$< .005$
Residual	215	32311.84	150.29		

The program stopped adding variables to predict weight reduction index scores after Step 2. MMPI score Pd was added on Step 1 and MMPI score R was added on Step 2. (see Table 8). The two variables placed in the regression equation were MMPI score Pd and MMPI score R. The multiple $R = 0.243$ and $R^2 = .059$, and the $H_0: R^2 = 0.00$ was rejected. The probability associated with the observed outcome was $p < .005$.

Table 8

Summary of Multiple Regression Analysis for
Weight Reduction Index

Analysis of Variance	df	ss	ms	F	p
Regression	2	15779.835	7889.92	6.823	<.005
Residual	216	249772.831	1156.36		

A discriminant analysis for predicting group membership was performed using the same variables that were used to form the regression equation. The program stopped adding variables after Step 1 which was MMPI scale score Pd ($F(1,216) = 4.34, p < .0142$). Pairwise comparisons between the success and failure groups ($F(1,216) = .582, p < .446$) and between the dropout and failure groups ($F(1,216) = 1.6254, p < .2037$) were not significant. The pairwise comparison between the success and dropout groups ($F(1,216) = 8.5787, p < .0038$) was significant. The next two variables that would have been added were Goal Weight and Initial Weight, but the F statistics were just short of significance. The Success group was less obese initially. The Dropout group had a lower target weight than the Success and Failure groups.

To test whether the successful subjects' scores changed significantly on their posttests, a difference score was computed for the predictor variables on which there was a pretest and posttest. Hotelling's T^2 square statistic for dependent samples was used to demonstrate multivariate significance. The global test for all values taken at once indicated that the difference between pretest and posttest

scores was significant ($F = 3.3469$, $df = 36$, $p < .040$).

Numerous t tests were then performed to test the null hypothesis that the population average difference (gain or loss) score was equal to zero for each of the predictor variables. Individual MMPI scales on which the means were lowered significantly were: Hs, D, Hy, Pt, A, Ca, and Dy. Scale means on which the posttest was significantly higher were Es, St, and So. T statistics for the individual scales, their significance levels, and the pretest and posttest means are reported in Table 9.

Pearson product moment correlations between pairs of the pretest variables were computed. These were tested for significance by a table of critical values (Glass & Stanley, 1970) and are reported in Appendix J. A large number of the correlations did reach significance.

Posttest Procedure The subjects were contacted by phone in an attempt to get them to come back to the clinic for the posttest procedure. The response was remarkably poor. Only three subjects responded. It was then decided to mail the subjects the tests and questionnaires with a self-addressed stamped envelope in which to return the answer sheets. The mailing was followed with a phone call to each subject in the success group encouraging her to participate in the posttest procedure. She was also told that the results of the second testing and an interpretation of its comparison with the results of the first testing would be made available to her in a private interview with one of the clinic's professional counselors.

Forty percent of the success group returned the posttest battery and questionnaire. Thirty-six percent of the failure and dropout group

Table 9

Results of Univariate t Tests Following the
Significant Hotelling's T^2 Test on
Rotter's I-E and MMPI Pretest
and Posttest Measures for
Success Group

Source of Variation	<u>t</u>	<u>p</u>	Pretest Mean	Posttest Mean
Int	0.32	.75	14.2	14.4
Ext	-1.42	.165	8.9	7.9
L	0.64	.525	49.9	50.3
F	-0.85	.403	52.5	51.9
K	1.48	.149	51.3	53.1
Hs	-3.19	.003*	57.0	53.1
D	-2.95	.006*	56.9	52.8
Hy	-4.25	.0001*	59.9	55.0
Pd	-1.13	.267	57.2	55.7
Mf	0.27	.789	48.2	48.6
Pa	-0.19	.853	54.6	54.4
Pt	-2.90	.006*	57.6	53.6
Sc	-1.70	.099	57.1	54.9
Ma	-1.52	.137	57.9	55.8
Si	-2.55	.015	56.7	54.3
Es	3.32	.002*	52.1	56.0
Nt	-1.98	.055	76.3	74.4
A	-4.44	.0001*	51.1	46.5
R	-0.30	.765	48.6	48.2

Table 9 (continued)

Source of Variation	<u>t</u>	<u>p</u>	Pretest Mean	Posttest Mean
Lb	-0.16	.875	56.7	56.4
Ca	-3.07	.004*	52.2	48.0
Dy	-3.11	.004*	51.6	48.4
Do	1.20	.239	55.5	56.8
Re	0.24	.814	49.4	49.7
Pr	-0.75	.459	47.9	47.1
St	2.87	.007*	55.6	58.3
Cn	-0.73	.470	49.8	48.7
So	4.11	.0001*	38.4	41.6

*Indicates significance at the $p < .01$ level

returned their follow-up questionnaires.

The answers on the follow-up questionnaires were rated independently by two Ph.D. psychologists who placed them into categories predetermined by the researcher. There was concurrence on all but a few items. The few discrepancies were resolved by the researcher. Questions 8, 9, and 10 of the Success Follow-up Questionnaire (see Appendix F) had responses too varied to score, as did Question 2 on the Failure and Dropout Questionnaire (see Appendix G). A summary of the rated responses is reported in Table 10 for the success group and in Table 11 for the dropout and failure groups. For the success group, 86% of the subjects reported that their family reacted positively to their weight loss; 92% had the support of their family during the program; and exposure to fattening foods was reported as the biggest source of stress. Improvement in appearance and self image was the most positive aspect of weight loss; sexual relationships were reported as generally the same before and after weight loss; and 84% of those subjects answering saw the psychologist administering treatment as caring and accepting. Twenty-two of the subjects had not regained weight after reaching their goal. Of the nine who had, the average weight gain was 10 pounds.

Failure and dropout group subjects reported that the three most common reasons for not losing weight were not continuing the sessions, improper eating, and emotional problems. The number of subjects reporting difficulties with finances approximately equaled those reporting no difficulties in this area. The subject's family was generally supportive

Table 10

Success Group Follow-up Questionnaire Data

<u>Variable</u>	<u>Frequency</u>	<u>Proportion</u>
Interaction with family since weight loss		
Proud, supportive, complimentary	32	.86
No change	2	.06
Subject became critical of family	3	.08
Most positive aspect of weight loss		
Appearance, clothes, self image	22	.61
Self satisfaction-succeeded, self-respect, job well done	8	.22
Health-feel better	6	.17
Support of husband and/or family during program		
Positive	34	.92
Neutral	1	.03
Negative	2	.05
Sources of stress		
Eating-parties, eating out, fattening foods	13	.43
Health-fatigue, low blood pressure	6	.21
Family problems	3	.10
Distance to clinic	3	.10
Emotional problems	3	.10
Cooking for family	2	.06

Table 10 (continued)

<u>Variable</u>	<u>Frequency</u>	<u>Proportion</u>
Sexual relationships before weight loss		
Superlative	6	.16
Good	21	.57
Fair or Poor	10	.27
Sexual relationships after weight loss		
Superlative	6	.18
Good	21	.62
Fair or Poor	7	.20
Description of therapist		
Gentle, caring, accepting	20	.84
Skilled professional, competent	2	.08
Businessman, making money	1	.04
Negative reaction	1	.04
Subject regained weight		
Yes	9	.29
No	22	.71
Pounds gained back		
10 pound average (n = 9)		

Table 11

Failure and Dropout Group Follow-up Questionnaire

<u>Variable</u>	<u>Frequency</u>	<u>Proportion</u>
How subject prevented weight loss		
Not continuing sessions, travel not following through	16	.39
Improper eating, got off diet	12	.29
Emotional problems	9	.22
Too busy	2	.05
Medical	2	.05
Difficulty with finances		
Yes	23	.47
No	26	.53
Family support in weight loss		
Yes	35	.83
No	7	.17
Family verbalizations during program		
Positive	20	.53
Neutral	12	.32
Negative	6	.15
Sources of stress		
Eating-parties, eating out, fattening foods	22	.48
Emotional problems	8	.17
Distance to clinic	6	.13

Table 11 (continued)

<u>Variable</u>	<u>Frequency</u>	<u>Proportion</u>
Family problems	4	.09
Health-fatigue, low blood pressure	4	.09
Cooking for family	2	.04
Sex relationships		
Superlative	14	.29
Good	24	.50
Poor or Fair	10	.21
Description of therapist		
Gentle, caring, accepting	30	.62
Skilled professional, competent	12	.24
Businessman, making money	3	.06
Negative reaction	4	.08

during the program. Occasions for improper eating were reported as the biggest source of stress. The majority of the subjects saw the psychologist as either a caring and accepting person or a skilled, competent professional.

Information on cost analysis was compiled (see Appendix K). For 83 of the successful subjects whose records were available, the mean number of hours in treatment was 14.52. At a rate of \$15 per hour or session, the average amount spent per patient was \$218. The mean weight reduction index was 85.02. Jeffrey (1974) suggests that one cost effectiveness index might be the mean weight-reduction index (RI) divided by the mean treatment time.

$$\text{Cost Effectiveness Index} = \frac{\text{Mean weight-reduction index}}{\text{Mean treatment time per patient}}$$

If this formula was followed, the C.E. Index would be 5.85. The cost effectiveness index has not been used widely in the literature, so there is no direct standard against which to compare this figure.

Appendix L contains the answers to the personal history questionnaire in a coded form and raw scores of the tests administered. The follow-up testing scores are reported in Appendix M.

Discussion

The present study sought to identify variables that would be predictive of success or failure in treatment of obesity by group hypnosis. It was hypothesized that a significant proportion of the variance in raw score weight losses and weight-reduction index scores could be predicted by the best combination of predictor variables which were gathered before treatment began. These consisted of demographic and weight history information and scores on selected instruments. The findings of this study support the hypothesis in principle, since the R^2 values were statistically significant. The values placed in the prediction equation, however, account for only 6% of the total variability in weight reduction index scores, and 19% of the variability in pounds lost; therefore the practical significance of the variability explained is negligible. On the basis of these results, formation of a prediction equation for use in treatment would not be indicated.

The possibility of a complex interaction among predictor variables is an intriguing avenue of research, which this study has only begun to explore. A definitive statement about the relationship between these variables and treatment success cannot be made from the data of the present study. Considering the large number of variables investigated, the ones that show significance are few in number. While the findings are tentative, they are worthy of further investigation in future studies.

It was also hypothesized that a multiple discriminant function analysis could be calculated to predict the patient's eventual membership

in one of the three groups: successful weight losers, unsuccessful weight losers, and those patients who drop out of treatment prematurely. While the analysis attempted to find a combination of variables, one sole variable was found that made any discrimination, MMPI scale score Pd. The discrimination was further limited to a significant difference between the success group and dropout group only.

Several findings of previous research related to demographic variables and weight history were not supported by the data of the present study. The age of onset of obesity was cited by Mendelson (1965) as the easiest criterion for success in treatment. Those patients suffering from "reactive obesity" who became obese during adulthood or as a reaction to some severe stress had a better prognosis than did those patients with juvenile onset or developmental obesity. Age of onset did not prove to differentiate success in treatment in this study. One explanation for this fact, however, may be that the hypnotic treatment program investigated in this study places particular emphasis on psychological and emotional factors governing eating, rather than using a purely behavioral approach. Treating the underlying emotional disturbance by attention to these factors is the approach recommended for patients with a long standing history of obesity.

Social learning theory emphasizes the role of learning in personality development. If the subjects came from overweight families, this could mean that they had learned overeating by imitation. This hypothesis about family history of obesity was not statistically supported, however.

Other researchers (Stunkard, Grace & Wolff, 1955; Borden, 1974) have found that previous unsuccessful diet attempts are negatively related to success in weight loss. There is no support to be found in the data of the present study for this contention, but an interesting finding which may be related has to do with whether medication for weight loss had been tried. The proportion saying "Yes" was significantly higher in the failure and dropout groups than in the success group, which could point to the more extreme measures tried as the subjects became more irremediable.

Lower socioeconomic status as defined by education and occupation has been related to obesity in some of the literature. While this may relate to prevalence of the condition, it does not act as a predictor of success in treatment, according to this study. No difference in age or marital status was found in the three groups, thus ruling out any of the social factors considered as possible predictors.

When subjects' eating patterns were investigated, the "binge eating" syndrome proved to be significant, which was found in previous research (Stunkard, Grace, & Wolff, 1955) to make this type of eater a poor candidate for weight reduction. The significantly higher number of binge eaters in the dropout group may indicate a difficulty with impulse control which contributes negatively to their weight loss.

When the configurations of MMPI scores were analyzed with the elevation variable and without, no differences appeared among the groups. No personality pattern is apparent for those who succeed and those who fail, which supports many of the observations in the literature. Of the

MMPI scale scores tested, it seems that there may be a difference between the groups on variable Pd. It was the one and only variable that appeared in the discriminant analysis. It also appeared in the regression equation for predicting R.I., and came closest to being significant when tested by the one-way Anova. Many people who score high on Pd (Scale 4) exhibit an apparent inability to plan ahead, an almost reckless disregard of the consequences of their actions. Unpredictability is a feature of their behavior. The same lack of impulse control characterized by binge eating is evident in Pd. Inner control has not been developed, and additionally, there is a rebellion against outer control. Alienation from the social group and anger with recognized convention cause these people to revolt against family or society or authority.

It is understandable why persons of this type would not only be poor candidates for the type of hypnotic treatment offered, but also be likely to drop out of the group completely. The hypnotist is a type of authority figure and the mode of treatment requires participation in a large group process, two of the very elements the high Pd subject is uncomfortable with. He or she does not have a sufficient amount of inner personal control, but will not accept control from the therapist. This variable is associated also with inability to profit from experience, including psychotherapy (Dahlstrom & Welsh, 1960). The anger associated with this category could be treated from the psychoanalytic point of view as indicative of oral aggression. Traditional Freudian theory views the cause of obesity as fixation at or regression to the oral stage of psychosexual development. The psychoanalytic view of

hypnosis is that it is a regressive phenomenon in which the subject relates to the hypnotist as he/she might to a significant figure of the past, one who represented authority in an earlier period of the patient's life.

The issue of internal control is also addressed by Rotter's I-E Scale. The negative results with regard to this test were unexpected, according to the proposition of Schachter (1971), that obese people show virtually no relationship between internal state and eating behavior, because eating behavior is under the control of external environmental cues. The internally oriented individual, who is conceived as one who is able to control important aspects of life, would be expected to be more successful than the externally oriented individual who feels controlled by the outside world. There could be many possible explanations for the subject's score on this test not being significant. The way the test is interpreted, the externally oriented individual is one who believes that luck or chance are important determinants of life. The test is measuring the individual's belief system, and the behavior may or may not accurately reflect the belief system. Another viable possibility has to do with the sample not being representative of the obese population in general. The subjects who took the initiative to come to the clinic and also to take part in the study are possibly more internally directed than the obese who chose not to participate in the weight treatment or in the research study. This idea seems to be supported in the data. The mean for the total sample is 14.2 for the Internal Locus of Control score as opposed to 8.8 for the

External Locus of Control score.

Initial susceptibility to hypnosis as measured by the HGSHS:A may not be a factor in treatment success with this therapy mode because conditioning to the hypnotic process occurs throughout the course of therapy. A low score on the test could change vastly in just a few hypnosis sessions, making the subject more open to treatment.

While the successful subjects' pretest and posttest scores on the MMPI were significantly different when all variables were tested together, not a lot can actually be said about psychological changes in the subjects. Individual scales that changed statistically were MMPI scale scores Hs (body overconcern), D (psychic hurting), Hy (somatization), Pt (compulsive and ruminative tendencies), A (anxiety), Ca (possible brain damage), and Dy (psychotherapeutic dependency). Means on these scales were lowered. Scale means that were significant in a higher direction were: Es (ego strength), St (socioeconomic status), and So (responds to socially desirable items). These changes were all in the desirable direction. The differences in scale scores were not great when judged clinically, however.

One reason the follow-up on successful weight losers was conducted was to assess whether symptom substitution or adverse side effects of treatment were present, such as anxiety, depression, or irritability. It appears that as measured by the test, this has not occurred. It is not possible to say, for several reasons, however, that the psychological state of the patients has improved from their pretest measurement. When only 37 out of the 93 success subjects were retested, one cannot

generalize about post-treatment differences. There is more than likely some selection factor operating in those who responded. The measurement of change is also subject to the limitations of an O T O design. Additionally, efforts at using MMPI items to detect changeability or to develop scales that would give clues to potential for change have not met with much success (Butcher & Tellegren, 1978). It should also be noted that some of the subjects were concurrently undergoing individual personal therapy at the weight clinic. This uncontrolled variable could have affected their MMPI scores and their weight loss. Trends toward a positive change are apparent, but the relationship between these two sets of scores cannot be decided definitively by the data of the present study. In future studies different instruments might be employed which are more suitable for measuring psychological change.

The follow-up questionnaires yielded some interesting information especially in areas of family systems and the patient-therapist relationship. Systems theory posits that a family has an investment in its homeostatic balance and will therefore attempt to prevent change. One theory being investigated was, therefore, that family members might in overt or covert ways undermine the patient's weight loss. The success group reported very positive support from their families. The failure and dropout groups reported somewhat less underlying support, but it was generally still positive. The number of "neutral" verbalizations from families of the failure and dropout group is worthy of comment. These could have been interpreted detrimental, or at the least, not helpful to the patient.

It is well to keep in mind with this follow-up information, as with the posttest, the voluntary return factor which could be biasing the findings.

A large majority of the success group rated the therapist in the caring and accepting category, as did a great number of the failure and dropout group. A considerable number of the latter group did see him also as a skilled, competent professional. There were few negative opinions in either group, but the perception of the therapist as caring may have had a significant effect on success. The measurement of patient-therapist relationship is a relatively new frontier, and there are very few instruments suitable for use. It would be well in future investigations to consider, in whatever way is feasible, this very important treatment factor. Rather than factors inherent in the patient which this study focused on, a more important variable predictive of success may be the patient's perception of the therapist or what type of relationship is developed between them. A large number of the subjects reported that they wished the therapist had had more time for individual contact or smaller groups.

The majority of sexual relationships was reported as good in both groups, with no significant change in the success group after treatment. This either does not support the hypothesis that excess weight is sometimes a defense against sexual feelings and activities, or the subjects were reluctant to report the true state of affairs in such a personal area.

The greatest source of stress in both groups was eating out,

parties, and general avoidance of fattening foods. This information may be useful in improving the treatment program and giving more support to patients in this area. Emotional problems were reported slightly more often in the failure and dropout groups, but the data are not strong enough to warrant much comment.

Improved appearance as related to clothing and self image was reported as the most positive aspect of weight loss, an important incentive which could be emphasized in the treatment program.

The evaluative information obtained in the follow-up questionnaire is a substantial part of this study. Since empirical, methodologically sound research can greatly aid the clinician in the formation of effective treatment programs, it is being passed on in a formal report to the therapist who may be able to use it in altering his treatment in various ways. One way it would appear to be of value is in formation of suggestions during the actual hypnotic induction. Restructuring the words used to address specific problem areas pointed out in the follow-up questionnaire, such as sources of stress, parties and eating out, and binge eating, and other factors already covered, may be useful in treatment. Also, formation of smaller groups or another means of providing a more solid patient-therapist relationship could be investigated.

Approximately one third of the success subjects responding to the follow-up indicated they had gained back an average of 10 pounds. One of the problems in evaluating success of weight control programs is that the initial weight loss is not maintained. The findings of this study support a fact that is already quite apparent, that research in this area needs to include long term follow-up to measure durability of

change and generalization across time.

A contribution of this study which is of a pioneering nature is the effort to deal with the cost effectiveness of the treatment program (Jeffrey, 1974). There is a growing trend toward evaluating successful treatment programs not only for their effectiveness, but for their efficiency as well. For 83 subjects that were successful upon whom this information was available, the mean number of hours in treatment was 14.52. At a rate of \$15 per hour or session, the average amount spent per patient was \$218. The efficiency of the program in terms of dollars spent for those subjects who did lose weight, appears to be high. The same statement, of course, cannot be supported for the failures and dropouts.

The generalizations that can be made from the present study are limited by a number of factors. One is the question of whether the sample is representative of the obese population. The subjects who took part in the study are possibly different from obese subjects who chose not to participate. They were almost entirely Caucasian and well above average in annual income, for example.

Furthermore, the measures were all self-report measures which are especially subject to faking. Most items on such measures have one answer that is recognized as more socially desirable than the other. Edwards (1957) who first studied the social desirability factor, proposed that the tendency to choose socially desirable responses need not indicate deliberate deception on the part of the respondent. The tendency to "put up a good front" is a factor the respondent is largely unaware

of. There is also difficulty in tapping personality dynamics with any self-report measure. Intrapsychic events are subjective and not easily translated into objective, measurable personality scales.

Though the difference in certain test scores was statistically significant, their differences were not necessarily clinically significant, and therefore the difference in practicality is questionable. A score on the scale Es of the MMPI of 56.0 is statistically different from 52.1. This would not be interpreted as having a great deal of meaning clinically, however. Also, so few variables showed significance considering the large number tested for, there is the possibility of chance occurrence, although every attempt was made to control for the inflated error rate.

This study has addressed major issues in obesity research (Jeffrey, 1974). Results of the study were reported in the form of Feinstein's weight reduction index, in order to approach a standard improvement measure. Cost effectiveness analysis of treatment, the issue of dropouts, analysis of both successes and failure in treatment were considered. Data was gathered to try to determine what variables are predictive of success in treatment. Indeed this may not be possible, considering the complexity of the condition of obesity. Bruch (1957) observed that there was no meaningful analysis of factors that made for success or failure. Hall and Hall (1974) commented that though many demographic, test, and life history variables have been hypothesized to predict treatment outcome, few have been found to be useful.

Variability in subjects' responses to treatment and in the effectiveness of therapists using the same technique contribute to the problem of prediction. In all programs, inevitably some patients do not lose weight. Even though it is likely that certain patients could be treated more effectively in one type of therapy than another, it is probable that many cases of obesity do not respond to treatment of any kind.

Even though the issue of prediction is left unanswered by this study, the information obtained raises questions for further research and can make a substantial contribution to the planning of more effective treatment programs.

The biggest differences in results seemed to occur between the dropout group and the success group. The issue of what keeps a patient in treatment, whether he succeeds or not, would bear further study.

Future investigators could look at the control issue: internal versus external controls, authority and its meaning to the patient, impulse control and other factors related to this central theme.

Nonspecific factors in treatment may need to be tapped, such as the patient's expectancy, motivation, and faith in the therapist. The question of the relationship between the therapist and patient (Gurman, 1977) and the patient's perception of the therapy relationship (Barrett-Lennard, 1962) seem to have a bearing on results and could be addressed. The outcome of weight therapy may not depend on factors inherent in the patient which can be measured by standardized instruments, as has been thought in the past.

Variables of a more interactional nature look promising for research, such as family relationships, support systems, and what is transpiring in the patient's personal life at the time of treatment. The researcher of the future may be tested for ingenuity and originality in devising ways to question for and quantify variables of this kind.

In conclusion, the fascinating dilemma of obesity needs to be addressed by future studies. Hopefully this study has added a small bit of information to the ongoing scientific process, as well as raised some pertinent questions for the future.

APPENDICES

Appendix A

Personal History Questionnaire

1. Name _____
2. Address _____ City _____ State _____
3. Age _____ 4. Phone number _____
5. Date _____
6. Marital Status _____ (Married, Single, Divorced, Widowed)
7. Family Income per year _____ (Total if both husband and wife work)
8. Race _____ (Caucasian, Negro, Mexican-American, Other)
9. Number of years of formal education _____. For example: high school diploma = 12 years; 30 semester hours of college - 1 year
10. Present occupation _____
11. Why do you wish to lose weight at this time?
_____ for myself
_____ pressure from husband, family, or other significant person
_____ for medical reasons
_____ my physician advised me to
12. During which periods have you been overweight?
_____ Preadolescence (below age 12)
_____ Adolescence (ages 13-19)
_____ Age 20 to 30
_____ Age 30 and above

13. Did you first gain weight as a reaction to some event, such as death of a loved one or friend, job loss, or other stressful situation? ☐ Yes ☐ No
14. Is anyone in your family overweight? ☐ Husband ☐ Mother ☐ Father ☐ Brother or Sister
15. Have you ever tried to lose weight before? ☐ Yes ☐ No
16. Have you successfully reached your weight goal when trying to lose? ☐ Yes ☐ No
17. How many times?
18. What methods have you tried?
☐ a specific diet plan (Ex.: Dr. Atkins, low carbohydrate, etc.)
☐ medication
☐ Weight Watchers
☐ Individual personal therapy
☐ Other
19. Do you ever overeat by what could be called "going on a binge" or eating large amounts of food with resultant weight gain in a short period of time? ☐ Yes ☐ No
20. Do you have a habit of eating large amounts of food at night, and sometimes neglecting to eat at other times during the day?
☐ Yes ☐ No
21. Do you eat because it is time to do so, rather than because you are hungry? ☐ Yes ☐ No
22. Do you think that you will successfully reach your weight goal in this therapy program? ☐ Yes ☐ No

23. How did you first learn of Weight Clinics of America?

_____my physician

_____another patient

_____advertising

_____newspaper article

24. If you were referred by a patient, describe his progress in the program.

_____reached his weight goal

_____was far enough into the program to notice improvement

_____had not lost a noticeable amount of weight

Appendix B

Hollingshead Occupational Scale

Score 9 Higher Executives, Proprietors of Large Businesses, and Major Professionals

- a. Higher executives: chairpersons, presidents, vice-presidents, assistant vice-presidents, secretaries, treasurers;
- b. Commissioned officers in the military: majors, lieutenant commanders, and above, or equivalent;
- c. Government officials, federal, state, and local: members of the United States Congress, members of the state legislature, governors, state officials, mayors, city managers;
- d. Proprietors of businesses valued at \$250,000 and more;
- e. Owners of farms valued at \$250,000 and more;
- f. Major professionals (census code list).

<u>Occupational title</u>	<u>Census code</u>
Actuaries	034
Aeronautical engineers	006
Architects	002
Astronautical engineers	006
Astronomers	053
Atmospheric scientists	043
Bank officers	202
Biologic scientists	044
Chemical engineers	010
Chemists	045
Civil engineers	010
Dentists	062
Economists	091
Electrical/electronic engineers	012
Engineers, not elsewhere classified (n.e.c.)	023
Financial managers	202
Geologists	051
Health administrators	212
Judges	030
Lawyers	031

Score 9 (Cont'd.)

Life scientists, n.e.c.	054
Marine scientists	052
Materials engineers	015
Mathematicians	035
Mechanical engineers	014
Metallurgical engineers	015
Mining engineers	020
Optometrists	063
Petroleum engineers	021
Physical scientists, n.e.c.	054
Physicians	065
Physicists	053
Political scientists	092
Psychologists	093
Social scientists, n.e.c.	096
Sociologists	094
Space scientists	043
Teachers, college/university, including coaches	102-140
Urban and regional planners	095
Veterinarians	072

Score 8 Administrators, Lesser Professionals, Proprietors
of Medium-Sized Businesses

- a. Administrative officers in large concerns: district managers, executive assistants, personnel managers, production managers;
- b. Proprietors of businesses valued between \$100,000 and \$250,000;
- c. Owners and operators of farms valued between \$100,000 and \$250,000;
- d. Commissioned officers in the military; lieutenants, captains, lieutenants, s.g., and j.g., or equivalent;
- e. Lesser professionals (census code list).

<u>Occupational title</u>	<u>Census code</u>
Accountants	001
Administrators, college	235
Administrators, elementary/secondary school	240

Score 8 (Cont'd.)

Administrators, public administration, n.e.c.	222
Archivists	033
Assessors, local public administration	201
Authors	181
Chiropractors	061
Clergymen	086
Computer specialists, n.e.c.	005
Computer systems analysts	004
Controllers, local public administration	201
Curators	033
Editors	184
Farm management advisors	024
Industrial engineers	013
Labor relations workers	056
Librarians	032
Musicians/composers	185
Nurses, registered	075
Officials, public administration, n.e.c.	222
Personnel workers	056
Pharmacists	064
Pilots, airplane	163
Podiatrists	071
Sales engineers	022
Statisticians	036
Teachers, secondary school	144
Treasurers, local public administration, n.e.c.	201

Score 7 Smaller Business Owners, Farm Owners, Managers,
 Minor Professionals

- a. Owners of smaller businesses valued at \$75,000 to \$100,000;
- b. Farm owners/operators with farms valued at \$75,000 to \$100,000;
- c. Managers (census code list);
- d. Minor professionals (census code list);
- e. Entertainers and artists.

<u>Occupational title</u>	<u>Census code</u>
Actors	175
Agricultural scientists	042
Announcers, radio/television	193

Appraisers, real estate	363
Artists	194
Buyers, wholesale/retail trade	205
Computer programmers	003
Credit persons	210
Designers	183
Entertainers, n.e.c.	194
Funeral directors	211
Health practitioners, n.e.c.	073
Insurance adjusters, examiners, investigators	326
Insurance agents, brokers, underwriters	265
Managers, administration, n.e.c.	245
Managers, residential building	216
Managers, office, n.e.c.	220
Officers, lodges, societies, unions	223
Officers/pilots, pursers, shipping	221
Operations/systems researchers/analysts	055
Painters	190
Postmasters, mail supervisors	224
Public relations persons	192
Publicity writers	192
Purchasing agents, buyers, n.e.c.	225
Real estate brokers/agents	270
Reporters	184
Sales managers, except retail trade	233
Sales representatives, manufacturing industries	281
Sculptors	190
Social workers	100
Stock/bond salesmen	271
Surveyors	161
Teachers, except college/university/secondary school	141-143
Teachers, except college/university, n.e.c.	145
Vocational/educational counsellors	174
Writers, n.e.c.	194

Score 6 Technicians, Semiprofessionals, Small Business Owners

- a. Technicians (census code list);
- b. Semiprofessionals: army, m/sgt., navy, c.p.o., clergymen
(not professionally trained), interpreters (court);
- c. Owners of businesses valued at \$50,000 to \$75,000;
- d. Farm owners/operators with farms valued at \$50,000 to \$75,000.

<u>Occupational title</u>	<u>Census code</u>
Administrators, except farm--allocated	246
Advertising agents/salesmen	260
Air traffic controllers	164
Athletes/kindred workers	180
Buyers, farm products	203
Computer, peripheral equipment operators	343
Conservationists	025
Dental hygienists	081
Dental laboratory technicians	426
Department heads, retail trade	231
Dietitians	074
Draftsmen	152
Embalmers	165
Flight engineers	170
Foremen, n.e.c.	441
Foresters	025
Home management advisors	026
Inspectors, construction, public administration	213
Inspectors, except construction, public administration	215
Managers, except farm--allocated	246
Opticians, lens grinders/polishers	506
Payroll/timekeeping clerks	360
Photographers	191
Professional, technical, kindred workers--allocated	196
Religious workers, n.e.c.	090
Research workers, not specified	195
Sales managers, retail trade	231
Sales representatives, wholesale trade	282
Secretaries, legal	370
Secretaries, medical	371
Secretaries, n.e.c.	372
Sheriffs/bailiffs	965
Shippers, farm products	203
Stenographers	376
Teacher aides, except school monitors	382
Technicians	150-162
Therapists	076
Tool programmers, numerical control	172

Score 5 Clerical and Sales Workers, Small Farm and Business Owners

- a. Clerical workers (census code list);
- b. Sales workers (census code list);

- c. Owners of small business valued at \$25,000 to \$50,000;
- d. Owners of small farms valued at \$25,000 to \$50,000.

<u>Occupational title</u>	<u>Census code</u>
Auctioneers	261
Bank tellers	301
Billing clerks	303
Bookkeepers	305
Bookkeeping/billing machine operators	341
Calculating machine operators	342
Cashiers	310
Clerical assistants, social welfare	311
Clerical workers, miscellaneous	394
Clerical/kindred workers---	396
Clerical supervisors, n.e.c.	312
Clerks, statistical	375
Collectors, bill/account	313
Dental assistants	921
Estimators, n.e.c.	321
Health trainees	923
Investigators, n.e.c.	321
Key punch operators	345
Library assistants/attendants	330
Recreation workers	101
Tabulating machine operators	350
Telegraph operators	384
Telephone operators	385
Therapy assistants	084
Typists	391

Score 4 Smaller Business Owners, Skilled Manual Workers,
Craftsmen, and Tenant Farmers

- a. Owners of small businesses and farms valued at less than \$25,000;
- b. Tenant farmers owning farm machinery and livestock;
- c. Skilled manual workers and craftsmen (census code list);
- d. Noncommissioned officers in the military below the rank of master sergeant and C.P.O.

<u>Occupational title</u>	<u>Census code</u>
Airline cabin attendants	931
Automobile accessories installers	401
Bakers	402
Blacksmiths	403
Boilermakers	404
Bookbinders	405
Brakemen, railroad	712
Brickmasons/stonemasons	410
Brickmason/stonemason apprentices	411
Cabinetmakers	413
Carpenters	415
Carpenter apprentices	416
Carpet installers	420
Cement/concrete finishers	421
Checkers/examiners/inspectors, manufacturing	610
Clerks, shipping/receiving	374
Compositors/typesetters	422
Conductors, railroad	226
Constables	963
Counter clerks, except food	314
Decorators/window dressers	425
Demonstrators	262
Detectives	964
Dispatchers/starters, vehicles	315
Drillers, earth	614
Dry wall installers/lathers	615
Duplicating machine operators, n.e.c.	344
Electricians	430
Electrician apprentices	431
Electric power linemen/cablemen	433
Electrotypers	434
Engineers, locomotive	455
Engineers, stationary	545
Engravers, except photoengravers	435
Enumerators	320
Expeditors	323
Firemen, fire protection	961
Firemen, locomotive	456
Floor layers	440
Foremen, farm	821
Forgemen/hammermen	442
Furriers	444
Glaziers	445
Heat treaters/annealers/temperers	446
Heaters, metal	626
Housekeepers, except private household	950
Inspectors, n.e.c.	452
Inspectors/scalers/graders, log and lumber	450

Interviewers	331
Jewelers/watchmakers	453
Job and diesetters, metal	454
Lithographers	515
Loom fixers	483
Machinists	461
Machinist apprentices	462
Mail carriers, post office	331
Mail handlers, except post office	332
Managers, bar/restaurant/cafeteria	230
Marshals, law enforcement	963
Mechanics	470-495
Meter readers	334
Millers, grain/flour/feed	501
Millwrights	355
Molders, metal	503
Molder apprentices	504
Office machine operators, n.e.c.	514
Patternmakers/modelmakers	522
Photoengravers	515
Plasterers	520
Plasterer apprentices	521
Plumbers/pipefitters	522
Plumber/pipefitter apprentices	523
Power station operators	525
Postal clerks	361
Practical nurses	926
Piano/organ tuners/repairmen	516
Pressmen, plate printers, printing trade	530
Pressmen apprentices	531
Projectionists, motion picture	505
Printing trade apprentices, except pressmen	423
Proof readers	362
Radio operators	171
Receptionists	364
Repairmen	471-486
Rollers/finishers, metal	533
Sheetmetal workers	533
Sheetmetal worker apprentices	536
Stereotypers	434
Stock clerks/storekeepers	381
Stone cutters/carvers	546
Structural metal workers	550
Superintendents, building	216
Switchmen, railroad	713
Tailors	551
Telephone linemen/splicers	552
Telephone installers/repairmen	554
Ticket/station/express agents	390

Tile setters	560
Tool and diemakers	561
Tool and diemaker apprentices	562
Weighers	392
Welders/flame cutters	680

Score 3 Machine Operators and Semiskilled Workers (census code list)

<u>Occupational title</u>	<u>Census code</u>
Animal caretakers	740
Asbestos/insulation workers	601
Assemblers	602
Barbers	935
Blasters/powdermen	603
Boardinghouse/lodginghouse keepers	940
Boatmen/canalmen	701
Bottling operatives	604
Bulldozer operators	412
Bus drivers	703
Canning operatives	604
Carding, lapping, combing operatives	670
Chauffeurs	714
Child care workers, except private household	942
Conductors/motormen, urban rail transit	704
Cranemen/derrickmen/hoistmen	424
Cutting operatives	612
Deliverymen	704
Dressmakers/seamstresses, except factory	613
Drill press operatives	650
Dyers	620
Excavating/grading/road machine operators, except bulldozer	436
Farm services laborers, self-employed	824
File clerks	325
Filers/polishers/sanders/buffers	621
Fishermen/oystermen	752
Forklift/tow motor operatives	706
Furnacemen/smelters/pourers	622
Furniture/wood finishers	443
Graders/sorters/manufacturing	623
Grinding machine operatives	651
Guards/watchmen	962
Hairdressers/cosmetologists	944
Health aides, except nursing	922
Housekeepers, private household	982
Knitters/loopers/toppers	671
Lathe/milling machine operatives	652

Machine operatives, miscellaneous specified	690
Machine Operatives, n.e.c.	692
Meat cutters/butchers, except manufacturing	631
Meat cutters, butchers, manufacturing	633
Metal platers	635
Midwives (lay)	924
Miliners	640
Mine operatives	640
Mixing operatives	710
Motormen, mine/factory/logging camp, etc.	710
Nursing aides/attendants	925
Oilers/greasers, except auto	642
Operatives, miscellaneous	694
Operatives, not specified	695
Operatives, except transport---allocated	696
Orderlies	925
Painters, construction/maintenance	510
Painter apprentices	511
Painters, manufactured articles	644
Paperhangers	512
Photographic process workers	645
Precision machine operatives, n.e.c.	653
Pressers/ironers, clothing	611
Punch/stamping press operatives	656
Riveters/fasteners	660
Roofers/slaters	534
Routemen	705
Sailors/deckhands	661
Sawyers	662
Service workers, except private household---	
allocated	976
Sewers/stitchers	663
Shoemaking machine operatives	664
Shoe repairmen	542
Sign painters/letterers	543
Spinners/twisters/winders	672
Solderers	665
Stationary firemen	666
Surveying, chainmen/rodmen/axmen	605
Taxicab drivers	714
Textile operatives, n.e.c.	674
Transport equipment operatives---allocated	726
truck drivers	715
Upholsterers	563
Weavers	673
Welfare service aides	954
Enlisted members of the armed services (other than noncommissioned officers)	---

Score 2 Unskilled Workers (census code list)

<u>Occupational title</u>	<u>Census code</u>
Bartenders	910
Busboys	911
Carpenter's helpers	750
Child care workers, private household	980
Construction laborers, except carpenters' helpers	751
Cooks, private household	981
Cooks, except private household	912
Crossing guards/bridge tenders	960
Elevator operators	943
Food service, n.e.c., except private household	916
Freight/materials handlers	753
Garage workers/gas station attendants	623
Garbage collectors	754
Gardeners/groundskeepers, except farm	755
Hucksters/peddlers	264
Laborers, except farm---allocated	796
Laborers, miscellaneous	780
Laborers, not specified	785
Laundry/drycleaning operatives, n.e.c.	630
Lumbermen/raftsmen/woodchoppers	761
Meat wrappers, retail trade	634
Messengers	333
Office boys	333
Packers/wrappers, n.e.c.	643
Parking attendants	711
School monitors	952
Waiters	915
Warehousemen, n.e.c.	770

Score 1 Farm Laborers/Menial Service Workers (census code list)

<u>Occupational title</u>	<u>Census code</u>
Attendants, personal service, n.e.c.	933
Attendants, recreation/amusement	932
Baggage porters/bellhops	934
Bootblacks	941
Chambermaids, maids, except private household	901
Cleaners/charwomen	902
Dishwashers	913

Farm laborers, wage workers	931
Farm laborers/farm foremen/kindred workers--- allocated	846
Janitors/sextons	903
Laundresses, private household	983
Maids/servants, private household	984
Newsboys	266
Personal service apprentices	945
Private household workers---allocated	986
Produce graders/sorters, except factory/farm	625
Stockhandlers	762
Teamsters	763
Vehicle washers/equipment cleaners	764
Ushers, recreation/amusement	953
Dependent upon welfare---no regular occupation	---

Appendix C

Oral Description of Research Study

My name is Mary Blaylock. I am a graduate student in the psychology department at Texas Woman's University in Denton. I will be conducting an extensive research project here at the clinic over a period of the next six months. The project is designed to evaluate the effectiveness of the treatment program here at Weight Clinics of America. It will be of benefit to you, if you decide to participate, by helping you know more about yourself. This can aid your progress in weight reduction. Hopefully the study will ultimately contribute to the betterment of the treatment program here and help other patients who follow in your footsteps to lose weight more successfully.

I have known Dr. Davisson for several years and worked with him professionally. He is enthusiastic about the research study and very interested in its results.

To participate, you would come to one research session which would last about three hours. There are several times already scheduled from which you can choose the one most convenient for you.

At this session you would be asked to sign a form indicating that you are willing to participate in the study. The group would then be asked to complete several forms that are commonly used by psychologists. These include the Minnesota Multiphasic Personality Inventory, Rotter's Internal-External Locus of Control Scale, The Harvard Group Scale of Hypnotic Susceptibility, and a form on which to answer questions

concerning demographic data about yourself and your weight history. You, of course, do not have to take part in this project, and even if you should decide to do so, you can withdraw at any time.

This is an opportunity for you to learn more about yourself, however, because the information you give me on the forms will be scored and made available to you. Feedback on these tests will help you know more about yourself which should be of interest to you and also could aid in your weight reduction efforts.

A private psychologist usually charges a considerable fee for a battery of tests of this kind. Your tests will be scored and explained to you in a private interview at no charge to you.

The questionnaires will be marked with numbers and only I will know what names the numbers are connected with. The consent forms you sign will be locked in a file so that no one will know who participates in this study but me. Shortly after completion of the study, the forms will be destroyed. This is all to assure that the information you share about yourself will be very confidential. Do you have any questions?
(Time for questions)

Dr. Davisson and I both hope you will choose to participate in the study. I have a list of sessions scheduled. Please see me if you wish to sign up for one.

Appendix D

Informed Consent Form

Consent to Act as a Subject for Research and Investigation:

I have received an oral description of this study, including a fair explanation of the procedures and their purpose, any associated discomforts or risks, and a description of the possible benefits. An offer has been made to me to answer all questions about the study. I understand that my name will not be used in any release of the data and that I am free to withdraw at any time.

Signature

(Date)

Witness

(Date)

Certification by Person Explaining the Study:

This is to certify that I have fully informed and explained to the above named person a description of the listed elements of informed consent.

Signature

(Date)

Position

Witness

(Date)

Appendix E

Hypnotic Induction Used in Weight Control Treatment

If you have anything in your lap, move it, so that you'll be most comfortable. Okay. Now I'd like you to let yourself move around in your chair so that your body is very, very comfortable. And let yourself close your eyes now, and as you close your eyes, I would like for you to take ten deep breaths of air, filling your lungs to capacity, holding your breath, and exhaling slowly. And as you allow yourself to begin to relax completely, you'll give me your undivided attention, as much as is possible. And as you allow yourself to concentrate on my voice, you may be aware of other sounds in the room, or sounds from the street, or sounds from the hall. But as you concentrate on my voice, you'll find that no sound has any significance for you other than my voice. And as you allow yourself to concentrate deeply, with each breath, you'll feel yourself beginning to slide more deeply relaxed. And as you allow yourself to begin to survey your body now, you'll be aware of any tension anywhere in your body. You'll be aware of any tension in your feet, or in your toes, or in your ankles. You'll allow yourself to move your feet slightly so they'll be more relaxed. You'll be aware of any tension in the calves of your legs, or in your thighs. You'll be aware of any tension in your hips, any tension in your abdominal area. And as you allow yourself to relax more completely, with each breath you will feel yourself continuing to slide on down deeper and deeper. You'll

be aware of any tension in your upper arms or in your lower arms. And as you begin to focus on your hands, you may want to stretch your fingers, to move your hands slowly. And as you do so, you'll continue to relax your hands more completely and to slide on down, deeper and deeper relaxed. You'll feel all the muscles in your neck begin to relax, and all the muscles in your face. You'll be aware of any tension in your face, any tension around your jaws, any tension in the back of your neck, you'll be aware of. And as you continue to relax more completely, you feel yourself sliding on down, deeper and deeper relaxed. You're beginning to feel a growing desire within yourself to reach your goal. You're beginning to want to reach your goal more deeply than you ever have in your life. You're beginning to be acutely aware of the excess fat on your body. You're beginning to feel a growing desire to follow through, to reach your goal until you stabilize there. You enjoy losing the excess fat, and as you allow yourself to hear the suggestions that I give you, you will accept deeply within yourself the suggestions that will help you reach your goal, those suggestions that will help you stabilize there. And when you have reached your goal and when you have stabilized there, you will never allow yourself to exceed your optimum weight again. Your whole body is becoming more limp and relaxed and heavy. And now as you allow yourself to be more aware of your breathing, you'll be aware that with each breath you may notice a sensation sweep over your body, and as you breathe more slowly you may notice a sense of drowsiness that may begin to sweep over your body. But as you become more drowsy, while your body may seem to go to sleep, your mind will stay deeply alert, and you will allow yourself to concentrate on the words that I say.

And you feel yourself continuing to relax more completely now, and as I count, with each count you feel yourself beginning to slide on down. With each count you feel yourself beginning to slide deeper and deeper relaxed. With each count you let go more completely, sliding all the way down, completely relaxed, lowered on down now. Ten...nine...eight...on down deeper and deeper relaxed, seven...six...down, five...four...on down deeper and deeper relaxed, three...still deeper...two...one. You're letting yourself begin to be lowered deeper and deeper with each breath. You may notice a sensation beginning to sweep over your body, and your body may seem gradually heavier. You may be aware of the weight of your head, more aware of the weight of your arms and your hands. You may be more aware of the weight of your legs and your feet. And as you continue to breathe more slowly, with each breath that you take, you feel yourself continuing to slide, more deeply relaxed, more deeply content. And you'll allow yourself to open your eyes, and as you open your eyes, you will allow yourself to notice that your body is becoming more deeply relaxed. And you'll let yourself look upward, and as you open your eyes, you'll look upward at the ceiling, very very high up. High enough that you can just see the edge of your eyebrows, high enough that your eyes feel slightly strained. And as you look upward, you'll allow yourself to lock in on one specific point. As you focus on that point, you'll allow yourself to concentrate on that point, and as you focus on that point, you will notice that your eyelids become heavier. You will allow them to close, and when you have closed them for the first time, you will keep them closed until I specifically instruct you otherwise. And you feel your whole body beginning to relax more completely. As you

continue to breathe more slowly, you feel yourself sliding on down deeper and deeper relaxed, and you do not hold back at all. Let yourself completely let go, and drift deeper and deeper relaxed. You feel all the muscles in your arms and hands become more limp and relaxed and heavy. You feel all the muscles in your legs becoming more limp and relaxed and heavy. And with each breath, you let yourself continue to drift deeper and deeper relaxed. You enjoy taking better care of yourself. You enjoy avoiding sweets. You're beginning to realize that you do not need sweets and you do not want sweets. You're beginning to find that whenever you see sweets or any fattening foods, you think of fat, and you do not want the fat on your body. And you will not allow yourself to eat or drink any food or beverage that would be fattening, that would interfere with your reaching the goal that you've set for yourself. You're beginning to enjoy taking better and better care of yourself with every day that passes. You like yourself more. You respect yourself more as you continue to follow those steps that will lead you all the way down to the goal that you have set for yourself. And you feel yourself sliding more deeply relaxed. More deeply relaxed with each breath that you take. You pretend now that your right arm, your right arm is becoming too heavy to lift. And you'll be aware that as you pretend things you can make them happen in your mind. And you'll pretend that your right arm is becoming very, very heavy, so heavy that it would be difficult to lift your arm. You pretend that your right arm is continuing to become more limp and relaxed and heavy. And you pretend also that your left arm is becoming more limp and relaxed and heavy. Your right and left arms are becoming completely limp and relaxed and heavy, too heavy to

lift. And you pretend that the trunk of your body is becoming heavier. And you pretend that your head is seeming heavier and heavier. You pretend that your right leg is becoming more limp and relaxed and heavy, so heavy that it would be extremely difficult to lift your leg. And you pretend now that your other leg is becoming more limp and relaxed and heavy, so very heavy that you cannot lift it. And as you allow yourself to continue to breathe more slowly, with each breath you feel yourself sliding on down, deeper and deeper relaxed. Your whole body is becoming more limp and relaxed and heavy, deeper and deeper relaxed now. Let yourself continue to slide now, and as I count, you will allow yourself to continue to be more relaxed with each count. You continue to let go more. Ten...you feel all the muscles in your face, all the muscles around your head, you feel relaxing more completely. Nine...you feel all the muscles in your neck relaxed and heavy. Eight...you're sliding on down now, you feel all of the muscles in your chest and in your shoulders becoming more relaxed and heavy. Seven...all of the muscles in your arms continuing to relax, six...you feel all of the muscles in your hips and in your abdominal area continually relaxing, five...all the muscles in the thighs. Four...the muscles in the calves of your legs are becoming more limp. Three...your feet and ankles are letting go. Two...you're sliding on down deeper and deeper relaxed, more deeply relaxed with each breath you take. And you visualize yourself now walking very quietly down a country lane. And as you are walking, you notice the leaves on the trees beginning to fall. You notice the colors of the leaves. You notice that they are already turning yellow and golden and brown, and as you look around you, you see the leaves everywhere.

You notice their color, and you notice that while there is no breeze at all that they seem to be dropping from the trees. And you notice them as they seem to float down slowly. And as you look upward at the sky, you notice how very, very blue the sky is. You notice the lacy white clouds that are floating by, and you notice the contrast between the blue of the sky and the white of the clouds. And as you allow yourself to relax still more completely, you feel yourself drifting deeper and deeper relaxed. And as you see yourself walking there now, you notice that you already have lost all of the excess fat on your body. You notice that your body is trim. Your clothing fits you most attractively. You have no excess fat on your abdominal area. It is flat and firm. You notice that your hips are trim. Your waist is trim. You notice that your legs are trim. You notice that as you walk you do not become tired because your body is perfectly toned. You are in excellent health. And as you look into your face, you see the look of confidence and the look of happiness that goes with having set your goal and having reached the goal that you set for yourself. And you feel yourself sinking deeper and deeper relaxed now. And as you walk down the country lane, you pass over a small hill, and you notice down below you is an abandoned farmhouse. And you notice out fairly close to the road is an old rocker. You allow yourself to walk down to that point. You look at the rocker and you decide to let yourself walk over and sit down. And as you do, you feel perfectly safe, perfectly comfortable, perfectly at ease. And as you reach the rocker, you let yourself sit down, you let yourself lean back, and as you do so, you feel a sense of drowsiness beginning to sweep over your body. And as you begin to rock, you allow yourself

to look upward at the sky. And as you watch the clouds, and as you see the contrast of the colors of the trees against the blue of the sky, you feel a deep sense of joy in being alive. You love yourself more with every day that passes. You feel a growing sense of confidence. You feel a growing sense of pride in yourself. You want to do everything in your power to help yourself to reach the goal that you set for yourself. You want to do everything in your power to stabilize at your optimum weight. And when you have reached your goal and stabilized there, you will never allow yourself to ever exceed your optimum weight again. And you feel yourself beginning to slide on down, more deeply relaxed with each breath that you take, deeper and deeper relaxed. You like yourself more. You enjoy yourself more. You appreciate yourself more with each day that passes. You enjoy keeping accurate and honest records of all of the foods and beverages that you eat and drink. You enjoy drinking your water. You enjoy avoiding sweets. You enjoy knowing that you will reach your goal. You find that the image of the way you will appear when you have reached your goal flashes through your mind throughout the day and night. And as you allow yourself to relax more completely, you feel all of the muscles in your brow, you feel all of the muscles in your scalp relaxing. You feel all of the muscles around your eyes, all of the muscles in your eyelids, you feel relaxing more completely. You feel all of the muscles in the cheeks of your face and in your jaws, around your ears and in the back of your neck, you feel the muscles relaxing still more completely relaxed with each breath that you take. You enjoy taking better care of yourself. You enjoy becoming more deeply relaxed, more deeply confident with each day that passes. You

will reach the goal that you set for yourself. You will stabilize at that point, and when you have reached your goal and stabilized there, you will never allow yourself to ever exceed your optimum weight again. You feel all of the muscles in your neck, the muscles at the base of your neck, the muscles in your vertebral column, the muscles on each side of your vertebral column. You feel all of the muscles that extend down through your shoulders beginning to relax. And the muscles that extend up through your throat and into your mouth and into your tongue. The interior of your mouth you feel relaxing more completely. You feel all of the muscles in your chest, the muscles in your shoulders, the muscles across the top of your shoulders, then all the muscles down your upper arms, deep in your upper arms and around your elbows and down the sides of your lower arms and deep inside of your lower arms, around your wrists and across the tops of your hands and through your fingers and back into the palms of your hands, you feel the muscles relaxing, so that your arms and hands and the trunk of your body seem more limp and relaxed and heavy. You feel all of the muscles in the broad of your back beginning to relax, all of the muscles in your vertebral column and down the entire length of your back begin to relax now. You feel all of the muscles in your abdominal area and deep in your hips beginning to relax. All the muscles in your thighs, on top of your thighs, along the sides and deep in your thighs, you feel relaxing. The muscles in your knees and deep down in the calves of your legs, all the muscles in your ankles and the tops of your feet and out through the toes and back through the palms of your feet, you feel your whole body continuing to relax. Your hands and arms are more relaxed and heavy. Your feet and your legs are

more relaxed and heavy. The trunk of your body continues to relax, and as I count now with each count you feel yourself continuing to slide more deeply relaxed with each count. Ten...nine...on down deeper and deeper relaxed, eight...seven...sliding on down, six...five...deeper and deeper, four...three...two...one. You feel yourself continuing to relax now, and as you relax more completely, you will not eat in response to stress. You will not eat in response to tension. You will not eat for any emotional reason. But you eat only for nutritional reasons. You enjoy taking better care of yourself with each day that passes. And as I continue to count, with each count, you let yourself slide still more deeply relaxed. Ten...nine...eight...deeper and deeper relaxed, seven...six...five...deeper and deeper relaxed, four...three...two...one, deeper and deeper relaxed. You're beginning to like yourself more deeply than ever before. You're beginning to feel a new sense of hope and of confidence. You're beginning to realize the power that you have over yourself. You're beginning to realize that you will reach the goal that you set for yourself, that you will stabilize there. And when you have reached your goal and stabilized, you will never exceed your optimum weight again. You're beginning to look forward to reaching the goal that you set for yourself. You find that you enjoy keeping accurate records of all the food and beverages you eat and drink. And you find it easy to keep accurate records at home as well as away from home. You find it easy to follow the guidelines wherever you are. And you will follow those steps to reach the goal that you set for yourself. No sweets, no fattening foods, no fattening beverages. You enjoy talking about your weight loss, talking about the program and the steps you will

follow. You find that each time you talk about the steps, you follow them more easily. You want to follow the steps, and you will reach the goal that you set for yourself. And as I count now by the count of 10, you will return to your normal state. You look forward to your next session. You look forward to sinking more deeply relaxed, more deeply refreshed with each session. You enjoy watching yourself as you change, and you will reach the goal that you set for yourself. One...two...three...four...five...six...seven...eight...nine...10...and you'll let yourself come on back gradually. You'll be able to open your eyes comfortably as you choose as you return to your normal state. You feel very, very relaxed and very comfortable, and you'll let yourself come on back gradually now. Okay, let yourself close your eyes now for a moment, and as you close your eyes, I'd like for you to visualize yourself now seated in the rocking chair in front of the old farmhouse. All around you are the colors of autumn, and as you see yourself there, you think about how very, very important your life is. You think about how very, very important it is that you take care of your body and your life. You let yourself think about how very important it is to get your body into perfect physical condition. And as you allow yourself to visualize yourself there now, you look at your face, and you see the look of confidence. You see the look of happiness and the look of security. You are deeply proud of yourself. You like yourself. You respect yourself. And as you see yourself there now, you notice how very healthy you appear, and as you see yourself getting up and beginning to walk to the road again, you notice that you carry yourself comfortably and proudly. Your body appears light, for you have no excess fat anywhere on your body. Your muscles

are nicely toned. Your body is trim. You are in excellent health. And as you see yourself there now, you realize that it is just a matter of time until you will reach your goal, until you will stabilize there. And when you have reached your goal, and when you have stabilized there, you will never allow yourself to ever exceed your optimum weight again. You enjoy avoiding sweets. You enjoy avoiding fattening foods. You feel a growing desire for exercise, a growing craving for having your body in perfect health. You look forward to your hypnosis. You sink more deeply each session. You feel a growing sense of calmness and inner security that continues to increase with each session. And as I count now, by the count of five, you will return to your normal state. Okay, one...two...three...four...five...and you'll let yourself open your eyes comfortably as you choose. And you'll let yourself come on back gradually now. I'd like for you to turn to the person sitting next to you now, and I'd like for you to tell that person just how good looking you're going to be when you reach your goal. And I'd like for you to tell them in some detail just how healthy and alive you're going to feel.

Appendix F

Follow-up Questionnaire For Successful Weight Losers

1. Since I've lost weight the thing I notice about my family is _____

2. The thing I like most about having lost weight is _____

3. When I was in the program my husband and/or family usually _____

4. The greatest source of stress when I was in the program was _____

5. Before I entered the program my sex relationships _____

6. Now they are _____
7. Dr. Davisson is _____

8. I felt good when Dr. Davisson _____

9. I wish Dr. Davisson had _____

10. Since losing weight I have encountered certain new problems in my
life.
They are _____

10. (Cont'd.) _____

(Leave this blank if the statement is not true)

11. After I lost a considerable amount of weight, I found it difficult to maintain and gained a significant portion of it back.

_____ Yes _____ No

12. If the answer to #11 is Yes, how much have you gained back?

_____ pounds

Appendix G

Follow-up Questionnaire for Members of
Failure and Dropout Groups

1. I stopped myself from losing weight by _____

2. If only _____
3. Financial difficulties made it difficult to attend therapy.
_____ Yes _____ No
4. My family supported my effort toward weight loss.
_____ Yes _____ No
5. When I was in the program my husband and/or family usually _____

6. The greatest source of stress when I was in the program was _____

7. My sex relationships are _____

8. Dr. Davisson is _____
9. I wish Dr. Davisson had _____

Appendix H

Chi-square Contingency Table Analysis of Demographic
Variables and Personal History Questionnaire Items
According to Frequencies and Proportions in Success,
Failure, and Dropout Groups

City Resided In

	Success	Failure	Dropout	Total
Greater Dallas	70* 74.5	26 83.9	77 73.3	173 75.2
Ft. Worth Arlington	8 8.5	3 9.7	8 7.6	19 8.3
Other Cities	16 17.0	2 6.5	20 19.0	38 16.5
Total	94 40.8	31 13.5	105 45.7	230 100

*The top figure in the cell is the frequency
The bottom figure is the proportion

Race

	Success	Failure	Dropout	Total
Caucasian	92 98.9	31 100.0	103 99.0	226 99.1
Mexican American	1 1.1	0 0.0	1 1.0	2 0.9
Total	93 40.8	31 13.6	104 45.6	228 100.0

Income

	Success	Failure	Dropout	Total
\$2,000-9,000	3 4.0	2 7.4	7 7.6	12 6.2
\$10,000-19,000	18 24.0	6 22.2	27 29.3	51 26.3
\$20,000-29,000	13 17.3	6 22.2	24 26.1	43 22.2
\$30,000-39,000	20 26.7	5 18.5	11 12.0	36 18.6
\$40,000-49,000	10 13.3	1 3.7	6 6.5	17 8.8
\$50,000-59,000	7 9.3	5 18.5	9 9.8	21 10.8
\$60,000-99,000	3 4.0	1 3.7	7 7.6	11 5.7
\$100,000-350,000	1 1.3	1 3.7	1 1.1	3 1.5
Total	75 38.7	27 13.9	92 47.4	194 100.0

Wish to Lose Weight for Medical Reasons

	Success	Failure	Dropout	Total
Yes	29 30.9	12 38.7	42 40.0	83 36.1
No	65 69.1	19 61.3	63 60.0	147 63.9
Total	94 40.8	31 13.5	105 45.7	230 100.0

Wish to Lose Weight Because of Doctor's Advice

	Success	Failure	Dropout	Total
Yes	25 26.6	8 25.8	36 34.3	69 30.0
No	69 73.4	23 74.2	69 65.7	161 20.0
Total	94 40.8	31 13.5	105 45.7	230 100.0

Marital Status

	Success	Failure	Dropout	Total
Married	79 84.0	22 71.0	73 69.5	174 75.7
Single	4 4.3	2 6.5	12 11.4	18 7.8
Divorced	5 5.3	4 12.9	16 15.2	25 10.9
Widowed	6 6.4	3 9.7	4 3.8	13 5.7
Total	94 40.9	31 13.5	105 45.7	230 100.0

Occupation

	Success	Failure	Failure	Total
1	4 4.3	0 0.0	10 9.6	14 6.1
2	0 0.0	0 0.0	2 1.9	2 0.9
3	4 4.3	1 3.2	1 1.0	6 2.6
4	5 5.4	1 3.2	4 3.8	10 4.4
5	16 17.2	7 22.6	24 23.1	47 20.6
6	4 4.3	2 6.5	12 11.5	18 7.9
7	18 19.4	4 12.9	16 15.4	38 16.7
8	6 6.5	3 9.7	7 6.7	16 7.0
9	1 1.1	1 3.2	2 1.9	4 1.8
10	35 37.6	12 38.7	26 25.0	73 32.0
Total	93 40.8	31 13.6	104 45.6	228 100.0

Note: Categories 1-9 are taken from the Hollingshead rating (see Appendix B). 10 is for housewives.

Wish to Lose Weight for Myself

	Success	Failure	Dropout	Total
Yes	90 95.7	30 96.8	103 98.1	223 97.0
No	4 4.3	1 3.2	2 1.9	7 3.2
Total	94 40.8	31 13.5	105 45.7	230 100.0

Wish to Lose Weight Because of Pressure From Others

	Success	Failure	Dropout	Total
Yes	18 19.1	5 16.1	22 21.0	45 19.6
No	76 80.9	26 83.9	83 79.0	185 80.4
Total	94 40.8	31 13.5	105 45.7	230 100.0

Overweight During Preadolescence

	Success	Failure	Dropout	Total
Yes	29 30.9	9 29.9	33 31.4	71 30.9
No	65 69.1	22 71.0	72 68.6	159 69.1
Total	94 40.8	31 13.5	105 45.7	230 100.0

Overweight During Adolescence

	Success	Failure	Dropout	Total
Yes	33 35.1	10 32.3	39 37.1	82 35.7
No	61 64.9	21 67.7	66 62.9	148 64.3
Total	94 40.8	31 13.5	105 45.7	230 100.0

Overweight Between Ages 20-30

	Success	Failure	Dropout	Total
Yes	53 56.4	16 51.6	65 61.9	134 58.3
No	41 43.6	15 48.4	40 38.1	96 41.7
Total	94 40.8	31 13.5	105 45.7	230 100.0

Overweight After Age 30

	Success	Failure	Dropout	Total
Yes	74 78.7	25 80.6	71 67.6	170 73.9
No	20 21.3	6 19.4	34 32.4	60 26.1
Total	94 40.8	31 13.5	105 45.7	230 100.0

First Gained as Reaction to
Stressful Event

	Success	Failure	Dropout	Total
Yes	70 76.9	18 58.1	66 62.9	154 67.8
No	21 23.1	13 41.9	39 37.1	73 32.2
Total	91 40.0	31 13.7	105 46.3	227 100.0

Husband Overweight

	Success	Failure	Dropout	Total
Yes	28 29.8	10 32.3	18 17.1	56 24.3
No	66 70.2	21 67.7	87 82.9	174 75.7
Total	94 40.8	31 13.5	105 45.7	230 100.0

Mother Overweight

	Success	Failure	Dropout	Total
Yes	44 46.8	17 54.8	57 54.3	118 51.3
No	50 53.2	14 45.2	48 45.7	112 48.7
Total	94 40.8	31 13.5	105 45.7	230 100.0

Father Overweight

	Success	Failure	Dropout	Total
Yes	24 25.5	8 25.8	25 23.8	57 24.8
No	70 74.5	23 74.2	80 76.2	173 75.2
Total	94 40.8	31 13.5	105 45.7	230 100.00

Brother or Sister Overweight

	Success	Failure	Dropout	Total
Yes	36 38.3	14 45.2	42 40.0	92 40.0
No	58 61.7	17 54.8	63 60.0	138 60.0
Total	94 40.8	31 13.5	105 45.7	230 100.0

No One in Family Overweight

	Success	Failure	Dropout	Total
Yes	22 23.4	5 16.1	24 22.9	51 22.2
No	72 76.6	26 83.9	81 77.1	179 77.8
Total	94 40.8	31 13.5	105 45.7	179 100.0

Patient Tried to Lose Weight Before

	Success	Failure	Dropout	Total
No	4 4.3	1 3.2	3 2.9	8 3.5
Yes	90 95.7	30 96.8	102 97.1	222 96.5
Total	94 40.8	31 13.5	105 45.7	230 100.0

Patient Successfully Reached Goal

	Success	Failure	Dropout	Total
No	26 27.7	13 41.9	49 46.7	88 38.3
Yes	66 70.2	18 58.1	55 52.4	139 60.4
Total	92 40.4	31 13.5	104 45.6	228 100.0

Tried Specific Diet Plan

	Success	Failure	Dropout	Total
Yes	56 59.6	21 67.7	64 61.0	141 61.3
No	38 40.4	10 32.3	41 39.0	89 38.7
Total	94 40.8	31 13.5	105 45.7	230 100.0

Tried Medication

	Success	Failure	Dropout	Total
Yes	40 42.6	22 71.0	69 65.7	131 57.0
No	54 57.4	9 29.0	36 34.3	99 43.0
Total	94 40.8	31 13.5	105 45.7	230 100.0

Tried Weight Watchers

	Success	Failure	Dropout	Total
Yes	51 54.3	20 64.5	59 56.2	130 56.5
No	43 45.7	11 35.5	46 43.8	100 43.5
Total	94 40.8	31 13.5	105 45.7	230 100.0

Tried Individual Personal Therapy

	Success	Failure	Dropout	Total
Yes	16 17.0	5 16.1	14 13.3	35 15.2
No	78 83.0	26 83.9	91 86.7	195 84.8
Total	94 40.8	31 13.5	105 45.7	230 100.0

Tried Other Methods of Weight Loss

	Success	Failure	Dropout	Total
Yes	23 24.5	7 22.6	27 25.7	57 24.8
No	71 75.5	24 77.4	78 74.3	173 75.2
Total	94 40.8	31 13.5	105 45.7	230 100.0

Number of Times Patient Reached Goal

	Success	Failure	Dropout	Total
0	26 28.0	13 41.9	49 47.6	88 38.8
1	31 33.3	9 29.0	20 19.4	60 26.4
2	16 17.2	5 16.1	16 15.5	37 16.3
3	7 7.5	2 6.5	12 11.7	21 9.3
4	4 4.3	1 3.2	1 1.0	6 2.6
5	0 0.0	1 3.2	0 0.0	1 0.4
6	1 1.1	0 0.0	2 1.9	3 1.3
10	0 0.0	0 0.0	1 1.0	1 0.4
Total	85 39.2	31 14.3	101 46.5	217 100.0

Patient Overeats With Binges

	Success	Failure	Dropout	Total
Yes	27 28.7	8 25.8	12 11.4	47 20.4
No	67 71.3	23 74.2	93 88.6	183 79.6
Total	94 40.8	31 13.5	105 45.7	230 100.0

Patient Eats Large Amounts At Night

	Success	Failure	Dropout	Total
Yes	43 45.7	12 38.7	34 32.4	89 38.7
No	51 54.3	19 61.3	71 67.6	141 61.3
Total	94 40.8	31 13.5	105 45.7	230 100.0

Patient Eats Because It Is Time To Do So

	Success	Failure	Dropout	Total
Yes	18 19.6	4 12.9	20 19.4	42 18.6
No	74 80.4	27 87.1	83 80.6	184 81.4
Total	92 40.7	31 13.7	103 45.6	226 100.0

Patient Expects To Reach Goal

	Success	Failure	Dropout	Total
Yes	1 1.1	0 0.0	5 5.0	6 2.7
No	93 98.9	31 100.0	96 95.0	220 100.0
Total	94 41.6	31 13.7	101 44.7	226 100.0

Learned of Clinic Through Physician

	Success	Failure	Dropout	Total
Yes	4 4.3	1 3.2	12 11.4	17 7.4
No	90 95.7	30 96.8	93 88.6	213 92.6
Total	94 40.8	31 13.5	105 45.7	230 100.0

Learned of Clinic Through Another Patient

	Success	Failure	Dropout	Total
Yes	81 86.2	29 93.5	79 75.2	189 82.2
No	13 13.8	2 6.5	26 24.8	41 17.8
Total	94 40.8	31 13.5	105 45.7	230 100.0

Learned of Clinic Through Advertising

	Success	Failure	Dropout	Total
Yes	6 6.4	1 3.2	12 11.4	19 8.3
No	88 93.6	30 96.8	93 88.6	211 91.7
Total	94 40.8	31 13.5	105 45.7	230 100.0

Learned of Clinic Through Newspaper

	Success	Failure	Dropout	Total
Yes	11 11.7	4 12.9	11 10.5	26 11.3
No	83 88.3	27 87.1	94 89.5	204 88.7
Total	94 40.8	31 13.5	105 45.7	230 100.0

Referrer Reached Weight Goal

	Success	Failure	Dropout	Total
Yes	20 21.3	5 16.1	15 14.3	40 17.4
No	74 78.7	26 83.9	90 85.7	190 82.6
Total	94 40.8	31 13.5	105 45.7	230 100.0

Referrer Had Not Lost Noticeable Weight

	Success	Failure	Dropout	Total
Yes	13 13.8	6 19.4	15 14.3	34 14.8
No	81 86.2	25 80.6	90 85.7	196 85.2
Total	94 40.8	31 13.5	105 45.7	230 100.0

Referrer Noticed Improvement

	Success	Failure	Dropout	Total
Yes	50 53.2	20 64.5	53 50.5	123 53.5
No	44 46.8	11 35.5	52 49.5	107 46.5
Total	94 40.8	31 13.5	105 45.7	230 100.0

Appendix I

MMPI Profiles According to Codetype Categories

Neurotic Type Profiles

1-2-3 (any combination)	1-5, 5-1	2-7, 7-2
1-2, 2-1	1-7, 7-1	2-0, 0-2
1-3, 3-1	2-3, 3-2	7-0, 0-7

Psychotic Type Profiles

1-3-8 (any combination)	1-6, 6-1	6-8, 8-6
2-7-8 (any combination)	1-8, 8-1	6-9, 9-6
	2-8, 8-2	7-8, 8-7
	8-3, 3-8	8-9, 9-8

Characterological Type Profiles

2-7-4 (any combination)	1-4, 4-1	4-6, 6-4
4-6-8 (any combination)	2-4, 4-2	4-7, 7-4
4-6-2 (any combination)	3-4, 4-3	8-4, 4-8
4-8-2 (any combination)	4-5, 5-4	4-9, 9-4
4-9-6 (any combination)		

Appendix 3

Pearson Product Moment Correlation Matrix Between Pairs of Pretest Variables

	INITWT	GOALWT	AGE	ED	INTLC	EXTLC	HVPSUSC	L	F	K	HS	D	HY	PD	MF	PA	PT	SC	MA	SI	ES	NT	A	R	LB	CA	DY	DO	RE	PR	ST	CM
INITWT	1.00																															
GOALWT	.51	1.00																														
AGE	-.06	.33	1.00																													
ED	-.13	-.00	-.02	1.00																												
INTLC	-.04	-.07	-.23	-.06	1.00																											
EXTLC	-.02	-.07	-.23	-.07	-.98	1.00																										
HVPSUSC	-.03	-.04	-.25	-.05	-.10	1.00																										
L	-.03	-.18	-.21	-.16	-.26	-.23	1.00																									
F	-.01	-.16	-.19	-.15	-.27	-.26	-.03	1.00																								
K	-.07	-.05	-.13	-.02	-.07	-.07	-.02	-.31	1.00																							
HS	-.00	-.07	-.07	-.08	-.22	-.21	-.05	-.01	-.34	-.26	1.00																					
D	-.05	-.05	-.05	-.05	-.03	-.04	-.00	-.06	-.28	-.13	-.21	1.00																				
PD	-.05	-.05	-.05	-.05	-.03	-.04	-.00	-.06	-.28	-.13	-.21	-.37	1.00																			
MF	-.04	-.06	-.15	-.03	-.13	-.06	-.00	-.00	-.48	-.04	-.00	-.05	-.04	1.00																		
PA	-.04	-.06	-.14	-.03	-.17	-.13	-.06	-.00	-.48	-.07	-.44	-.05	-.06	1.00																		
PT	-.04	-.11	-.15	-.15	-.15	-.16	-.04	-.17	-.49	-.17	-.44	-.05	-.06	1.00																		
SC	-.07	-.06	-.19	-.17	-.20	-.18	-.06	-.16	-.75	-.08	-.48	-.46	-.47	1.00																		
MA	-.08	-.07	-.20	-.17	-.07	-.06	-.08	-.20	-.34	-.19	-.16	-.19	-.15	-.26	1.00																	
SI	-.03	-.02	-.02	-.02	-.21	-.21	-.06	-.12	-.26	-.53	-.27	-.48	-.28	-.25	-.09	1.00																
ES	-.10	-.02	-.08	-.10	-.12	-.10	-.10	-.32	-.52	-.71	-.26	-.80	-.12	-.29	-.05	1.00																
NT	-.01	-.11	-.20	-.17	-.28	-.27	-.03	-.24	-.08	-.33	-.17	-.32	-.27	-.27	-.69	1.00																
A	-.13	-.06	-.08	-.03	-.07	-.07	-.05	-.09	-.05	-.25	-.26	-.40	-.29	-.01	-.27	1.00																
R	-.13	-.06	-.08	-.03	-.07	-.07	-.05	-.09	-.05	-.25	-.26	-.40	-.29	-.01	-.27	1.00																
LB	-.04	-.09	-.15	-.11	-.29	-.28	-.07	-.26	-.48	-.65	-.33	-.64	-.26	-.30	-.10	1.00																
CA	-.04	-.09	-.15	-.11	-.29	-.28	-.07	-.26	-.48	-.65	-.33	-.64	-.26	-.30	-.10	1.00																
DY	-.03	-.04	-.13	-.19	-.19	-.20	-.05	-.10	-.24	-.70	-.20	-.57	-.08	-.18	-.09	1.00																
DO	-.03	-.04	-.13	-.19	-.23	-.22	-.16	-.28	-.37	-.47	-.03	-.11	-.06	-.16	-.03	1.00																
RE	-.05	-.02	-.14	-.27	-.23	-.20	-.32	-.46	-.70	-.08	-.31	-.05	-.05	-.20	-.05	1.00																
PR	-.03	-.03	-.19	-.26	-.30	-.30	-.02	-.32	-.46	-.34	-.04	-.29	-.06	-.02	-.15	1.00																
ST	-.03	-.03	-.19	-.26	-.30	-.30	-.02	-.32	-.46	-.34	-.04	-.29	-.06	-.02	-.15	1.00																
CM	-.08	-.08	-.08	-.02	-.16	-.14	-.03	-.06	-.16	-.34	-.04	-.28	-.12	-.18	-.06	1.00																
S0	-.03	-.13	-.21	-.16	-.31	-.30	-.03	-.25	-.76	-.63	-.37	-.59	-.29	-.36	-.03	1.00																

NOTE: A correlation of .14 reaches significance

Appendix K
Cost Effectiveness Index Data

Subject Number	Hours in Treatment	R.I. Index	Subject Number	Hours in Treatment	R.I. Index
003	9	58	121	10	93
005	11	68	126	10	86
006	19	98	127	11	60
009	11	55	129	10	83
010	22	93	130	11	81
011	18	89	138	11	72
012	11	55	154	11	76
014	14	77	161	17	58
015	11	134	163	12	52
022	17	50	166	6	61
023	12	87	167	8	57
024	25	126	170	15	63
028	11	57	174	20	73
131	16	91	179	17	142
035	21	66	180	16	62
038	8	51	181	19	72
039	22	49	182	9	44
040	8	83	187	12	157
043	19	120	189	23	144
044	13	104	192	18	81
047	20	79	193	20	75
051	11	59	199	12	56
052	18	135	200	9	94
053	8	95	202	26	91
057	18	105	203	19	90
061	16	77	206	4	54
062	13	61	209	7	74
063	15	64	210	13	145
064	14	107	212	25	119
065	21	82	215	9	76
068	10	127	217	14	150
079	15	123	218	11	117
081	7	62	220	19	65
084	16	102	222	15	114
085	20	80	229	17	56
087	10	56	232	22	67
098	4	54	231	19	100
099	20	96	235	17	98
102	13	143	236	16	92
109	19	97			
113	18	68			
116	15	59			
117	20	109			
120	6	55			
			Total	1205	7057
			n=83		
			Mean hours in treatment=14.52		
			Mean R.I. Index=85.02		

Appendix L

Personal History and Pretest Information for Subjects in All Groups

Information on Card 1

Column

- 1-3 Subject identification number
- 4 Group number
- 1-Success 2-Failure 3-Dropout
- 4-Records missing
- 5-7 Initial weight
- 8-10 Goal weight
- 11-13 Pounds overweight
- 14-16 Percentage overweight
- 17-19 Weight lost
- 20-22 Weight reduction index
- 23 Where subject lives
- 1-Greater Dallas 2-Ft. Worth and Arlington 3-Other cities
- 24-25 Age
- 26 Marital status
- 1-Married 2-Single 3-Divorced 4-Widowed
- 27-29 Family income per year given in thousands of dollars
- 30 Race
- 1-Caucasian 2-Black 3-Mexican-American

Column

- 33-34 Occupation
- 35-38 Reason for wanting to lose weight
- 1-For self 2-Pressure from significant others
- 3-Medical reasons 4-Physician's advice
- 39-42 Periods of life when overweight
- 1-Preadolescence 2-Adolescence
- 3-Age 20 to 30 4-Age 30 and above
- 43-44 Gained in reaction to a stressful event
- 1-Yes 2-No
- 45-49 Family members overweight
- 1-Husband 2-Mother 3-Father
- 4-Brother or sister 5-No one
- 50-51 Tried to lose weight before
- 1-Yes 2-No
- 52-53 Successfully reached goal
- 1-Yes 2-No
- 54-55 Number of times successful
- 56-60 Methods tried
- 1-Specific diet plan
- 2-Medication
- 3-Weight Watchers
- 4-Individual personal therapy
- 5-Other
- 61-62 Eating in "binges"
- 1-Yes 2-No

Column

63-64 Eating large amounts at night

1-Yes 2-No

65-66 Eating because of specific time

1-Yes 2-No

67-68 Expectation of success in program

1-Yes 2-No

69-72 Way first learned of clinic

1-Physician 2-Another patient 3-Advertising

4-Newspaper article

73-75 Progress of referrer

1-Reached goal 2-Noticed improvement

3-Not lost weight

76-77 Internal Locus of Control score

78-79 External Locus of Control score

Information on Card 2

1-3 Subject identification number

5 Card number

7-8 Hypnotic Susceptibility Test score

9-10 MMPI Scale score L

11-12 F

13-14 K

15-17 Hs

18-20 D

Column

21-23	Hy
24-26	Pd
27-29	Mf
31-33	Pa
34-36	Pt
37-39	Sc
40-42	Ma
43-45	Si
46-48	T scores over 70 or under 30
	1-none 2-one 3-two
49-50	Es
51-52	Nt
53-54	A
55-56	R
57-58	Lb
59-60	Ca
61-62	Dy
63-64	Do
65-66	Re
67-68	Pr
69-70	St
71-72	Cn
73-74	So
76	Group number

00131751250500280170481363009114061 234 2 2 1 2001234 1 1 21 2 31211
 001 2 11504968054045058063037 0620500540670341 68773746493432655435674849 3
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 002 2 06485172050043058065043 059058065048041 2 75683955663638676235714649 2
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[illegible]

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 09711370990380270220801321030112051 2 4 2 2 4 1 1 031 51 1 1 1 2 2 1508

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 098 2 10544947042063058058035 0500430600640471 65774944575446565149646344 1
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 232 2 07485449048039046043037 0500470460500551 62794548364450654949624339 1
 2333212139073034004008351399911201 34 41 2 1 1 01 51 1 21 3 1706
 233 2 06545166066055065073057 050057060052048 2 56754251495449546544583347 3
 23431741290450260130391433010118051 41 34 2 51 1 881 51 1 1 1 2 2 0914
 234 2 06486155062071060070037 053070069064068 2 58725741627264403351476130 3
 23511931290640330420981471016112101 234 2 4 2 21 21 2 2 1112
 235 2 07485055052055058053033 0530500580620571 68723953704240595447644647 1
 23612161450710330440921371013114071 4 341 23 1 1 011 3 1 1 1 1 2 2 0815
 236 2 07464955050057054065061 0620600570670501 50754658664852565755604849 1
 23731371190180130000001591013113061 34 2 4 2 2 1 1 02 2 451 1 1 1 2 232003
 237 2 06525164076065077073053 056057062055057 365684365704840675149646143 3
 2380 1311020114101 41 1 4 1 1 01 3 1 21 1 1 1805
 238 2 08525064050047048055047 0500530570520401 58683744493837675942624150 0

Appendix M

Posttest Information for Successful Subjects

Column

1-3	Subject identification number
5	Group number
7-8	MMPI Scale Score L
9-10	F
11-12	K
13-14	Hs
15-16	D
17-18	Hy
19-20	Pd
21-22	Mf
23-24	Pa
25-26	Pt
27-28	Sc
29-30	Ma
31-32	Si
33-34	Es
35-36	Nt
37-38	A
39-40	R
41-42	Lb
43-44	Ca

Column

45-46	Dy
47-48	Do
49-50	Re
51-52	Pr
53-54	St
55-56	Cn
57-58	So
61-62	Internal Locus of Control Score
64-65	External Locus of Control Score

006	3	5451535863625551625248575352774346536257403553584141	19	04
012	3	4649664835586053595557643267733434573436756231784653	19	04
022	3	5747614443505345594251524361643944623243625442694850	13	10
024	3	5456494647606537595257555059755160495649625449585143	17	06
028	3	4859476063585849806366716844755855535662452753495632		
035	3	4647454037424351504343504458834423494043654942645349	13	10
039	3	5447435453624037415045675064734634625043546247564640	13	10
043	3	4853454249524841444043505550734558454649655458584642	15	08
044	3	5249595449464853595052437148774960535451455745494340	16	07
047	3	5050615255626045445248505662644262624243595145644142	13	09
052	3	5046594247425349535345434762724330493641565933644147	16	07
061	3	4856615039506543534558764173733860573444563847624645	13	09
064	3	4351364861446839506045526950946439456663513056606836	15	08
065	3	5056616265625861475369575741604253535248564347515140	12	11
068	3	4857575051586057596562505153754851744443544649535638	09	14
081	3	5249645057566845655248404861703858663843656235673845	15	08
085	3	4860495259656039505266486458725055665442625947675839	15	08
099	3	4847413655384547444238456359704551454847543856515345	20	03
113	3	5054437471734841655755575748885651536057625949605134	19	04
117	3	5951636065504847536755367653644958625654545442474340	20	03
121	3	5056576237635569475362814559724246664443654945603844	19	04
126	3	4647534853567057445048555064663853534648453856604850	11	12
127	3	5950475047464053475349625055815032493849564649604344	16	07
129	3	5054476637635839654055714561834334745043654936785638	17	06
167	3	5253574849504543444552504861723737574036704947716148	13	10
179	3	4850434645464863533846554858664246494247565149514340	16	07
180	3	5056596253624551536555485750774855495453434951424838	16	07
181	3	594768464354654953485540525553262663231515444512852	15	08
189	3	5053516661543555596358645958835246625856594644605637	18	05
192	3	4850616849715561565360624353683953494048655742564342	15	08
199	3	506747585954953365627762595692637745857624153588327	09	14
200	3	4349435845466051566760606059835644326064373860475336	18	05
201	3	4849644849465351595052504968683744623843655442624149	18	05
202	3	5254615071546553596257486858624367455047565745423337	08	15
215	3	5049415471544043416762607641836453666067545753535839	07	16
220	3	5054396073655353595566716036946246706654565158494831	12	11
226	3	50496352496258455566865624656774846494047565942714645	14	09

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