The Effects of Two Contracting Methods on Altering the Eating and Exercise Behavior of Seven Obese Adolescents: An In-Home Weight Treatment Study

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THE EFFECTS OF TWO CONTRACTING METHODS ON ALTERING THE EATING AND EXERCISE BEHAVIOR OF SEVEN OBESE ADOLESCENTS: AN IN-HOME WEIGHT TREATMENT STUDY

by

Donald Edward Montgomery

A Thesis Submitted to the Faculty of The Graduate College in partial fulfillment of the requirements for the Degree of Master of Arts Department of Psychology

Western Michigan University
Kalamazoo, Michigan
August 1986
THE EFFECTS OF TWO CONTRACTING METHODS ON ALTERING THE EATING AND EXERCISE BEHAVIOR OF SEVEN OBESE ADOLESCENTS: AN IN-HOME WEIGHT TREATMENT STUDY

Donald Edward Montgomery, M.A.
Western Michigan University, 1986

Seven obese males and females, ages ranging 12-15 years, served as participants in an eight-week in-home treatment program. The purpose of the study was to compare the effects of two contracting methods to influence eating and exercise patterns. Individualized exercise and nutrition programs were designed for each participant based on their health and behavior patterns at the time of the study. Four subjects were assigned to Group A (Self-Management) where contracting was established with each adolescent and based their compliance with the program. In Group B (Parental Modeling) contracting was established with the mothers of three subjects who participated along with their child and functioned as role models. Results of the study indicated success in both groups in altering both eating and exercise patterns; however, incidence of fasting and possible malnutrition were evident in both groups during baseline conditions. Contracting proved necessary to ensure that proper daily nutrition was acquired. Without contracting and monitoring, potential health hazards were evident despite educating attempts with both adolescents and parents.
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Donald Edward Montgomery

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CHAPTER 1

INTRODUCTION

Among the many health related dangers attributed to obesity are an increased susceptibility to gouty arthritis, diabetes mellitus, and gall-bladder disease. An overweight person's life expectancy is reduced as obesity aggravates cardiovascular disease and osteoarthritis; increases susceptibility to hypertension, atherosclerosis, and hernia; and adds to hazards of surgery (Burton, 1965). Mortality rates are higher among obese than those of normal weight, and overweight persons who reduce have a considerably lower mortality rate than those who remain overweight (Goodhart & Wohl, 1964). As obesity is directly correlated with such medical conditions, treatment particularly at an early age is essential before permanent damage occurs.

There exist psychological dangers connected with the obese person. These individuals are often ridiculed by their peers and by our society as a whole as we become seemingly more health conscious and tend to view the slimmer person more favorably. Within most professional settings, obese individuals are discriminated against in favor of the slender and normal weight person. As a
result, depression is likely to occur producing low job performance, loss of income, lack of social reinforcement, and possibly suicide (Halpern, 1979).

Approximately one-third of our adult population is defined as overweight. A person is said to be obese when he or she exceeds 19% of his or her ideal weight according to the height and frame chart developed by the Society of Actuaries and life insurance carriers. Obesity is a health hazard to persons of all ages, but more so for males, which is the major contributing factor to premature death among that sex gender. In persons under age 40, obesity correlates more than any other factor with the incidence of fatal myocardial infarction in males. Of all people manifesting diabetes mellitus after the age of 40, 40% are obese at the time of discovery of diabetes. Successful weight reduction reverses insulin resistance.

Of the many methods used to treat obesity, a few of the more common are gastric stapling, implantation of gastric bubbles, hypnotism, and medication.

For years, diet has been used as treatment for the promotion of health maintenance and disease prevention. In addition, when properly followed diet has been used for the treatment and control of such medical conditions as high blood pressure and cardiovascular diseases. Diet also serves as treatment for malabsorption disorders,
gastrointestinal diabetes mellitus, gout, and renal disease (Burton, 1965; Goodhart & Wohl, 1964)

When such conditions arise, proper diet becomes essential in their treatment. Physicians estimate that of all deaths attributed to diabetes, heart conditions or high blood pressure, nearly 85% were treatable by proper diet maintenance and could have been saved by simply following the diet program prescribed by their physician (Craig, 1979). For many medical afflictions, the use of medication alone is not sufficient for treatment. Proper dietary regulation is essential for the diabetic. Insulin treatment unaccompanied by a coordinated dietary regimen is undesirable because of the constant possibility of insulin-induced hypoglycemic shock. Proper dietary treatment in conjunction with other treatments is necessary in the treatment of disorders such as ulcers or diabetes (Burton, 1965).

Obesity, like many other medical related conditions, depends on the use of consistent and manageable diet plans as well as exercise. Dieting alone is not suitable for proper or healthy weight loss. Reducing food intake alone can produce a breaking-down of vital body muscle rather than the loss of body fat. Exercise in combination with a low fat, low cholesterol, and reduced sugar diet is essential for proper weight reduction (Nisbett, 1968).
Many studies (Bleidt, 1979; Cohen, Gelfand, Dodd, Jensen & Turner, 1980; Epstein, Masek & Marshall, 1978; Janzen, 1981; Katell, 1983; St. Charles, 1981) have used group training sessions to educate participants in the selection and consumption of proper foods. For the most part, these classes were conducted outside the home and entailed two to six 1 hour sessions generally occurring over a period of two weeks.

The present study provided nutritional training over a period of time, 4 weeks, which enabled subjects to practice the content of the information in progressive steps. This method reduces confusion at the same time that it enhances an understanding of the material and also increases the probability that the material will be used. The present study also differs from the above mentioned studies in that subjects are educated not only in making nutritional selections, but were also taught that limiting foods or changing food preparation methods are ways that normally eaten foods can continue to be consumed. In addition, subjects were taught that the time of day when foods are eaten is also crucial.

While the effectiveness of many weight treatment programs is reduced due to laborious, sometimes impractical methods, the present study takes a more individualized, yet less traditional approach. Rather than requiring individuals to make drastic changes in
diet and exercise, subjects are educated in managing their existing behaviors while integrating more appropriate diet and exercise. This is done to promote continued compliance once participation in the study has ended. The primary goal of this study was to establish generalization across settings, and over time and situations.

The present study evaluates and compares the effects of contracting between self-management and parent modeling groups in an attempt to change exercise and eating patterns over a period of eight weeks. Previous studies have indicated greater weight loss with the use of behavior change programs than with the use of a strict, low-caloric diet (Fried, 1975). A more significant degree of weight loss is achieved with parent contracting (Bleidt, 1979; Epstein, Wing, Koeske, Andrasik & Ossip, 1981), while interventions involving self-monitoring are better predictors that weight loss will be maintained (Grace, 1976). While the use of parent contracting has demonstrated greater effectiveness to reduce weight, nearly all studies (to date) involving contracting with the child have involved monetary compensation contingent on the completion of self-report assignments (Cohen et al., 1980; Grace, 1976). The study examines the effects of parent-contracting to subject-alone contracting. In both groups conseqeuation
is contingent on meeting or failing to meet weekly individual goals. Monetary compensation is presented contingent on the subject-alone group members meeting requirements as specified in contracts.

This program is unique in that it involves programs individualized to the needs and current lifestyle of each participant. Exercise and nutrition plans were tailored to each participant's way of living, and enabled each subject to lose weight without having to buy special foods or exercise devices. Though the project extended for only a period of two-months, programs could easily be extended to allow participants to continue and maintain a weight loss program.

The following paragraphs provide a brief description and rational of intervention phases.

**Self-Management**

Clinicians have implemented various treatment interventions to demonstrate the effectiveness of self-management in reducing and maintaining weight loss in adolescents. Treatment programs have included self-administered reinforcement (Weiss, 1976); self-monitoring (Bleidt, 1979; Grace, 1976); dietary intervention (St. Charles, 1981; Weiss, 1976); behavior modification (Epstein et al., 1978; St. Charles, 1981; Wheeler & Hess, 1976); physical activity (Epstein et al.,
1978; St. Charles, 1981); and monetary compensation (Grace, 1976; Cohen et al., 1980). Each of these studies places contracting contingencies on the completion of graphs or dietary journals.

In the present study, the experimenter directly influenced eating and exercise behaviors of these subjects by using behavioral contracting. In this way subjects were responsible for following and maintaining a dietary program and food plan previously setup by the consulting dietician and in accordance with the contracting agreement.

Parental Modeling

Therapists have effectively influenced relative weight of adolescents using indirect methods. Studies have demonstrated the effectiveness of parental modeling and reinforcement of mealtime behaviors (Bleidt et al., 1979; Epstein et al., 1981; Klesges et al., 1983; Janzen, 1981). Treatment programs may involve instructional training (Katell, 1983), nutritional training (Janzen, 1981), parental modeling (Janzen, 1981), and contracting (Aragona, Cassady & Drabman, 1975).

As a means of indirectly manipulating subject eating and exercise behaviors, the experimenter contracted with parents who would provide role modeling behavior. Aragona et al. (1975) concluded that greater weight reduction
could be achieved when monetary compensation is implemented with response-cost conditions. Prior to the program each parent participant provided the experimenter with twelve post-dated checks the amount of which was predetermined on an individual basis. The check would be returned once weekly goals were met. In the event that individuals failed the comply with their programs, checks would be sent to an organization or individual selected by the subject prior to the start of the program.

Guidelines used to establish the weight treatment program were similar to those of the self-management group where specific eating patterns were previously specified by the consulting dietician.
CHAPTER II

METHOD

Subjects

The experimenter used a number of methods to obtain subjects. Letters requesting referrals were sent to area junior and senior high schools as well as to resident pediatricians. Subjects were also obtained by individuals responding to an advertisement printed in a local newspaper.

Subject selection was based on the following criteria (a) the individual was neither currently involved in nor had participated within the last year in a weight reduction program; (b) the participant could provide the investigator with a certificate of adequate physical health from a licensed physician and later could provide documented approval of the weight program in which he or she (the subject) would be participating (this was to ensure that the participant did not have any health related conditions which could be adversely affected by participating in the study, and to provide supervision of the program by his or her family physician); and (c) adolescent participants were between the ages of 12 and 16 years. No criteria were placed on parent participants.
Results of recruitment provided four subjects assigned to the self-management group and three mother/child participants assigned to the parental-modeling groups. Two additional mother/child groups dropped out shortly after the start of the program and one group chose not to participate after the first initial contact was made.

Participants were from a lower socio-economic range; three of the five groups were divorced, single parent families; and family size ranged from one to two siblings. Ranges of obesity were between 22% and 47% over ideal body weight.

Setting

With the exception of assessment interviews, all phases of the experiment were conducted within the home of each subject. Weekly home visits were made by the experimenter to perform weigh-ins and collect data materials.

Procedure

Before implementing the study, an initial draft of the program was submitted for review by the Human Subjects Committee at Western Michigan University where it received initial approval. Next, a signed consent form from the parents of each subject was also necessary before subjects
were allowed to participate in the study (Appendix A). Finally subjects were required to submit a signed letter from their family physician ensuring that they had no physical conditions which could be adversely affected by participating in the program. Final approval of specific weight and exercise programs would also be necessary from each subject's physician once the final program plan had been designed. These conditions served to protect subjects against any possible health risks that may have occurred as a result of participating in the program.

Subjects were placed in one of two study groups: (1) self-management, or (2) parent contracting. Selection for group assignments was based solely on whether parent (mother) participation was obtained.

The experimenter obtained baseline data on each subject through a series of four interviews. Questions regarded general health history, general eating behavior including food preferences, subject's responsibility to plan and prepare meals, the extent to which snacking occurs, and an approximate time when meals and snacking occur. In addition to dieting, information on exercise behavior was also obtained. Questionnaire items provided information related to involvement in exercise including types and time spent exercising daily. A list of exercises was generated with the help of the fitness consultant for those participants not involved in any
Next, a fitness consultant from Western Michigan University's Health, Physical Education and Recreation Program met individually with each participant. A series of tests were conducted with each participants to determine pre-intervention cardiovascular efficiency, weight, and percent body fat measuring triceps, biceps, scapula, and SI using skin calipers. A weekly fitness program was then designed using information provided by each participant as to exercise preference and availability. From reports of exercise currently performed daily, and from reports of exercise which the participant expressed a desire to partake in, the consultant then compiled a weekly exercise program which the participant was to follow daily, and which changed weekly as the individual progressed.

Information obtained from intakes revealed that meals for all subjects were conducted self-serve, and seconds were made available. Likewise, each had input to food selection. This information demonstrated that these participants were well suited for this program (i.e., assumed much responsibility for diet). Given this information the experimenter then spent the next several weeks working with the consulting dietician from Bronson Hospital in designing a diet/nutrition program to be used for the duration of the study.
The focus of the intervention program was on the alteration of general eating patterns, mainly that of reducing snacking behaviors while increasing physical activity.

Based on interviews, all subjects reported a general diet consisting of food high in caloric content (sugar, cholesterol, and starch). Information indicated that specific and consistent eating patterns were very evident during regular meals as well as outside scheduled meals. Specific stimuli tended to increase the probability that snacking would occur. These generally included television viewing prior to going to bed and general lack of activity.

Programs were designed to alter the consumption of foods to those times of the day when exercise is more probable (i.e., at the beginning of the day). Most subjects indicated that little or no food consumption occurred at this time. Subjects further reported that most eating occurred in evening hours when activity levels were at their lowest. Increasing activity levels during those times when most food consumption occurred further rid the body of excess calories. Engaging in hobbies or exercising at these times was emphasized to alter behavior at this time and to reduce snacking behavior while increasing activity levels. This aspect of the study (changing behavior patterns) served as the central focus.
Existing behaviors were modified and managed to enhance feasibility and to maximize the probability that subjects would continue with their program once the study ended.

In the event that exercise was not desired, careful food selection including limitation and substitution became the primary concern. Educating participants with regards to food preparation became a vital issue after learning of their present cooking styles—most cooked with ingredients high in fat. Based on information received, and due to their ages, altering the foods eaten with regard to substitution would be insufficient, if not improbable. One means of reducing caloric content in diets was to address the issue of food preparation as most adolescents indicated they were to some extent responsible for, or assisted with the planning as well as the preparation of meals. Substitution, preparation, limitation, and alteration of eating patterns were primary elements of dietary program planning.

Phase 1

During Phase 1, information regarding the use of exercise logs, food selection, food measurement and preparation, meal planning, and snacking was introduced. Each week new material dealt with one topic and was used to supplement information introduced in previous weeks. Subjects from both groups filled out nutrition and

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exercise diaries daily and brought the information with them for their weekly check-in. No consequence occurred for failure to produce these logs since contracting had not yet been implemented.

The following paragraphs are brief descriptions of each stage and the weeks in which each stage was presented. Each new stage supplemented all previous stages.

**Diet And Exercise (Week #1)**

During this phase participants were given the opportunity to become familiar with the diet and exercise logs to be used each day for registering daily performance (Appendices B & C). Subjects were expected to specify the types of foods eaten, as well as the times each meal or snacking occurred and the approximate amount. Measuring food portions was not emphasized at this time. At this time the concern was to enhance awareness of food consumption and eating patterns. Likewise, daily exercise were also be recorded in accordance with programs as specified on the log sheet.

Subjects were instructed to use the logs to become better aware of the types and amount of foods they consumed as well as when regular eating and snacking occurred. Subjects were encouraged to alter their eating patterns, and to spread daily consumption evenly.
throughout the day while avoiding increased eating. Increasing activity levels was also emphasized at those times when eating occurred the most, and when activity was generally at its lowest (e.g., at night). Subjects were urged to allow approximately one hour lapse time between eating and exercise to avoid cramping and undue stress on the body.

**Food Selection (Week #2)**

At this time, subjects were introduced to a food chart (Appendix D) which classified the foods into categories depicting nutritional value. Subjects were encouraged to use the charts to make food selections.

**Food Measurement And Preparation (Week #3)**

Subjects began practicing food measurement by using scales as well as other measuring devices. Over time subjects were able to approximate food portions making measuring devices no longer necessary.

**Meal Planning (Week #4)**

Using the information acquired from previous weeks, subjects began the practice of planning daily menus (Appendix E).
Snack Selection And Substitution (Week #5)

Snacking was defined as any unplanned food eaten outside regular meal. Subjects were provided with a chart to assist with selecting nutritionally appropriate snacks as well as acceptable limitations on snacks subjects were currently eating.

Phase 2

At the onset of Phase 2, all subjects from both groups once again met with the diet and exercise consultants to go over programs to be followed for the remainder of the treatment program. Subjects from self-management and parent contracting groups met with the experimenter to establish contracting criteria to be met weekly (Appendix F).

Contracting Criteria:

1. Menu planning charts are completed by the day immediately preceding the onset of the program week.

2. Menu planning charts are followed with 75% accuracy (this allowed for a 3 meal deviation every 4 days but not to exceed more than 2 meals in one day.

3. Menu logs are completed and returned by the end of
each recording week.

4. Daily totals will not deviate by more than 5 pts. below the established mean of 40 on any given day.

**Self-Management**

During this phase, the parents of the self-management group met with the experimenter to establish contracting under which consequence would occur as the result of meeting or failing to meet contract agreements (see contracting criteria above).

Monetary compensation was used to reinforce successful completion of contract agreement. For all subjects, parents agreed to use a weekly allowance contingent on the child's success, and then agreed to pay for a pre-specified item of the child's choice each week that criteria were met. In the event a subject failed to comply with contracting, he/she failed to earn reinforcement.

**Parental Modeling**

For this group, contracting was established with the parent. Unlike the self-management group, the experimenter used a negative reinforcement design to enhance compliance. Under the terms of contracting, each parent provided four post-dated checks (one for each week
of the phase) which were kept by the experimenter and returned when criteria were successfully met at the end of each week. In the event the parent failed to meet his/her contract agreement, the check would be sent to an organization or person selected by the subject prior to the start of the program.

Revisions in logs were made for Phase 2 conditions. The simplified forms, while easier and requiring less time to complete, also provided more information to both the subject and experimenter. As a result, subjects became more accurate and consistent in filling them out. The assignment of point values and use of daily graphs provided subjects with more immediate feedback regarding progress.

The nutrition chart (Appendix E), was revised from Phase 1. Numbers were assigned to categories to reflect their degree of nutritional value in comparison to other foods (e.g., High Nutrition—5pts., Okay Foods—3pts.). The goal was to achieve the highest point total possible by selecting those foods of higher nutritional value and subsequent point worth. Eating more foods of lesser point value rather than one more highly nutritional food did not change the total points acquired. The reason for this was that no more than one food was to be registered under each category. Also, eating a higher nutritional food to supplement fewer points acquired by eating a lesser valued
Food would not increase the point value, because in the instance that more than one food is consumed from any one category, only the lesser point value is recorded. An example of this would be an individual who for lunch eats a hot dog (1 pt.), then in the same meal eats a piece of baked chicken (5 pts.). In this case, only the hot dog would be recorded because it has been assigned the lesser point value. In the case where a dish was composed of a variety of foods from differing categories (such as casseroles, pizza, etc.), this would be recorded by breaking the food down into separate food components, which would then be assigned to the section under which they fall.

Subjects were required to submit a completed meal planning chart prior to the start of each week. The experimenter and nutrition consultant then reviewed each plan to ensure that proper dieting was occurring. In the event that poor selections were made, revision were necessary before beginning the week's diet.

After foods have been recorded and point values assigned, then the sums for that meal were registered in the space provided. At the end of each day the sums for each meal were added together which make up the daily total. These figures were then graphed (Appendix G).
Snacking

Snacking, which was defined as impulsive eating, and lack of exercise were the leading contributors to obesity. Thus, any food consumption that deviated from the specified meal planning charts was penalized according to the program.

The food selection chart (Appendix D) demonstrates point assignments. At the lower left corner of each food category heading is an assigned point value preceded by an asterisk. These points were used to record snacking behavior. Values were reversed in relation to their point values of other foods consumed during meals.
CHAPTER III

RESULTS

Information obtained from interviews conducted prior to the onset of the study provided baseline data. Since self-report was the method for obtaining baseline data, the content of information tended to be similar and thus data for both groups are presented together and subject to estimations.

Approximately 55-70% of each subject's total daily diet was consumed between the evening hours of 5 p.m - 10 p.m, and of this, 10-47% consisted of snacking. During weekends no significant changes in eating patterns occurred. Red meats and poultry tended to be the preferred main course. Frying and boiling served as the primary method of food preparation. Snacking generally involved sweets.

Figures 1 - 4 show data relating to eating patterns for subjects in both self-management and parental modeling groups during the first and last weeks of Phase 1 and 2. Each graph represents food consumption for specific weeks. The shaded areas illustrate percent of total food consumption during morning, afternoon, and evening time periods. Snacking is depicted separately and is not
reflected in other time frames. Thus, the time occurrence of snacking is not represented in these graphs. Instead, the illustrations present snacking as a percentage of total food consumption.

Self-Management

During Phase 1 diet and nutrition information was presented at the onset of each week. A comparison of Week 1 and Week 4 demonstrates the effectiveness of the program in altering eating behaviors in relationship to time periods throughout the day when eating occurred. Nutritional concerns, however, became an issue as subjects tended to reduce food consumption during evening phases, while continuing to consume low quantities during other time periods. In addition, subjects failed to supplement diets with food selections of any significant nutritional value. As a result, weight loss was achieved; however, potential health hazards (such as malnutrition) could develop should this behavior continue.

Programs were developed for each participant in attempts to change eating patterns. In this way, food consumption would be occur in accordance with the individual's level of activity. By the end of week 4 snacking behavior was reduced by 5-17% over baseline data. Percentage of food consumption during the morning period increased from 1-13% while afternoon increased by 0-15%
Figure 1. Food Consumption During Weeks 1 & 4 (Phase 1), 5 & 8 (Phase 2) For Subjects A-1 & A-2.
Figure 2. Food Consumption During Weeks 1 & 4 (Phase 1), 5 & 8 (Phase 2) For Subject A-3.

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Figure 3. Food Consumption During Weeks 1 & 4 (Phase 1), 5 & 8 (Phase 2) For Subject A-4.
Figure 4. Food Consumption During Weeks 1 & 4 (Phase 1), 5 & 8 (Phase 2) For Subjects B-1 & B-2.
SUBJECT B-3

PHASE 1

WEEK 1

PHASE 2

WEEK 4

WEEK 5

WEEK 8

MORNING DIET 7 A.M - 12 P.M
AFTERNOON DIET 12 P.M - 5 P.M
EVENING DIET 5 P.M - 10 P.M
SNACKING

Figure 5. Food Consumption During Weeks 1 & 4 (Phase 1), 5 & 8 (Phase 2) For Subject B-3.

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while evening dieting decreased by 2-16%.

At the onset of Phase 2, subjects A-1 and A-2 terminated. Subjects A-3 and A-4 continued to demonstrate changes in eating patterns; however, more significant were changes in food selection and consumption. Both meal and snacking selections improved allowing more foods to be consumed while still reducing caloric intake. With this, a proportional eating pattern developed across the day whereby food consumption more appropriately matched activity levels at specific times of the day.

**Parental Modeling**

During Phase 1, as with self-management, changes in eating patterns occurred; however, improper food selections and fasting behaviors resulted rather than the substitution of more nutritional food selections or revisions in food preparation. Both parent and child subjects demonstrated similar eating patterns.
Figure 6. Percent Exercise Program Met During Phase 1 and Phase 2 For Subjects A-1 & A-2.
Figure 7. Percent Exercise Program Met During Phase 1 and Phase 2 for Subjects A-3 & A-4.
Figure 8. Percent Exercise Program Met During Phase 1 and Phase 2 for Subjects B-1, B-2, & B-3.
CHAPTER IV

DISCUSSION

Information obtained from intake interviews revealed a number of similarities among subjects regarding eating and exercise behaviors. In all cases subjects reported diets consisting primarily of foods high in fat and caloric content. All subjects estimated that at least 60% of their daily food consumption occurred in the evening (this is also when activity levels were at their lowest. Likewise, impulsive snacking in combination with poor food preparation methods, and overall lack of physical were major contributors to their condition of obesity, and ones that were specifically addressed.

The interventions used as part of individual programs were: (a) educate subjects to substitute for those foods high in caloric content foods that were nutritionally better and lower in calories (i.e., lower in fat and sugar); (b) limit the consumption of all foods in accordance with their programs; (c) emphasize alternative behaviors including exercise in those situations when the susceptibility to snacking is highest (i.e., watching television, specific times of the day, lack of activity "bored"); and (d) educate all participants with regard to
food preparation, such that added caloric content would be minimized during cooking.

Low log scores during Phase 1 tended to result from both extensive between meal snacking (particularly those of higher assigned point value). In addition the elimination of meals completely (endangering health) or eating less but still consuming less nutritious foods contributed to poor performance. These factors clearly indicate the need for contingency contracting based on performance in order to reduce the occurrence of improper weight loss by fasting or failure to acquire necessary nutrients in daily diet. Information received from questionnaires distributed post-Phase 1 indicated a general desire of all participants for quick weight loss of no less than 5-10 lbs. per week (these expectations were based on advertised fad diets). Few participants reported changes in exercise or eating patterns during this phase of the program. Likewise menu charts were misused. Nine out of ten indicated that these charts were used to record what had been eaten rather than for meal planning as intended.

Contracting proved necessary as results of Phase 1 indicated that the subjects were unable to properly follow and use information without posing a health threat. Evidence revealed that subjects tended to limit food intake rather than substituting foods.
Because subjects were subjecting themselves to potential health risks as a result of improper dieting, the need for a dietary consultant proved necessary. These results suggest that merely educating the obese with use of lectures and pamphlets is not enough to ensure proper weight loss. In addition, careful monitoring is a must to ensure proper use, thus minimizing risks.

Despite attempts to educate subjects, as well as parents, on the importance of healthy, well balanced diets, most participants chose to continue selecting those foods which, for the most part, had been the primary cause of their obesity in the first place. The approach taken for this study was that of educating the individuals on proper food selection as well as how to properly manage their present diet in a way that would be more health promoting. Teaching subjects methods of managing their present diets included teaching alternative preparation methods, limiting foods, and altering eating patterns. To implement a program demanding that clients follow a rigorous diet program would be beneficial for the study, and subjects may in fact have lost more weight; however, the probability that this behavior would continue once the restraints of the study were removed would seem low. One must remember that like any individual, the obese person has developed a series of patterned behaviors over the years which are difficult to change.
Perhaps the most difficult role of the clinician is to change those expectations the obese person has as a result of medically unapproved, fad diets which promise extraordinary weight loss in a relatively short period of time. As any legitimate weight program demonstrates or physician suggests, weight loss takes time and requires a careful balance of both good eating and exercise. For subjects of this study, and for most obese persons, the primary purpose of participating in a weight loss program is to lose weight. All subjects failing to complete the study did so because this program did not demonstrate comparable results to those of many advertised programs that they had read. They were not losing weight fast enough and felt discouraged at an early phase. In view of this, it would seem illogical to expect that a person would change his/her entire life style (e.g., diet and exercise) when, instead, he/she could lose more weight (and at a faster rate) taking a fad diet pill, and still be allowed to continue eating the same foods as before. The above point emphasizes the idea that telling a person what is good for them is not enough. In addition, persons must also be educated that, while alternative foods may be better for them, properly managing their present diet and altering eating patterns are suitable substitutes. Exercise in any program is also a must.
APPENDIX A

Parent Consent Form
Informed Consent - Parent

As legal representative, and on behalf of ____________________________, I agree to his/her participation in an eight week in-home weight treatment program. The purpose of this investigation is to compare the effects of two contract methods to manage dietary regulation and exercise. The tentative start of the program is September 1, 1985 with completion expected November 1, 1985.

Benefits of weight loss resulting from proper diet and increased physical activity include improved health conditions (cardiovascular, respiratory, circulatory, etc.) and enhanced resistance to disease (high blood pressure, diabetes, coronary artery disease, etc.).

I understand that my child will meet with the consulting nutritionist and fitness instructor to set up a dietary and exercise program necessary to meet with the child’s individual needs. To ensure that the child is under no current health conditions which may be adversely affected by participating in the study, I understand that final written approval must be acquired from a family physician before beginning the program.

To ensure confidentiality, any documented information will categorize each participant numerically rather than referring to them by name. Further, I knowingly give consent to the investigator to report information and results from this study to a professional journal.

Enrollment in this program is voluntary. Participants may withdraw at any time without penalty or loss of benefit to which the individual is otherwise entitled.

If any questions remain unanswered by this form, or further information is required, contact the investigator whose name appears at the bottom of this form.

I have read, understand, and agree to ____________________________’s participation in this program.

Signature Of Parent : ___________________________________________

Date: ___________

Donn Montgomery
APPENDIX B

Sample Diet Log
Scores for "BETWEEN MEAL SNACKS" are reversed to 1 - 3 - 5, then subtracted from total.

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* Scores for "BETWEEN MEAL SNACKS" are reversed to 1 - 3 - 5, then subtracted from total.
APPENDIX C

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APPENDIX D

Food Selection Chart
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<th>OKAY FOODS *(3 points)</th>
<th>LOW NUTRIENT FOODS *(1 point)</th>
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<td>- peanut butter, nuts</td>
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<td>and seeds in moderation</td>
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<td>FRUIT AND VEGETABLE</td>
<td>5</td>
<td>- All fresh and frozen fruits</td>
<td>- dried fruits</td>
<td>- fruit juice with added</td>
</tr>
<tr>
<td>FOODS</td>
<td></td>
<td>and vegetables</td>
<td></td>
<td>sugar</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- fruit juice,</td>
<td>- fruit canned in syrup</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>unsweetened</td>
<td>- olives</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>- avocados</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>- french-fried vegetables</td>
</tr>
<tr>
<td>BREADS AND CEREAL</td>
<td>5</td>
<td>- whole grain breads and</td>
<td>- white flour products</td>
<td>- pastries, pies, cookies</td>
</tr>
<tr>
<td>FOODS</td>
<td></td>
<td>crackers</td>
<td>(pasta, snack crackers,</td>
<td>and doughnuts</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>hamburger buns, pizza</td>
<td>- sugared cereals</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>crust)</td>
<td>- potato chips and tortilla</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- flour tortilla</td>
<td>chip</td>
</tr>
<tr>
<td>FATS AND SWEETS</td>
<td>0</td>
<td></td>
<td></td>
<td>- butter, salad dressing,</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>oil and mayonnaise</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>- sugar, honey, syrup and</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>jelly</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>- soda pop</td>
</tr>
</tbody>
</table>
APPENDIX E

Menu Planning Chart
<table>
<thead>
<tr>
<th></th>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
<th>Friday</th>
<th>Saturday</th>
<th>Sunday</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>BREAKFAST</strong> For One Week:</td>
<td>pts</td>
<td>pts</td>
<td>pts</td>
<td>pts</td>
<td>pts</td>
<td>pts</td>
<td>pts</td>
</tr>
<tr>
<td><strong>LUNCH</strong> For One Week:</td>
<td>pts</td>
<td>pts</td>
<td>pts</td>
<td>pts</td>
<td>pts</td>
<td>pts</td>
<td>pts</td>
</tr>
<tr>
<td><strong>DINNER</strong> For One Week:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Total:**

NAME: ____________________________

DATES: FROM: ________ TO: ________
CONTRACT

Contract Dates: From _______________ to _______________

Terms of Contract:

1) Menu planning charts will be completed and returned on the Friday before the date stated above.

2) Menu planning charts are followed to within 75% accuracy.

3) Menu logs are to be completed and returned by the end of each recording week.

4) Daily totals will not deviate by more than 5 points below an mean of 40 points on any given day.

I understand and agree to all conditions specified under the terms of this contract. I understand that failing to meet these conditions will result in a loss of $ __________.

As a volunteer participant, I may withdraw at any time without penalty or loss of benefit to which I am otherwise entitled.

Signature Of Participant: ___________________________ Date: ________

Signature Of Investigator: ___________________________ Date: ________
APPENDIX G

Diet Progress Graph
BIBLIOGRAPHY


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