

PREDICTORS OF SUCCESS IN A WEIGHT
REDUCTION PROGRAM USING HYPNOSIS

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ABSTRACT

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Weight reduction programs are notorious for their high attrition rates, poor success, and poor long term outcome. The purpose of the present study was to investigate five variables, hypnotic susceptibility, motivation, self-efficacy, body image estimate and body image attitude as possible predictors of success. Fifty-seven clients, mostly female, who met the entrance criterion of 10 pounds (4.5 kilograms) overweight, volunteered for a weight reduction program using hypnosis. Following initial assessment on the five variables, and a single hypnotherapy session, clients were given audio cassettes of the treatment which utilized Hartland's Ego-enhancing Instructions and Stanton's Weight Loss Suggestions.

At three months follow-up, 12 clients (21.8%) had lost 10 or more pounds (4.5 kilograms) and/or 4 millimetres or more of skinfold. Certain motivation items predicted 81.8% of the successful weight losers and 79.5% for the skinfold

reducers. Differences in pre-post measures of self-efficacy were found for successful clients on both criteria. The other three potential predictors were unrelated to the outcome criteria.

These findings are consistent with those found in smoking studies using a similar treatment. Motivation to lose weight or quit smoking appears to be the main factor linked to success; hypnotic susceptibility though strongly related to successful treatment of medical disorders like clinical pain and asthma, is unrelated to the elimination of socially learned habits such as smoking, and, in the present study, weight loss.

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INTRODUCTION

Obesity is a major health concern in North America with 60% of the U.S.A. population overweight (Bray, 1976). As 'thinness' is viewed as a desirable social condition in North America, the overweight suffer from severe social stigma (Allon, 1973), from severely damaged self-image (Bruch, 1973; Glucksman, 1972), and, of course, from serious risk to their physical health with an increased incidence of cardiovascular disease (Stunkard, 1975). The problem is so widespread that, in a recent editorial, Cohen (1979) commented that "historians may well characterize America in the latter part of the 20th century as 'the land of the fat' (p. 1).

Obesity has been defined as an excess of fat of body weight in comparison to standards such as those found in public health (U.S. Public Health Service, 1965) or life insurance tables (Leon, 1974). Although overweight (Footnote 1) may be caused by various medical conditions including diabetes mellitus and endocrine disorders, the most common cause is overeating (Bray, 1976). Psychological research is primarily concerned with the latter type.

Treatment of Obesity and Outcome

Numerous techniques have been used to treat the obese and overweight ranging from major gastro-intestinal surgery (Kuldau, Barnard, Kreutziger & Rand, 1979) to psychotherapy (Bruch, 1973). Diets, advocated or prescribed by physicians, nutritionists or self-proclaimed experts, have usually led to the common pattern of rapid weight loss initially, and equally as rapid regaining of weight once the diet has been 'broken' or completed (Stunkard & Penick, 1979). Dieting has been reported to lead to emotional disturbances such as nervousness, irritability, fatigue and nausea (Stunkard & McLaren-Hume, 1959) which possibly explains why dieters rapidly regain weight. Other studies, however, using low carbohydrate diets in combination with drugs (Shipman & Plesset, 1963; Silverstone & Lascelles, 1966) reported findings contrary to those of Stunkard and McLaren-Hume (1959). The results of these studies show that dieting does not pose a serious emotional risk to the obese provided that the clients were not severely depressed or anxious when treatment began. These authors recommend that the obese patients be screened for emotional problems.

Hypnosis has been used to treat obesity and overweight either through direct suggestions, positive and/or aversive ego-enhancing suggestions, autohypnosis, the use of an audio-

tape (Stanton, 1975) or some combination of these techniques (Miller, 1976; Carstoniu, Note 1) either with individuals (Mott & Roberts, 1979) or in a group setting (Glover, Note 2). Nutritional information and suggestions for increased physical activity are an aspect of most hypnosis weight reduction programs (Cohen, 1979; Mott & Roberts, 1979; Carstoniu, Note 1; Glover, Note 2). The outcome of these programs has been varied. Stanton (1975) reported a 100% success rate, in that all his clients (N = 100) achieved their desired weight loss of 20 lbs. (9.07 kg.) (Footnote 2). In a 1974 study, M. Miller found that 49 out of 50 clients could be hypnotized and lost a mean weight of 4 lbs. (1.81 kg.) per week. He observed that the most overweight lost weight more rapidly initially. In this study, however, the duration of the program, total weight lost and percentage of weight lost were not specified. Miller (1976), using hypnosis in combination with aversive techniques over a one year period found that 59% (N = 100) of the clients achieved at least half of the desired weight loss, while 34% lost less than half of what was desired. However, neither the percentage nor the number of clients who achieved the desired weight loss is reported. Glover (Note 2) described a 2 month program in which 100 obese clients participated in group hypnosis sessions, a high protein-low carbohydrate diet and daily exercise. Although clients, as a group, fell short of the predicted weight loss by 1.5 lbs.

(.68 kg.), the average weight loss was 21.11 lbs. (9.81 kg.) or 92% of their desired weight loss. This study also does not state how many clients actually achieved the desired weight loss. It would appear that not one did since the individual who lost the highest percent of weight in two months lost only 17.8% of their desired weight loss.

Hypnosis does not appear to have any greater success rate than other treatment procedures. Most authors claim, however, that the positive change in the client's personality (Miller, 1976; Stanton, 1975; Glover, Note 2), the absence of emotional side-effects (Miller, M., 1974), the extrinsic reinforcement or motivating effects (Tilker & Meyer, 1972), and the general report from clients on the agreeable aspects of hypnosis (Miller, 1976) warrants its clinical use. None of these studies took pre- or post-treatment personality measures so that the 'positive' effects have been assessed solely by client reports or on the basis of the clinical evaluation of the therapist.

Behaviour therapists have researched various treatment techniques for obesity with a view to determining which procedure is the most effective. Such methods as changing eating behaviours (Hall, Hall, DeBoer & O'Kulitch, 1977), stimulus-control (Levitz & Stunkard, 1974) and the use of group and individual rewards for behaviour change and weight loss (Hall et al., 1977; Tobias & MacDonald, 1977) have been investigated. Other researchers have examined

the role of the therapist (Carter, Rice & DeJulio, 1977; Lindstrom, Balch & Reese, 1976) or the use of self-help behaviour therapy manuals (Glasgow & Rosen, 1978; Tobias & MacDonald, 1977) in the treatment of the obese. These studies have been able to report which treatment techniques are most successful. Overall, behaviour therapy, regardless of the specific treatment technique, has claimed the greatest success amongst all weight reduction programs in terms of weight loss, that is, the greatest number of pounds or kilograms lost!

Despite the overall impression from the literature that all behaviour therapy treatment techniques are successful for some obese and overweight clients, close examination reveals that only moderate amounts of weight are lost. Stunkard and McLaren-Hume (1959) reviewed 30 obesity studies and found that only 25% of clients were able to lose as much as 20 lbs. (9.07 kg.). Shipman and Plesset (1963) found that only 11% of clinic and 14% of private obese patients lost 20 lbs (9.07 kg.) or more. Treatment programs spanning various periods of time, that is 3, 6, 12 months had similar results in terms of pounds lost (Jeffrey, 1974; Jeffrey, Christensen & Katz, 1975; Silverstone & Lascelles, 1965). Levitz and Stunkard (1974) reported a mean weight loss of 4.2 lbs. (2.37 kg.) in a 3 month program with eight in a sample of 234 clients losing 20 lbs. (9.07 kg.) or more. Overall the results are not encouraging!

Attrition from Weight Loss Programs

In his presidential address to the American Psychosomatic Society Meeting in 1974, Stunkard (1975) stated that "of those (obese patients) who do enter treatment, most will not remain" (p. 196). Attrition rates are high and consistent regardless of the specific treatment techniques being utilized. Treatment programs utilizing nutrition clinic approaches, that is, low carbohydrate diets and/or drugs, have reported drop-out rates from 16% to a high of 40.6% (Silverstone & Solomon, 1965; Silverstone & Lascelles, 1966; Shipman & Plesset, 1963; Stunkard & McLaren-Hume, 1959). Behaviour modification programs using various techniques such as weight reduction manuals, behavioural contract, stimulus-control, etc. have suffered from attrition to the same extent, ranging from 33% (Tobias & MacDonald, 1977) to approximately 40% (Levitz & Stunkard, 1974).

In a review article Baekeland and Lundwall (1975) examined dropping out of treatment in a variety of clinical areas and medical conditions. Such intractable conditions as alcoholism, heroin addiction and obesity were included. Fifteen factors were found to predict drop-out in 60-100% of the relevant studies. Those factors which appear to be most relevant to obesity are: social isolation (100%), denial of the problem or less objective self-evaluation (92.3%),

poor motivation (82.9%), sex, that is, female (44.8%), social instability, that is, unemployment, residential mobility and marital instability (44.4%) and socio-economic status, that is, 41.9% of the drop-outs were of low socio-economic status.

Follow-Up of Weight-Reduction Programs

Follow-up studies provide an even gloomier picture on the effectiveness of weight reduction programs for obese clients. Within one year of treatment most subjects have regained 50-55% of their weight loss upon completion of treatment (Brightwell, 1976; Jeffrey, 1974; Jeffrey et al., 1975; Stunkard & McLaren-Hume, 1959). Short term follow-ups on behaviour therapy studies have shown continued maintenance of weight loss in subjects who initially lost minimal amounts of weight (5-10 lbs., or 2.3 - 4.5 kg.) (Hall et al., 1977; Levitz & Stunkard, 1977; Stunkard, 1972; Tobias & MacDonald, 1977). Studies in which overweight subjects lost a considerable amount of weight, 6.4 kg. (14 lbs.) or more, were less successful as the subjects tended to regain between 15-60% of their former weight within six months to one year (Beneke, Paulsen & McReynolds, 1978; Foreyt & Kennedy, 1971; Öst & Göttestam, 1976). In 1972, Stunkard reported a one year follow-up on 32 obese patients who had undergone a behavioural (N = 15) or a control (N = 17) treatment condition. Behavioural

subjects lost a median of 9.5 kg. (21 lbs.) and on one year follow-up had increased this weight loss to 12.7 kg. (28 lbs.). The control group lost a median of 6.8 kg. (15 lbs.) and one year later had increased this loss to 9.5 kg. (21 lbs.). These encouraging results were shattered, however, by Stunkard and Penick (1979) who reported on a five year follow-up in which 27 of the original clients were reassessed. Four of the original group had died, two from obesity-related conditions, and one other client had undergone intestinal by-pass surgery. On five-year follow-up only three or 25% of the behavioural condition subjects (N = 12) and four or 30% of the control condition subjects (N = 13) weighed less than at the end of treatment. Overall, at one year, 17 out of 28 (60%) had maintained or increased their weight loss while four years later this had shrunk to seven out of 26 (25%).

Reports on follow-up studies where hypnosis was the primary treatment modality for obesity have been few and far between (Mott & Roberts, 1979). Follow-ups have usually not been carried out (Miller, M., 1974; 1976; Glover, Note 2) or limited to individual cases (Tilker & Meyer, 1972). The previously mentioned success rate (100%) of Stanton (1975) was maintained over a two year period. Tilker and Meyer (1972) reported a continued maintenance of weight loss in one female at 9 months follow-up. Aja (1977) assessed a hypnosis program

consisting of 3 sessions with 40 obese clients. He found the mean weight loss of the group at 3 months follow-up was 12.6 lbs. (5.61 kg.) while, disappointingly, at 6 months follow-up it was 9.5 lbs. (4.30 kg.). The group as a whole was regaining at a rate of 25% over a 3 month period. Glover (Note 2), despite no reported follow-up on his group hypnosis procedures, concluded his program was very successful and continued to use it on 3,756 new clients and 32,655 returning weight patients.

Unfortunately we are still faced with the same problems in treatment of the obese that Stunkard (1975) identified in 1974. These are, namely, that "most obese people do not enter treatment for obesity; of those who do enter treatment most will not remain; of those who remain, most will not lose much weight; of those who lose weight, most will regain it; and many will pay a high price for trying" (p. 196).

Predictors of Treatment Outcome for Obesity

Client History

History questionnaires have been used to try and determine which, if any, demographic variables, attitudes towards being overweight food preference and/or eating habits could predict treatment outcome for the obese and overweight (Green, 1975; Leon & Chamberlain, 1973; Silverstone & Cooper, 1972; Stunkard, 1975; Tobias & MacDonald, 1977).

Demographic Variables

The prevalence of obesity and overweight in lower socio-economic levels is much higher for females (30%) and males (32%) than in the upper socio-economic level (5% and 15% respectively) (Stunkard, 1975). Silverstone and Cooper (1972) found that Social Class III (middle class) patients lost weight more readily (35%, N = 41) than Social Class II (upper class) (29%, N = 9) or IV and V (lower class) (30%, N = 50) patients. In 1965, Goldblatt, Moore and Stunkard found that the longer a female's family had been in the U.S.A. the less likely she would be obese (24% overweight in the 1st generation and only 5% in the 4th generation). The finding was highly significant. A more recent study (Green, 1975) found the reverse to be true in that significantly more Americans than non-Americans and significantly more 4th generation than 1st generation females were obese. Levitz and Stunkard (1974) cited older age, less education and lower socio-economic class as reasons for failure to lose weight in a behaviour modification program.

Silverstone and Solomon (1965) found, that, although most overweight clients had a family history of one or both parents obese, it had no significant bearing on their weight loss. Clients with both parents overweight tended to lose less weight. In a multiple regression analysis Green (1975)

found the single most powerful predictor for obesity in women was an overweight mother. Quereshi (1977) found that Factor 24 on the Rating of Self Status Scale (ROSS) was significant in the predicted direction; the remediablely obese female usually had encountered a happy childhood, a slim mother, and a number of slim friends. Sex had been identified as a predictor of treatment outcome with males reported as more successful by Stunkard and McLaren-Hume (1959) and as losing more weight than females if they persisted with treatment (Silverstone & Cooper, 1972).

The age of clients has been found relevant in some studies although sometimes in conflicting ways. Silverstone and Cooper (1972) reported that younger subjects dropped out of treatment more quickly and subjects who became overweight after 40 years showed the greatest likelihood of successful short term response to dieting (47%, N = 17). This was not confirmed by Levitz and Stunkard (1974) who found older females to be less successful.

Attitudes Towards Obesity and Overweight

In a questionnaire study Green (1975) attempted to assess a subject's attitude toward obesity in relation to satisfaction with appearance, weight estimate and advantages or disadvantages of being overweight. She found that obese females were significantly more dissatisfied with their appearance

and underestimated their weight by 5%. Only 42% perceived one or more advantages to being overweight in terms of self-discovery while 98% viewed it as a great disadvantage both psychologically and socially. Her overall conclusion was that obese females had a very negative attitude toward obesity particularly if they had a history of overweight.

Food Preferences and Eating Habits

Both food preferences and eating habits have accurately predicted remediable vs. irremediably obese. In Leon's and Chamberlain's (1973) study it was found that food preferences varied significantly between the three groups with regainers preferring pastries (41.2%), maintainers preferring meat and starches (45.4%) and controls preferring meat (48.7%). Quereshi (1977) found that the irremediably obese showed a significant preference for bread and meat as compared to other foods. Different states of emotional arousal tended to influence the eating habits of overweight clients although not significantly so (Leon & Chamberlain, 1973). Weight regainers tended to eat in response to multi-arousal states such as loneliness, boredom, happiness and excitement (50%) while maintainers mainly overate in response to negative emotional states such as boredom and loneliness (36.4%). Controls, on the other hand, mainly ate when hungry (48.7%). The eating habits which accurately predicted failure in Quereshi's popu-

lation (1977) were a significantly higher need to keep high calorie foods out of reach, significantly more rapid eating and higher selectivity in food choices.

Personality Characteristics

Numerous studies have been conducted to try and ascertain which personality characteristics of the obese would determine successful treatment outcome. Shipman and Plesset (1963) found that very successful dieters had low anxiety and depression scores on the Anxiety-Depression Scale and the Taylor Manifest Anxiety Scale prior to treatment. Although the overall correlation was low, Silverstone and Lascelles (1966) essentially had the same results, that is, the most anxious and depressed patients lost the least weight. Carstoniu (Note, 1) found that these personality variables as measured on the IPAT anxiety questionnaire and the Zung Self Rating Depression Scale (SDS) were unrelated to treatment outcome.

In another study, the Eysenck Personality Inventory was used to measure neuroticism and it was found that the least neurotic clients were the most successful in losing weight (Silverstone & Cooper, 1972). Only one out of eight very successful clients in this study were considered high on neuroticism and the eight were overall less neurotic than the rest of the sample. Affective ratings have been found to predict the

prognosis for alcoholics, that is, to accurately differentiate abstainers from non-abstainers to a highly significant degree. Successful weight losers were found to express more dissatisfaction with themselves and their ability to establish relationships (Payne, Rasmussen, & Shinedling, 1970). Quereshi (1972) used the Michil Adjective Rating Scale (MARS) and found that irremediably obese considered themselves to be significantly more happy and more extraverted. In a later study (Quereshi, 1977), on the Rating of Self Scale (ROSS), they considered themselves to be significantly more emotionally brittle, peevish and irritable.

The seeming lack of self-control in the obese and overweight has been the object of many studies using Rotter's (1966) Internal-External (I-E) Scale, which is the most common measure used. The results of many clinical studies indicate that the obese and overweight client who scores high on the internal scale will be most liable to complete (Balch & Ross, 1975) and be the most successful at losing and maintaining weight loss (Cohen & Alpert, 1978; Garner, Garfinkel, Stancer & Moldofsky, 1976; Schreiber, Schauble, Epting & Skovholt, 1979). Rotter's I-E Scale, which is said to assess more stable personality characteristics, was able to predict long-term results.

It has been found, also, that internal obese subjects maintained a significantly greater weight loss at 18 months

follow-up than external subjects. The Schauble and Pierce (1974) I-E Scale which assesses situationally determined attitudes was found to significantly predict short-term results, that is, internals had lost more weight at 3 months follow-up (Schreiber et al., 1979). Garner et al. (1976) found a significant relationship between an obese person's externality score on the Rotter I-E. Scale and overestimation of body image; greater externality was found to be significantly related to greater overestimation of body width. These features have been found related to unsuccessful treatment outcome (Balch & Ross, 1975). Other researchers, however, have not confirmed this finding (Leon & Chamberlain, 1973; Tobias & MacDonald, 1977). Green (1975) in a study comparing 50 overweight females with 50 normal females did not find that overweight subjects were more external than normals.

Overall, although there is clearly some evidence that personality characteristics influence successful treatment outcome for obese clients, the data conflict and are by no means conclusive.

Client Expectancies - Treatment Technique, Self-efficacy

Recent studies, particularly on client populations noted for poor treatment outcome such as agoraphobics (Mathews, Johnston, Shaw & Gelder, 1974), the obese (Bradley, Poser & Johnson, 1979; Stanton, 1976), and snake phobias (Bandura &

Adams, 1977), have examined the client's belief in the treatment technique itself (Stanton, 1977) or in the client's belief or expectancy in their own ability to be successful with a specific treatment program (Bandura & Adams, 1977). Mathews et al. (1974) found that high expectancies of a desensitization procedure for agoraphobia was not predictive of treatment outcome.

In a weight-loss program involving hypnosis, Stanton (1976), found that the clients who had received a strong positive recommendation to the program were the most successful weight losers although not to significant levels. He attributed this success to high expectancies of hypnosis. College students who complained of a lack of confidence and no purpose in life were offered a series of ten hypnosis sessions with five using the Hartland Ego-Enhancing Suggestions and five employing Ellis's Rational-Emotive Therapy. Subjects rated both procedures on a Belief Rating Scale prior to treatment and follow-up. The Ellis technique was rated significantly more beneficial both before and upon completion of treatment; further, at 6 months follow-up, there was no change in this belief. The results indicated that the Ellis technique was more successful than the Hartland method. The authors concluded that a client's belief in a treatment procedure has a powerful effect on treatment outcome.

The client's belief in his own abilities has been found

crucial to treatment outcome by Bandura and Adams (1977). Two studies on snake phobias were conducted in which all subjects rated, on a Self-Efficacy Rating Scale, both pre- and post-treatment, their level of expectancy or confidence in their ability to meet the treatment demands. The clients with high self-efficacy expectations prior to treatment were successful in 92% of these demands. Also, a higher level of perceived self-efficacy at the end of treatment, was significantly related to a higher level of approach behaviour by the client to the phobic situation.

Bradley et al. (1979) adapted the Self-Efficacy Rating Scale and rated clients prior to and following a 7 week behaviour therapy weight loss program. The amount of weight the client's expected to lose correlated significantly with actual weight loss for the 12 out of 15 clients who completed it. A further finding, however, showed that client's expectations exceeded their actual weight loss. These results support the hypothesis that client expectations of how well they will do in treatment themselves is a relatively good predictor of actual outcome.

Motivation

Although the motivation of the client is commonly touted as an important factor in treatment, little research has been done to establish its role and/or its effect on treatment out-

come. A few studies have examined client motivation in an attempt to predict the efficacy of specific treatment procedures while others have looked at it from the point of view of client outcome. Mathews et al. (1974) found that low rated motivation failed to predict outcome in behaviour therapy for phobics. The motivation of 53 patients was rated by their therapists prior to and following psychotherapy on the Beth Israel Hospital Psychiatric Clinic: Discharge Summary Questionnaire (Sifneos, 1975). One item on the questionnaire proved to be a powerful predictor of treatment outcome. This was motivation for psychotherapy or change as rated from 'excellent' to 'unmotivated' on a seven-point scale. In short-term psychotherapy eight out of eight (100%) clients rated as having excellent motivation, prior to treatment, were very successful. In long-term psychotherapy seven out of eight (87.5%) very successful clients had received the same rating. The author concluded that motivation was not only a good predictor but, if maintained through the treatment period, a good psychotherapy outcome could be expected.

In a study of 52 alcoholics, Adamson, Fostakowsky and Chebib (1974) found that motivation alone, as rated on a Motivation Checklist, did not predict outcome. However, when the 30 variables with the highest standard coefficient from the Motivation and Affect Checklists were combined, a discriminant functional analysis accurately distinguished abstainers

from non-abstainers at a highly statistically significant level. Although no single item on the tests was predictive, alcoholics who had an optimistic outlook for the future and a benign attitude towards themselves and others were represented significantly in the abstainer group.

In a study of smoking, a Smoking Inventory which assessed the client's motivation to quit and attitudes toward smoking was given to 30 volunteers before and after a 'non-treatment' programme (McFall & Hammen, 1971). Despite random assignment to 1 of 4 'non-treatment' groups, it was found that clients who achieved total abstinence had previously rated their motivation as significantly stronger than those who did not quit.

Perry, Gelfand and Marcovitch (1979) found that three inventory items on a Smoker's History and Motivation Questionnaire could discriminate between the quitter and non-quitter quite accurately. In the first study a stepwise multiple regression analysis found that these three items predicted outcome for 67.9% (N = 46) of the clients regardless of whether the treatment was a rapid-smoking technique or hypnosis. A discriminant analysis found that a knowledge of the client's standing on the three motivational items accurately predicted five out of six quitters and 26 out of 40 non-quitters at 3 months follow-up. A second study (N = 29) used a combined rapid-smoking and hypnosis technique. Although a multiple regression analysis found the three items did not correlate significantly with outcome,

discriminant analysis showed that knowledge of the client's standing on these three motivational variables could predict 16 out of 22 non-quitters (72.7%) and four out of seven quitters (57%). The data from the two studies was combined and reanalyzed. Results showed that the three motivational variables correlated significantly with smoking levels at 3 months follow-up. These same variables were found, by discriminant analysis to predict outcome for nine out of 13 quitters and 37 out of 62 non-quitters, thereby, giving an overall prediction of outcome for 61.3% of the 75 clients.

No comparable examination of the role of motivation in relation to the treatment outcome of the obese has been done. Carstoniu (Note 1) comments that it is often unclear as to what factors are the essential ones for successful weight loss and suggests that client motivation might be a key factor.

Hypnotic Susceptibility

Clinicians have long stated that hypnotic susceptibility had little to do with successful outcome in treatment programs using hypnosis. Only recently have researchers tried to determine whether the hypnotic susceptibility level of a clinical population differs from normals or whether it is relevant to successful outcome when hypnosis is an integral part of the treatment.

Several studies have tried to determine whether or not

obese clients have higher susceptibility levels than normals (Deyoub, 1978; Green, 1975; Thorne, Rasmus & Fisher, 1976; Carstoniu, Note 1). In 1974, Green compared the hypnotic susceptibility levels of 50 overweight and 50 normal college females on the Harvard Group Scale of Hypnotic Susceptibility: Form A (HGSHS:A) of Shor and E. Orne (1962). She found a significant positive correlation between hypnotic susceptibility and obesity, but it was obtained using a one-tailed test of significance. When the two extremes of each group were compared, that is, normals who were 'never overweight' and obese who were 'overweight since childhood' the overweight subjects were again significantly more highly hypnotically susceptible but again on a one-tailed statistical test. Overall it was found that subjects with no history of overweight were less hypnotically susceptible than all the obese subjects. A multiple regression analysis of the data found that hypnotic susceptibility, although a weak predictor, was one of only four variables which accurately predicted obesity.

Thorne et al. (1976) administered the HGSHA:A to 258 'fat' girls and found that there was a significantly higher portion of high susceptibles than in normals. The authors felt that the high scores might have been due to the demand characteristics of the situation, that is, 'fat' girls felt high hypnotizability was necessary to be accepted into the weight reduction program and, therefore, tried to meet these

demands with high scores. Deyoub (1978), in an experiment conducted to examine the hypothesis that there is a possible correlation between obesity and susceptibility, found this was not the case. When 73 subjects were given the Barber Suggestibility Scale (BSS) of Barber (1965) the results showed there was no significant relationship between obesity and this measure of hypnotic responsivity.

Further, it was found that BSS scores did not increase with an increase in obesity, and, when compared with normals, the obese were no more suggestible than the general public. At the same time, the norms of the Stanford Hypnotic Clinical Scale (SHCS) of Morgan and J. Hilgard (1978-79) indicate that 37% of the normative sample was high susceptible, 31% were medium susceptible, and 26% were low susceptible. These figures do not correspond with repeated findings of from 10-15% of individuals being highly susceptible and a further 10-15% being insusceptible (Bernheim, 1889; Hilgard, 1965). These conflicting reports may be due to the use of different scales of hypnotic susceptibility, however, they suggest that more research may need to be performed to establish hypnotic susceptibility 'norms' for specific clinical populations.

Perhaps the more relevant issue is whether or not hypnotic susceptibility levels are related to successful treatment outcome where hypnosis is the main treatment technique.

Miller, J., (1974) evaluated 60 obese females on the HGSHS:A

and then, subjects with low or high hypnotic susceptibility were randomly assigned to one of four treatment groups, two of which involved hypnosis. He found that hypnotic susceptibility did not correlate positively with weight loss. In a more recent study, scores on the Stanford Hypnotic Susceptibility Scale: Form A (SHSS:A) of Weitzenhoffer and Hilgard (1959) did not correlate with either the total pounds lost or percent of total body weight lost in a weight-reduction program for 14 obese females involving eight hypnosis sessions (Cohen & Alpert, 1978).

Carstoniu (Note 1) also found that hypnotic susceptibility had no effect on treatment outcome for either weight or skinfold loss. It was found, however, in a step-wise multiple regression analysis that hypnotic susceptibility plus three other independent variables could predict weight change to a significant level and hypnotic susceptibility plus four independent variables could predict skinfold change. Both high weight losers and high skinfold losers could be differentiated significantly by discriminant analysis, on a combination of hypnotic susceptibility and questionnaire variables. The overall conclusion is that hypnotic susceptibility alone does not predict outcome in a weight loss program using hypnosis. By contrast, in the smoking studies previously described (Perry et al., 1979), it was found there was no relationship between hypnotic susceptibility and smoking outcome. The first

of two studies described in this report found that out of six quitters, four were scored as medium susceptible and two as insusceptible using the HGSHS:A to measure hypnotizability. The correlation of hypnotic susceptibility with the hypnosis technique was small for a rapid-smoking technique, used as a second treatment modality in this first study. In Study 2, using a combined hypnosis and rapid-smoking technique, the pre-treatment correlation on the SCHS was near zero and on the SHSS:C at follow-up it continued to be low and non-significant. The breakdown of hypnotic susceptibility for the seven quitters was two high, three medium and two low susceptibles. The authors found the client's attitude to hypnosis to be highly relevant to subsequent success, in that the quitters thought hypnosis would only facilitate their personal efforts to quit smoking while the non-quitters thought it would have an automatic effect, and that no personal effort would be required of them.

The results of these studies lend support to the clinicians' belief that hypnotic susceptibility is not relevant to treatment outcome in hypnosis programs. Again, the use of a variety of hypnotic susceptibility scales may have had a confounding effect on the results. More controlled and replicated studies are needed to provide conclusive evidence on this matter.

Body Image

Body image disturbance is a very commonly reported psychological symptom of individuals with eating disorders. Body image has been defined as: (a) the mental or perceptual image of the physical body as a whole, as well as its parts, including their size, shape and spatial relationships and (b) the attitudes, emotions and feelings a person has in relation to his body (Garner et al., 1976; Powers, 1980; Traub & Orbach, 1964).

Individuals with eating disorders, that is, anorexia nervosa or obesity have been found to overestimate their body image. In a study conducted by Schonbuch and Schell (1967) using 60 male college students who were either over, under, or 'ideal' weight, it was found that both the over and underweight subjects made incorrect judgements on a Body Appearance Scale. (They had to select a graded series of pictured physiques as close to their own as possible.)

The overweight tended to significantly overestimate in relation to normal Ss', as did the underweight also. Closer scrutiny found that only half of the underweight and half the overweight overestimated their body image. This finding suggests that there may be a subgroup of Ss' in each instance who overestimate. The authors felt they could not predict from this test which Ss' would either over or under-

estimate. Members of the deviant weight groups made significantly more errors in estimating their body appearance than did members of the normal weight group.

Gray (1977) tested 62 males and 117 female students on a Body Affect Questionnaire and on a Perception of Weight-related Appearance questionnaire in an interview situation. On the affect scale the overweight students had a significantly greater negative body affect while on the factual or perceptual questionnaire the overweight tended to perceive themselves as weighing less (15.8%). The underweight females tended to perceive themselves as significantly more overweight than they really were, and the underweight males perceived themselves as weighing less than they really did. The authors concluded that body image disturbance exists in the population at large in relation to one's perception of actual appearance but not with disturbance of affect.

Numerous studies have been conducted on body-image disturbance in subjects with eating disorders, namely, anorexia nervosa and obesity. Such subjects have been compared either with each other on specific tests or with normals (Button, Fransella, & Slade, 1977; Garfinkel, Moldofsky, & Garner, 1977; Garner et al., 1976; Green, 1975; Slade & Russell, 1973). Studies on anorexia nervosa have found that these patients tend to overestimate their body image on a visual size

estimation (rod apparatus) test to a significant degree (Slade & Russel, 1973) while Garner et al. (1976) on an adjustable distorted photo technique found no difference between anorexics and controls on this test overall. By contrast Button et al. (1977) found that anorexia nervosa clients were significantly more accurate on estimating hip size. They also found that a sub-group of anorexia nervosa patients, namely the vomiters, tended to significantly overestimate more. Garfinkel et al., (1977) found this particular sub-group of anorexia nervosa patients (N = 28) to have poor treatment outcome. They found, too, that this sub-group overestimated their body size and that body size overestimation was a very significant predictor of treatment outcome. The overestimators (N = 15) had significantly more previous hospitalizations and significantly higher global clinical scores both initially and at follow-up. The anorexia nervosa (N = 13) clients who underestimated showed considerable change in their clinical evaluation on follow-up and had higher weight at follow-up. On the basis of these data, they reasoned that the patient's perception of her body size was an important aid to prognosis. Standard tests such as the visual size estimate of a vase or other nonbody tests found the S's perception to be normal or accurate. The disturbance, there, was relevant only to body image.

Several researchers (Button et al., 1977; Garfinkel et al.; 1977; Slade & Russel, 1973) have found that with

weight gain there was a significant change in the Body Perception Index overall and on specific body parts, namely, chest and waist. In other words the body image disturbance became less as the patients gained weight steadily. Bruch (1973) has considered realistic body image to be of sufficient importance to constitute it "a precondition for recovery in anorexia nervosa" (p. 90).

Although strong statements have been made in relation to treatment outcome, based on research findings, for a subgroup of anorexia nervosa patients the picture is not quite as clear for the obese and overweight. These individuals have also been found to overestimate their body size (Bailey, Schinedling & Payne, 1970; Garner et al., 1976; Slade & Russel, 1973; Askevold, 1975; Tallant, Note 3) and to have a very negative attitude towards their bodies (Allon, 1979; Garner et al., 1976; Green, 1975; Leon & Chamberlain, 1973; Solow, Silberfarb, & Swift, 1974; Stunkard & Mendelson, 1967).

Askevold (1975) in a preliminary report on a new body image measure, found that obese ($N = 17$) and anorexia nervosa ($N = 15$) Ss overestimated their body image more than other medical patients and a control group of physiotherapists. Due to the small numbers the exact statistics were not reported. Tallant (Note 3) compared 13 obese and 13 normal Ss on the Askevold (1975) or Direct Body Image Test. On the pre-treatment test all Ss overestimated but obese Ss overestimated significantly more on the shoulder width. On the post-test,

although the obese Ss overestimated their shoulders/ significantly less than before, it was still significantly larger than the controls. On the post-test, controls significantly overestimated their hips and waist more than previously. This finding was interesting since the control group had gained weight over the time period of the experiment. When compared with a measure taken of a standard object, all Ss were more accurate with a significant difference between their estimate of the standard object and the Direct Body Image. These results do not support previous studies (Bailey et al., 1970; Garner et al., 1976) which found obese subjects overestimate significantly more than normals.

Tallant (Note 3) using the Draw-A-Person (DAP) Body Image Test found that all Ss (obese = 13, control = 13) overestimated on the shoulders and underestimated on the waist and hips with the obese, however, overestimating significantly more than controls on the shoulders on the pre-test. On the post-test the same shoulder finding was made for the obese. The DAP measure remained fairly constant for all Ss over the time period (3 months). Overall, the Ss tended to significantly underestimate on the DAP and overestimate on the Draw-A-Light-Bulb Test. These results tend to contradict the work of others (Bailey et al., 1970; Garner et al., 1976) for obese overestimators. The distinguishing feature differentiating the groups is the shoulders with the obese Ss overestimating more than normals. A similar finding was also noted by Kotkov

and Goodman (1953) who found that obese females drew square shoulders on the DAP more than normals.

The obese and overweight have been reported to have a very negative attitude toward their bodies (Allon, 1979; Garner et al., 1976; Garner et al., 1978; Gray, 1977; Leon & Chamberlain, 1973; Leon, 1974; Stunkard & Burt, 1967). Gray (1977) found on a body affect questionnaire that overweight students had significantly more negative body affect scores than normal weight students. Allon (1979) found the same in obese adolescent females. She found that Ss who made most frequent negative comments about their body image lost little or gained weight. She concluded that a very negative body image could prevent weight loss. Green (1975), when comparing 50 obese and 50 control females on the Barrier Score as an index of body image boundary, found that the obese Ss scored lower on the test meaning that they had less definite body boundaries, and viewed themselves as passive and vulnerable. There was a significant negative correlation between the Barrier Score and obesity but the test of significance was one-tailed. Green also found in a multiple regression analysis that the Barrier ratio was a weak predictor of obesity, it being fourth in predictive powers after mother, overweight, generation American, and the hypnotic susceptibility score.

Leon and Chamberlain (1973) gave a semantic differential containing six concepts (Eating, The Fat Me, The Thin Me, Me Right Now, My Home and Going to the Movies). Each concept consisted of nine scales of which four were chosen from the evaluative factor (pleasant-unpleasant; beautiful-ugly; good-bad; clean-dirty), two scales from the activity factor (active-passive; hot-cold); and three from the potency factor (heavy-light; strong-weak; hard-soft). This test was given to 56 females who had lost weight one year previously in a weight reduction program, 34 regained weight and 22 maintained their weight loss. They were compared with a control group of 39 females.

Multivariate analysis of variance for unequal sample sizes, were performed on each of the six concepts. It was found that there was no overall significant difference between the groups. However, specific scales within the concepts were significant for the groups, namely, Eating, Me Right Now, and The Thin Me. On the Eating Scale, the regainers found eating to be more positive, that is, more pleasant, clean, beautiful, good and active. However, they also rated eating as heavier and weaker. Maintainers scored lowest on this score. It would appear that regainers were ambivalent about Eating. Me Right Now was rated heavy by all three groups but, regainers saw themselves as more active and hot, with maintainers as very weak. The Thin Me was seen by the regainers

as more pleasant and clean with the controls scoring lowest on this scale. Leon concludes that there was no significant overall disturbance in body image for the regainers and maintainers although there were some differences on specific scales.

In 1974, Leon used the same test to determine whether there would be a body image attitudinal change in obese females who lost weight (Change group, N = 14), did not lose weight (No change group, N = 34) and a control group (N = 26). Results showed there was a significant difference between the groups on the concept Me Right Now on the heavy-light scale. The Change group scored themselves as heavier on the pre-test and showed the biggest difference at follow-up in the lighter direction.

The Fat Me concept showed a significant difference on the clean-dirty scale with the Change group the most clean each time and the No change the dirtiest on pre-test and cleanest at follow-up. On the Eating concept there was significant difference on the good-bad scale and on the heavy-light dimension. Eating became less good for the Change group on the post-test and heavier for both the Change and No Change groups over time. Overall the obese showed few differences to the controls in body image attitudes but on the post-test the Change group had a less heavy and more realistic attitude toward body image, and saw eating as less good. These changes,

the authors concluded were related to the actual weight loss. Interestingly, the No Change group had a less negative evaluation of themselves than the other two groups on the pre-test. This might well be the reason they did not lose weight since if they were initially more satisfied with themselves they might have had less incentive to lose weight. The less negative body image attitude might very well be a more accurate predictor of weight loss in the obese.

Tallant (Note 3) found, using a multivariate analyses of variance that an overall significant difference occurred between the obese and controls on the concept My Home, The Fat Me, The Thin Me, and Me Right Now. The overweight group had a more negative body image attitude than the control group. They viewed the Fat Me as significantly more heavy and harder and Me Right Now as weaker, uglier, less good, and less pleasant than the control group. The Thin Me was viewed as significantly more unpleasant which is surprising, since they had all volunteered for a weight-reduction program indicating some dissatisfaction with their current status. As most patients had tried to lose weight many times before, they may have found the process of becoming thin unpleasant as it made them feel anxious, irritable and moody. However, as only four clients lost weight in this study, this scale might be particularly relevant as a predictor of treatment success.

Predictive Studies

Escalating medical costs both in terms of treatment procedures and personnel have recently turned researchers to the issue of prediction of treatment outcome. The few studies thus far reported have been concerned with outcomes among clinical pain patients. The MMPI was used by Kuperman, Golden and Blume (1979) to try and predict the outcome of pain treatment in patients with organic-based (N = 58) and functional based (N = 46) pain. Multiple regression analysis found that the hypochondriasis (Hs) scale was significantly associated with poor outcome for organic pain patients and the correction (K) scale was significantly related to poor outcome for functional pain patients. Overall, these authors concluded that psychological factors were minimal in the prediction of treatment outcome for pain patients.

A battery of psychological tests were given preoperatively to predict the outcome of lumbar disc surgery on 48 subjects (Pondaag & Oostdam, 1979). At six months follow-up clinical evaluation found 31 subjects to have satisfactory results, eight to have improvement but no cure and nine had no improvement. The results of a linear discriminant analysis showed, in order of predictability, that the VOBG (a Dutch inventory of subjective health), educational level, duration of complaints, age and the NPV (a Dutch personality questionnaire) on the RG-rigidity, IN-personal inadequacy and SI-social inadequacy

scores were able to predict surgical outcome for 93.4% of the satisfactory cases and 58.8% of the nonsatisfactory cases. Overall these variables were able to predict outcome (satisfactory vs. nonsatisfactory) correctly in 85.4% of cases.

The Present Study

As mentioned previously, weight-reduction programs are notoriously unsuccessful. The expense and time involved for both clients and therapists is considerable. Mott and Roberts (1979) caution that with each failure the obese individual becomes more desperate and therefore more vulnerable to be exploited by extravagant claims of commercialized clinics or treatments. It seems highly relevant, therefore, to seek accurate predictors of treatment outcome for obesity both for the client and the therapist.

The purpose of the present study was to predict which clients would successfully lose an adequate amount of weight and/or skinfold. The variables of motivation, hypnotic susceptibility, self-efficacy, body image estimate and body image attitude were selected as possible predictors of treatment outcome, either individually, or in combination with each other.

METHOD

Clients

Fifty-seven clients (55 female, 2 male) ranging in age from 16 to 67 (mean = 32.63) years volunteered for treatment of a weight problem. Forty-four clients completed the program; the remaining 13 clients dropped out, either during the program, or else did not return for the final post-treatment evaluation. Clients came from a heterogeneity of occupational and socio-economical backgrounds and had only their weight problem in common.

Procedure

Posters were placed on notice boards at Concordia University (Sir George Williams Campus), McGill University, St. Mary's Hospital, and the Montreal General Hospital. Advertisements were placed in the student newspapers at McGill and Concordia Universities (Appendix A). Initial contact was made by telephone and clients were given a brief description of the program. They were told that they must be a minimum of 10 pounds overweight (4.5 kg.) for their age and height as determined by the U.S. Public Health Service Scale (1965, pp. 12-13), that they should not be undergoing any other form of medical intervention, and would be required

to pay \$50 (\$25 fee and \$25 deposit refundable at the end of the program). The clients were scheduled for a group meeting to which they were to bring the fee and a signed medical statement as proof of health and eligibility for the weight loss program. Initial meetings with the clients were held in small groups in the Applied Psychology Center, Concordia University with the experimenter. The meeting followed the procedure described by Carstoniu (Note 1). Clients were informed that the weight loss program had a dual purpose involving both treatment and research. It was emphasized that the prime concern of the investigators was to help the clients lose weight. It was explained further that the research goal was to develop a better understanding of the factors underlying successful weight loss so that improved treatments could be developed. A brief review of obesity research and a short talk on the nature of hypnosis was given. Clients were told that the responsibility of the program lay with them as "the only way to lose weight is to eat less and exercise more". They were told that hypnosis could only help if they wanted to lose weight and were willing to make the effort to do so. They were advised that if they intended to take up active physical exercise they should have a physical check-up or stress test first. The clients were also told to walk at least half an hour per day.

The Canada Food Guide and a booklet entitled "The Whys

of Weight" (General Foods) were discussed with the clients to show them a balanced diet, plus nutritional and physical activity information. A question period followed after which the experimenter received the deposit and medical statements, and had them sign the Weight Loss Contract (Appendix B). The booklets on dietary information and a motivation questionnaire were distributed and the clients were given an appointment for the initial evaluation session. Clients were instructed to complete the questionnaire and bring it to the evaluation. The questionnaire, known as the Overweight History and Motivation Questionnaire, is described in a subsequent section.

Initial Evaluation

All clients were seen individually for approximately a one hour testing period in a hypnosis laboratory setting. Psychological tests were administered first in each case followed by a series of physical measures. The tests were given in the same order each time since two of them measured body image. It was felt that the process of measuring the physical dimensions prior to administration of the body image tests might heighten the client's awareness of his or her real body dimension or attitudes towards their body.

Clients handed in the completed Overweight History and Motivation Questionnaire (Appendix C) which they had received

at the initial meeting. The questionnaire, adapted from the "Smoker's History and Motivation Questionnaire" used by Perry et al. (1979), consisted of personal history questions concerned with age, number of years of overeating, number of attempts to lose weight and foods eaten excessively, etc. Motivational items consisted of (a) a semantic differential scale consisting of 7 pairs of adjectives describing present eating habits, that is, bad-good, safe-dangerous, (b) a motivational thermometer to provide an index of the client's perceived motivation to quit overeating, (c) a desire thermometer to provide an index of the perceived desire to continue overeating, (d) questions pertaining to the client's expected probability of maintaining their reduced food intake upon termination of the treatment program and finally (e) questions to determine the type of incentives required for the client to quit overeating and lose weight.

Thirteen motivational variables were obtained by counting single measure items as one score and by summing the measures for each of the other questions to yield one score per question. Types of variables were eating habits and need for food, reasons and pressure to lose weight, expected changes and confidence of success, motivation to lose weight and desire for food, and incentives required to lose weight. No reliability or validity data are yet available on this test since it is the first time this particular adaptation of the

"Smoker's History and Motivation Questionnaire" has been used clinically for weight loss. An example of the manner in which it was scored is included in Appendix D.

Three psychological tests were given during the evaluation period: (a) the Self-Efficacy test (Bradley et al., 1979) (b) the Draw-A-Person test (Beck & Bart, 1970), and (c) a Semantic Differential Test (Leon & Chamberlain, 1973). Instructions were given verbally by the experimenter as well as in written form.

The Self-Efficacy test (Appendix E), adapted by Bradley et al. (1979) for a weight reduction program, was originally used by Bandura and Adams (1977) as a predictor of the amount of behavioural improvement phobics gain through mastery of threatening tasks at different stages in treatment. Bandura found that the stronger the subject perceived his self-efficacy, the more active were his coping efforts and the more liable he was to gain control over his phobic behaviours to a statistically significant degree.

The adapted test consisted of 15 behaviours that could be used to control overeating. Clients were asked to rate in importance (from 1st to 5th) the value of their belief in the effectiveness of a specific behaviour to control overeating. The items were subdivided into three groups, namely, in terms of the belief that general, internal or external behaviours would control overeating. An example of (a) a

general belief is - "I believe that information about what foods are nutritious and healthy is", of (b) an internal belief is - "I believe that learning to detect when one is hungry is" and of (c) an external belief is - "I believe that arranging food in one's house to avoid temptation is ...". Each set of five items was scored to yield three scores. On the second half of the test, the clients were asked to state whether or not they could perform these weight control behaviours. "Yes" answers were then rated by the clients (on a scale of 10-100, where 10 means uncertain and 100 indicates certain) as to their degree of confidence that they could perform the task. These 15 tasks were also divided into three groups of five items each, that is, confidence-general, confidence-internal, or confidence-external with each set summed to yield three separate scores.

The Draw-A-Person (DAP) test (Appendix F) consisted of an 8½ by 11 inch sheet of white paper with the printed instructions "DRAW YOURSELF AS REALISTICALLY AS POSSIBLE (FACING FORWARD)". The experimenter repeated these instructions adding that "the drawing should be from head to toe". Beck and Bart (1970) used the test with similar instructions and found that the test re-test reliability was .81 ($p < .01$) indicating that it is a stable measure over time. Scores were based on the widths, in centimeters, obtained at three points on the test, that is, the shoulder, waist, and hips. A length

measurement was made from the top of the head to the groin. These scores were compared to the actual measures of the client's body. A body image estimate was calculated for each client at each point according to the formula:

$$\frac{\text{Draw-A-Person}}{\text{Actual Client Size}} = \frac{\text{Shoulders Length (DAP)}}{\text{Shoulders Length (Actual)}} = \text{BODY IMAGE ESTIMATE (Shoulders)}$$

A similar procedure was employed for waist and hips. The final score, that is, the Body Image Estimate score yields an estimate of how much each client under or overestimated on each of the three body widths.

Tallant (Note 3) found that obese females (N = 13) overestimated significantly more on shoulders on the DAP test than the control group (N = 13). In general both groups overestimated on the shoulders and underestimated on the waist and hips.

A Semantic Differential test (Appendix G) constructed by Leon and Chamberlain (1973) was used to assess attitudes related to body image. The test consists of six concepts: Going to the Movies, My Home, The Fat Me, The Thin Me, Eating, and Me Right Now. Nine sets of bipolar adjectives were used. Four scales form the evaluative factor, that is, pleasant-unpleasant, clean-tidy, beautiful-ugly, and good-bad; two scales form the activity factor, that is active-passive, hot-cold;

and three scales form the potency factor, that is, heavy-light strong-weak, and hard-soft. Each item was scored separately so that there were nine scores for each of the six concepts making a total of 54 scores. To date this test has not been validated. Leon and Chamberlain (1973) and Leon (1974), however, found in two studies that the concepts Eating and Me Right Now were indicative of a significant difference in body image attitudes between weight losers, regainers and controls.

Upon completion of the tests, the experimenter took the physical measures of weight, height, head to groin, body widths at the shoulders, waist, and hips and a tricep-skinfold measure. Weight was measured and recorded in pounds using a standard medical balance scale made by the Fairbanks Company. Skinfold measures were taken on the triceps using the procedure of Seltzer and Mayer (1965) using a John Bull skinfold caliper manufactured by British Indicators Ltd. Body width and height measurements were taken in centimeters using a tape measure manufactured by Lufkin of Canada. The client was then given an appointment, no more than two weeks following the initial evaluation, for the hypnotherapy session in a laboratory setting.

The Stanford Hypnotic Clinical Scale (SHCS) of Morgan and J. Hilgard (1978-1979) was administered following which hypnosis was again induced using Hartland's (1971) technique which includes "ego-strengthening" suggestions. Stanton's

(1975) weight loss suggestions were appended to the induction. A transcript of the entire induction is included in Appendix H (Footnote 3). At the end of the hypnotherapy session a brief discussion on the client's experience took place and a 30 minute cassette tape of the hypnotic induction was given to each participant. The client was instructed to listen to the tape at least once per day. Addressed, stamped cards were given to each client on which they were to record their daily weight and number of times they listened to the cassette per week. They were asked to mail them to the experimenter each week for the entire course of treatment. A copy of the card used is included in Appendix I.

Clients were contacted at monthly intervals and reminded to attend a small support group meeting held in the Applied Psychology Center. Discussion centered on any problems encountered with the tape cassette, control over food intake, exercise, reactions of family and friends and their own emotional reactions to the program. At the end of the 12 week period clients were called in to the hypnosis laboratory for a final evaluation. Clients repeated the Self-Efficacy and body image tests; physical measures were retaken, a semi-structured follow-up interview was conducted by the experimenter and recorded on cassette tape. This

interview was modelled upon the one used by Perry et al. (1979) to evaluate the progress of a group of smokers. A copy of the interview questions is found in Appendix J. Basically, the interview consisted of asking all 19 questions with the procedure varying from question to question, depending on the answers given to any particular question. If, for example, a client's answer was vague, it was pursued until it was clarified. Finally, the clients underwent another hypnotic induction using the Stanford Hypnotic Susceptibility Scale: Form C (SHSS:C) (Weitzenhoffer & Hilgard, 1962).

Contact with the clients for the initial meeting, evaluation, and hypnotherapy session were made jointly by the hypnotherapist and the experimenter. All subsequent meetings and the final evaluation were conducted by the experimenter. The second hypnosis scale (SHSS:C) was administered by the experimenter.

RESULTS⁽⁴⁾

Comparison between the completers in Carstoniu's study (1978) and the clients in this present study showed that the latter were older, weighed more on entrance into the program, were less susceptible to hypnosis, and had less weight and skinfold loss at 3 months follow-up as Table 1 indicates.

INSERT TABLE 1, ABOUT HERE

In all, 44 clients completed the present study while 13 withdrew. The completers and non-completers were similar with the only significant difference being the age variable ($t = 2.86$, $p < .05$). Table 2 indicates that the completers were a slightly older group.

INSERT TABLE 2, ABOUT HERE

Physical Measure Changes⁽⁵⁾

The average weight loss for the completers, in the present study, was 4.83 lbs. (1.96 kg.) (S.D. = 8.299), and the mean skinfold loss was 1.25 mm. (S.D. = 2.136). These figures

Table 1

Descriptive Data of Present Weight Loss Program Completers Compared to Carstoniu (1978)

Variable	Sample			
	Present sample (N=44)		Carstoniu (1978) (N=36)	
	Mean	S.D.	Mean	Range
1. Age	32.63	11.99	27.8	51.0
2. SHCS	2.84	1.52	3.1	5.0
3. Weight loss	-4.83	8.20	-5.5	47.5
4. Skinfold Change	-1.25	2.13	-2.7	11.0

Table 2

Descriptive Data

Variable	Sample					
	Completers (N=44)		Non-completers (N=13)			
	Mean	S.D.	Range	Mean	S.D.	Range
Age	32.63	11.99	11.0	30.53	7.90	24.0
Weight before treatment (lbs.)	174.17	40.78	209.5	182.23	38.55	121.5
Skinfold before treatment (mm.)	34.75	9.27	48.0	36.30	10.64	43.0
Height (cm.)	65.22	2.50	12.9	65.50	3.12	11.8
Head to groin (cm.)	8.86	.52	2.5	8.96	.68	2.6
Shoulder width (cm.)	36.65	2.65	14.1	35.54	2.22	7.2
Waist width (cm.)	29.72	4.16	17.4	29.54	3.97	14.7
Hip width (cm.)	41.25	4.08	17.7	40.93	3.86	14.6
Pounds overweight	48.49	39.46	186.0	56.85	31.20	88.5
SCHS	2.84	1.52	5.0	3.41	1.24	4.0
Use of tape-Wk. 1	4.95	2.48	11.0	5.30	2.54	9.0
Use of tape-Wk. 12	2.36	2.75	10.0	---	---	---

include 10 clients who showed either no weight loss or an increase in weight, and 20 clients who showed either no skinfold loss or an increase in skinfold. The mean body width losses were shoulders 2.08 cm. (S.D. = 2.35), waist 1.90 cm. (S.D. = 2.27) and hips 4.35 cm. (S.D. = 2.63). All changes were in the direction of loss and were highly significant (p < .001). They are set out in Table 3.

INSERT TABLE 3, ABOUT HERE

Fifteen of the clients (34 percent) showed a weight loss greater than, or equal to the mean over the 12 week period. Similarly, 18 clients or 41% showed a skinfold loss greater than or equal to the mean (Table 4).

INSERT TABLE 4, ABOUT HERE

The two variables of skinfold and weight loss correlated significantly (r = 0.32, p < .01) but this correlation was not as high as was found in a previous study. Carstoniu (Note 1) reported a much more robust relationship (r_s = 0.60, p < .001).

No relationship was found, for the 44 completers, between the number of times a client listened to the cassette tape in either week one or week 12 of the program and the degree of

Table 3

Physical Measure Changes Over a 12 Week Period for 44 Clients Completing the Program

Variable	Mean Pretreatment	Mean Post-treatment	Mean Difference	t	P
Weight (lbs.)	174.17	169.34	4.83	3.86	.001
Skinfold (mm.)	34.75	33.50	1.25	3.88	.001
Shoulder Width (cm.)	36.65	34.57	2.08	5.86	.001
Waist Width (cm.)	29.72	27.82	1.90	5.55	.001
Hip Width (cm.)	41.25	36.89	4.36	10.96	.001

Table 4

Summary of Results of Weight Loss Program

Weight		Skinfold	
Amount of Loss	No. of subjects	Amount of Loss	No. of subjects
No change or increase	10	No change or increase	20
1 - 4.8 lbs. (Mean)	19	0.5 - 1.25 mm. (Mean)	6
5 - 9.5 lbs.	8	1.5 - 3.0 mm.	11
10 - 19.5 lbs.	6	4.00 - 5.00 mm.	6
20 lbs. or more	1	6.00 mm. or more	1

skinfold change and weight loss.

Hypnotic Susceptibility of the Present Sample

All available evidence indicates that hypnotic susceptibility is a stable characteristic of the individual. Studies have reported, consistently, for almost a century, that approximately 10-15% of the general population is highly susceptible (capable of post hypnotic amnesia, and usually, of post hypnotic suggestion), 10-15% are hypnotically insusceptible, and the remaining majority of 70-80% of individuals are moderately susceptible to varying degrees (Bernheim, 1889; Hilgard, 1965).

In presenting norms for the SHCS, which consists of five items, Morgan and J. Hilgard (1978-1979) divided scores into three categories of hypnotic susceptibility. High susceptibility was defined as those subjects scoring between 4-5, medium susceptible as 2-3, and low as scoring between 0-1. The susceptibility scores on the SHCS in the present study are almost identical to those of Morgan and J. Hilgard (1978-1979) (Table 5) in that there is a much higher percentage of high susceptibles than is usually found in the general population.

The present sample of 44 completers, however, when compared to Carstoniu (Note 1) (Table 5) has more low susceptibles. Notwithstanding, the present sample did not differ significantly,

either from Carstoniu's sample ($\chi^2(2)=1.26, p > .05$) or from Morgan's and J. Hilgard's normative sample ($\chi^2(2)=2.74, p > .05$). It is interesting to note further that the non-completers in the present weight reduction program had a greater percentage of high susceptibles (53.8%) than any of the other groups. Again, however, there was no significant difference between the 44 completers and the 12 drop outs in the present study in terms of their hypnotizability distributions ($\chi^2(2)=1.15, p > .05$).

There was a significant correlation between the hypnotic susceptibility scores on the SHCS administered prior to treatment and the SHSS Form C administered at 3 months follow-up for the 44 completers ($r_s = .56, p < .001$) (Table 6). This finding supports the belief that SHCS is a consistent measuring instrument though the 20% reduction in high susceptibles from pre- to post-testing may indicate a confounding of client expectations and hypnotic responsivity similar to that reported by Thorne et al. (1976).

INSERT TABLES 5 & 6, ABOUT HERE

Alternatively, the finding may indicate that SHCS overestimates the incidence of highly hypnotizable individuals. Morgan and J. Hilgard (1978-1979) reported that 37% of their normative

Table 5

SHCS Scores of Present Sample Compared to Morgan
and Hilgard (1978-1979) Normative Sample and to
Carstoniu (1978) Overweight Clients

SHCS (% in each category)

	N	Mean	S.D.	Low(0-1)	Medium(2-3)	High(4-5)
Present Sample Completers	44	2.84	1.52	25.0% (11)	38.6% (17)	36.4% (16)
Non-Completers*	12	3.42	1.24	8.3% (1)	33.3% (4)	58.3% (7)
Carstoniu (1978)	36	3.11	1.30	14.0% (5)	44.4% (16)	41.6% (15)
Morgan & J. Hilgard (1978-1979)	111	2.75	1.56	26.0% (42)	37.0% (41)	37.0% (28)

* Susceptibility data were not available for one client. This client experienced severe anxiety during the hypnosis testing and it was not possible to complete administration of SHCS.

Table 6
Hypnotic Susceptibility on SHCS and SHSS:C for Completers (N=44)

	Mean	S.D.	Low	Medium	High
SHCS	2.84	1.52	25.0% (11)	38.6% (17)	36.4% (16)
SHSS:C	5.23	3.40	27.2% (12)	56.8% (25)	15.9% (7)

sample of college students were highly susceptible. Both the present study, and Carstoniu's (Note 1) found a similar high incidence of high hypnotizables in separate clinical samples. Notwithstanding, these figures for SHCS are well in excess of what has been reported for the Stanford scales (Weitzenhoffer & Hilgard, E. R., 1959; 1962). They differ also from other reports of hypnotizability that date from the late 19th century (see Hilgard, 1965, for a summary). While the susceptibility data for the 44 completers are almost identical to the normative data reported by Morgan and J. Hilgard (1978-1979), the data imply that SHCS may not provide an accurate estimate of high hypnotic responsivity.

Inspection of the SHCS norms (Morgan & Hilgard, J., 1978-1979) suggests that the problem resides in the categorization of high susceptibles as scoring 4-5 on the scale. They indicate that, in the normative sample, 12% of subjects scored 5, and a further 25% scored 4. Morgan and J. Hilgard (1978-1979) do not indicate how many of the subjects scoring 4 on this 5 point scale passed amnesia only, and how many passed the post hypnotic suggestion item only. Since, however, high susceptibility is usually determined on the basis of the subject having post hypnotic amnesia, it is probable that high hypnotic susceptibility would be more accurately determined in future by considering only subjects in the 4-5 category who pass the amnesia item. For present purposes, it is sufficient

that the distribution of susceptibility obtained in the present study equates that of Morgan and J. Hilgard (1978-1979).

Hypnotizability and Weight and Skinfold Change

An initial analysis sought to determine whether there was any simple relationship between hypnotic susceptibility and either weight loss and/or skinfold change. This was done, even though no such relationship has been found in a previous weight loss study (Carstoniu, Note 1), nor in two previous smoking studies (Perry et al., 1979).

Pearson product moment correlation co-efficients were performed relating hypnotic susceptibility as measured on the pretest of SHCS and at three months follow-up on SHSS:C. This was done for both weight change and skinfold change. The testing for susceptibility was done for the 44 completers. The data are presented in Table 7. It can be seen that, as in previous studies, none of the correlations were statistically significant.

INSERT TABLE 7, ABOUT HERE

Hypnotizability and Pounds Overweight

As some clients in the study were only moderately overweight (10-20 lbs., 4.5-9.0 kg.) and others were extremely

Table 7

Correlation of Hypnotic Susceptibility Measures
with Weight and Skinfold Change

Item	<u>N</u>	<u>r</u>	<u>p</u>
SHCS to weight change	44	.18	.44
SHCS to skinfold change	44	.01	.96
SHSS:C to weight change	44	.26	.08
SHSS:C to skinfold change	44	-.02	.88

overweight, (90-120 lbs., 40.5-54.0 kg.), the question arose as to whether there was a relationship between hypnotic susceptibility and the extent to which subjects were overweight. A Kruskal-Wallis one-way analysis of variance by ranks was performed on all clients who received the SHCS (N = 56). Clients were ranked for pounds overweight in terms of three categories of hypnotic susceptibility (high, medium and low). The results were not significant ($H = .73$, $\chi^2 = 5.99$, $p > .05$).

The same analyses were made on the SHSS:C scores for the 44 completers. Once again, clients were ranked for pounds overweight in terms of the same three susceptibility levels. The results were not significant ($H = .24$, $\chi^2 = 5.99$, $p > .05$).

These results are similar to those found by Deyoub (1978), in a study in which he gave 73 overweight Ss the Barber Suggestibility Scale. He found, also, that there was no significant relationship between obesity and performance on the Barber scale.

Hypnotizability, Motivation and Weight Loss

A central purpose of the present investigation was to evaluate the respective contributions of hypnotic susceptibility and motivation to successful weight loss. The previous section indicated that hypnotic susceptibility itself, was not related to either the number of pounds lost or millimeters of skinfold reduced. This, however, does not rule out the

possibility that it might combine with various motivation variables in predicting successful outcome.

A problem inherent in all weight loss studies is the lack of unanimity among investigators in specifying success criteria. It was decided that, since the criterion for admission into the program was of the client being at least 10 pounds (4.5 kg.) overweight, that this would be the criterion for successful weight loss. Overall, seven of the 57 clients volunteering for the study met this criterion. Since there are even fewer criteria for determining meaningful skinfold change, than for pounds lost, it was decided to take the seven clients who showed the greatest skinfold reduction. In effect, this meant that the skinfold criterion was a reduction of 4 or more millimeters at 3 months follow-up.

Initially, the data were analyzed using both stepwise multiple regression and stepwise discriminant analysis. Separate analyses were performed for the 44 completers and for the 57 clients who volunteered for the program. They were carried out using both pounds lost and millimeters of skinfold reduced as the dependent variable in separate analyses. For simplicity of presentation, since the main point at issue was whether weight loss and skinfold change criteria can be predicted as a function of various motivational variables, only the discriminant analyses are reported. In addition, it should be noted that for the analyses involving the total sample of 57 volunteers, the 13 drop outs were treated as

zero weight reducers, and zero skinfold losers respectively.

Stepwise Discriminant Analysis of Weight Loss

For these analyses, both of the 57 volunteers and the 44 completers, there were 14 independent variables. Thirteen of them involved measures derived from the items of the motivation questionnaire, and the remaining one was hypnotic susceptibility as measured by SHCS. The dependent variable was scored in terms of whether or not the client had lost at least 10 pounds (4.5 kg.) of weight at 3 months follow-up. The data are summarized in Tables 8 and 9.

INSERT TABLES 8 & 9, ABOUT HERE

Tables 8 and 9 can be interpreted in a number of ways, depending upon the central question being posed by an investigation. If the main question concerns maximal prediction of both success and failure, it can be seen that eight variables predicted almost 85% of successes and failures in Table 8, and 13 variables predicted almost 89% of successes and failures in Table 9.

The present study, however, was interested in the question of the minimal number of variables needed to predict the optimal number of clients who successfully lost at least 10 pounds (4.5 kg.) of weight over the three months period. It

Table 8

Discriminant Analysis of Overweight History and Motivation Questionnaire Scores in Relation to Weight Loss for 57 Clients Volunteering for the Weight Loss Program

Step	Variables	Group 1		Group 2		% Predicted Correctly	X ²	P
		Predicted Group		Predicted Group				
		1	2	1	2			
1.	Current need for food. (Q. 17)	4	3	17	29	62.3	3.19	.074
2.	Monetary incentive to lose weight. (Q.25)	4	3	13	33	69.8	8.32	.004
3.	Pressure to lose weight (Q.19)	4	3	12	34	71.7	9.98	.002
4.	Reasons for wanting to lose weight (Q.18)	5	2	11	35	75.5	13.75	.0001
5.	Expected changes (Q.20)	5	2	9	37	79.2	18.13	.0001
6.	Desire to lose weight (Q.22)	6	1	9	37	81.1	20.55	.0001
7.	Hypnotic susceptibility	6	1	9	37	81.1	20.55	.0001

... continued

Table 8 Continued

Step	Variables	Group 1		Group 2		% Predicted Correctly	χ^2	P
		Predicted Group		Predicted Group				
		1	2	1	2			
8.	Emotional response to eating (Q.16)	5	2	6	40	84.9	25.83	.0001
9.	Reasons for overeating (Q.32)	5	2	6	40	84.9	25.23	.0001

Notes. 1. Motivation Questionnaire items in parentheses

Group 1: Clients who lost 10 lbs. (4.54 kg.) or more.

Group 2: Clients who lost less than 10 lbs.

2. The addition of variables into the discriminant analysis did not increase the degree of prediction from Step 8 onwards.

3. There were missing data for 4 of the 57 clients.

Table 9

Discriminant Analysis of Overweight History and Motivation Questionnaire Scores in Relation to Weight Loss for 44 Clients Completing the Weight Loss Program

Step Variables	Group 1		Group 2		% Predicted Correctly	χ^2	<u>P</u>
	Predicted Group		Predicted Group				
	1	2	1	2			
1. Current need for food (Q.17)	5	2	13	24	65.90	4.45	.035
2. Reasons for wanting to lose weight (Q.18)	5	2	13	24	65.90	4.45	.035
3. Expected changes (Q.20)	5	2	11	26	70.50	7.36	.007
4. Desire to lose weight (Q.22)	6	1	7	30	81.80	17.81	.0001
5. Love of food (Q.23)	5	2	8	29	77.27	13.09	.0001
6. Medical reasons for losing weight (Q.26)	5	2	7	30	79.54	15.36	.0001
7. Hypnotic susceptibility	5	2	8	29	77.30	13.09	.0001
8. Pressure to lose weight (Q.19)	5	2	7	30	79.55	15.36	.0001

... continued

Table 9 Continued

Step	Variables	Group 1		Group 2		% Predicted Correctly	χ^2	P
		Predicted Group 1	Predicted Group 2	Predicted Group 1	Predicted Group 2			
9.	Reasons for overeating (Q.32)	5	2	7	30	79.55	15.36	.0001
10.	Confidence of success (Q.21)	5	2	5	32	84.09	20.45	.0001
11.	Emotional response to eating (Q.16)	5	2	5	32	84.09	20.45	.0001
12.	Time to succeed (Q.27)	5	2	3	34	88.64	26.27	.0001
13.	Commitment to lose weight (Q.24)	6	1	4	33	88.64	26.27	.0001

can be seen that six motivation variables in Table 8 and four motivational variables in Table 9 predicted six of the seven weight losers, and that overall, 81.1% of the successes and failures were isolated by these means in Table 8 and 81.8% in Table 9. It can be seen, further, in both tables that hypnotic susceptibility did not increase the degree of prediction in either analysis, indeed, it led to a slight decrease in the number of successes and failures predicted correctly.

A comparison of Tables 8 and 9 indicates also that there were four variables in common predicting weight loss both for the 44 completers and the 57 volunteers (including the 13 dropouts). These were: current need for food, reasons for wanting to lose weight, expected changes, and desire to lose weight. By contrast, monetary incentive to lose weight and pressure to lose weight were found to be implicated for the total sample of 57 volunteers, but not for the 44 completers. This finding may be artefactual of treating the 13 dropouts as zero weight losers; alternatively, it may be indicating something about the motivations of dropouts from a weight loss program.

Stepwise Discriminant Analysis of Skinfold Change

As with weight loss, the skinfold data were analyzed initially using stepwise multiple regression analysis, both for the 44 completers and for the 57 volunteers. However,

the multiple regression analysis indicated no relationship between motivation variables and skinfold change for the 57 volunteers; accordingly, no subsequent discriminant analysis of this data was carried out. The stepwise discriminant analysis for the 44 completers is presented in Table 10.

INSERT TABLE 10, ABOUT HERE

It can be seen that the findings for skinfold are quite ambiguous. While a relatively consistent pattern of motivational variables was found for weight loss, both for completers and for the total volunteer sample, no relationship was found for the 57 volunteers using skinfold change as the dependent variable. Further, in terms of optimal prediction of success for the 44 completers it required 10 steps in order to predict six of the seven clients who lost 4 mm. of skinfold or more, for an overall rate of correct prediction of 79.5%. A more economical prediction rate is obtained from the first four steps, which correctly classifies 72.7% of the clients. The four variables, implicated for skinfold, however, have little in common with the variables isolated for weight change, although monetary incentive to lose weight was found to be predictive of skinfold change for the 44 completers, as had been found for weight loss for the 57 volunteers (see Table 8).

Table 10

Discriminant Analysis of Overweight History and Motivation Questionnaire Scores in Relation to Skinfold Loss for 44 Clients Completing the Weight Loss Program

Step	Variables	Group 1		Group 2		% Predicted Correctly	χ^2	<u>P</u>
		Predicted Group		Predicted Group				
		1	2	1	2			
1.	Monetary incentive to lose weight (Q.25)	2	5	4	33	79.50	15.36	.0001
2.	Love of food (Q.23)	4	3	10	27	70.50	7.36	.007
3.	Confidence of success (Q.21)	4	3	15	22	59.10	1.46	.23
4.	Time to succeed (Q.27)	5	2	10	27	72.70	9.09	.003
5.	Medical reasons for losing weight (Q.26)	5	2	8	29	77.30	13.09	.0001
6.	Expected changes (Q.20)	5	2	7	30	79.50	15.36	.0001
7.	Reasons for wanting to lose weight (Q.18)	4	3	5	32	81.80	17.82	.0001
8.	Desire to lose weight (Q.22)	4	3	5	32	81.80	17.82	.0001

... continued

Table 10 Continued

Step	Variables	Group 1		Group 2		% Predicted Correctly	χ^2	<u>P</u>
		Predicted Group		Predicted Group				
		1	2	1	2			
9.	Degree of com- mitment to losing weight (Q.24)	4	3	5	32	81.80	17.82	.0001
10.	Emotional re- sponse to eating (Q.16)	6	1	8	29	79.50	15.36	.0001
11.	Reasons for overeating (Q.32)	6	1	7	30	81.80	17.82	.0001
12.	Current need for food (Q.17)	6	1	6	31	84.09	19.93	.0001
13.	Pressure to lose weight (Q.19)	6	1	4	33	88.60	26.27	.0001

Note: Motivation questionnaire item numbers in parentheses.

Group 1 - Clients who lost 4 mm. or more.

Group 2 - Clients who lost less than 4 mm. or increased their
skinfold.

The implications of these findings for weight loss and skinfold change are not clear. Some investigators (Foreyt, 1977; Grimes & Franzini, 1977) have questioned the validity of the skinfold measure as an index of weight change, and the discrepancy between the weight loss and skinfold findings may simply be providing an empirical justification of this suspicion. Alternatively, the findings are as equally consistent with the belief that there are motivational differences between those individuals in a weight loss program who shed pounds and those who convert fat to muscle. This latter impression is supported by the earlier observation that only two clients did both. Presently, however, there is no rational basis for determining between these two alternatives.

All, but the analysis of skinfold data for the 57 volunteers, agree on one point. They implicate motivation as a major factor affecting success in a weight loss program involving brief therapeutic intervention. They indicate also that in such a program, hypnotic susceptibility has little bearing. One final analysis gives further support for this impression.

Relationship of Weight Loss to Motivational Variables Found to be Related to Successful Quitting of Smoking

In a recent report (Perry et al., 1979), three motivation questionnaire variables were found to predict outcomes for the treatment of cigarette smoking in 67.39% of clients

in one study and for 69% of clients in a second one. Since the two studies employed three different smoking treatments with 75 clients, it was concluded that motivation to quit smoking, rather than the treatment method employed was the main variable influencing success and failure.

The three variables isolated in this study were labelled (a) desire to quit smoking, (b) current need for cigarettes, and (c) reasons for smoking. As a final aspect of the present study, the same three variables were related to both the dependent variables of weight change and skinfold change respectively. The questions had been reworded in terms of (a) desire to lose weight, (b) current need for food, and (c) reasons for overeating. The discriminant analyses are reported in Table 11.

INSERT TABLE 11, ABOUT HERE

It can be seen in this table that the three variables yielded comparable successful prediction for weight loss as had been found for smoking, and did considerably better on the skinfold measures. It should be noted, however, that the relationship was not statistically significant (using a $p < .05$ decision level) for the weight change dependent variable.

The relationship was analyzed in one further way. A

Table 11
 Discriminant Analyses of Three Motivation Questionnaire Items
 Isolated in Two Smoking Studies Related to Weight Change and
 Skinfold Change

	Weight change		Skinfold change	
	Success	Failure	Success	Failure
Success	4 (57.1%)	3 (42.9%)	6 (85.7%)	1 (14.3%)
Failure	13 (35.1%)	24 (64.9%)	9 (24.3%)	28 (75.7%)

PREDICTED

X Cases Classified Correctly

	63.6%	77.3%
χ^2	3.27	13.09
P	<.07	<.0001

discriminant analysis was performed using the same three motivation variables isolated in the smoking study (Perry et al., 1979) plus hypnotic susceptibility, to determine whether better prediction of success and failure would occur. As can be seen from Table 12, (when compared with Table 11), the addition of the hypnotic susceptibility variable led to slightly worse prediction for skinfold change, and no change in prediction for the weight loss variable.

INSERT TABLE 12, ABOUT HERE

Taken together, these findings, have both practical and theoretical implications. At the theoretical level, they strengthen the impression that motivation is extremely important in determining successful therapeutic outcome, when the condition is of a learned social origin - as both overeating and smoking are. At a more practical level, it is still not clear which combination of motivation questionnaire variables would be most appropriate to utilize in the screening of clients who are most likely to benefit from a minimal intervention treatment of an overweight problem. The situation, as it appears, is that for both weight loss and skinfold change, the more variables that one employs, the better the prediction. However, there appears to be a point at which better prediction

Table 12

Discriminant Analysis of Three Motivation Questionnaire Items Isolated in Two Smoking Studies (see Table 11) and Hypnotic Susceptibility as Measured by SHCS, Related to Weight and Skinfold Change

	Weight change		Skinfold change	
	Success	Failure	Success	Failure
Success	4 (57.1%)	3 (42.9%)	6 (85.7%)	1 (14.3%)
FAILURE	13 (35.1%)	24 (64.9%)	11 (29.7%)	26 (70.3%)

Z Cases Correctly Classified

63.6%

72.7%

χ^2

3.27

9.09

P

<.07

<.003

is obtained but only at the expense of an unduly large number of predictor variables.

Self-Efficacy and Successful Outcome

As indicated in the Introduction, the self-efficacy test has been found by Bandura and Adams (1977) to be related to therapeutic improvement in a sample of phobic patients. The version of the test used in the present study was Bradley et al.'s (1979) adaptation for clients in a weight loss program.

The test did not become available until a few weeks after the present study had commenced so that the first 13 clients in the study did not complete it. Of the remaining 46 clients, 11 dropped out of the program, so that it was not possible to obtain self-efficacy data for them at three months follow-up.

Analyses were performed firstly, to determine whether self-efficacy at the time of volunteering for the study could predict successful outcome. These analyses were performed separately for the 46 clients who filled out the questionnaire at the commencement of the study (initial self-efficacy) and for the 35 who completed it a second time at three months follow-up (final self-efficacy). Separate analyses were performed using weight loss and skinfold change as the dependent measures. As with the motivation data, in those analyses

which used the total sample, dropouts were treated as zero weight changers, and zero skinfold losers respectively. For all analyses, there were seven independent variables; the six measures derived from the self-efficacy scale described in the method section, and hypnotic susceptibility as measured by SHCS.

Four stepwise multiple regression analyses were performed to determine whether initial self-efficacy measures could predict weight loss both for the 46 clients who filled out the questionnaire initially, and for the 35 clients who completed the study. There was no relationship between self-efficacy and either of the dependent variable measures of success in the program. Accordingly, as with the motivation analyses, stepwise discriminant analyses were not performed. A similar finding was obtained for the final self-efficacy measures obtained at 3 months follow-up for the 35 completers.

Further analyses were performed for the 35 clients who completed the program, predicting the difference between their pre-post self-efficacy scores (self-efficacy difference scores). The same seven measures of the previous analyses were the independent variables, and weight loss and skinfold change, respectively, were the dependent variables. This time both of the stepwise multiple regression analyses found significant relations. The results are presented in Tables 13 and 14, in terms of the subsequent stepwise discriminant analyses that were

performed.

INSERT TABLES 13 and 14, ABOUT HERE

It can be seen from Tables 13 and 14 that the results are remarkably consistent. In each case, two of the self-efficacy scale measures, belief-internal and belief-general correctly classify approximately 70 percent of clients both for the weight loss and skinfold variables. The addition of further variables in each analysis did not increase prediction. It should be noted, further, that as with the motivation analyses, hypnotic susceptibility did not enter into the prediction of success in the present set of analyses.

Body Image Estimate and Successful Outcome

Stepwise multiple regression analyses were performed using the three body image estimates obtained in the present study. The body image estimates of waist, shoulders and hips were obtained from scores on the Draw-A-Person test described in the previous section. Together with hypnotic susceptibility scores on SHCS, these three body image measures constituted the independent variables in separate stepwise multiple regression analyses using weight loss and skinfold change, respectively, as the dependent variables. The analyses were

Table 13

Discriminant Analysis of Self-Efficacy Test Scores in Relation to Weight Loss for 35 Clients
 Completing the Weight Loss Program

Step	Variable	Group 1		Group 2		X ²	P
		Predicted Group 1	Predicted Group 2	Predicted Group 1	Predicted Group 2		
1.	Pre-post difference - Belief-Internal	5	2	7	21	8.26	.004
2.	Pre-post difference - Belief-General	7	0	10	18	6.43	.001
3.	Pre-post difference - Confidence-Internal	7	0	10	18	6.43	.001
4.	Pre-post difference - Confidence-External	6	1	9	19	6.43	.001

Notes: For both Tables 13 and 14:

- (I) After Step 2 the level of prediction is not increased.
- (II) Group 1 - Clients who lost 10 lbs. (4.54 kg.) or more.
- Group 2 - Clients who lost less than 10 lbs.

Table 14

Discriminant Analysis of Self-Efficacy Test Scores in Relation to Skinfold Loss for 35 Clients

Completing the Weight Loss Program

Step	Variable	Group 1		Group 2		% Pre-dicted	X ²	P
		Predicted Group 1	Predicted Group 2	Predicted Group 1	Predicted Group 2			
1.	Pre-post difference - Belief-Internal	6	1	8	20	74.3	8.26	.004
2.	Pre-post difference - Belief-General	7	0	10	18	71.4	6.43	.011
3.	Pre-post difference - Confidence-Internal	7	0	9	19	74.3	8.26	.004

performed on the 44 clients who completed the study, for initial body image estimate, final body image estimate, and body image estimate change (difference between pre and post body image estimate).

In all analyses, no relationship was found for any combination of the four independent variables and either of the dependent variable measures of successful outcome. Accordingly, because of this lack of relationship on the multiple regression analyses, stepwise discriminant analyses were not performed.

Body Image Attitude and Successful Outcome

The semantic differential test used to measure body image attitude consists of six main concepts each of which contains nine sets of bipolar adjectives. This means the test itself has 54 variables. Multivariate analyses of variance alone is considered to be an extremely conservative approach making it difficult to find differences when they really exist (Hummel & Sligo, 1971). For this reason, it was decided to use a combination approach, that is, multivariate analysis of variance on each of the six main concepts followed by univariate analysis of variance on the nine pairs of bipolar adjectives within each concept.

The finding was that there were no overall significant differences between the 44 completers and the 13 non-completers

on the multivariate analysis of variance on any of the six main concepts on the pre-treatment scores. Univariate analysis of variance revealed, however, that there were specific differences occurring within the 'Going to the Movies' concept of the active-passive scale ($p < .03$) with the non-completers viewing it as more active. Again, specific differences appeared on the strong-weak scale ($p < .03$) within the 'My Home' concept with the non-completers viewing it as stronger. The meaning of these specific differences is unclear and appear to bear little relationship to body image attitude. There were no specific differences on the more relevant concepts such as 'The Fat Me', 'The Thin Me', 'Eating', or 'Me Right Now'.

A multivariate analyses of variance was performed for the 44 completers to see if there was a change from pre to post treatment in their body image attitude. There was an overall significant difference over time on the concepts 'The Fat Me' ($F(9, 35) = 3.096, p < .008$) and 'Me Right Now' ($F(9, 35) = 4.003, p < .001$). The clients tended to view 'The Fat Me' more negatively over time and the concept 'Me Right Now' was viewed more positively.

Significant differences were seen over time on several of the sub-scales within the 6 main concepts. Within the concept 'The Fat Me' the clients viewed themselves as lighter ($p < .004$) and less bad ($p < .02$) and 'The Thin Me' as less

beautiful ($p < .05$). 'Eating' was seen as less pleasant ($p < .05$) and less bad ($p < .007$). The body image attitude changes for the concept 'Me Right Now' were all in the positive direction with the clients viewing themselves as more beautiful ($p < .003$), more good ($p < .01$), more active ($p < .001$) and lighter ($p < .001$). The results are presented in Table 15.

INSERT TABLE 15, ABOUT HERE

It would appear that this test was unable to detect differences between the completers and non-completers in relation to their body image attitude and, therefore, served no predictor function.

However, the test was able to pick up changes in body image attitudes over time in the 44 clients who completed the program. The group as a whole lost weight and, therefore, we might speculate that this partly contributed to the attitudinal change; however, certain aspects of the treatment program itself, for example, Hartland's ego-strengthening statements, the attention of the experimenter and hypnotherapist may have contributed to making the clients feel more positively toward themselves.

Table 15

Means and Significance Levels for the Scales
 Within the Six Concepts for the 44 Completers
 Over Time (Pre-post)

Concept Scale	Mean		Significance <u>P</u>
	Pretreatment	Posttreatment	
'The Fat Me'			
- light-heavy (7-1)	1.59	2.21	.003
- bad-good (1-7)	3.18	3.71	.02
'The Thin Me'			
- beautiful-ugly (7-1)	5.91	5.66	.05
'Eating'			
- pleasant-unpleasant (7-1)	5.84	5.43	.05
- good-bad (7-1)	3.84	4.59	.007
'Me Right Now'			
- ugly-beautiful (1-7)	3.41	4.23	.0003
- good-bad (7-1)	4.25	4.84	.01
- passive-active (1-7)	3.77	4.66	.001
- heavy-light (1-7)	2.02	3.09	.0001

Interview Data at Three Months Follow-Up

At three months follow-up, 44 clients were given a semi-structured interview as described in the previous section. This section deals only with responses that differentiated weight loss and skinfold reducers from those clients who had not satisfied either criterion of success in the study.

Question 1 on the interview schedule asked clients for their reasons for wanting to lose weight, quit overeating and/or reduce their food intake. Answers were classified in terms of these three options. Forty-three distinct reasons such as health, appearance, wanting clothes to fit, self-dislike, lack of control and willpower, general fatigue and vanity were given. Although there were almost as many reasons as clients, only one response provided differentiation. Six of the seven clients who lost at least 10 lbs. (4.5 kg.) of weight cited health as the main reason for wanting to quit overeating, as opposed to 10 of the 32 clients not meeting this 10 pound criterion ($\chi^2 (1) = 6.41, p < .02$). No comparable finding emerged for skinfold reducers ($\chi^2 (1) = 1.71, p > .05$) nor for the pooled group of weight and skinfold reducers ($\chi^2 (1) = 3.25, p > .05$).

Question 5, which asked clients if they listened to the hypnosis tape at specific times of the day, also found a differentiation for weight losers as opposed to skinfold reducers. Six of the seven weight losers reported they did not listen to the tape at any specific time, as opposed to nine of the 32 clients who did not meet the weight loss criterion ($X^2 (1) = 6.47, p < .02$). Only three of the skinfold reducers reported doing the same thing ($X^2 (1) = 0.85, p > .05$). The outcome for the total sample, when the 12 clients fulfilling one or both success criterion were pooled, was this time significant ($X^2 (1) = 4.31, p < .05$).

Again, differences between weight losers and skinfold reducers were found on Question 7 which asked clients what role they felt hypnosis played in allowing them to quit overeating, eat less, or lose weight. Five of the seven weight reducers said the role played by hypnosis was either nil, minimal or that they did not know. By contrast, 23 of the 32 unsuccessful weight reducers reported that hypnosis had helped them in some way ($X^2 (1) = 4.73, p < .05$). As with the two previous questions, no such difference was found for the skinfold reducers (where obtained and expected frequencies were identical), but again the relationship held when the 12 clients who satisfied

one or both of the success criteria were compared to the 32 clients who did not ($\chi^2 (1) = 4.73, p < .05$).

Question 11 asked clients what strategies they had used to stop overeating and/or lose weight, other than using the hypnosis tape. Thirteen strategies were described (see Appendix J) but differences were only found for two of them. On strategy (c) (taking part in a bet), five of the seven weight losers reported doing this as compared to nine of the 32 remaining clients ($\chi^2 (1) = 4.73, p < .05$). Again, there was no comparable finding for the skinfold reducers ($\chi^2 (1) = 0.84, p > .05$). A significant relationship was found, once again, when all the successful clients were pooled and compared to the remaining 32 clients ($\chi^2 (1) = 4.58, p < .05$). However, of the seven successful clients who used this strategy, only two rated it from good to excellent; the remaining clients who took part in a bet did not find it of much use.

The other strategy which was rated as effective was strategy (g) (forcing oneself to engage in another activity such as exercise, reading, going to a movie, calling a friend, listening to the hypnosis tape, etc. to divert attention from food when the urge to overeat became too great). This time, there was no differentiation when weight and skinfold losers were compared individually to the remaining 32 clients ($\chi^2 (1) = 0.71$ and 2.85 respectively, $p > .05$). When the two groups were combined, however, 10 of the 12 successful clients

had used diversion as opposed to 17 of the 32 unsuccessful clients ($\chi^2 (1) = 4.28, p < .05$). Again, however, the significance of this result is tempered by the finding that 80% of the successful clients rated diversion from good to excellent as did 70.58% of the unsuccessful clients.

It was thought that clients in this study might differ in terms of (a) the mean number of strategies used, (b) the mean number of strategies used that were reported as successful, and (c) the percent of successful strategies (b)-(a), and (d) the mean rated effectiveness of the strategies reported as being used. This latter measure was the sum of the ratings from 1-5 (where 1 = excellent and 5 = ineffective) of strategies reported as being used, divided by the number of strategies. The data are reported in Table 16.

INSERT TABLE 16, ABOUT HERE

None of the differences on any of the four strategy measures were statistically significant. There is, however, a statistically non-significant tendency for weight and skin-fold reducers to attempt more strategies and to report slightly more success with the strategies they chose in terms of means, percentages, and mean rated effectiveness (where a lower mean indicates greater perceived effectiveness).

Table 16

Data for Indices of Strategy Use for Weight Losers,

Skinfold Reducers and Clients not Meeting Either Success Criterion

	N	Mean Attempted	Mean Successful	Percent Success	Mean Rated Effectiveness
Weight losers	7	8.57	5.29	61.67	3.22
Skinfold reducers	7	8.71	6.14	70.49	3.28
Pooled Successes	12	8.50	5.42	63.73	3.35
Unsuccessful	32	7.50	4.46	59.33	3.52

Note: The 2 clients who were successful on both weight loss and skinfold reduction

criteria are included in both the Weight Losers and the Skinfold Reducers groups.

When not included in the calculation, the pattern of findings presented in this table is not altered.

In question 12 the clients were asked what other strategies they might have used to quit overeating, eat less and/or lose weight. The most common answers, as expected, were diet and exercise; however, both successful and non-successful clients agreed in similar proportions that more attention to these was needed. A further 16 personal strategies were described such as keeping busy, not eating in restaurants, taking a long term approach, and giving oneself pep talks. These, however, were all idiosyncratic to individual clients.

Overall, clients suggested from 0 to 4 such strategies. When the number of responses was analyzed, seven of the 12 successful clients, as opposed to eight of the 32 remaining clients gave from 3-4 personal strategies they might have used during the weight loss program ($\chi^2 (1) = 4.62, p < .05$). This finding did not hold when weight losers and skinfold reducers were compared separately to the 32 clients who did not reach either success criterion of the present study ($\chi^2 (1) = 3.38, p > .05$ in both analyses). In short, there is a suggestion that the majority of the non-successful clients (75%) felt that they could do no more than they had done in the present study to attain their stated goal.

On Question 16 the eight components of the weight loss program were described to the clients, and, they were asked which of them were related to their overall outcome in the program. Only one of the components (participating in an

evaluation session) was discriminative. Ten of the 12 successful clients (those reaching the weight and/or skinfold reduction criterion at follow-up) rated this aspect of the program as related to their success ($\chi^2 (1) = 5.65, p < .02$), as compared to 14 of the 32 remaining clients. Again, as with other questions, the effect was significant for clients who fulfilled the weight loss criterion ($\chi^2 (1) = 6.38, p < .02$) but not for those rated as successful on the skinfold change criterion ($\chi^2 (1) = 2.83, p > .05$).

One final non-significant finding is of interest. In response to Question 18, which elicited suggestions as to how the program could be improved, 43.18% of the clients advocated more group discussion, and 18.18% advocated more hypnosis sessions. Since many of the clients had been through Weight Watchers unsuccessfully, which emphasizes group discussion as a major component of treatment, it is not clear what motivation is being expressed here. On the pessimistic view, almost one-half of the clients wish to talk more, and do little about their overweight problem. On the optimistic view, a combination of group discussion and hypnosis might provide a more successful treatment package for weight loss clients.

DISCUSSION

The main purpose of the present study was to determine whether it is possible to predict treatment outcome on the basis of a number of indices obtained at the time of initial contact with clients. Accordingly, the variables of client motivation, hypnotic susceptibility, self-efficacy, body image estimate and body image attitude were selected as the possible predictors of success and failure in losing weight and/or reducing skinfold magnitude.

The overall success rate for the program was equivalent to others previously reported using both hypnosis (Miller, 1976; Carstoniu, Note 1) and other treatment methods (Stunkard & Penick, 1979). On one criterion, that is losing weight or skinfold greater than or equal to the sample mean, 34% of the clients lost weight and an even larger percentage, 41%, reduced their skinfold. Body width changes, that is, shoulders, waist and hips were all in the direction of loss. In all, 21.1% of the completers lost weight and/or skinfold over and above the 'success' criteria (10 lbs. or 4.54 kg.; 4 mm.). In general, the results of the present treatment program were comparable to those reported by Carstoniu (Note 1) who used the same brief hypnotherapy procedure.

The findings of the present study indicate clearly that motivation is a powerful predictor of treatment outcome for overweight clients. Although this has been demonstrated for smoking (McFall & Hammen, 1971; Perry, et al., 1979) and for alcoholism (Adamson, et al., 1974) this is the first study showing that client motivation is vital also to treatment outcome for overweight problems.

Six items from the Overweight History and Motivation questionnaire predicted 81.8% of the successful weight losers from the entire sample (N = 57). A further four items predicted six out of seven successes for the completers (N = 44). There was no relationship between the motivation variables and skinfold change for the 57 clients, however, four variables correctly classified 72.7% of the successful completers who lost 4 mm. of skinfold or more.

As this is the first study using this adaptation of the Smoker's History and Motivation Questionnaire (Perry, et al., 1979), it is interesting to find that it has a comparable predictor potential for the obese. When the appropriate analysis was performed, the three variables, which had been found previously to be linked to success and failure for smoking, were found also to predict outcome quite well for a weight loss program. These were: (a) desire to lose weight, (b) current need for food, and

(c) reasons for overeating.

Before the Overweight History and Motivation Questionnaire can become a screening device for obese clients, the present study will need to be replicated. Also, further studies, using other treatment techniques, for example, behaviour therapy, should be made to see if the questionnaire has a more universal use in predicting treatment outcome than merely in programs utilizing hypnosis as the main mode of treatment.

Another avenue to consider in using the questionnaire would be to adapt it for use with obese children. It would seem that, if obese children could be treated when optimally motivated, or, if found unmotivated, be treated in a way to encourage motivation, it might be possible to prevent a life time of the bad eating and poor exercise patterns that are commonly encountered in the overweight client's life history. Prevention would affect the child both on the physical and psychological level since negative self-attitudes become built in at a very early age in the obese child (Wooley, S., Wooley, O., & Dyrenroth, S., 1979).

The majority of obese clients have been found to fail to lose weight regardless of the type of weight reduction program they enter (Stunkard, 1975) and spend considerable time and cost moving from one clinic to another (Mott &

Roberts, 1979). Aside from the financial cost, each failure has great emotional cost for the obese client since it adds to the individual's sense of poor personal esteem (Wooley, S., et al., 1979).

It has been found (Bradley et al., 1979) that the client's expectancy of how much weight he or she would lose correlated significantly with actual weight loss even though the client's expectancy exceeded the actual results. In the present study, client expectancies were not predictive of either weight or skinfold loss. It is interesting, however, that the difference between the pre-and post-treatment scores on two items on the self-efficacy questionnaire could correctly classify successful clients. The two items for both weight loss and skinfold changes were belief-internal and belief-general. These variables predicted 74.3% and 71.4% of successes and failures in the respective analyses.

It would appear that the successful clients in the present study, viewed themselves at 3 months follow-up as having gained more control over their internal body signals, more control over their knowledge about healthy eating, and greater confidence in responding to their body signals. These clients appear to have felt they had gained a degree of mastery over their eating problems by the end of the

treatment period which was similar to that found by Bandura and Adams (1977) for phobic patients who mastered their anxiety responses. These investigators concluded that success (small gains over phobic anxiety within the treatment program) breeds success (full control over the phobic anxiety). The clients in this study who lost weight and/or reduced their skinfold all experienced some success. This, therefore, according to Bandura's and Adams' (1977) results, would account for the change at the end of the treatment program in their self-efficacy scores. It would be interesting to follow-up the successful clients in this program to see if their greater self-efficacy at the end of treatment helped them to continue to maintain the weight and skinfold losses they had attained.

An interesting finding in this study is that those clients who lost weight ($N = 7$) and those clients who reduced their skinfold ($N = 7$), except for an overlap of two clients, were different people. The interview data at follow-up further pointed out differences between the weight and skinfold losers. Certain questions were able to differentiate the successful from the unsuccessful weight losers, however, this did not occur with the skinfold reducers.

The successful weight losers were found to be individuals who were more highly motivated to lose weight (as indicated by the Overweight History and Motivation Question-

naire), who in the interview stated health was the main reason for losing weight, who listened to the hypnosis tape at irregular times, who felt hypnosis played only a minor role in their treatment outcome, and who found that engaging in a bet to lose weight was helpful.

The criterion skinfold change (4 mm.) for the program was quite small. As previously mentioned, skinfold reduction occurs mainly when body fat is turned into muscle. The completers, in this study, were older clients who may have reduced their food intake and, therefore, lost weight. They may not, however, have necessarily increased their activity or exercise level which would have led to more skinfold change (Franzini & Grimes, 1976).

Question 11 in the follow-up interview, concerned itself with the type of strategies used to prevent overeating. One might have expected that exercise, such as a sport or other physical activity would have differentiated the skinfold losers, but this was not the case.

The use of the skinfold measurement, itself, could come into question. The triceps measure (as used in the present study) has been examined as to its validity in relation to other body sites by numerous researchers (Foreyt, 1977; Franzini & Grimes, 1976; Seltzer & Meyer, 1965) and has been found a valid measurement. In general, the triceps skinfold measure correlates highly with other more specific

body fat measurements such as hydrostatic weighing (Grimes & Franzini, 1977).

It has also been researched with a view to establishing norms for skinfold data for males and females. This aspect of the measurement is still somewhat questionable as there is so much variability in the percentage of body fat between the sexes (females more). Further, the deposition of body fat varies considerably within 'normal' individuals. To date, there is a lack of normative data for the extremely or morbidly obese client (Grimes & Franzini, 1977).

From the present study, it can only be concluded that the skinfold reducers are different from the weight losers. Although a fairly clear picture emerges for the weight loser, it is not as clear for the skinfold reducer. It may be that the right questions have not been asked, either in the motivation questionnaire or in the follow-up interview, to yield a more precise profile of people who convert body fat to muscle. Alternatively, it may reflect a lack of validity in the skinfold method as an index of success in a weight loss program.

An important question concerns whether obese clients are more hypnotically susceptible than normals. The importance of this question is two-fold. Firstly, if they were more hypnotically susceptible, would this help us to under-

stand the phenomena of overeating? Would they be more responsive to food cues? Secondly, would hypnotic susceptibility be a predictor of treatment outcome, particularly in weight reduction programs using hypnosis as the main treatment technique?

Thorne et al.'s (1976) finding that 'fat girls' were more hypnotically susceptible on the HGSH:A spurred other researchers to investigate the same phenomena. Deyoub (1978) found no correlation between obesity and scores on the Barber Suggestibility Scale. In a subsequent study, Deyoub (1979) compared two groups of 10 obese females each on the HGSH:A who participated in 8 weekly group hypnosis sessions. He found no significant difference between the groups and also, no significant difference in terms of weight loss. There was no significant correlation between the hypnotic susceptibility scores and weight loss for the groups either separately or when pooled. He concluded that hypnotizability was not a predictor for weight loss. This supported his earlier study (Deyoub, 1978) that obese clients are not exceptionally responsive to hypnosis.

The results of the present study also demonstrate that obese clients are not overly susceptible in that the scores equate those reported by Morgan and J. Hilgard (1978-1979) on a normal population using the same scale, the SCHS.

Further, in the present study, no differences were

found between the hypnotic susceptibility levels of the moderately vs. the extremely overweight clients. These results give further support to those reported by Deyoub (1978). It would appear that obese clients are no more hypnotically susceptible than the general population and that hypnotizability is not a relevant factor in their overeating behaviour.

Interestingly, there was a greater percentage of high susceptibles (53.8%) amongst the non-completers. This could mean that high susceptibility in an obese client is actually a poor prognostic predictor. Such a client may expect 'hypnosis' to lose weight and reduce skinfold automatically and may feel little effort is required on his or her part.

The high susceptibles, who dropped out of the program, may have become discouraged when hypnosis did not have the 'magical properties' of losing weight for them. It is interesting to note that the successful weight losers in the follow-up interview did not rate the hypnosis as an important aspect of the treatment. In fact, they stated the role played by hypnosis was either nil, minimal, or unknown.

The results of the present study, which are similar to those found in other weight reduction programs using hypnosis (Deyoub, 1979; Carstoniu, Note 1) show that hypnotic susceptibility is not relevant to weight loss or skinfold change. In fact, in this study, the addition of the hypnotic suscepti-

bility variable decreased the degree of predictability for weight loss. Further, it does not appear to be predictive of skinfold change at all.

Other researchers have found also that hypnotic susceptibility has little relevance in the clinical setting for addictive behaviours such as smoking (Perry & Mullen, 1975; Perry, et al., 1979) and overeating (Carstoniu, Note 1). In each of these studies, as in the present one, no relationship was found between the hypnotizability measures and treatment outcome. It can, therefore, be concluded that hypnotic susceptibility is not a predictor of treatment outcome, at least in a program involving minimal contact between therapist and client.

Body image estimate, specifically overestimation has been found to be a predictor of poor treatment outcome for a sub-group (vomitters) of anorexics (Button, et al., 1977; Garfinkel, et al., 1977). This phenomena became so well recognized clinically that clinicians felt a more realistic body image was predictive of good recovery in anorexia nervosa (Bruch, 1973).

A natural extrapolation of this finding is that body image estimate may provide a similar predictor of treatment outcome for obesity. Although the literature presents a mixed picture as to whether or not obese clients do overestimate their body image (Bailey, et al., 1970; Garner,

et al., 1976; Slade & Russel, 1973; Tallant, Note 3) no one has been able to find a link between body image overestimation and treatment outcome. Certainly, in the present study, the results show that body image estimate is not predictive of treatment success for either weight loss or for skinfold reduction. It also does not classify clients into successful reducers on the post treatment measure or on the body image change measure.

One could argue that the formula used to derive the body image estimate differed from the body image index used by others (Garfinkel, et al., 1976; Slade & Russel, 1973) and that this accounted for the difference in results. It should be noted, however, that this formula was used previously by the present author and similar results were obtained (Tallant, Note 3). It might be informative to re-analyze the body image estimate data using the body image index formula (Slade & Russel, 1973) to see if the body image estimates of the present study are similar to those found by Garner, et al. (1976). At any rate, regardless of the formula used, body image overestimation in the obese has not yet shown up as a predictor of treatment outcome.

Body image attitude has been investigated as a possible predictor for treatment outcome for the obese. Allon (1979) found, in adolescent obese girls, that a very negative body attitude resulted in little or no weight loss. Tallant (Note 3)

found that obese females had a more negative body image attitude prior to treatment than a group of controls.

It is interesting that in the Tallant (Note 3) study, the group as a whole gained weight. Again, as in Allon's (1979) study, the negative body image attitude could have served as a predictor of poor treatment outcome.

In the present study, there were no pre-treatment differences between the completers and non-completers in their body image attitude. This finding supports that of Leon and Chamberlain (1973) who found no differences on this variable between a group of females who maintained their weight loss and a group of controls. The conflicting findings in these studies (Allon, 1979; Leon & Chamberlain, 1973; Tallant, Note 3) make it difficult to reach any definite conclusions as to the usefulness of body image attitude as a predictor of treatment outcome. Certainly, in the present study, this variable is not predictive of either weight loss or of skinfold change.

Leon (1974) found that considerable body image attitude change occurred in clients who lost weight. In the present study, the completers, whether or not they lost weight or reduced their skinfold, showed a positive shift over time on this variable. Upon completion of the weight reduction program, they viewed 'The Fat Me' as more negative and 'Me Right Now' as more positive, that is, more beautiful, good,

active and lighter. Since not all of the 44 completers lost weight or reduced skinfold, the physical changes may not be solely responsible for the change in body image attitude.

Part of the hypnosis treatment, Hartland's ego-enhancing suggestions, are specifically directed towards helping the client to gain self-confidence (see Appendix H) and to develop self-esteem. Positive changes have been noted in the client's attitudes toward themselves following treatment (Glover, Note 2; Miller, 1976; Stanton, 1975), although these assessments have been based solely on therapist impressions. It may well be that the semantic differential for body image attitude used in the present study is, in actual fact, measuring the effectiveness of this aspect of the hypnosis treatment. Hartland's Ego-enhancing suggestions may have developed positive body image attitudes even in those clients who did not lose weight or skinfold. It is interesting to note that in the follow-up interview the clients who lost weight felt hypnosis played only a small role in their success. By contrast; the non-weight losers reported that it had helped them in some way - perhaps to feel more comfortable with and accepting of themselves.

The overall results for the present weight reduction program show that 21% or 12/57 clients were successful in losing weight and/or reducing skinfold. These results are

comparable to those of other weight reduction programs involving hypnosis (Miller, M., 1974, 1976; Carstoniu, Note 1). Only Stanton (1975) has reported complete success (100%) in a program which involved four hypnosis sessions of one hour per week.

The present study used a brief treatment intervention consisting of one hypnotherapy session which involved hypnotic induction, Hartland's Ego-enhancing instructions, Stanton's (1975) specific suggestions for weight loss and a tape cassette of the entire session which the client was asked to listen to daily. The 'single' hypnotherapy session was used in this study to minimize the therapist-client contact, since this could have been a confounding variable. It is interesting, therefore, to note that Stanton (1975) using the same hypnotherapy procedure as the present study had a much higher success rate. The main difference between the two programs was in the number of hypnotherapy sessions, that is, in Stanton's study, four, as compared to one in the present study.

One can, therefore, ask - is more hypnosis better? or is the repeated therapist-client contact the crucial ingredient for successful outcome? Many clinicians do use repeated hypnotherapy sessions and report positive results of up to 70% (Cohen, 1979). Unfortunately, many of these reports are single case studies in which the authors have neither

defined 'successful weight loss', nor standardized the hypnotic procedure nor replicated the study (Mott & Roberts, 1979). It is very difficult, therefore, to determine whether the hypnosis or the therapeutic relationship plays the key role in weight reduction. Interestingly, behaviour therapists have addressed themselves to the role of the therapist in weight reduction programs. Abramson (1977), in a review article, examined the effectiveness of several behaviour therapy techniques. He concluded, from his review of 56 articles, that self-control (non-therapist control) is the most effective treatment for obesity currently available. Carter et al. (1977) found that obese clients who had the therapist 'faded' during the treatment period maintained their weight loss at 6 months follow-up, but that the 'no-fade' clients did not.

Positive results have been reported for other clinical studies using brief hypnotherapy techniques. Perry and Melzak (1975), using a similar procedure to the present study, with chronic pain patients found that 56% of their clients were able to reduce the pain from unbearable to bearable. Perry, et al. (1979) found in a smoking study that a similar brief hypnotherapy intervention combined with rapid-smoking obtained a 25% success rate at three months follow-up. The difference here may simply reflect the obvious: that cigarette smoking, despite its potentially deleterious

effects on health, is more enjoyable than chronic pain.

From the practical point of view, the success rate of the present study, where one out of five clients lost weight or reduced skinfold, makes this a very useful initial treatment procedure; it involves minimal time for both the therapist and client and minimal cost for the client. Failure in such a program may merely indicate the need for more therapeutic intervention.

In summary, overall, the present study had good treatment results, given the brevity of the intervention. Of the five variables investigated as predictors of weight loss, motivation emerged as a powerful predictor of success and failure, although the variables in the motivation questionnaire linked with weight loss, varied from analysis to analysis. All that can be said, at this point, is that motivation appears to be related to success and failure. Further work will be required to pinpoint specific motivational variables.

In addition, self-efficacy changes were found to reflect the weight and skinfold changes of successful clients. By contrast, hypnotic susceptibility, body image estimate and body image attitude were unrelated to weight loss. Further, quite a clear profile of the motivations and strategies used by weight losers emerged but this did not appear for skinfold losers.

At 3 months follow-up the successful clients had a greater belief in their ability to control their internal body signals and their environment in relation to over-eating. At the same time, all 44 completers had a more positive body image attitude at follow-up which may be a result of the hypnotherapy procedure itself, regardless of success and failure.

Future research would necessitate replication of the present study, and the use of the motivation questionnaire in other types of weight reduction programs needs to be explored. Further investigation should be made, also, of the differences between weight losers and skinfold reducers. A follow-up study of the successful clients should be conducted to determine whether changes found in self-efficacy and body image attitude persist. The effect of Hartland's Ego-enhancing Instructions on body image attitude should be investigated more extensively since it may be relevant to the maintenance of therapeutic gains. Finally, further research needs to evaluate the relative effectiveness of brief hypnotherapy intervention versus repeated hypnotherapy sessions in weight reduction programs using hypnosis.

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FOOTNOTES

1. The current literature on excess weight problems tends to use the terms 'overweight' and 'obese' interchangeably. To date there is no minimum standard definition for obesity or overweight, that is, no minimum limit for the number of excess pounds or kilograms or amount of excess skinfold in relation to weight and skinfold scales. Although definitions do not appear that are relevant in the case of the massively obese it would seem important that a lower limit be established in order to determine who should be included in the studies and how the results of weight-reduction programs should be interpreted. The most commonly used percentage of excess weight is 10-20% above the standard for height, sex, age and frame of the Metropolitan Life Insurance Tables, 1959. This life insurance table is the one used most often despite there being no accepted method for choosing frame size (Leon & Roth, 1977).
2. Physical measurements have been reported in nonmetric units as well as in the International System of Units (SI) in parentheses. This is in keeping with the APA Council of Editors and the Publications Board requirements during the transition from the nonmetric to the

metric system. (Publication Manual for Psychology. American Psychological Association, 1975.)

3. There is an issue concerning whether Hartland's (1971) ego-strengthening techniques constitute a treatment for weight loss. Some of the evidence that it is comes from Hartland (1971) himself. He reported that he first developed the technique within the context of a busy clinical practice which did not permit him very much time with each patient. The ego-strengthening technique was developed as a stop-gap procedure; as a means of giving the patient at least something. With psychosomatic disorders, Hartland reports (with no accompanying statistical data) that he developed the technique to the point where patients recovered quickly, did not remit, and did not show symptom substitution. He reports also utilizing the technique with more seriously disturbed psychoneurotics. He found that when such patients were given the ego-strengthening technique as a preparation for more extensive psychotherapy, "the average length of treatment was shortened, but the need for more involved analytic techniques was also greatly reduced" (1971, p. 2).

Subsequent empirical data support the claim for the method as a legitimate treatment, but reveal interesting differences in success rate for differing patient

or client groups. Melzack and Perry (1975) found that 56 percent of patients suffering constant chronic pain, reduced their pain by one third or more (from unbearable to bearable) when the Hartland method was used. By contrast, 25 percent of cigarette smokers had quit smoking at three months follow-up when the method was adapted to the treatment of smoking (Perry et al., 1979). Findings similar to those repeated for smoking have been found for weight loss (Stanton, 1975; Carstoniu, Note 1). These differences in success rates for the different client groups may reflect greater motivation for pain patients to reduce their pain than for smokers and overweight individuals to alter their behaviour.

Further, Anderson, Basker and Dalton (1975) found complete remission of migraine headaches for 44 percent of patients when the Hartland method was used as opposed to 13 percent complete remission for patients treated by prochlorperaline.

4. All probability values reported in this section are 2-tailed.
5. Weight scales were in lbs., tape measure was in cms., and skinfold caliper in mms.

Appendix A
Advertisements

OVERWEIGHT?

If you are seriously interested in losing weight and willing to spend some time and effort, we can help.
For more information call:*

Dr. Campbell Perry
Psychology Dept.
879-2885

The Georgian, Concordia University.

OVER-WEIGHT?

If you are seriously interested in losing weight and willing to invest some time and effort, we can help.

For information about weight loss programs involving hypnosis call:

Dr. Campbell Perry
Dept. of Psychology
Concordia University
879-2885

The McGill Daily, McGill University.

Appendix B

Weight Loss Contract

I, the undersigned, agree to participate in a weight loss program for 12 weeks commencing today. As a guarantee of my continuing participation, I have given Dr. Campbell Perry the sum of \$50.00 of which \$25.00 will be returned to me at the end of the program. I agree to forfeit this money if I fail to fulfill the following requirements:

1. That I show up for all scheduled meetings.
2. That I send in, by mail, once a week, a card showing a record of my daily weight and frequency of using a cassette tape.

I understand clearly the above conditions.

Date _____

Signed

Witness

Appendix C

Overweight History and Motivation Questionnaire

Instructions: Please answer the following questions as they apply to you in the space provided on this form.

NAME _____

AGE _____ PHONE NUMBER _____

1. Does your husband/wife or some other person close to you have a weight problem? _____
2. Do your children overeat? _____
3. What type of foods do you eat to excess? _____

4. At what time of day do you eat most heavily? _____
5. Do you eat between meals? _____
6. Do you eat before retiring? _____
7. Do you eat if awakened in the evening or during the night? _____
8. What feelings do you derive from overeating? _____

9. What are the benefits of overeating? _____
10. Why do you want to stop overeating or reduce your food intake? _____

11. Have you tried to stop overeating? _____ If so, how many times? _____
12. What was the shortest length of time that you stopped overeating? _____
The longest time? _____
13. What caused a return to overeating? _____

14. What would happen if you stopped overeating? _____
15. What would happen if you reduced your intake of fattening foods? _____
16. Rate your present eating habits on each scale separately without regard to judgments made on the other scale.

awful	_____	_____	_____	_____	_____	_____	_____	nice
beautiful	_____	_____	_____	_____	_____	_____	_____	ugly
dirty	_____	_____	_____	_____	_____	_____	_____	clean
safe	_____	_____	_____	_____	_____	_____	_____	dangerous
bad	_____	_____	_____	_____	_____	_____	_____	good
distasteful	_____	_____	_____	_____	_____	_____	_____	tasty
pleasant	_____	_____	_____	_____	_____	_____	_____	unpleasant

17. Current need for food. How much do you need food for:

	NONE	SLIGHT	MODERATE	STRONG
a) relieving tension	_____	_____	_____	_____
b) relieving loneliness	_____	_____	_____	_____
c) social support	_____	_____	_____	_____
d) relieving boredom	_____	_____	_____	_____
e) just straight taste	_____	_____	_____	_____

18. Reasons for wanting to lose weight:

	NONE	SLIGHT	MODERATE	STRONG
a) financial	_____	_____	_____	_____
b) medical	_____	_____	_____	_____
c) Social (friends dieting, lack of friends)	_____	_____	_____	_____
d) challenge	_____	_____	_____	_____
e) other*	_____	_____	_____	_____

*describe

20. Expected changes:	NONE	SLIGHT	MODERATE	STRONG
a) physical (greater energy, improved health)	_____	_____	_____	_____
b) at home (spouse not nag, feel happier with self, money to buy things)	_____	_____	_____	_____
c) at work	_____	_____	_____	_____
d) socially	_____	_____	_____	_____
e) other*	_____	_____	_____	_____

*describe

21. How confident are you that you will be able to lose weight? Are you completely confident (100% probability of success), certain you will never make it (0% probability of success), or somewhere in between?

Express your confidence of success in percentage (%) form next to each of the following:

_____ Probability of not overeating or reducing your food intake to a desired level one week after training program.

_____ Probability of not overeating or reducing your food intake to the desired level one month after the training program.

_____ Probability of not overeating or reducing your food intake to the desired level for one year after the training program.

_____ Probability of never overeating again or reducing your food intake to the desired level immediately after the training program.

22. We need an idea of just how strongly you would like to give up overeating. Would you please indicate on the "motivation thermometer" below how strongly you feel your motivation is to quit. Mark the thermometer with a line at the level which your motivation reaches. Make sure you rate your current motivation to quit.



10 An extremely strong desire to quit.

9

8

7

6

5

4

3


2

1

0

No desire to quit at all. Perfectly happy with overeating.

23. In a similar way, we would like to know how much you like the idea of eating. How strong is your desire to overeat in terms of things you like about eating? When thinking of your desire do not consider physical cravings you may have from time to time. Rather, tell us how much you like eating.

	10	Very strong love for food. (Want to eat more than anything else and cannot imagine not being able to do it.)
	9	
	8	
	7	
	6	
	5	
	4	
	3	
	2	
	1	
	0	Never want to eat. No desire at all.

24. Would you continue to overeat if an ordinary meal cost:

\$5 ___ \$10 ___ \$15 ___ \$20 ___ \$25 ___ \$30 ___ \$35 ___ \$40 ___ \$45 ___ \$50 ___

25. If you were offered money to quit overeating, how much would it take for you to quit or reduce?

\$10,000 ___ \$50,000 ___ \$100,00 ___ \$250,000 ___ \$500,000 ___ \$750,000 ___
\$1,000,000 ___

26. What if today the doctor told you that you had to quit overeating completely for medical reasons. Would you reduce by 25% ___, reduce by 50% ___, reduce by 75% ___, reduce by 90% ___, quit completely ___?

27. With regard to the previous question, how long would it take before you reached your goal? Immediately ___, one week ___, one month ___, one year ___.

28. What weight do you want to achieve? _____

29. What would you consider to be the ideal weight loss for you? _____

30. What weight loss would you be satisfied with? _____

31. What reasons would you have to continue overeating? _____

32. ANSWER Yes or No to the following questions:

1. If I am without food for some time, I am not bothered or uncomfortable. _____

2. Part of the enjoyment of eating comes from the steps I take to prepare food. _____

3. I find I eat for the taste alone. _____

32.

4. When I run out of food I enjoy most I find it unbearable until I get more. _____
5. Eating gives me something to do with my hands. _____
6. I eat in order to keep myself from slowing down. _____
7. When I feel uncomfortable or upset about something, I eat. _____
8. I have found food in my mouth and did not remember putting it there. _____
9. I find food pleasurable. _____
10. When I am nervous in social situations, I eat. _____
11. Eating is pleasant and relaxing. _____
12. Eating makes me feel more awake. _____
13. I eat to be sociable. _____
14. I find it very unpleasant to be without food for some time. _____
15. When with other people, I am more at ease if I am eating. _____
16. I get a real gnawing hunger for food when I have not eaten for awhile. _____
17. The ritual of eating, e.g., table setting, atmosphere, company, etc. are part of the enjoyment of it. _____
18. Eating seems to help when I feel embarrassed. _____
19. I eat to have something in my mouth. _____
20. I eat food to stimulate me, to perk myself up. _____
21. When I find I'm out of my favorite food, I immediately go out and buy some more. _____
22. I like the taste of food. _____
23. I eat automatically without even being aware of it. _____
24. I eat with my friends to be one of the crowd. _____
25. When I feel 'blue' or want to take my mind off cares and worries, I eat. _____
26. I enjoy eating so much, I don't mind if the way to eat the food is 'messy', e.g. chicken legs, corn on the cob, or 'difficult', e.g. boning a fish, chopsticks, etc. _____
27. I eat a lot at parties when I hardly know anyone. _____

Appendix D

Method for Scoring the Motivation Scales on
the Overweight History and Motivation Questionnaire

135

The method for scoring the motivation scales on the Overweight History and Motivation Questionnaire (Appendix C) can be illustrated by the following procedure outlined for Question 16 - Attitudinal Response to Eating Habit.

Question 16 contained an eight point semantic differential scale for seven adjective dimensions describing attitudes towards eating habits. The adjective dimensions were: awful-nice, ugly-beautiful, dirty-clean, dangerous-safe, bad-good, distasteful-tasty and unpleasant-pleasant. A 1 to 8 scoring scale corresponded to the 8 point semantic differential scale in a way described by the following example.

	1	2	3	4	5	6	7	8	
Adjective Subitem: Nice	_	_	_	_	_	x	_	_	Awful
Score =									6

The scores were then calculated in this fashion for each of the sub-items in Question 16 and were summed to provide an overall estimate of perceived attitude towards eating. The underlying assumption was; that the higher the score or the more awful, ugly, dirty, dangerous, bad, distasteful and unpleasant the eating habit was, the more motivated the overweight individual would be in reducing their food intake. This assumption was applied to the scoring of all the motivation questions on the Overweight History and Motivation Questionnaire, except for Questions 17, 24, 25 and 27. The assumption underlying the scoring of these questions was that higher scores reflect a stronger commitment towards overeating.

Question 17 - Current Need for Food, Question 18 - Reasons Wanting to Lose Weight, Question 19 - Pressure for Wanting to Lose Weight, Question 20 - Expected Changes were scored on a 1 - 4 scale which corresponded to the

four rating categories: none, slight, moderate and strong. Using Question 17 as an example, the scoring was tabulated in the following way:

	1	2	3	4
	None	Slight	Moderate	Strong
Q. 17 a) Need For Relieving Tension			X	

Score = 3

Once again each subitem for Question 17 was scored and totalled to give an over-all estimate of "Current Need for Food".

For Question 21 - Confidence of Success, the percent probability of success scores as rated by the overweight individual were totalled for the four subitems.

Question 22 - Desire to Quit and Question 23 - Love for Food were scored on the basis of where the overweight individual marked his or her response on the thermometer.

Question 24 - Cost of Food, Question 25 - Money Offer to Quit Overeating, Question 26 - Medical Reasons for Quitting and Question 27 - Time to Reach Goal were scored on a scoring scale corresponding to the number of response categories for each question. This scoring system can best be illustrated using Question 24 as per the example on the following page.

The subitems on Question 32 - Reasons for Eating were scored such that Yes = 0 and No = 1. It was possible to obtain two types of measures for this question. For example: a "strength of motivation measure" was obtained by calculating a total score for the 27 items. The underlying assumption was that the fewer reasons for eating (hence the lower score), the more favourable the motivation to quit.

Q. 24 - Would you continue to overeat if an ordinary meal cost:

<u>COST</u>		<u>SCORE</u>
\$ 5	_____	1
\$10	_____	2
\$15	_____	3
\$20	_____	4
\$25	_____	5
\$30	_____	6
\$35	_____ X	7
\$40	_____	8
\$45	_____	9

Score = 7

Appendix E
Self-Efficacy Test

We would like you to rate the value of a number of behaviours in helping a person lose weight. Each of the behaviours is mentioned in a phrase on the left side of the page below. Read the phrase and then complete the phrase by writing in the blank space the level of importance which you believe should be given to that behaviour. Choose the level of importance from the following list:

- extremely important (first in importance)
- very important (2nd in importance)
- somewhat important (3rd in importance)
- minimally important (4th in importance)
- not important (5th in importance)

1. In order to lose weight, I believe that exercise is _____
2. In order to lose weight, I believe that learning to detect when one is hungry is _____
3. In order to lose weight, I believe that arranging food in one's house to avoid temptation is _____
4. In order to lose weight, I believe that keeping a diary of the foods that one eats is _____
5. In order to lose weight, I believe that paying attention to how one's stomach is feeling as one is eating is _____
6. In order to lose weight, I believe that not buying or not having food in the house which one is tempted to overeat is _____
7. In order to lose weight, I believe that rewarding oneself for eating less calories is _____
8. In order to lose weight, I believe that detecting when one is full is _____
9. In order to lose weight, I believe that eating meals at regular times and in the same place is _____
10. In order to lose weight, I believe that information about what foods are nutritious and healthy is _____
11. In order to lose weight, I believe that learning to eat only when one is really hungry is _____

12. In order to lose weight, I believe that both shopping from a list and shopping when one is not hungry is

13. In order to lose weight, I believe that hearing something about the scientific discoveries in the field of obesity is

14. In order to lose weight, I believe that learning to stop eating when one is full is

15. In order to lose weight, I believe that learning to eat without doing other things such as reading or watching T.V. is

Please read each question and decide whether you expect you could perform the particular activity. If you expect you can perform the activity, write "yes" in the space provided. If you expect you can not perform the activity, write "no".

For those questions you indicated "yes", you expect to perform, indicate in the column marked confidence, how confident you are that you could complete them. Rate your degree of confidence by recording a number from 10 to 100 using the scale below:

10	20	30	40	50	60	70	80	90	100
Uncertain				Moderately certain					Certain

Rate your expectation and your confidence if you were asked to perform the tasks today.

	Expectation (Yes/No)	Confidence
1. I expect that I could exercise	_____	_____
2. I expect that I could detect when I was hungry	_____	_____
3. I expect that I could arrange food in my house to avoid temptation	_____	_____
4. I expect that I could keep a diary of foods that I eat	_____	_____
5. I expect that I could pay attention to how my stomach is feeling when I am eating	_____	_____
6. I expect that I could either not buy or not have food in the house which I am tempted to overeat	_____	_____
7. I expect that I could reward myself when I eat less calories	_____	_____
8. I expect that I could detect when I am full	_____	_____
9. I expect that I could eat meals at regular times and in the same place	_____	_____

Expectation (Yes/No)	Confidence
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

- 10. I expect that I could become aware about nutrition and what foods are healthy foods
- 11. I expect that I could eat only when I really felt hungry
- 12. I expect that I could shop from a list and shop when I was not hungry
- 13. I expect that I could understand more about the scientific discoveries in the field of obesity
- 14. I expect that I could stop eating when I was full
- 15. I expect that I could eat without doing other things such as reading or watching T.V.

Appendix F

Draw-A-Person (DAP) Test

DRAW YOURSELF - AS REALISTICALLY AS POSSIBLE
(facing forward)

Appendix G

Semantic Differential Test for Body Image Attitude

NAME _____

AGE: _____

SEX: _____

DATE: _____

Instructions


Each page of this questionnaire is headed by a title. There is a different title on every page. Your task is to make a number of judgments on each page, in relation to the title which heads the page. For example, if the title of one page were "Modern Art," and beneath it one of the judgments were something like this:

Like

--	--	--	--	--	--	--

 Dislike



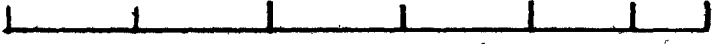
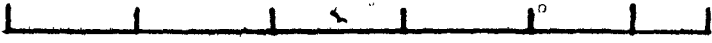





your task would be to place a check mark at the appropriate point in terms of whether you liked, disliked, or where in between you judged your feeling to be about modern art.

Please remember to place your check mark directly on one of the lines, , rather than in the space between two lines.

On each page there will be a number of different judgments to make in relation to the title of the page. Please try not to spend a long time on any particular item.

Thank you very much.




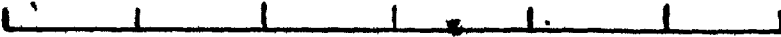





Going to the Movies

Hot		Cold
Hard		Soft
Strong		Weak
Heavy		Light
Active		Passive
Dirty		Clean
Unpleasant		Pleasant
Good		Bad
Ugly		Beautiful

My Home

Pleasant		Unpleasant
Active		Passive
Bad		Good
Dirty		Clean
Hot		Cold
Ugly		Beautiful
Light		Heavy
Strong		Weak
Hard		Soft

The Fat Me

Light		Heavy
Passive		Active
Pleasant		Unpleasant
Strong		Weak
Ugly		Beautiful
Cold		Hot
Bad		Good
Dirty		Clean
Soft		Hard

The Thin M

Beautiful	_____	Ugly
Unpleasant	_____	Pleasant
Weak	_____	Strong
Passive	_____	Active
Bad	_____	Good
Light	_____	Heavy
Hot	_____	Cold
Hard	_____	Soft
Clean	_____	Dirty

Eating

Hard		Soft
Pleasant		Unpleasant
Hot		Cold
Dirty		Clean
Weak		Strong
Beautiful		Ugly
Good		Bad
Passive		Active
Heavy		Light

Me Right Now

Weak	_____	Strong
Cold	_____	Hot
Dirty	_____	Clean
Ugly	_____	Beautiful
Hard	_____	Soft
Good	_____	Bad
Passive	_____	Active
Heavy	_____	Light
Pleasant	_____	Unpleasant

APPENDIX H

Induction Transcript

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First of all, make yourself comfortable in the chair -- and then, look at the dot on the wall. Just begin staring at it. In the meantime, I am going to give you some simple instructions which will help you to experience hypnosis. You'll find that you can quickly learn to follow these instructions and to experience the things I describe to you. With practice on subsequent days you will find that you can experience these things with greater vividness, with greater intensity than you do at first.

As you stare at the dot on the wall, you may find that occasionally your gaze may wander. And that your vision may even blur. If this happens, simply refocus your eyes and continue staring evenly at the dot on the wall.

Now take a deep breath in, and hold it: hold it until it starts to feel uncomfortable and then, when it starts to feel uncomfortable, just let it out slowly. (Long pause) You will find that you are starting to experience a comfortable feeling: -- a feeling of well-being begins to develop as you continue to rest in the chair. Just looking at the dot on the wall, listening to my voice. Now take another deep breath and hold it --

Notice the feeling of tightness and tension in your chest and abdomen -- and then, as it starts to feel uncomfortable just as you did before, let it out very slowly (long pause).

Notice that with breathing out -- with letting the tension out of your lungs -- you become even more aware of a feeling of comfort and well-being settling over you.

Just sink deeper into the chair, and focus your attention closely on feelings of relaxation in various parts of your body -- in your head and your neck, in your arms and in your legs, in your chest and in your back. And just breathe freely and evenly and deeply -- freely, even and deeply, not

too quickly, not too slowly. Just at a comfortable rate for you to notice that relaxation increases gradually as you breathe out.

You may even be aware of the walls of your chest growing looser -- just rest there for a moment experiencing the sensation. Continue relaxing your chest so that feelings of warmth and comfort radiate to your back and your shoulders and your neck and your arms and your legs.

You're probably starting to notice certain changes in the dot on the wall -- changes that occur from staring at it for so long. Sometimes the dot on the wall looks like its moving up and down, or from left to right. Sometimes it may not look like a coloured dot on the wall, but a small hole in the wall. At other times it might seem like a coloured patch just a few inches in front of the wall. You may see some of these things or even all of these things. Whatever you see, just continue staring at the dot; continue listening to my voice. Continue to become more deeply relaxed, more deeply relaxed.

And as you watch the dot on the wall, your eyelids become heavier and heavier and your eyes are becoming tired from staring. Your eyelids start to feel very tired and heavy, as you sit there breathing freely and evenly and deeply -- breathing in, breathing out freely, evenly, deeply. The eyelids are becoming so heavy, so tired that soon they will just close of their own accord, as if they were coated with a lead paste; as if there were magnetic fields in the eyelashes drawing the eyelashes together.

Concentrate now, even more closely on feelings of relaxation and comfort in various parts of your body. First of all, think of relaxation in the muscles of your left arm -- the hand, the fingers of the left hand, the left forearm... the left upper arm ... the left shoulder. Think of relaxation in each of these areas and as you think of the relaxation, the

muscles become progressively more relaxed.

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Then ... relax the muscles of your right arm ... the right hand, the fingers of the right hand, the right forearm, the right upper arm, and the right shoulder.

And then ... relax the muscles of your neck ... your chest ... your back. Relax each of these muscle groups ... the neck ... the chest ... the back. And as you relax these muscles, your facial muscles will also relax and loosen of their own accord. Then relax the stomach muscles by doing this: ... tighten your stomach muscles ... make your abdomen hard ... and then, let the tension out... notice the feeling of well-being that comes with relaxing your stomach ... like a gentle massaging action all over your stomach and even up to your chest.

Then relax the muscles of your legs ... the right leg ... the right foot ... try to feel it in the toes of your right foot ... and then the right calf ... the right thigh.

Then the left leg ... the left foot ... the toes of your left foot ... the left calf ... and the left thigh.

Just thinking about relaxation in these areas causes the muscles to become more relaxed and you may even feel an interesting thing happen. That the feelings of relaxation you feel in each of these areas of the body start to spread and irradiate so that they may seem to join up like parts of a jigsaw puzzle and you feel a deep feeling of overall relaxation. Of contentment and of well-being permeating the whole of your body.

And your eyes will probably have closed now from concentrating so carefully on the dot on the wall, but, if they haven't, just close them gently now of your own accord and take a deep breath in and hold it and then, when it starts to feel uncomfortable just as you've done before ..

just let it out slowly.

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With your eyes closed, you are ready to experience hypnosis - to experience it more profoundly - but you will find an interesting thing is happening. That no matter how deeply relaxed you ever feel, no matter how deeply in hypnosis you ever feel, your mind is always clear. You're always aware of my voice and of what I am saying to you. You are completely aware of everything that is happening around you even though you are deeply relaxed -- deeply in hypnosis.

You can now go even deeper into hypnosis. Say to yourself -- just by thinking it -- "Now I am going deeper and deeper". Think it to yourself. And imagine yourself standing at the top of an escalator. Visualize the scene of the escalator -- of the steps moving down -- and picture the moving hand rail.

Count backwards slowly from ten to zero, imagining, as you count that you are stepping onto the first step of the escalator and standing with your hands on the railing while the steps move down carrying you deeper and deeper into hypnosis. You can plan it so that you reach zero just as you reach the bottom and step off the escalator. It will take you about 1 minute.

(Pause 60 seconds)

You have now become so deeply relaxed -- so deeply in hypnosis -- that your mind has become so sensitive -- so receptive to what I say -- that everything I say to you -- will sink so deeply into the furthestmost recesses of your mind -- and will make so deep and lasting an impression there.

And because these things will remain -- firmly embedded in the deepest parts of your mind -- after you have left here -- when you are no longer

in this room -- they will continue to exercise the same profound impression -- just as strongly -- just as surely -- just as powerfully -- when you are back at home -- or anywhere else you happen to be -- as when you are actually here in this room, listening to my voice.

As a result of this deep relaxation -- this deep hypnosis -- you are going to feel physically stronger and fitter and healthier in every way. You will feel more alert -- more wide awake -- more energetic. You will become much less easily tired -- much less easily fatigued -- much less easily discouraged.

Every day you will become so deeply interested in whatever you are doing -- in whatever is going on around you -- that your mind will become completely distracted away from everything else -- you will no longer think nearly so much about yourself -- you will become much less conscious of yourself -- much less concerned with yourself and with your own feelings.

Every day your nerves will become stronger and steadier -- your mind calmer and clearer -- more composed -- more placid -- more tranquil. You will find that it takes a lot for things to worry you -- that it takes a lot for things to upset you even slightly.

You'll be able to think more clearly -- you'll be able to concentrate more easily -- you'll be able to give up your whole undivided attention to whatever you are doing -- to complete exclusion of everything else. As a result you will find it easier to remember things than you do now -- you will be able to see things in their true perspective -- without magnifying them -- without ever allowing them to get out of proportion.

Every day you will become and you will remain emotionally more calm -- much more settled -- much less easily disturbed. Every day you will become -- and you will remain -- more and more completely relaxed -- much

less tense each day -- both mentally and physically -- wherever you are -- at home -- or anywhere else you happen to be.

As you become -- and as you remain -- more relaxed and less tense each day -- so -- you will develop much more confidence in yourself.

More confidence in your ability to do -- not only what you have to do each day -- but more confidence in your ability to do whatever you ought to do -- without feeling that you might fail -- without feeling uneasy.

Because of this -- every day -- you will feel more and more independent -- more able to stand up on your own 2 feet -- more able to hold your own -- no matter how difficult or trying things may be.

Every day -- you will feel a greater feeling of personal well-being -- a greater feeling of personal serenity -- than you have felt for a long, long time.

And because all these things will begin to happen -- more and more rapidly -- more and more powerfully -- more and more completely -- every time you hear my voice on this tape -- every time you practise these hypnosis exercises by yourself -- you will feel much happier -- much more contented -- much more contented -- much more optimistic in every way.

You will, consequently, be much more able to rely upon and depend upon -- yourself -- your own efforts -- your own judgements -- your own opinions. You will feel -- much less need to have to rely upon -- or to depend upon -- other people.

And now just rest there enjoying the feeling of warmth and comfort and relaxation that have been developing during this hypnosis session. Think particularly about these sensations I've described to you that you find especially pleasant.

TWO MINUTES OF SILENCE

NOW I WANT YOU TO HAVE A CLEAR MENTAL IMAGE OF YOURSELF STANDING ON A SET OF SCALES - AND THE SCALE REGISTERING THE WEIGHT YOU WISH TO BE. SEE THIS VERY ... VERY CLEARLY .. FOR THIS IS THE WEIGHT YOU WILL BE. SEE YOURSELF LOOKING THE WAY YOU WOULD LIKE TO LOOK WITH THE WEIGHT OFF THOSE PARTS OF THE BODY YOU WANT THE WEIGHT TO BE OFF. SEE THIS VERY ... VERY VIVIDLY AND SUMMON THIS IMAGE INTO YOUR MIND MANY TIMES DURING THE DAY: PARTICULARLY JUST AFTER WAKING IN THE MORNING AND BEFORE GOING TO SLEEP AT NIGHT. ALSO HAVE IT VIVIDLY IN YOUR MIND BEFORE EATING MEALS. AND THIS IS THE WAY YOU WILL LOOK AND THIS IS THE WEIGHT YOU WILL BE. AS YOU BELIEVE THIS .. SO IT WILL HAPPEN.

WHEN YOU HAVE ATTAINED THIS WEIGHT ... YOU WILL BE ABLE TO MAINTAIN IT... YOU WILL FIND YOURSELF EATING JUST ENOUGH TO MAINTAIN YOUR WEIGHT AT THE WEIGHT YOU WOULD LIKE TO BE ... UNTIL YOU DO ATTAIN THIS WEIGHT YOU WILL FIND YOU WILL HAVE LESS AND LESS DESIRE TO EAT BETWEEN MEALS. IN FACT .. VERY... VERY SOON... YOU WILL HAVE NO DESIRE TO EAT BETWEEN MEALS... YOU SIMPLY WILL NOT WANT TO. ALSO YOU WILL FIND THAT YOU WILL BE CONTENT WITH SMALLER MEALS. THERE WILL BE NO SENSE OF UNHAPPINESS OR DISSATISFACTION: SMALLER MEALS WILL BE QUITE SATISFACTORY TO YOU... AND YOU WILL HAVE NO DESIRE TO EAT LARGER MEALS. AND YOU WILL HAVE LESS .. AND LESS.. DESIRE FOR HIGH CALORIE .. RICH.. UNHEALTHY FOODS.

DAY BY DAY .. YOUR DESIRE FOR SUCH FOODS WILL BECOME LESS AND LESS .. UNTIL VERY VERY SOON .. YOU WILL HAVE NO DESIRE AT ALL FOR RICH.. HIGH CALORIE .. UNHEALTHY FOODS. INSTEAD - DAY BY DAY ... YOU WILL DESIRE LOW CALORIE.. HEALTHY FOODS... AND THESE WILL REPLACE THE HIGH CALORIE FOODS . THE RICH FOODS... YOU HAVE EATEN IN THE PAST.

AS YOU LOSE WEIGHT AND APPROACH CLOSER AND CLOSER THE WEIGHT YOU WISH TO BE YOU WILL FIND YOURSELF GROWING STRONGER AND STRONGER

HEALTHIER AND HEALTHIER. YOUR RESISTANCE TO ILLNESS AND DISEASE WILL INCREASE ... DAY BY DAY. WITH LESS WEIGHT YOU WILL FEEL BETTER AND BETTER. .. AND YOUR HEALTH WILL BECOME BETTER AND BETTER.

REMEMBER TOO.. THAT YOUR OWN SUGGESTIONS WILL BECOME JUST AS EFFECTIVE AS THE SUGGESTIONS I AM GIVING YOU ON THIS TAPE...

In a moment you will be able to wake up. All you have to do is say to yourself "Now I am going to wake up" and then count from 1 to 3. You will wake up feeling refreshed and buoyant; as though you have been in a deep and dreamless sleep. You will have a feeling of vigor, of vitality-- vigor-- vitality.

When you are practising these hypnotic exercises by yourself it is very important that you always wake yourself up at the end, rather than just going off to sleep. You will find that you get better results this way. Now, just rest there for about one minute and then after 1 minute say to yourself "Now I am going to wake up" - and then count from one to three.

And remember to do these exercises in your own time and to practise them regularly.

ONE MINUTE OF SILENCE

And now that the minute is up - say to yourself "Now I am going to wake up" and count from 1 to 3.

Appendix I

Weight and Hypnosis Tape Record Card

NAME _____

DATE _____

	Sun	Mon	Tues.	Wed.	Thurs.	Fri	Sat.
Record your weight each day in this row.							
Each time you use the technique record it in this row.							

Appendix J

Follow-Up Interview Questions

1. What reasons did you initially have for wanting to quit overeating, reduce your food intake and lose weight?
2. What reasons do you presently have for wanting to / maintain your weight loss / quit overeating / eat less?
3. Prior to your first coming here, to what degree did you expect hypnosis could effectively help you to quit overeating / eat less / lose weight?
4. After completing the treatment session, did these expectations change? How? Why?
5. Did you listen to the tape at a regular time each day?
6. During which section of the tape; relaxation, ego-boosting statements or weight reduction statements, did you feel you received the greatest benefit?
7. What role do you feel the hypnosis played in allowing you to quit overeating / eat less / lose weight?
8. Did you enter the hypnotherapy session expecting that hypnosis would have an automatic effect on your overeating and that after leaving this room (the lab.) you would never have the desire to overeat again?
9. How many times per week did you listen to the tape initially? Now? Do you believe you no longer need to listen to it? What led you to believe this?
10. To what do you attribute your success in having stopped overeating / reduced your food intake / lost weight? - OR - to what do you attribute the fact that you could not?
11. People have indicated in the past that they have used a number of strategies to help them quit overeating. I'd like to describe some of them to you and I want you to tell me if and when you ever used them and how effective they were for you.
 - a) Trying to resist fattening unhealthy foods by imagining your mind all the unpleasant feelings associated with overeating.
 - b) Reminding yourself of damage to your body and serious risk to your health when you overeat.

- c) Taking part in a bet in which you received some type of material reward if you would not overeat for a specified time period.
 - d) Setting a quitting date for overeating and gradually reducing the amount of food you ate each day.
 - e) Controlling your eating by only eating in a very specific situation, i.e. same place or regular times each day.
 - f) Changing those behaviours that you regularly associated with overeating e.g. eating alone, skipping meals all day and eating heavily in the evening, eating 'junk' food snacks.
 - g) Forcing yourself to engage in some other activity, so as to divert your attention from food whenever the urge to overeat became too great e.g. physical exercise, read, go to a movie, call a friend, listen to the tape, etc.
 - h) Offering yourself praise and encouragement or some type of material reward if you abstained from overeating for a certain period of time.
 - i) Having friends, spouse or some significant other, offer you praise and encouragement for your attempt to quit overeating / eat less / lose weight.
 - j) Increasing your daily physical activity level e.g. walking, sports, exercise.
 - k) Become consciously aware of your internal body signals, i.e. recognizing when you feel hungry or full.
 - l) Controlling your food intake by shopping for groceries when full, shopping from a grocery list, eating healthier food, arranging the food in the house to avoid temptation, not buying 'junk' food or food which you are tempted to overeat.
 - m) Becoming more knowledgeable about nutrition, healthy foods and scientific discoveries about obesity.
12. What personal strategies might you have used to quit overeating, to eat less, to lose weight?
13. Regardless of how successful you were in your attempt to quit overeating, I would like you to imagine now, that you are trying to give up overeating, to eat less, and to lose weight with whatever techniques you feel are necessary. So far, you have been quite successful, you have lost weight, reduced your food intake and had no binge eating episodes. You suddenly get this incredible desire to eat your old favourite fattening food (get an example). Knowing that you want to control yourself and keep losing weight, what types of things would

you possibly say to yourself to refrain from eating that food or eating it to excess? What kinds of thoughts and feelings would you have? What would you do to protect yourself from that food?

14. Taking this imaginary situation further, I want you to picture yourself giving in to your desire, getting your old favourite fattening food (example), over-eating it, all the time knowing you have been trying not to. What types of things would you possibly be saying to yourself now? What kinds of feelings and thoughts would you have? How would you go about resisting this situation again (type of food, binge eating, etc.)
15. How did you feel when you had your first binge after the hypnotherapy session? How did this alter your expectations of successfully being able to stop over-eating and lose weight?
16. I am going to describe to you the components of the weight reduction programme you have just participated in. Please tell me how much you feel each of these components has been responsible for your success / lack of success in changing your eating habits / losing weight.
 - a) attending an orientation meeting.
 - b) receiving literature on nutrition and obesity.
 - c) participating in an evaluation procedure.
 - d) a hypnotherapy session.
 - e) listening to a cassette tape of the hypnotherapy session.
 - f) keeping a daily record of your weight.
 - g) attending three follow-up discussions.
 - h) participating in a final evaluation and discussion.
17. Did you engage in any other weight reduction or therapy programme during the time period you were involved in this one. Describe.
18. Do you have any suggestions as to how this programme could be improved?
19. Would you be willing to be recontacted in the future to determine whether or not the programme was effective over time? e.g. 3 months, 6 months, 1 year.

Beverlea Tallant,
March, 1979