California State University, Northridge

SELF REGULATION FOR WEIGHT CONTROL

A thesis submitted in partial satisfaction of the requirements for the degree of Master of Arts in Psychology by Delores Eileen Craig

January, 1973
The thesis of Delores Eileen Craig is approved.

California State University, Northridge
January, 1973
ACKNOWLEDGEMENTS

The author would like to express her appreciation to Professor Ronald Doctor for his guidance in conducting this thesis research. She is grateful to Professors Robert Dear and Philip Smith for their encouragement and advice.
# Table of Contents

**Abstract**  

**Section**  
- Introduction  
- Method  
- Results  
- Discussion  

**References**  

**Appendix**  
- I. Programs  
- II. Lecture Notes  
- III. Prescriptive Tasks  
- IV. Questionnaire, Scale, Evaluation  
- V. Cumulative Group Weight Changes  
- VI. Homework Performance  
- VII. Graph of Results  
- VIII. Standard Height and Weight Chart
ABSTRACT

SELF REGULATION FOR WEIGHT CONTROL

by

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Master of Arts in Psychology

December, 1972

The area of weight control has been studied medically and psychologically, with very little success reported. Behavior modification programs, based on learning principles and their application, have reported some success in long term weight control. This study was an attempt to compare a group program which included effective aspects of the behavior modification programs with a group program using the same overall program elements with the addition of home mediators. The standard group received knowledge of results and recognition for success in the group setting. The other group received recognition in the form of points dispensed by a "significant other" in the home environment.

Results indicated the nonmediated group program was more effective in obtaining weight losses for the period when the groups were meeting. Long term results are not yet available. The failure of the mediators to perform
was felt to be the poor performance of the mediated groups. There was also a finding of an interaction between the program and the group leader. Of the two group leaders, one was more effective with mediated subjects, and the other was more effective with the standard program. The main difference between the two leaders appeared to be their experience with behavior modification and group work.
SELF REGULATION FOR WEIGHT CONTROL

Introduction

The problem of obesity has resisted the efforts of researchers to find a treatment which patients can endure and which is effective on a long term basis. Throughout the ages, obesity has shown its dependency on environmental support by fluctuating to lows in cultures such as the early Greeks where physical fitness and exercise were praised, to highs where overindulgence and fat were taken as signs of status and affluence. The legendary size of the Hawaiian queens is an example of the latter. For whatever reasons, some forty million Americans are obese today, and there is every indication the problem will continue to grow unabated. Treatment of the problem has ranged from the addition of obnoxious flavoring to foods to rigorous exercise programs and steam baths. Current research in obesity can be broadly divided into the application of medical technology and application of techniques derived from psychological theories.

Medical research has typically studied therapeutic starvation programs. Swanson and Dinello (1969) reviewed the area and described three fasting techniques: short term, intermittent, and prolonged starvation. In all cases the patients were hospitalized for the period of actual fasting. Short term fasting, utilized by Bloom (1958), Biggers (1966) and Fischer (1967), refers to those studies where patients
were hospitalized for periods of four to fourteen days with intake restricted to nonnutritive fluids and vitamins. Duncan (1962) utilized intermittent fasting in his research in obesity. This second form of fasting consisted of fourteen days of hospitalization where the patient received only nonnutritive fluids and vitamins, then one or two day fasts per week were conducted by the patient in his home until, in theory, the ideal weight was attained. The third plan of prolonged starvation involved hospitalization for fasting periods up to one-hundred-seventeen days. Drenick (1964) conducted prolonged fasts of differing duration and concluded a minimum fast of thirty days was necessary, and sixty days should be regarded as a maximum. Crumpton (1966) and Rowland (1968) conducted similar studies with similar results.

The results of all these therapeutic starvation programs show high initial losses, but with some rather unpleasant side effects for patients. Most patients experience disruptive psychological reactions of extreme hostility, verbal aggression, and in some cases, severe depression. Some suicide attempts were reported. These emotional complications may explain the high dropout rate. Those who do remain in treatment show average losses of two pounds per day in short term programs; twenty to thirty-two pounds loss during the first fourteen days of fasting with the intermittent program; and an average of one pound loss per
day in prolonged fasting. In no case was it reported that
the patient actually attained the ideal weight.

Few followups have been reported, but those reported
show discouraging evidence that in most cases the patient
does not change eating habits by fasting, and quickly re-
gains the lost weight, once he returns to his home envir-
onment.

Therapeutic starvation programs regard the solution
to the problem of obesity as getting rid of excess fat.
The medical model likens overweight to disease, so treat-
ment of overweight involves getting rid of the excess fat,
just as treatment of an infection involves getting rid of
the excess germs. The results of these studies show that
the fat is only one part of the problem. Apparently, the
home environment and living styles are crucial determinants
of eating habits which are untouched in therapeutic starv-
ation.

Psychodynamically oriented programs are based on a
model which views obesity as a consequence of overeating,
which is not a simple habit but the result of the personal-
ity of the individual. Bruch (1961) has based his obesity
therapy on attempts to transform oral impulses, which are
assumed to have roots in the early developmental years.
Bruch (1970) also discusses the need to direct therapy for
obese patients toward awareness of oral impulses and learn-
ing to discriminate between bodily sensations and emotional
states. No results were reported, so the value of this approach cannot be assessed.

Group psychotherapy has also been used as a treatment for overweight. Strear (1969) found that reality oriented counseling was useful for obese patients, but gives no specific loss results. Chapman (1953) obtained average losses of one pound per week for four patients, but six other patients who underwent treatment did not lose a significant amount of weight.

Watkins (1971), Hanley (1967), and Brodie (1964) developed treatment methods using group therapy and group hypnosis. These programs generally used hypnosis as a means of getting at reasons for overeating. Hypnosis alone has been used by Hartman (1969) and Kroger (1970). Hanley expresses the view that overeating is a learned process, and hypnosis can be of great value in the relearning process. Hypnotic suggestion is used to make certain classes of food less appealing, and to suggest that the person feels more confident. Results show losses of about two to three pounds per week. Watkins (1971) reported similar losses for one patient. There were no followups so there is no way to evaluate the duration of effects.

The psychodynamic and hypnotic programs cited above approach obesity by attempting to restructure the personality of the individual in some way. The results show limited success for some programs, but there is a lack of evidence for long term change. In general these programs
require a long and expensive course of treatment which severely restricts their use for many people.

A third general approach to the problem of obesity comes in behaviorally oriented programs based on learning theory. Behavioral programs have utilized aversive conditioning, contingency management, and self control.

Aversive conditioning studies try to eliminate the approach response to high calorie inappropriate foods. Making use of classical conditioning, the approach to high calorie foods is paired with aversive stimuli.

Kennedy and Foreyt (1968) had their subjects construct a hierarchy of craved foods. They then paired the smell of a high calorie craved food with a noxious gas odor. The one subject who was reported experienced a slow weight loss because when she stopped eating foods paired with the noxious odor, she began to eat more of other foods. A second difficulty results from the obvious presence or lack of the control feature. The equipment which is used in the conditioning becomes a discriminative stimulus, which, when present, indicates the approach behavior will be punished with the noxious odor, and when absent indicates the behavior will not be punished. A second study by Foreyt and Kennedy (1971) reported average losses of thirteen pounds in nine weeks, and an average loss of 9.17 pounds after forty-eight weeks. They reported some difficulty with dropout since some subjects were not willing to continue treatment after contact with the aversive odor.
Fricke (1970) compared aversive escape conditioning with simple aversive conditioning. In the escape conditioning the high calorie food was paired with shock and there was the possibility of escaping the shock by avoiding the food. In the aversive conditioning, there was pairing of the food and shock. The subjects did better when the escape possibility existed. Fricke provides no specific data about the weight losses, which makes it difficult to compare the effects of this program with others.

Stollak (1967) also used electric shock and compared its effects with the amount of personal contact in the program varied from slight to extensive. He found that aversive conditioning did obtain a loss, which was quickly regained after treatment. Meyer and Crisp (1964) obtained similar results but added that treatment worked only with patients who felt anxiety only when approaching tempting foods. If the patient was generally anxious, poor results were obtained. Successful patients also had sources of pleasure other than food, such as social involvement, or a strong interest in some activity.

All these research reports indicate that aversive conditioning is of no particular value as a treatment for obesity. Failures can result from habituation to the aversive stimulus. The fact that the control source was external and obviously present or absent can also be considered a problem. The conditioning apparently failed to
generalize to extra-experimental settings since the subjects reported little resistance to temptation.

Meynen (1971) compared several classical conditioning approaches. Covert sensitization, systematic desensitization, and relaxation were all significantly more effective than no treatment. However, all of these obtained a small effect, and no follow-up was reported.

Contingency management for treatment of obesity can be defined as alteration of the consequences or controlling stimuli for eating. This may be accomplished by environmental manipulation, changes in reinforcement schedules, or combinations of these techniques.

Goldiamond's study (1965) can be viewed as representative of environmental manipulation. The client is given some information about the role of the environment in supporting behavior. When the client understands stimulus control, he is assisted in extinguishing stimuli which have come to elicit inappropriate eating. For example, all clients are generally instructed to eat in one location without any other activity while eating, so that eating will not be associated with any activity and only with one appropriate location. Clients are also advised to set up conditions which they know will control the desired specific behavior. For example, they could arrange to eat with someone else if that controls eating, or they could arrange to avoid being home alone if they overeat when home alone.
Stuart (1967, 1971) not only worked to break down inappropriate stimuli such as activities, but also encouraged subjects to remove external cues such as presence of snack food or sight of snack food. He also used chaining, a reinforcement concept where a particular action is viewed as a chain of several behavioral links which is supported by one reinforcer. The results of this study are unique in that they represent one of the few true success stories with obese subjects. Of the ten patients who received treatment, two did not complete the program. This is in itself a very low dropout rate. Of the eight who completed the program, all lost large amounts of weight. The smallest loss was twenty-six pounds, and the largest was forty-seven pounds. Both occurred over a twelve month period and were maintained at followups. Most of the patients reported an increased range of social activity after weight loss.

Bernard (1968) used reinforcement for weight loss, presumably an altered reinforcement contingency, as well as control of caloric intake, and obtained a one-hundred-two pound loss for one patient in six months. No signs of reversal appeared. However, this patient was institutionalized in a situation where Bernard could exercise control over the patient's environment. A similar study by Upper and Newton (1971) made use of a token economy and also showed good results. While these two studies are certainly useful in providing a basis for obesity management in
controlled environment, they cannot be generalized to problems occurring in the natural environment, where it is not possible to have control of client privileges.

Working in the natural environment requires that the client take responsibility for much of the implementation of the program. This responsibility has generally been labelled self control. Programs emphasizing self control require voluntary efforts by the client to change his environment, reward system, or other relevant aspects which are discovered to exert control over eating behavior.

The client usually undergoes some form of training which is designed to make him aware of behavioral principles which are the basis of the program. The training is then accompanied by some tasks which apply the relevant principles. The focus of the training or tasks may be environmental or contingency management, cognitive management, or the use of relaxation.

Ferster (1962) focused attention of the clients on the contingencies for eating. He especially emphasized the negative consequences for overeating. Results obtained were small. Harris and Bruner (1971) reported a similar study, where treatment was given in groups. Information was given, but the emphasis was not clear. The tasks were given only as recommendations, with no particular incentive for performance. Weight losses were small and of short duration, with no long term significant differences between control and experimental groups.
Wallersheim (1970) did a very comprehensive study of a self control type program with control groups for social pressure, undergoing group treatment, and no treatment. The self control type group had 61% who showed a significant loss at the end of treatment and 50% still showing a significant loss after followup. An average loss in this group was 10.83 pounds after treatment, and 9.11 pounds at the followup. It was not clear if any reinforcement was given or what contingencies existed.

Penick, Syndor, Filion, Fox, and Stunkard (1971) reported the only study which specifically reinforced the application of principles taught. This study combined training, tasks, and reinforcement for tasks, and obtained very good results. 13% lost more than 40 pounds, 33% lost more than 30 pounds, and 53% lost more than 20 pounds.

Two self control techniques have been offered for cognitive control. Coverant control involves use of the Premack (1965) principle to reinforce cognitive behaviors incompatible with eating. Coverant is a term used to indicate a cognitive operant, or voluntary thought response. The Premack principle states that any low probability behavior can be made more probable by making a high probability behavior contingent upon performing a low probability behavior. Tyler and Straughan (1970) compared coverant control with relaxation and breath holding and found coverant control more effective in aiding weight loss. Horen and Johnson (1971) also studied coverants. Both of
these studies support the efficacy of the Premack Principle and coverant control, but show coverants are not enough to produce large effects by themselves.

Covert sensitization is the other technique for cognitive control. The method utilizes covert aversive stimuli, which are paired with inappropriate pleasureable objects, such as rich desserts or snacks. Cautela (1966), who developed the method, reports a 56 pound weight loss for one female subject, which has not reversed after seven months.

Both coverant control and covert sensitization are certainly self control programs since the client is trained in a technique which she must then utilize for herself. The therapist aids the client in establishing control over her own behavior. These programs, and all of the other training programs have assisted the client in gaining some measure of control. Where training programs are accompanied by rewards for appropriate tasks, results are good. A training orientation also increases involvement of the subject, which should lead to an ability to make future adjustments in eating behavior, as required. The only apparent drawback to these programs is the use of a reinforcement source (therapist or group) which is only present during the active phase of the program, and does not exist after the program is over. This does not build in a long term reinforcement for the new behavior. In order to obtain
significant long term effects it would seem important to include transfer of reinforcement to significant others in the subject's natural environment.

The purpose of the present study was to determine what increments are obtained by reinforcement in the natural environment, as opposed to reinforcement in the program setting for weight loss. Hereafter, the program with reinforcement given by a home mediator will be referred to as (M) program, and the weight oriented program with reinforcement in the program setting will be known as (W) program.

Both (M) and (W) programs included those elements of other self control programs which have demonstrated value, and included a change in the natural environment of the client so rewards would be given by people in the person's social environment in program (M). This should have insured reinforcement after the termination of the formal program. Subjects were also encouraged to evaluate their own performance, thereby improving self regulation skills. These two deviations represent the major comparisons in the present study, and are based on the idea that the most fundamental changes result from manipulation of contingencies in the environment where the behavior occurs most frequently.
Method

Subjects

The subjects were thirty-five females ranging in age from 19 to 59 years of age. The subjects included both married and single women, distributed to the various groups randomly. Subjects were recruited for this program by means of brochures and a newspaper release. All subjects paid $38.00 for the program, which was offered as a workshop in weight control techniques through the extension division at California State University, Northridge.

Data were included for those who were between 15 and 55 pounds overweight, as determined by a standard height and weight table (See Appendix VIII). The study was restricted to this group of moderately overweight women in an effort to test the effect of the programs on women who were all moderately overweight. No subjects were included who reported a prior diagnosis of some physiological basis for their obesity, since this would introduce an additional factor in their overweight problem. Those who weighed in excess of the 55 pound overweight limit, or who reported a physiological problem, were allowed to attend the workshop, but their data were not included in the analysis of the program.

All subjects were informed at the first meeting that two techniques were being utilized but they were not given a detailed account of the differences until the final
Seven subjects did not complete the entire program for various stated reasons, none of which was specifically related to the nature of the program.

Design

A 2 x 2 factorial design was chosen, involving two programs and two discussion group leaders, hereafter referred to as leader K and leader C. Each discussion group leader handled an (M) group and a (W) group. Both leaders were female graduate students in psychology who received payment for their services as group leaders. They also received training in behavior modification principles and instruction in leading the discussion groups.

The two programs were alike with respect to information presented, and differed with respect to contingencies of reinforcement and source of reinforcement. The (M) group had home mediators who issued daily rewards in the form of points earned by performing assigned tasks. These points were then used to gain access to the discussion group. The weight loss (W) group was rewarded for weight losses by the group leaders. A minimum weight loss of one pound per week was rewarded by granting access to the discussion group. Visual displays of progress were also evaluated in the discussion period.

A full description of the (M) and (W) programs is
available in Appendix I.

Procedure

The programs included nine meetings over a fifteen week period. Meetings were held weekly for the first five weeks to provide necessary information and assistance. The meetings were then spread to every other week to allow the subjects an opportunity to firmly establish the prescribed behaviors. This procedure also allowed the subjects to assume greater responsibility themselves in preparation for termination of the formal program. A final four week period between meetings allowed subjects to assume full responsibility for evaluating behavior and adjusting their program of change as required.

Each meeting consisted of a one hour lecture concerning the contingencies governing eating behavior, and background in the necessary operant conditioning principles. Appendix II contains a complete outline of lecture notes. Lectures were followed by a discussion group, where group leaders explained the prescriptive tasks and checked individual progress. Any difficulties or successes were discussed and assistance was provided in solving problems. The prescriptive tasks were applications of the information provided in lectures. Appendix III contains a complete list of the tasks. All the subjects were weighed at each meeting.
An effort to individualize the program was made by use of the behavior analysis. Subjects were encouraged to fit the tasks to their own circumstances and assistance was provided in adapting the tasks.

At the end of the fifteen week period all successful subjects received a certificate of completion. Success was defined as having moved through all stages of the program. Stages included the behavior analysis, baseline, beginning application, advanced application, and self management.

All subjects completed a diet questionnaire at the beginning and the end of the program. They also filled out a marriage adjustment scale at the beginning, and an evaluation of the program at the end. Appendix IV contains copies of these questionnaires.

Mediators met with the group leaders during the second week. They were given a description of the program and were asked to issue daily points for compliance with the tasks. Mediators were encouraged to react positively to success, neutrally to failure. The mediators were contacted twice by telephone during the program. They received encouragement and gratitude for their help.
Results

The measure of effect was the weight change recorded at each meeting. Subjects were weighed at each meeting, and the net change from the beginning weight was recorded. The weigh in was handled privately by the group leader just before the discussion period.

A Hotelling's $T^2$ multivariate analysis was performed. By use of a multivariate analysis it was possible to compare the programs over time rather than simply in terms of the final result. Each subject had data in the form of the weekly cumulative weight changes from the beginning weight. Missing data was filled in with an average of the change recorded by other members of the same group. Independent tests, analogous to planned comparisons in the univariate case, were used to tests for program effects, group leader effects, and an interaction. The results, shown in Table 1, showed that the $F$ obtained from analysis of program effects was very close to the critical $F$, but was not significant. Only the interaction effect $F$ exceeded the critical $F$.

TABLE 1
Hotelling $T^2$ Results

<table>
<thead>
<tr>
<th>Source</th>
<th>$T^2$</th>
<th>$F$</th>
<th>$F^*$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Program Effects</td>
<td>19.293</td>
<td>2.07</td>
<td>2.08</td>
</tr>
<tr>
<td>Group Leader Effects</td>
<td>15.859</td>
<td>1.70</td>
<td>2.08</td>
</tr>
<tr>
<td>Interaction Effects</td>
<td>22.087</td>
<td>2.37</td>
<td>2.08</td>
</tr>
</tbody>
</table>

*This is the critical $F$ with $\alpha = .10$ and 7, 18 df*
Group weight change per weigh in is shown in Appendix V, as are the individual subject changes at each weigh in.

Since no particular method of program evaluation has been established in the literature on obesity, some alternate assessments are offered. Results concerning the percentages of subjects reaching a specified weight loss showed that group (WC) had the best performance, as shown in Table 2. Dropouts have also been sued as indicators of the clients' ability to endure treatment. Results, shown in Table 3, indicate equally good results for groups (WC) and (MK).

**TABLE 2**

<table>
<thead>
<tr>
<th>Group</th>
<th>Amounts of Weight Lost</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Gain</td>
</tr>
<tr>
<td>Group 1 (WK)</td>
<td>50%</td>
</tr>
<tr>
<td>Group 2 (WC)</td>
<td>---</td>
</tr>
<tr>
<td>Group 3 (MK)</td>
<td>25%</td>
</tr>
<tr>
<td>Group 4 (MC)</td>
<td>50%</td>
</tr>
</tbody>
</table>
### TABLE 3
**Percent of Subjects Who Dropped Out**

<table>
<thead>
<tr>
<th>Group</th>
<th>Percent Dropped Out</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group 1 (W-K)</td>
<td>33%</td>
</tr>
<tr>
<td>Group 2 (W-C)</td>
<td>11%</td>
</tr>
<tr>
<td>Group 3 (M-K)</td>
<td>11%</td>
</tr>
<tr>
<td>Group 4 (M-C)</td>
<td>25%</td>
</tr>
</tbody>
</table>

A summary of homework performance is presented in Appendix VI. In all groups successfully completing the homework was usually accompanied by weight loss.

Graph display of the weight changes for the various groups is provided in Appendix VII.
Discussion

The results indicate that the two programs did differ in their effect on weight, but not enough to show statistical significance under these conditions. The standard weight loss oriented (W) program obtained the best results. This was not expected since it was felt that use of home mediators would provide more meaningful rewards on a daily basis for the subjects. In the (W) groups, the subjects were given knowledge of results (weight change) and approval for success by their group leaders at each meeting. Subjects in both conditions were provided the same lectures and homework. A final quiz showed that all subjects who completed the program had mastered the material. The two programs did not differ in their ability to communicate principles.

The reward or motivational aspect of the programs appears to be most promising as a source of differing results. Theoretically, the mediated program should offer the more effective reward system with daily reward for performance, provided in the environment where the behavior occurs. The fact that this does not occur led to suspicion about the performance of the mediators. Questioning of the subjects led to substantiation that mediator performance was poor or nonexistent in many cases. Many of the mediators were initially enthusiastic when first contacted. They did check the subjects' daily progress, but as time
passed they showed declining performance. Subjects reported filling out their own points, and weekly obtaining their required mediator's signature, which was obtained often without inspection of the record. This is a plausible explanation for the declining performance of the mediated subjects. The graph which displays the cumulative progress of the groups in Appendix VII supports this interpretation.

Subjects in (W) groups were given approval for success and feedback at each meeting by their group leaders. The large difference between overall average losses in the groups shows the powerful effect of the group leaders. Leader (C) has average losses of 11.34 pounds in the (W) group, while leader (K) has an average gain of .3 pounds with her (W) group using the same homework and incentives. The differences of these two leaders are very difficult to specify. They both rated high on communication scales, and were both rated warm and sympathetic by their subjects. They did differ in their previous experience in behavior modification. Leader (C) had extensive classroom and field experience, while leader (K) had only limited field experience. This could have altered the areas of subject behavior attended to, differentially rewarding the groups.

Homework performance of the two groups differed in the same way as weight change. Rarely did anyone lose weight without successful completion of homework (Appendix VI). Leader (K) had a (W) group which completed less than two-thirds the number of successful assignments completed by
subjects in the (W) group of leader (C). Apparently the group leaders differed in their ability to motivate successful homework completion, which resulted in differential weight changes. The homework reward contingency also needs to be reconsidered. Simply requiring a record of completion, without an accompanying weight change, encourages cheating. Improved results might be obtained by requiring a weight loss as well as evidence of completion of homework.

With mediated groups the end results were very similar for the two leaders, with average losses of 2.79 and 2.01 pounds for leaders (K) and (C) respectively. This shows that where the reward system is controlled by mediators rather than group leaders, the differences in group leaders had very little effect. Perhaps if the leaders had more contact with mediators then differences would have been larger. This is an area that requires further research, so that proper use can be made of mediators.

The dropout rate for the various groups must also be considered since no program can be effective unless it attracts and maintains members. Group (W) under leader (K) lost 33% of its beginning subjects, group (M) lost 25% under leader (C), while the two remaining groups both lost 11%. Losses cannot be attributed to group leaders, nor do records show that the dropouts were gainers, but it is interesting to note that the group with the highest dropout rate is also the group which showed the only average gain.
Questioning of the dropouts revealed that reasons for their absence were not related to the program. Some did report they felt the program was rather impersonal. Most dropouts occurred during the first two weeks of the program.

The conclusions which can be drawn from this study are somewhat limited. The general program of training lectures and prescriptive homework tasks appears to have been effective but this has not been conclusively demonstrated since there was no control group receiving no treatment. This control group was omitted since evidence indicates something is better than nothing with obese subjects. This study was a test of a new mediated program against a program which included the major elements of previously successful behavior modification programs for obese subjects. Further research is needed to develop a means of effectively using the mediators. This area seems promising as a way to insure long term changes in eating behavior by changing the consequences of eating which exist in the subject's environment.

More attention must be given to group leader differences. Experience should be equated, and the personal characteristics of the leaders should also be evaluated so all leaders will be rewarding the same behaviors with similar incentives.
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Premack, D. Reinforcement Theory. In Nebraska Symposium on Motivation (Editor D. Levine), 1965, University of Nebraska Press. Lincoln, Nebraska.


APPENDIX I

PROGRAMS

TRAINING

A complete outline of the lectures series is given in Appendix II. Both programs included the same lectures.

SKILLS ACQUISITION

Both groups had programs which included the same prescriptive tasks. These tasks were designed to permit the individual to apply the information from lectures to individual situations. Appendix III contains a complete list of the tasks.

INCENTIVE

(W) Weight Oriented

Social reinforcement for weight loss was given during discussion period. Charts of progress were kept and approval was given for weight loss. Access to discussion meetings was contingent on a minimum weight loss or demonstration of knowledge of principles. Subjects were encouraged to evaluate their weight progress.

(M) Home Mediated

A point system was used as a basis for social reinforcement. Points were earned for adhering to tasks, and were issued by "significant other" in the home. Access to the discussion group was obtained by signed evidence of compliance with tasks. Subjects were asked to evaluate their own ability to utilize the tasks.
APPENDIX II

Lecture Notes

I. Past experiences with weight control programs vary.
   A. Diet oriented programs
      1. Focus is on a temporary program for weight loss.
      2. Generally diets are not oriented toward target eating habits.
      3. Diet tells you what to do.
         a. Diet fails to give guidance on how to stay with it.
         b. Most people fail to attain ideal weight.
      4. The entire focus is on food, no attention to environment which may be supporting obesity.
      5. Most diets recommend the same thing for all, despite the fact that we are all different.
   B. Therapy Groups (Supportive Groups)
      1. Views overweight as symptom of personality.
      2. To change weight, must change personality.
      3. Group may actually maintain weight problem if group is open only to those with a problem.
      4. Some groups are unpleasant if the group tries to exert social pressure to bring about weight loss.

II. What are the elements of a successful weight control program?
   A. Correct ideas about controls for eating
      1. Focus on observable controls for the behavior rather than on inner states which cannot be readily observed.
      2. Make use of the laws of behavior which offer principles for increasing or decreasing behaviors.
   B. Need plans which can be followed indefinitely
      1. Weight loss program should closely approximate target pattern of eating.
      2. Program should not be so unpleasant as to be difficult to endure.

III. Behaviorally oriented programs have the elements of successful weight control.
   A. Focus on observable controls of eating, function
      1. Analyze the problem situation.
         a. When is the problem worst? (situation)
         b. Examine events just prior to or just after eating.
c. When is the problem under control?
   1. What events or situations currently act to control eating?
   2. Are these situations under voluntary control of the client?

d. Make a specific description of the problem.
   1. Overseating is too general to work with, need to clearly define.
   2. Define the eating in terms of frequency, duration, or quantity.

2. What maintains the behavior?
   a. Are there inherent rewards for eating?
   b. Are there social rewards for eating?
   c. Does obesity make it possible to avoid unpleasant situations?

3. Analyze the person's motive for change.
   a. What rewards are available for good behavior?
   b. Is it possible to make desired rewards contingent on proper eating?
   c. Who controls desired rewards?

4. Evaluate the person's existing skills for change.
   a. Know the person's background in nutrition.
   b. How has the person dealt with the problem in the past?
      1. Has the person been able to lose to an ideal weight but not maintain it?
      2. Is the person unable to lose any of her excess weight?
     3. What about the existing exercise patterns of the person?
   c. Evaluate the existing exercise patterns of the person?

5. What skills does the person need to develop?
   a. Help the person become familiar with behavioral principles, and application.
   b. Assist the person in developing a definite plan individually tailored to her needs.
   c. Provide any needed background relevant to nutritional planning.

6. Some general observations in successful plans.
   a. Observation of the problem is crucial in determining functional relationships.
   b. If a dead man can do it, you cannot objectively observe it.
   c. Focus on what relationships now exist, not necessarily why they came into being.

7. Tasks can help to focus on the controls.
   a. Keep a daily log showing time, location, quantity of food eaten, and events before and after eating. Record after the fact.
b. Review your past attempts at dieting, see what skills you have, what skills you need to acquire.
c. Evaluate rewards which could assist in the effort to develop good eating habits.

B. An objective index of behavior: baselines
1. Select some relevant aspect of behavior.
   a. Frequency of the behavior.
   b. Duration from beginning to end of the behavior movement cycle.
   c. Instance or situation where the behavior occurs.
2. The behavior selected for observation must be cyclical, repeatable, and involve movement.
3. Accumulate daily data until you have a stable measure of the behavior.
4. The baseline information provides knowledge of where one is beginning.
5. Comparison of baseline data at the beginning with a baseline taken at some later period can provide accurate information about success and progress.
6. Graphing data also helps to discover any cycles or patterns in behavior which might otherwise go unnoticed.

After the client has completed a behavior analysis and baseline data collection period, he has a clear picture of his current eating habits. Before he can plan an appropriate program for change, there must be some goal. Formulation of goals requires some knowledge of desirable eating habits and nutrition.

IV. Nutrition is the basic tool in formulating a balanced diet.
A. Protein
   1. About one-third of our daily calories should be invested in meat or primarily protein food.
   2. Best choices are low in fat.
   3. This category includes meat, cottage cheese, eggs, and hard cheese.
B. Milk
   1. Approximately one-eighth of the daily calories can be used for milk and milk products.
   2. Low fat milk, yogurt, buttermilk, and cottage cheese are some good choices in this category.
C. Cereal
   1. One-fifth of the daily calories should go for cereal, an important source of vitamins.
   2. This includes bread, crackers, cereal, corn, soups with barley or other grains.
D. Vegetables
   1. One-tenth of the calories can be used here.
2. Vegetables also provide needed bulk and roughage in the diet.

3. Correct preparation of vegetables is very important both for calorie content and nutrition.

E. Fruit
1. Use one-tenth of the daily calories for fruit.
2. This can help to satisfy a desire for sweets.
3. Best choices are raw or low sugar processed.

F. Miscellaneous
1. One-eighth of the calories remain for this segment of the diet.
2. Several subclasses are grouped here.
   a. Fat sources such as mayonnaise, salad dressing, and butter.
   b. Sweets such as hard candy and sherbet.

V. How many calories do we really need?
A. Basic needs
1. National Research Council gives the following daily allowance for a moderately active woman:

<table>
<thead>
<tr>
<th>Age</th>
<th>Weight</th>
<th>Daily Allowance</th>
</tr>
</thead>
<tbody>
<tr>
<td>18-22</td>
<td>128</td>
<td>2000</td>
</tr>
<tr>
<td>22-35</td>
<td>128</td>
<td>2000</td>
</tr>
<tr>
<td>35-55</td>
<td>128</td>
<td>1850</td>
</tr>
<tr>
<td>55-75+</td>
<td>128</td>
<td>1700</td>
</tr>
</tbody>
</table>

This is for a woman who is not sedentary, and does have some activities in her daily life. Adjust these allowances according to your activities. Add 100 calories for every 25 pounds over this weight.

2. This is the daily allowance to maintain your weight, not to lose weight.

B. Exercise and its effect
1. Light exercise requires four calories per minute over the basic requirement.
   a. This should be the class of exercise first undertaken by anyone beginning an exercise program.
   b. Included in this class are golf, table tennis, and volleyball, as well as a walk.

2. Moderate exercise uses seven calories per minute over resting.
   a. These exercises can be used initially if one is careful to exercise for short periods.
   b. Included here are bicycling at 9 mph, heavy gardening, and moderate swimming.

3. Heavy exercise uses up ten calories per minute over resting.
   a. This class is only for people who are used to exercising regularly.
b. Included are calisthenics, cycling 12 mph and skiing.

4. A plan which includes daily exercise will allow greater latitude with calories.

VI. When food is eaten is also important.
A. Larger meals should come before larger periods of activity.
B. Smaller more frequent meals have been shown to be of greater value in a weight control program.
C. Until you learn to know the value of various foods you should devise some system to keep daily records so you do not exceed your chosen limit. A simple checklist for the various categories of foods is simple and may serve the purpose.

VII. A specific plan is very helpful.
A. Develop a nutritionally sound plan which includes some exercise. Do not go to less than 1200 calories unless you consult a doctor.
B. Use the plan as a basis for making out a shopping list. Use the shopping list whenever you go to the store, and buy only items on the list. This will help you to have only appropriate foods available.

VIII. Stimulus control refers to the relationships between events and eating.
A. In the behavior analysis you may have found that certain events frequently signalled eating.
   1. The signal event could be many things.
      a. A specific location such as standing at kitchen counter.
      b. A certain activity such as reading or TV watching.
      c. Being with a certain person, such as a sister.
      d. A time of the day when food is expected.
      e. An emotional state, such as anger.
   2. Whatever the signal event might be, it occurred prior to eating.
B. Establishment of relationships
   1. When two things occur together a number of times, one serves as a signal for the other.
      a. First one may turn on the TV during meal periods. Then when one turns on TV, one seeks something to eat because TV is associated with eating.
      b. If you read while you are eating a meal, you will come to associate reading with eating, and seek something to eat when you are reading.
   2. An event or object will come to serve as a signal for behavior if that behavior is
rewarded in the presence of the object, or following the event.

a. If feeling anxiety is followed by eating and the anxiety is thus reduced, then feeling anxiety will lead to the behavior of eating, which is rewarded by a reduction of the anxiety. Since the reduction of anxiety is rewarding to most people, anxiety comes to serve as a signal that eating will be rewarded.

b. The husband is home (event). The wife overeats (behavior). The husband pays attention to the wife to scold or to sympathize about the eating problem (reward). The presence of the husband then signals the availability of the reward for the behavior.

C. Existing relationships
1. Eating will occur at a high frequency if there are many of these relationships.
2. Eating can also occur at a high frequency if there are only a few of these relationships but the signal events occur often.
3. An examination for the relationships in the behavior logs will confirm the existence of these relationships.
   a. Time patterns are often established.
   b. Location patterns are common for women who prepare meals.
   c. Events before and after offer clues to relationships.

D. Breaking up relationships between eating and the signal events.
1. Do not permit the two events to occur together at any time.
   a. May not eat if the TV is on.
   b. May not eat and read.
   c. May not eat while standing, if standing in kitchen has been a signal.
2. Do not permit the signal event to occur.
   a. If you eat while home alone, cannot be home alone.
   b. If you eat when there is a chocolate cake on the kitchen counter, do not make a chocolate cake.

E. Decreasing the frequency of eating brought about by environmental cues.
1. Decrease the frequency of the cues.
   a. Go the the kitchen less often.
   b. Watch less TV.
2. Decrease the overall number of cues for eating
   a. Break up the relationship between TV and eating by never eating when TV is on.
b. This is most readily done by selecting only one situation for eating only.

F. Increasing the probability of appropriate eating

1. Increase the frequency of cues that are associated with not eating or controlled eating.
   a. Place a picture of husband in kitchen if you never eat when your husband is present, or if you eat in a controlled way with him present.
   b. If you do not like to eat when you have just brushed your teeth, brush your teeth more often.
   c. In general, seek out those cues which you now associate with control of eating and make them more frequent events in your environment.

2. Increasing the number of cues for appropriate eating
   a. Use distinctive setting when eating in a controlled way.
   b. In general, arrange the situation first so you will eat in a controlled way, then add your cues. Once they have become associated with controlled eating, then you can use them to assist you in control of eating.

G. Specific recommendations

1. Limit eating to one general situation, such as sitting at the dining table.
   a. This eliminates all other cues for eating by breaking bonds between cue and food.
   b. You should not try to limit the quantity eaten in the selected location. By taking away all the pleasure producing activities which have accompanied food in the past you will be making it less attractive, so you will eventually find less desire to eat in the selected place since there is little reward in the food alone.
   c. Try to reserve the situation or location selected for eating. Avoid using it for any other activities.

2. Do not engage in any other activity while eating.

3. Develop cues which facilitate appropriate eating, such as distinctive place setting, or writing down calories consumed before eating the food.

IX. Reinforcement is a consideration to the effects of the consequences of behavior.
A. If a desired event is made contingent on a given behavior, that behavior will become more probable.
   1. The reward should immediately follow the behavior to be rewarded.
   2. Generally, the larger reward has greater effect on the probability of behavior.
   3. Eating has become a high probability behavior because it has been reinforced in the past.
   4. Now we wish to strengthen appropriate eating, so rewards should follow appropriate eating.

B. Rewards may be negative or positive.
   1. Negative rewards are defined as avoiding an aversive event by performing the specified behavior. For example, by performing the behavior of dieting, you can avoid the negative event of being fatter.
   2. Positive rewards are defined as obtaining a desirable event by performing the behavior. For example, by performing the behavior of losing weight you obtain the reward of recognition for success from your friends and family.

C. All new behavior patterns are shaped.
   1. At first a small part of the desired behavior is rewarded.
   2. Once the small pieces of the behavior have been learned the performance requirements are increased until the reward is given for full performance of the behavior.

D. A whole series of responses can be supported by one reward. (Chaining)
   1. The chain, or series of responses, must not exceed the value of the reward, or the chain of behavior will break down.
   2. The limit of the chain which can be supported by a given reward is determined by individual values, which can be functionally determined by how much work the person will do for the reward.
      a. If you desire to maintain a chain of behavior, do not exceed the value of the reward with the length of the behavior chain.
      b. If you desire to discard a behavioral chain, make additions to the chain until the behaviors required exceed the value of the reward.
      c. In regard to eating, make the chain of events which leads to the pleasure of food in mouth or stomach too great to be supported by the pleasure of food alone.
      d. The food eating chain may be lengthened in two ways.
1. Increase the number of responses necessary to begin eating. For example, require that all foods to be eaten must be prepared in some way, that they be served on a dish, or that they be served one serving at a time. A pause in the meal is also useful.

2. Increase the complexity of each response element of the chain. For example, count "one, two," before each part of the movement cycle of eating. Count, pick up fork, count, put food on fork, count, bring food to mouth, count, put food in mouth, count, chew.

3. Increase the chain by a pause in each movement cycle. Take a bite, put down fork, pause, pick up fork, take a bite, put down fork, pause, etc.

E. Schedules of rewards
1. Some rewards are given on a continuous schedule.
   a. A reward is given following each occurrence of the behavior.
   b. If the reward is not given (extinction) the behavior rapidly ceases to occur.

2. Most rewards in the natural environment are delivered on intermittent schedules.
   a. The reward is given after a specified number of responses or lapse of time.
   b. If the ratio of responses to rewards becomes too great, there will be a breakdown of performance.
   c. When rewards are not given, the behavior will continue at a high level for a time and then gradually deteriorates.
   d. At the beginning, the behavior is generally supported by a continuous schedule and then gradually shifted to an intermittent schedule.
   e. Behavior rate of response is generally higher on an intermittent schedule.

F. Extinction
1. Extinction is defined as the removal of reward for a given response.
2. Extinction eventually results in the response ceasing to occur.
3. It is characterized by a slight rise in rate of response immediately after extinction.
begins. Then the response rate falls to a very low frequency.

4. Extinguishing undesirable behavior should be accompanied by reinforcement for desired behavior.

5. An example of the application of this would be to have others ignore inappropriate eating and praise successful control of eating.

G. Punishment
1. The frequency of a response may be decreased by following it with aversive event or negative consequence.

2. Punishment may produce side effects of frustration, aggression, or anger.

3. Punishment should be used coupled with rewards for appropriate behavior, and is less desirable than positive reward as a means of changing the frequency of behavior.

H. Noncontingent Reward or Punishment
1. Noncontingent rewards will reinforce whatever it immediately follows, desirable or undesirable.

2. This may lead to superstitious behavior or mistaken ideas about proper behavior.

3. Weight loss often comes in this category, if you are weighing daily. Gains may inadvertently follow a day of control, or losses may reward a day of poor control.

4. Permanent changes are best supported by the use of rewards which can be made contingent on appropriate behavior.

X. Incompatible behaviors may be used to block eating.

A. Problem situations
1. When in a problem situation where eating is highly probable, eating can be avoided by doing something which is incompatible with eating.
   a. Respond to anxiety by the use of relaxation exercises.
   b. Chew gum while frosting a cake.
   c. Respond to being home alone by calling a friend instead of eating.

2. By reviewing your behavior analysis you can determine the situations where you need an incompatible behavior.

B. A definite plan
1. Make a list of the day's activities.
2. Decide where opportunities for overeating exist.
3. Find an activity or behavior which will make eating impossible during the problem times.
4. Make out a schedule and stick to it.
XI. The probability of eating is often controlled by the elements of the environment.

A. Environments with many cues for eating
   1. There is a high visibility of foods ready to be eaten.
   2. Inappropriate foods are in abundant supply.
   3. There is an opportunity to eat at any time because something is always ready and available.
   4. Overeating is a high probability behavior.

B. Environments for control
   1. Only appropriate foods are available.
      a. Use the shopping list based on a good diet plan.
      b. Store snack foods for other family members in an "Off Limits" shelf or box, locked if necessary.
      c. Allow sufficient budget allowance to permit purchase of appropriate foods.
      d. Store all foods out of sight.
      e. All foods should require some form of preparation.
   2. A minimum of cues for eating are present.
      a. Avoid magazines which are known for their pictorial display of foods.
      b. Have only one location which is used for eating.
      c. Clear away all edible leftovers at once.
      d. Try to leave the room when others are eating foods you cannot eat.
      e. If you tend to eat more when alone, try to avoid being alone when eating.
   3. Develop and display cues for appropriate eating.
      a. Display some reminder of a reward which will be available when eating is under control. For example, if theater tickets are to be a reward for a week of control, these might be taped to the refrigerator or some other prominent location.
      b. Cues for appropriate eating can be developed by using distinctive items when eating in a controlled way. Then they may be used to facilitate control.
      c. Display evidence of past rewards earned for control.
   4. Display objective evidence of progress.
      a. Use visible charts to display progress toward short term goals. Use a cumulative record, so all is not lost if a slip does occur.
      b. Indicate receipt of rewards on your charts. Rewards should be immediate.
c. A display of weekly weight changes can also provide encouragement.

XII. Cognitive responses can be viewed as cognitive voluntary responses.

A. Signals for behavior

1. Cognitive responses can act as signals for behavior just as external cues signal behavior.
   a. May be allowing irrational thoughts about dieting to bring about defeat.
   b. You could believe you will always be fat and there is nothing you can do about it.
   c. You may believe there is some one right solution, and you only need to find it to solve the problem.

2. Development of these voluntary cognitive responses makes eating a high probability behavior, and encourages delay in dealing with the problem.

B. Cognitive responses are behaviors subject to behavior laws

1. Reinforced thoughts will become more probable.

2. Thoughts can be reinforced according to the Premack principle.
   a. The Premack principle states that any low probability behavior can be made more probable by making the performance of a high probability behavior contingent on the performance of the low probability behavior.
   b. Must select some definite thoughts to be identified as the low probability behavior.

3. Coverant control refers to a plan developed to reinforce cognitive responses via the Premack principle.
   a. Select several negative statements about being overweight, not about eating.
      1. These should be so aversive as to be incompatible with eating.
      2. They should not be about eating since this would stimulate more thinking about eating.
      3. There should be several statements to avoid habituation to any one negative statement.
   b. Select one or more positive statements about being at a normal weight.
      1. Make these incentive or reward oriented.
      2. These should also not be directly about eating.
3. The use of several of these is not crucial, but may be useful.

c. Select a single class of high probability behavior.
1. The behavior should not be connected with eating.
2. The behavior should occur several times over the day.
3. The behavior should be voluntary so the intent to perform the behavior can be noted.

d. Follow the routine several times daily.
1. As soon as you become aware of the intent to perform the high probability behavior, say the negative statement. Use a different negative statement each time in a day if possible.
2. After you have said the negative statement, say the positive remark.
3. Then perform the high probability behavior.

e. If you are unduly disturbed by the use of the negative statement, drop it and use only the positive statement. This is recommended only if you are genuinely upset by the negative statement.

f. It is helpful if you are able to select a high probability behavior which takes you out of the situation where eating is a possibility.

XIII. Covert sensitization is another means of cognitive control.

A. Some means is required to handle strong appeal of certain inappropriate foods.
1. Because of the high reward value of some foods their presence alone is enough to cause a loss of control.
2. Since it is not always possible to insure the absence of these foods, other means must be used to develop control.

B. The food can be paired with an aversive event to reduce the probability of approach to that food.
1. If the objectionable food were paired with an actual aversive event, it would be possible to note the presence or absence of the event, and choose only to avoid the food if the aversive event were certain to be paired with the eating of the food.
2. An imaginal aversive conditioning process avoids this problem, and is not painful. It can also be practiced anywhere by the client.
C. Procedure

1. Relaxation exercises should be provided and practiced until you are able to completely relax.
2. Visualize the pleasure object (food to be paired with aversive event) and situation where it presents a problem. Do not proceed until the scene can be clearly visualized.
3. Imagine taking up the food and almost getting it to the mouth.
4. Just then you become aware of a strong sensation of nausea, and you know you will vomit. Imagine vomiting all over the food.
5. Begin again by relaxing.
6. Visualize the food and the situation in detail.
7. Just as you reach for the food, you become aware of a strong sensation of nausea. You reject the food, saying, "I don't need that food," or some other appropriate sentence.
8. You now feel very calm and relaxed.
9. Practice the entire sequence five times daily until you are sensitized to the food, and then repeat only as needed to maintain the sensitization.

D. General instructions

1. Be sure to visualize vomiting just as you are about to take a bite, or as you take the first bite.
2. Make the situation fit your problem. If you have a problem with the food when you are home alone, visualize yourself home alone, in the appropriate room, with the accompanying feelings.
3. This procedure need only be used by those who have strong appetite or attraction for some inappropriate food.

XIV. The goal of this program is to give you sufficient knowledge of available means of control so you exert control over your eating by making use of those elements of the environment which control eating.

A. Clear picture of problem

1. It is most effective to look at behavior rather than at personality.
   a. What is wrong with the current behavior?
      1. Is it occurring too frequently?
      2. Is it occurring in inappropriate situations?
      3. Is it of too long a duration?
      4. Does the behavior occur too rarely?
   b. What maintains the behavior?
      1. Identify existing rewards.
      2. Determine who controls those rewards
and how they are being used.

3. Assess potential rewards for new behavior.
   c. What skills do you possess for change?
      1. Review your past efforts, and try to find the most important elements of successful plans.
      2. Make use of the knowledge you now possess regarding behavior and how to modify it.

2. As a beginning to future alterations in behavior you will need to do a behavior analysis to obtain a current picture.

B. Steps to a plan

1. Be sure you know what you need nutritionally. This should be a close approximation to what you consider a sound permanent eating plan.

2. Decide if stimulus control is a problem with your eating behavior.
   a. Are there too many things which stimulate eating?
   b. Have you made use of appropriate eating stimuli?

3. Contingency management should be considered.
   a. Behavior can be made more probable by following it with a reward, or less probable by removing any rewards which support it.
   b. Remember to shape in any new behavior.
   c. If the behavior is a chain of responses consider the effect of lengthening the chain beyond the value of the reward.
   d. If rewards on schedules are involved, recall the results of changing a schedule.
   e. Could incompatible behaviors assist in getting through problem times?

4. Environmental management is also important.
   a. Experimental manipulation of elements of the environment which seem to affect eating can be useful in discovering control.
   b. Check to see if your environment contains many visual stimuli for eating, such as magazines with food pictures.
   c. Do you have objective indications of progress in the environment?

C. Complete some evaluation of whether cognitive responses require some manipulation.

1. Work at developing rational thought support for good eating.
   a. Coverant control can help here.
   b. Emphasize the positive statements.
2. Use mental responses to limit appeal to certain foods. Stop to consider if you really want the food to such a high degree, then consider the use of covert sensitization to limit the appeal of the food as required.

3. Use your knowledge to assist you in choosing responses and contingencies which support appropriate behavior.
APPENDIX III

Prescriptive Tasks

Meeting

1

Subjects were given log sheets with columns for time, location, food consumed, and events before and after eating. They were asked to record in detail their daily eating.

2

Subjects were asked to use the food log sheets again, and to take the data provided and use it to aid in making a baseline graph of a relevant aspect of eating habits.

3

Subjects were instructed to use a shopping list based on a sound nutritional plan. They were also advised to develop the habits of clearing away all leftovers at the end of the meal.

4

Subjects began to eat in one location or situation, which they specified, and which was appropriate. They also began to make eating a singular experience by doing nothing else while eating.

5

Some form of chaining was instituted. It was also suggested that incompatible behaviors be used as needed.

6

Subjects were encouraged to structure their home environment to make good eating habits more likely. They were advised to use charts in the home.

7

Subjects developed a plan to use coverants.

8

Cognitive sensitization was introduced.

9

Subjects were instructed in the selection and use of the various principles for self management.
APPENDIX IV

Questionnaire, Scale, Evaluation

DIET QUESTIONNAIRE

The following questions are about your eating habits. Please be frank since the replies will be useful in helping you. There are no right or wrong answers. Be sure to answer all questions.

1. How long have you had a weight problem?
   a. less than 1 year
   b. 1-2 years
   c. 3 years
   d. 5 years
   e. more than 5 years

2. What is the extent of your weight problem?
   a. less than 15 lbs. overweight
   b. 15-20 pounds overweight
   c. 20-30 pounds overweight
   d. 30-40 pounds overweight
   e. more than 40 lbs. overweight

3. Do you eat three regularly scheduled meals a day?
   a. always
   b. almost always
   c. sometimes
   d. rarely
   e. never

4. Do you snack between meals?
   a. always
   b. almost always
   c. sometimes
   d. rarely
   e. never

5. Do you overeat or snack more alone?
   a. always
   b. almost always
   c. sometimes
   d. rarely
   e. never
6. Do you keep a lot of prepared snacks around the house?
   a. always
   b. almost always
   c. sometimes
   d. rarely
   e. never

7. Are foods such as candy or nuts openly visible around the house?
   a. always
   b. almost always
   c. sometimes
   d. rarely
   e. never

8. How long does it usually take you to eat the evening meal (actual time eating)?
   a. less than 5 minutes
   b. 5-10 minutes
   c. 10-15 minutes
   d. 15-20 minutes
   e. 20-25 minutes
   f. 30 minutes or more

9. How fast do you think you eat?
   a. very fast
   b. fast
   c. average
   d. slow

10. Do you shop from a list and buy only items on your list?
    a. never use a list
    b. use list, never follow it
    c. use list, occasionally follow it
    d. use list, usually follow it
    e. use list, always follow it

11. Do you eat while reading, watching TV, etc?
    a. always
    b. usually
    c. occasionally
    d. never

12. How do you utilize your time on an average day? (Fill in the appropriate percentage of time per activity.)
    (1 hour = 3%)
    ___ meal preparation
    ___ supervising children
    ___ housecleaning
    ___ driving
    ___ job (work time)
    ___ other (specify)
    ___ recreation (specify)
    ___ other (specify)
13. Do you know of any situation where you consistently do not eat?

14. Do you know of any situation where you consistently always overeat?

Marriage Scale

The following questions are about how you feel about your marriage now. Frank and honest replies are of the highest importance. There are no "right" or "wrong" answers. Be sure to answer all questions. Do not leave any blanks to signify "no" reply.

1. When disagreements arise they generally result in
   ____ a. husband giving in
   ____ b. wife giving in
   ____ c. neither giving in
   ____ d. agreement by mutual give-and-take

2. Do you and your mate agree on right, good, and proper behavior?
   ____ a. always agree
   ____ b. almost always agree
   ____ c. occasionally disagree
   ____ d. frequently disagree
   ____ e. almost always disagree
   ____ f. always disagree

3. Do husband and wife engage in outside activities?
   ____ a. all of them together
   ____ b. some of them together
   ____ c. few of them together
   ____ d. none of them together

4. In leisure time, which do you and your mate prefer?
   ____ a. both to stay at home
   ____ b. both to be on the go
   ____ c. one to be on the go, one to stay at home
5. Do you and your mate agree on aims, goals, and things believed important in life?
   a. always agree
   b. almost always agree
   c. occasionally disagree
   d. frequently disagree
   e. almost always disagree
   f. always disagree

6. Do you and your mate agree on friends?
   a. always agree
   b. almost always agree
   c. occasionally disagree
   d. frequently disagree
   e. almost always disagree
   f. always disagree

7. Do you and your mate agree on ways to deal with in-laws?
   a. always agree
   b. almost always agree
   c. occasionally disagree
   d. frequently disagree
   e. almost always disagree
   f. always disagree

8. Do you and your mate agree on handling of family finances?
   a. always agree
   b. almost always agree
   c. occasionally disagree
   d. frequently disagree
   e. almost always disagree
   f. always disagree

9. Do you and your mate agree on the amount of time spent together?
   a. always agree
   b. almost always agree
   c. occasionally disagree
   d. frequently disagree
   e. almost always disagree
   f. always disagree

10. How often do you kiss your mate?
    a. every day
    b. now and then
    c. almost never

11. How frequently do you and your mate get on each other's nerves around the house?
    a. never
    b. almost never
    c. occasionally
    d. frequently
    e. almost always
    f. always
12. Do you and your mate agree on demonstrations of affection?
   a. always agree
   b. almost always agree
   c. occasionally disagree
   d. frequently disagree
   e. almost always disagree
   f. always disagree

13. Check any of the following items which you think have caused serious difficulties in your marriage.
   a. difficulties over money
   b. lack of mutual friends
   c. constant bickering
   d. interference of in-laws
   e. lack of mutual affection (no longer in love)
   f. unsatisfying sex relations
   g. selfishness and lack of cooperation
   h. adultery
   i. mate paid attention to another person
   j. drunkenness or alcoholism
   k. overweight
   l. other reasons
   m. nothing

14. Have you ever wished you had not married?
   a. frequently
   b. occasionally
   c. rarely
   d. never

15. Do you and your mate generally talk things over together?
   a. never
   b. now and then
   c. almost always
   d. always

16. How happy would you rate your marriage?
   a. very happy
   b. happy
   c. average
   d. unhappy
   e. very unhappy

17. If you had your life to live again would you:
   a. marry the same person
   b. marry a different person
   c. marry no one
18. What is the total number of times you left your mate or your mate left you because of conflict?
   a. no times
   b. one time
   c. two times or more

19. What are your feelings on sex relations with your mate?
   a. very enjoyable
   b. enjoyable
   c. tolerable
   d. a little enjoyable
   e. not at all enjoyable

20. Do you and your mate agree on sex relations?
   a. always agree
   b. almost always agree
   c. occasionally disagree
   d. frequently disagree
   e. almost always disagree
   f. always disagree

21. During sexual intercourse are your physical reactions satisfactory?
   a. very
   b. somewhat
   c. a little
   d. not at all

22. Is sexual intercourse between you and your mate an expression of love and affection?
   a. always
   b. almost always
   c. sometimes
   d. almost never
   e. never
Program Evaluation

The following questions are concerned with your reactions to the workshop. Please be as honest as possible, and try to answer all the questions.

1. What do you think was most helpful to you in this program? (PLEASE rank these, using 1 for most helpful)
   a. lectures
   b. discussion period
   c. regular weigh in
   d. other (specify)

2. Please rank the characteristics of your group leader you feel were most helpful.
   a. past experience with the same problem
   b. warmth and sympathy
   c. interest
   d. communication skills
   e. other (specify)

3. How would you rate the lectures?
   a. clear and easy to understand
   b. mostly clear, some areas not fully explained
   c. mostly unclear, a few areas well explained
   d. too technical to be well understood
   e. other (specify)

4. How would you rate the homework?
   a. effective and clear
   b. some tasks useful, some irrelevant
   c. too vague, boring
   d. impersonal and too general
   e. homework should have been spread out more
   f. homework was too slowly paced
   g. other (specify)

5. How would you characterize the discussion group?
   a. useful discussion of relevant issues
   b. mostly useful discussion, but some people monopolized the conversation
   c. a lot of discussion but not very useful
   d. very little discussion
   e. other (specify)

6. What activities do you now engage in to self manage your eating?
7. What additions to the program do you feel would have made the program more successful for you? (Check any which seem appropriate.)
   a. some individual counseling in addition to group discussion
   b. more meetings
   c. smaller discussion groups
   d. use of a prescribed diet
   e. other (specify)

8. What things were included in the program which you feel would have been omitted to make the program more success oriented for you?

9. Miscellaneous comments
APPENDIX V
Cumulative Group Weight Changes

<table>
<thead>
<tr>
<th>Group</th>
<th>Cumulative weight changes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1(WK)</td>
<td>-0.75 -2.00 -2.50 -1.30 0.96 -1.69 0.30</td>
</tr>
<tr>
<td>2(WC)</td>
<td>1.46 -1.71 -3.71 -4.82 -8.19 -11.57 -11.34</td>
</tr>
<tr>
<td>3(MK)</td>
<td>-0.71 -0.94 -2.25 -2.81 -2.45 -4.04 -2.79</td>
</tr>
<tr>
<td>4(MC)</td>
<td>0.25 -2.25 -4.00 -3.94 -3.74 -2.13 -2.01</td>
</tr>
</tbody>
</table>

NOTE: The last change score represents the average change from the beginning weight for each group.

Cumulative Individual Weight Changes

<table>
<thead>
<tr>
<th>Group 1 (WK)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) 0.00 -4.50 -7.25 -9.00 -11.50 -10.50 -12.75</td>
</tr>
<tr>
<td>(2) -1.00 2.75 3.50 6.50 6.75 4.75 11.00</td>
</tr>
<tr>
<td>(3) -1.50 -1.25 1.50 2.75 10.75 8.09 10.09</td>
</tr>
<tr>
<td>(4) -0.25 -1.25 -1.00 1.00 3.00 3.34 2.34</td>
</tr>
<tr>
<td>(5) -2.00 -5.00 -7.25 -5.00 -3.70 -10.70 -8.70</td>
</tr>
<tr>
<td>(6) 0.25 -2.75 -4.50 -3.25 0.50 -2.16 -0.16</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Group 2 (WC)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) 2.00 -1.00 -0.50 -3.50 -4.50 -6.50 -8.75</td>
</tr>
<tr>
<td>(2) 3.50 -2.25 -7.00 -9.75 -10.25 -13.56 -13.40</td>
</tr>
<tr>
<td>(3) 7.00 3.00 0.25 0.86 -10.36 -11.36 -11.20</td>
</tr>
<tr>
<td>(4) -3.00 -5.50 -8.75 -11.25 -13.00 -16.31 -16.15</td>
</tr>
<tr>
<td>(5) -1.50 -1.67 -3.42 -1.92 -5.42 -13.71 -11.67</td>
</tr>
<tr>
<td>(6) -1.50 -3.25 -5.25 -7.00 -8.75 -11.00 -12.25</td>
</tr>
<tr>
<td>(7) 0.00 -2.25 -4.25 -4.75 -8.25 -11.56 -11.40</td>
</tr>
<tr>
<td>(8) 2.25 -1.25 -0.75 0.50 -3.00 -6.31 -6.15</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Group 3 (MK)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) 0.00 -2.00 -2.50 -3.50 -4.50 -6.08 -4.83</td>
</tr>
<tr>
<td>(2) -1.00 0.25 -2.50 -5.25 -7.00 -5.25 -2.25</td>
</tr>
<tr>
<td>(3) -1.25 -1.50 -5.00 -9.00 -7.50 -9.08 -7.83</td>
</tr>
<tr>
<td>(4) -2.25 -6.25 -6.00 -6.75 -4.25 -7.00 -5.75</td>
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<tr>
<td>(5) -0.75 -3.00 -2.25 -4.00 -4.50 -6.98 -4.83</td>
</tr>
<tr>
<td>(6) 0.00 2.25 1.75 -1.25 4.75 3.17 4.42</td>
</tr>
<tr>
<td>(7) 0.50 2.50 1.25 1.75 1.50 -2.25 -2.75</td>
</tr>
<tr>
<td>(8) -1.00 0.25 -2.75 1.50 1.85 0.27 1.52</td>
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<tr>
<td>Group 4 (MC)</td>
</tr>
<tr>
<td>-------------</td>
</tr>
<tr>
<td>(1)</td>
</tr>
<tr>
<td>(2)</td>
</tr>
<tr>
<td>(3)</td>
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<tr>
<td>(4)</td>
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<tr>
<td>(5)</td>
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<td>(6)</td>
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### APPENDIX VI

#### Homework Performance

<table>
<thead>
<tr>
<th></th>
<th>Subjects Who Completed 85%</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>(1) (1-K) (Ill-C) (111-K) (m-e)</td>
</tr>
<tr>
<td><strong>Group 1 (W-K)</strong></td>
<td>6 (4) 4 (3) 3 (1) 1 (1) 2 (3) 1</td>
</tr>
<tr>
<td><strong>Group 2 (W-C)</strong></td>
<td>8 (2) 8 (8) 5 (4) 5 (5) 6 (5) 6 (4) 1</td>
</tr>
<tr>
<td><strong>Group 3 (M-K)</strong></td>
<td>8 (5) 8 (4) 5 (6) 3 (5) 4 (5) 3 (2) 4</td>
</tr>
<tr>
<td><strong>Group 4 (M-C)</strong></td>
<td>6 (2) 4 (3) 4 (5) 2 (3) 3 (3) 2 (1) 3</td>
</tr>
</tbody>
</table>

Parentheses show the number of subjects who lost weight at each weight check.

#### Total Successful Assignments

<table>
<thead>
<tr>
<th></th>
<th>K</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>W</td>
<td>18</td>
<td>29*</td>
</tr>
<tr>
<td>M</td>
<td>26*</td>
<td>24</td>
</tr>
</tbody>
</table>

* Multiplied by .75 to equate for the different number of subjects.
APPENDIX VII

Graph of Results

Cumulative Average Weight Loss
APPENDIX VIII

Standard Height and Weight Chart*

<table>
<thead>
<tr>
<th>Height</th>
<th>Small</th>
<th>Medium</th>
<th>Large</th>
</tr>
</thead>
<tbody>
<tr>
<td>5'</td>
<td>100</td>
<td>109</td>
<td>118</td>
</tr>
<tr>
<td>5'1&quot;</td>
<td>104</td>
<td>112</td>
<td>121</td>
</tr>
<tr>
<td>5'2&quot;</td>
<td>107</td>
<td>115</td>
<td>125</td>
</tr>
<tr>
<td>5'3&quot;</td>
<td>110</td>
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<td>128</td>
</tr>
<tr>
<td>5'4&quot;</td>
<td>113</td>
<td>122</td>
<td>132</td>
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<tr>
<td>5'5&quot;</td>
<td>116</td>
<td>125</td>
<td>135</td>
</tr>
<tr>
<td>5'6&quot;</td>
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<td>139</td>
</tr>
<tr>
<td>5'7&quot;</td>
<td>123</td>
<td>132</td>
<td>142</td>
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<tr>
<td>5'8&quot;</td>
<td>126</td>
<td>136</td>
<td>146</td>
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<td>5'9&quot;</td>
<td>130</td>
<td>140</td>
<td>151</td>
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<td>5'10&quot;</td>
<td>133</td>
<td>144</td>
<td>156</td>
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<tr>
<td>5'11&quot;</td>
<td>137</td>
<td>148</td>
<td>161</td>
</tr>
<tr>
<td>6'</td>
<td>141</td>
<td>152</td>
<td>166</td>
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</table>