

93
17

WEIGHT CONTROL FOR LOW-INCOME
BLACK AND HISPANIC WOMEN

A DISSERTATION
SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS
FOR THE DEGREE OF DOCTOR OF PHILOSOPHY
IN THE GRADUATE SCHOOL OF THE
TEXAS WOMAN'S UNIVERSITY

DEPARTMENT OF NUTRITION AND FOOD SCIENCES
COLLEGE OF HEALTH SCIENCES

BY
SUZANNE B. SMITH

DENTON, TEXAS
MAY, 1990

Copyright © Suzanne B. Smith, M.S., R.D., L.D., 1990
All rights reserved

ACKNOWLEDGMENTS

I am very grateful to the following people for helping me achieve my educational goals:

- My husband, Mike, for his love and support;
- the rest of my family, for their encouragement;
- Dr. Betty Alford, for her expertise, guidance, friendship, inspiration and unbelievable ability to be there when I needed her;
- Dr. Barbara Gench, for her many hours of statistical assistance;
- Dr. Nancy DiMarco, Dr. Andie Hsueh, Dr. George Liepa, and Dr. Carol Shanklin, for their guidance and time as committee members;
- Hazel Cattlett, for her interest, help, support, and especially her friendship;
- the Health Education and Nutrition Services of the Department of Health and Human Services of the City of Dallas, for serving as the sponsoring agency;
- the Mary Crowley Academy, for allowing the Shape Up Dallas Program to be taught at its sites;
- Pemberton Hills Recreation Center, for allowing the Shape Up Dallas Program to be taught at its facility;

--Lucy Cantú, Irma Salas, Julian Flores, and Zulema Ortiz,
for their assistance in developing the Spanish program;
--María Rodriguez, for her assistance in teaching and
revising the Spanish program;
--Solina Kasten-Marquis, for translating most of the
Spanish program;
--Josephine Torres, for her help in recruiting the Hispanic
control group;
--Blessed Sacrament Catholic Church and Our Lady of
Perpetual Help Catholic Church for allowing the Spanish
program to be taught at their facilities;
--Dr. Carol Shanklin, for her dedication and contribution
to the profession of dietetics;
--Tracey Carlyle, for her inspiration and friendship;
--Sandy Graham and Carol Johnson, for their patient
assistance as secretaries in the NFS Department;
--the Staff of Interlibrary Loan at the TWU Library for
locating so many books and articles for me;
--Kraft-General Foods Foundation, Inc., for their generous
fellowships for two years of my graduate studies; and
--the Human Nutrition Research Fund from the State of
Texas, for the financial support of my research.

Weight Control for Low-income
Black and Hispanic Women

By Suzanne B. Smith, M.S., R.D., L.D.

May, 1990

Small-scaled studies of a free weight control program for low-income, low-literate black women were conducted with intact groups from a literacy program or a recreational center. The program was then modified, translated into Spanish, and pilot-tested with Hispanic women at two churches. The 11 weekly sessions included nutrition education and behavior modification.

The 31 women in the black treatment group lost 3.1 pounds overall (0.29 pounds per week) while their 14 controls lost 0.3 pounds (0.03 pounds per week). At three weeks follow-up, the black treatment group gained 0.5 pounds.

The 20 women in the Hispanic treatment group lost 8.7 pounds overall (0.80 pounds per week) while their 14 controls gained 0.8 pounds (0.07 pounds per week). The adjusted final weight of the Hispanic treatment group was significantly less than that of the Hispanic and black control groups ($p < .05$, Scheffé). At three weeks follow-up, the Hispanic treatment group lost another pound.

The black treatment group scored significantly higher on the nutrition knowledge post-test than their controls ($p < .05$, Scheffé); scores improved by 18.4 and 2.9 percent, respectively. Food diaries were completed with colored stickers or pencils 57.1 percent of the time. Attrition was 28 percent. Weight loss was greater as attendance and diary completion increased ($r = -0.43$ and -0.42 , respectively; $p < .05$, Spearman). The black treatment group indicated that the pamphlets, diary, and weekly weigh-ins, along with the topics of "tips for eating less," "exercise," and "cooking methods" had helped the most.

The Hispanic treatment group scored significantly higher on the post-test than their controls ($p < .01$, Scheffé); scores improved by 25.3 and 0.0 percent, respectively. The diary completion rate was 94.6 percent. Attrition was 54.6 percent. The Hispanic treatment group indicated that the diary, weekly weigh-ins, and tasting low-calorie foods, along with the topics of "serving sizes" and "choosing low-calorie foods" had helped the most.

Results indicated that the program significantly increased the nutrition knowledge of both black and Hispanic participants. In addition, the program significantly decreased the weight of Hispanic participants.

TABLE OF CONTENTS

ACKNOWLEDGMENTS	iv
ABSTRACT	vi
LIST OF TABLES	xi
Chapter	
I. INTRODUCTION	1
Rationale for the Study	1
Purpose of the Study	4
Research Questions	5
Definitions	6
II. RELATED LITERATURE	7
Prevalence of Obesity in Women in the United States	7
Prevalence of Illiteracy in the United States	10
Weight Control for Low-income Black and Hispanic Women	12
III. PROCEDURES	20
Development of the Shape Up Dallas Program	20
Development of the Spanish Program	24
Selection of the Locations for the Shape Up Dallas Program	25
Selection of the Locations for the Spanish Program	26
Recruitment of the Participants for the Shape Up Dallas Program	27
Recruitment of the Participants for the Spanish Program	27
Implementation of the Shape Up Dallas Program	28
Implementation of the Spanish Program	30
Collection of the Data for Black Women	31
Collection of the Data for Hispanic Women	32
Formation of the Control Groups	33

Criteria for Inclusion in Study	34
Approval for the Study	34
Tabulation and Analysis of the Data	35
Revisions for the Programs	35
IV. PRESENTATION OF THE FINDINGS WITH DISCUSSION . . .	36
Description of Participants	36
Attendance of the Program Participants	38
Weight Change Results	40
Food Diary Completion Results	49
Results of the Pre- and Post-tests	51
Significant Relationships	56
Evaluation	57
Recommendations for Revisions	62
V. SUMMARY AND RECOMMENDATIONS	65
Summary	65
Recommendations for Future Studies	68
REFERENCES	70
APPENDICES	76
A. Outline of The Shape Up Dallas Program	77
B. The Shape Up Dallas Song	83
C. Outline of the Lose Weight/Gain Health Program . .	85
D. Cancion de Pierda peso/gane salud (The Lose Weight/Gain Health Song)	92
E. Sample of Survey Tool	94
F. Sample of Pre-test/Post-test Tool	96
G. Sample of Participant Evaluation Form Tool	101
H. Approval Letter from the Human Subjects Review Committee	106
I. Approval Letter from the Sponsoring Agency	108
J. Evaluation (Questions One through 17)	110

K.	Evaluation (Questions 18 and 19)	114
L.	Evaluation (Question 20)	116
M.	Evaluation (Question 21)	119

LIST OF TABLES

1. Age and Educational Level of Participants	37
2. Scheffé Post Hoc Analysis for Educational Level . . .	38
3. Initial Weight	40
4. Initial, Final, and Adjusted Final Mean Weights . . .	41
5. Scheffé Post Hoc Analysis for Initial and Adjusted Final Weights	43
6. Initial and Final BMI	44
7. Weight Change Overall and at Follow-up	45
8. Possible Days, Actual Days, and Completion Rate for Diary	50
9. Pre- and Post-test Scores	52
10. Scheffé Post Hoc Analysis for Post-test Scores	54

CHAPTER I

INTRODUCTION

Rationale for the Study

Obesity is a serious problem in the United States due to its prevalence, medical and psychological consequences, and resistance to treatment (Brownell, 1984). In addition, obesity has been referred to as an epidemic (Kannel, 1983; Sims, 1980) as well as a major health problem (Nutrition and Obesity, 1983; Kannel, 1983; Rodin, 1982). The prevalence of obesity in the United States varies according to the criteria used; estimates include 10 to 50 million people (Bray, 1983); 15 to 50 percent (Brownell, 1984); and 34 million adults (Surgeon General's Report, 1988). Health hazards of obesity include diabetes, hypertension and stroke, coronary heart disease, gallbladder disease, and possibly some types of cancer (Alford and Bogle, 1982; Bray, 1980a; National Research Council, 1989; Surgeon General's Report, 1988).

Many theories have been proposed to explain the etiology of obesity. Obesity has often been classified as "endogenous" or "exogenous" which implies both internal and external causes (Vasselli et al., 1983). Environmental factors which may play a role in the development and maintenance of obesity include excessive energy intake, low energy expenditure, reproductive influences, lifestyle

variables such as smoking and alcohol intake, weight control behavior and attitudes, and food preferences (Kumanyika, 1987). Other factors which may contribute to the etiology of obesity include endocrinopathy, thermogenesis, fat cells, and lipoprotein lipase (Pi-Sunyer, 1988).

The strong influence of racial, ethnic and socioeconomic factors on the prevalence of obesity and its health hazards is indicated in epidemiological data. Black women are at greater risk for obesity than white women (Bray, 1980a; Najjar and Rowland, 1987). Mexican American women are overweight more often than white women but slightly less often than black women (Najjar and Kuczmarski, 1989; Najjar and Rowland, 1987; Personal communication, Dr. Wotekie, 1988). In addition, there is a significantly higher prevalence of obesity in females from the lower socioeconomic class than in females from the upper social classes (Bray, 1980b). Race and poverty status have also been found to be independent predictors of overweight for women (Van Itallie, 1985).

Blacks and Hispanics are of lower socioeconomic position (as measured by income, education, and occupation) than whites (Haan and Kaplin, 1985). Furthermore, some of the chronic diseases related to obesity, such as hypertension, diabetes, and cardiovascular diseases, are more prevalent among minority than white women (Zambrana, 1987; Manley et al., 1985). While the results of weight control programs

are reported frequently in the literature, few programs have been developed for minorities or low-income people.

Income level is usually directly related to educational level. Figures for the prevalence of illiteracy in the United States vary according to the source. The problem of illiteracy is so widespread that the federal government is replacing printed road signs with ones that use symbols to try to reduce the number of accidents (Loughrey, 1983). In 1983, President Reagan announced that the federal government was joining with local and state governments, private citizens, and business and industry groups to eliminate adult functional illiteracy in the United States (Sticht, 1984).

A National Nutrition Objective for 1990 states that "by 1990, the prevalence of significant overweight (120 percent of 'desired' weight) among the United States adult population should be decreased to ten percent of men and 17 percent of women, without nutritional impairment" (Stephenson et al., 1987). A midcourse review indicated that this objective appeared unlikely to be achieved (Sorenson et al., 1987). One of the Nutrition Risk Reduction Objectives for the proposed Year 2000 National Health Objectives states that the prevalence of overweight among people ages 20 to 74 should be reduced to less than 20 percent. Furthermore, the prevalence of overweight should be reduced to 25, 30, and 25 percent among the respective special population target groups of low-income women, black women,

and Hispanic women (Personal communication, Office of Disease Prevention and Health Promotion, 1990).

The recommendation to maintain appropriate body weight has been made by several organizations and agencies such as the U.S. Department of Agriculture; U.S. Department of Health, Education and Welfare; U.S. Department of Health and Human Services; National Institutes of Health; American Heart Association; American Cancer Society; National Cancer Institute; American Diabetes Association; and Committee on Diet and Health of the Food and Nutrition Board (National Research Council, 1989). Considering the high prevalence of obesity in black and Hispanic women, the interest of the government and other health organizations in reducing the prevalence of obesity in the American population, and the lack of weight control programs specifically for minorities or low-income people, research in this area is needed and could make a significant contribution to the effectiveness of nutrition education as well as to the health of the nation.

Purpose of the Study

The purpose of the study was to develop and test weight control programs designed especially for low-income, low-literate, black and Hispanic women. Specific objectives included the following:

- 1) Conduct small-scaled studies of the English program for low-income black women;

- 2) Modify the program for translation into Spanish;
- 3) Have the program translated into Spanish;
- 4) Produce the modified materials in English and Spanish;
- 5) Pilot-test the Spanish program; and
- 6) Recommend revisions for the English and Spanish programs based on the results of the study.

Research Questions

The research questions for the study included the following:

- 1) Does completion of the program result in a minimum average weight loss of five to ten pounds per person over a minimum of ten calendar weeks?
- 2) Is there a significant difference in weight loss between the control and treatment groups?
- 3) Is there a significant difference in weight loss between black and Hispanic women after completion of the program?
- 4) Do women who have completed the program maintain their weight loss at follow-up (approximately three weeks later)?
- 5) Does completion of the program result in an increase in knowledge as measured by improvement on pre- to post-test scores averaging at least 25 percent?

- 6) Is there a significant difference in knowledge gain as measured by post-test scores between the control and treatment groups?
- 7) Is there a significant difference in knowledge gain as measured by post-test scores between black and Hispanic women after completion of the program?

Definitions

A low-income woman was defined as one who was eligible to live in public housing in Dallas or to receive Food Stamps and/or Aid for Dependent Children, or one who actually lived in a low-income area of Dallas. Body mass index (BMI) was defined as weight in kilograms divided by height in meters squared.

The sponsoring agency for the study was the Health Education and Nutrition Services of the Department of Health and Human Services of the City of Dallas. Financial assistance was received from the State of Texas through the "Human Nutrition Research" Fund. Kraft-General Foods Foundation, Inc., also provided financial assistance in the form of two fellowships.

CHAPTER II

RELATED LITERATURE

Prevalence of Obesity in Women in the United States

A comparison of the percentages of overweight adults (defined as a BMI of 27.8 or greater for males and 27.3 or greater for females) in the First National Health Examination Survey (NHES, 1960-62), the First National Health and Nutrition Examination Survey (NHANES I, 1971-74), and the Second National Health and Nutrition Examination Survey (NHANES II, 1976-80) indicated that females were overweight more often than males in all three surveys. In addition, overweight was much more common among black than white women. Black women had incidences of overweight of 47.3, 47.8, and 49.5 percent during NHES, NHANES I, and NHANES II, respectively, while white women had incidences of overweight of 27.3, 27.4, and 27.5 percent during the same respective surveys (National Center for Health Statistics, 1985).

Kumanyika and Helitzer (1985) described the excess prevalence of obesity among black women as "the most outstanding nutritional problem in the black adult." Kumanyika (1987) compared the preponderance of overweight among black women to white women based on data from the NHES, NHANES I and II, National Health Interview

Survey, and Hypertension Detection and Follow-up Program.

Within-sample prevalence ratios were utilized to compare the various definitions of overweight. Overall, black women were overweight more often than white women in a ratio near or exceeding 2:1.

The National Health Interview Survey (NHIS) and the Behavioral Risk Factor Surveys (BRFS) included self-reported weights and heights. In the NHIS, the prevalence of overweight among the 985 Hispanic, 1,955 black, and 14,330 white women surveyed was 25.5, 34.7, and 20.2 percent, respectively (Dawson, 1988). In the BRFS, approximately 23 percent of the 16,592 white and 2,813 black and Hispanic adults surveyed were overweight. Furthermore, black and Hispanic women were overweight more often than white women for each age category (Forman et al., 1986).

Stern et al. (1981) found the prevalence of overweight in 262 Hispanic women living in low-income census tracts in Laredo, Texas, to be substantially higher than the national estimates from NHANES I for each age category. In a study with 541 Mexican American and 232 white women living in San Antonio, Texas, Stern et al. (1983) found that Mexican American women were four times as likely to be in the obese category as white women. Kumanyika and Helitzer (1985) described the excess prevalence of obesity and diabetes among Hispanics as an area of "special dietary and nutritional concern."

The Hispanic Health and Nutrition Examination Survey (HHANES) was conducted from 1982 to 1984 and included Mexican Americans living

in Arizona, California, Colorado, New Mexico, and Texas; Puerto Ricans living in New York City; and Cuban Americans living in Dade County, Florida (Lecca et al., 1987). The age adjusted prevalence of overweight for Mexican American women was 41.5 percent (Najjar and Kuczmarski, 1989). In NHANES II, white and black women had age adjusted prevalences of overweight of 24.6 and 45.1 percent, respectively (Najjar and Rowland, 1987). Thus, Mexican American women in HHANES were overweight more often than white women but slightly less often than black women in NHANES II (Personal communication, Dr. Wotekie, 1988).

Poverty influences the prevalence of overweight in women. Data from NHANES I indicated that educational level and socioeconomic status were inversely related to mean weight in women (Fulwood, 1981). In NHANES II, 25.3 percent of women above the poverty level were overweight compared to 36.9 percent of women below the poverty line (Personal communication, Office of Disease Prevention and Health Promotion, 1990). Kumanyika (1987) stated that "black women of low socioeconomic status have the highest obesity risk. Excess black female obesity, however, is observed in all socioeconomic strata." Results from the 1985 NHIS (Stephenson et al., 1987) and the BRFSS (Forman et al., 1986) indicated an inverse relationship between the prevalence of overweight and years of education.

The age adjusted prevalence of overweight in Mexican American women in HHANES below the poverty line at 46.1 percent was higher

than that above the line at 40.1 percent (Personal communication, Dr. Wotekie, 1988). Hazuda et al. (1988) found that the prevalence of obesity decreased as socioeconomic status increased in a sample of Mexican American women from San Antonio, Texas. However, others have found that obesity in Mexican Americans is seen across socioeconomic levels (Comas-Diaz et al., 1988; Kumanyika and Helitzer, 1985).

Prevalence of Illiteracy in the United States

Figures for the prevalence of illiteracy in the United States vary according to the source. Loughrey (1983) estimated that 21 million Americans were unable to read. Bell (1984) described adult functional illiteracy as a major "hidden" problem in the United States and estimated that 27 million Americans were "functionally illiterate" or lacking the skills needed to function in society. Duggan (1985) reported that perhaps 60 million men and women, or up to one-third of the adult population, were unable to read the front page of the newspaper. Doak et al. (1985) estimated that "23 million American adults may not be able to comprehend what health professionals are talking about." Nitzke et al. (1986) reported that 20 to 30 percent of American adults were severely limited in the area of health and consumer economics by their low literacy skills. Results of the United States Department of Education Study (based on surveys by the Census Bureau in 1982) indicated that 13 percent of

the population on a national level were functionally illiterate; Texas had more than the national average with 16 percent. Furthermore, illiteracy was more likely to be found in major cities than in other parts of the country (Rowan, 1986).

Adult illiterates come from every demographic group; however, illiteracy tends to be more common among certain groups than others. Some groups with the highest rates of illiteracy are the unemployed (or those employed at low-skill jobs), the poor, residents of the South and rural areas, minority groups, and the old. Within the groups, overlap is considerable; members of one group are often members of one or more of the other groups (McGrail, 1984). Grant (1982) reported that the inability to read and write was consistently more prevalent among blacks than among whites in surveys by the Census Bureau. Duggan (1985) reported that 44, 56, and 16 percent of black, Hispanic, and white adults, respectively, were either total, functional, or marginal nonreaders. The 1982 Census indicated that 24.7, 40.5, and 14.7 percent of blacks, Hispanics, and whites, respectively, aged 25 years and older had completed less than nine years of school. In addition, 45, 54.1, and 27.2 percent of blacks, Hispanics, and whites, respectively, in the same age range had completed less than 12 years of school (McGrail, 1984).

Weight Control for Low-Income
Black and Hispanic Women

Weisenberg and Fray (1974) compared group behavior modification consisting of 16 weekly sessions to individual treatment and standard group therapy in a small sample of women (50, 37.5, and 12.5 percent black, white, and Puerto Rican, respectively); 58 percent were on welfare. Overall results indicated that behavior modification was either less effective than group therapy or not significantly different than individual treatment. When the three racial groups were considered separately, behavior modification was the least effective for the blacks; for the whites and Puerto Ricans, group therapy and behavior modification were equally effective and individual treatment was least effective. The black women in the behavior modification group, standard group, and individual treatment had mean weight changes of -0.55, -14.0, and -8.6 pounds, respectively. Problems with the behavior modification group included resistance of clients to assume active roles, failure to complete written assignments and to comply with self-reinforcement, and inability to involve spouse/family members.

Blake (1976) compared behavior modification group treatment consisting of 12 weekly sessions to a retrospective review of records for individual treatment. The group treatment was completed by 41 females and three males; 25 and 75 percent were black and white, respectively, and 29.5 percent received public assistance. The

attrition rate for group treatment was 38 percent. Results indicated that 29 percent of the group subjects lost ten to 20 pounds in three months while 23 percent of the individual treatment subjects lost the same amount of weight in 5.4 months. Thus, behavior modification group treatment seemed to lead to more consistent and significant weight loss in less time than individual treatment.

Linnet et al. (1979) compared individual treatment of 112 females and 11 males to behavior modification group treatment of 71 females and 2 males in a "free" clinic. Racial information was not specified by the authors. Individual treatment consisted of weekly weight checks, monthly physician visits, and biweekly dietitian visits. Group treatment consisted of seven weekly sessions followed by weekly weight checks and monthly group sessions; clients were encouraged to remain in the program until reaching their desired weights. The overall attrition rates were 68 and 59 percent for individual and group treatment, respectively. There were no significant differences between the two types of treatment in weight loss. The average weight loss was 13.2 and 9.2 pounds per person per year for the individual and group treatments, respectively. The authors selected group therapy with behavior modification as the treatment of choice due to the time-saving factor and the lack of differences in weight loss between the two treatments studied.

Kaul et al. (1979) reported the results of individual treatment with 23 low-income black females by a team of a physician,

nutritionist, and health educator. Patients were asked to keep records of food intake and to engage in some type of physical activity. Behavioral causes of overeating were also identified. The women made a total of 55 visits in three months. After seven weeks of treatment, the mean weight loss was 4.2 pounds; 83 percent (or 19 of 23 women) lost weight while three gained and one maintained.

Kaul et al. (1982) later reported results of 110 low-income patients who made weekly visits for eight or more weeks. Racial information was not specified by the authors; however, the patients more than likely were black. Treatment consisted of individualized diet plans, nutrition education, behavior modification, and encouragement to exercise. The authors were vague in reporting results but did mention that the average weight loss was two to five pounds per week per patient with an attrition rate of 20 percent. The authors stated that the main reason for the success of their program was that it was individualized.

Holm et al. (1983) compared behavior modification group treatment consisting of 12 weekly sessions to individual treatment in 60 black and two white low-income women. The mean weight loss of the group was 6.5 pounds; 87 and 45 percent of group participants attended two and ten or more sessions, respectively. Results of the group treatment approached statistical significance compared to those of the individual treatment ($p = 0.058$, one-tailed, paired t-test for 31 matched pairs). At 16 to 17 months follow-up, the mean weight

loss for group participants was 4.9 pounds compared to only 1.1 pounds for individual treatment participants. Overall, the results were comparable with results of similar large, free-living programs among middle-class participants. The authors concluded that group behavior modification for weight reduction can be adapted for a lower socioeconomic, inner-city population.

Wassertheil-Smoller et al. (1985) conducted a Dietary Intervention Study of Hypertension to determine if patients with high blood pressure which had been controlled with drugs for more than five years could maintain control with sodium restriction or weight reduction instead of drugs. Patients were randomly assigned to one of seven treatment groups. Two of the four data collection centers included low socioeconomic status patients. Weight reduction treatment consisted of eight weekly behavior modification group sessions followed by individual, semi-monthly sessions for four months and then monthly sessions for six months; thus, treatment lasted for one year. Eighty-seven patients (28 males, 59 females; 54 blacks, 33 whites) completed the weight reduction treatment. Results indicated an average weight loss of 10.1 pounds by 32 weeks which was maintained up to 56 weeks. Furthermore, both males and females, blacks and whites were nearly equally successful in losing weight.

Sullivan and Carter (1985) conducted an eight-week nutrition and aerobic exercise (dance) program with sessions twice per week for low-income black mothers of children under three years. Results

indicated an attrition rate of 40 percent. For the six women who completed the program, there was no significant effect on weight as the mean loss was only 0.4 pounds. However, there was a significant decrease in body fat (Wilcoxon paired comparison test, $p < .031$) from 30.4 to 26.8 percent.

Fardan and Tyson (1985) reported the results of a multifaceted group approach to obesity treatment for low-income black women. Sessions were held twice weekly for the first month and weekly for the next two months; weekly follow-up meetings were then held for another two months. Group sessions included nutrition education, behavior modification, relaxation techniques, and exercise (yoga and aerobic exercise). Attrition was very high with 71 women attending at least one session, 28 attending at least four sessions, and only 15 attending eight or more sessions. Of the 15 who completed the program, seven lost from 12 to 18 pounds, two gained weight, one remained unchanged, and the remainder lost less than 12 pounds. At follow-up, three had gained up to three pounds and the rest were losing weight at a rate slower than one pound per week. Thus, almost 50 percent of the women who completed the program lost one pound per week and maintained the loss during follow-up.

Scaling Pounds Away, a weight control program for black women, was pilot-tested with 90 women. The 16 weekly sessions emphasized long-term weight loss through behavior modification, exercise, and sensible eating. Mean weight decreased significantly by 9.6 percent

or 9.5 kilograms (20.9 pounds). Mean body mass index also decreased significantly by 13.7 percent or 5.1 kilograms per meter squared (McGee and Davis, 1989).

Daniel (1989) developed and pilot-tested a multi-component weight management program consisting of five biweekly sessions for low-income women enrolled in the Special Supplemental Food Program for Women, Infants, and Children (WIC) and/or food stamp programs in rural western New York state. Components included nutrition education, behavior modification, exercise, and stress management. The mean weight went from 166 to 151 pounds for the 32 women who completed the program. Racial information was not specified by the author. The attrition rate was 30 percent.

WIC program staff in Pennsylvania developed six weight control lessons which included brief videotapes produced especially for WIC participants, bimonthly newsletters, and low-calorie recipes. Free, weekly exercise classes and weight checks were offered. The authors failed to specify weight changes or racial information but did comment that results have been positive for both the WIC participants and staff (Virostek and Guiler, 1989).

"Cuidando El Corazon" (Caring for Your Heart), a culturally sensitive program developed to help Mexican Americans modify eating and exercise habits to achieve weight loss and cardiovascular risk reduction, was recently tested in Rosenberg and Richmond, Texas. Families were randomly assigned to one of three groups: booklet

only, group sessions for one spouse, or group sessions for both spouses. Sessions included material on exercise, nutrition, and behavior modification. Mean weight change after three months of treatment was significant for the groups for one and both spouses who lost 7.2 and 4.6 pounds, respectively; the booklet only group gained 2.2 pounds. The results indicated that behavioral interventions can be used to produce health behavior change in Mexican Americans (Personal communication, R. Reeves, 1989).

According to Kumanyika (1987), "published reports of weight control interventions with black women are limited...studies are needed to define effective means of preventing and treating obesity among black women. Effective interventions are likely to be culture-specific." Fullarton (1980) stated that existing weight reduction programs have had little success with blacks, Hispanics, and other ethnic groups as well as low-income people since the programs were designed primarily for white, middle and upper class people with high levels of basic education. Fullarton also commented about the definite need to create weight control programs designed especially for minorities and low-income people; these programs must include strategies which are culturally appropriate.

The 1985 National Institutes of Health Consensus Development Conference on the Health Implications of Obesity stressed the importance of research on culture groups, including low-income and minority populations, to help effectively prevent obesity in the

future (Burton and Foster, 1985). At the National Conference on Nutrition Education Research in 1986, Gayle (1987) commented that since one in three Americans will be nonwhite by the year 2000, nutrition educators will be required "to devise a more complex approach to teaching to individual needs, cultures, and economic bases." Future research priorities identified by conference participants included determining the nutrition education needs of various populations such as low-income consumers and minorities with cultural food differences (Brun, 1987).

CHAPTER III

PROCEDURES

Development of the Shape Up Dallas Program

The Shape Up Dallas program was developed for English-speaking black women and pilot-tested in the fall of 1986 with a small group of black women (Smith, 1987). The program was revised based on the results of the pilot-testing. The revised program consisted of 11 weekly sessions taught by a Registered Dietitian. The basic theme was that weight loss could be achieved without spending extra money. The free program stressed the basic food groups and increased exercise such as walking and provided practical methods for weight control which could be followed for life. The program emphasized self-responsibility; a weight loss of one to two pounds per week was recommended. Participants were treated with dignity and respect. Participants were weighed weekly and changes in weight were announced to the group. An outline of the Shape Up Dallas program may be found in Appendix A.

The program was developed at a low educational level to meet the needs of low-income, low-literate women. Topics discussed included food and exercise diaries, basic food groups, exercise, cooking methods, shopping tips, serving sizes, balanced meals, recommended daily servings, rewards, buddies, tips for eating less, and choosing

low-calorie foods. A variety of teaching materials were used such as slide shows, pamphlets, overheads, recipes, and audiocassettes. Activities such as worksheets, discussion, games, food-tasting, self-monitoring with food and exercise diaries, singing, and participant commitment were used to increase active participation by the learner.

The use of diaries and participant commitment helped to emphasize self-responsibility. Participants self-monitored their eating habits and physical activity with diaries which utilized colored stickers or colored pencils. Several sessions allowed time for participant commitment and reports the following week as to the outcome of the commitment.

The teaching materials were developed by the principal investigator with help from the sponsoring agency. The slide shows ranged in length from two to nine minutes; inaudible tones were used to advance the slides. The principal investigator narrated the tapes for the slide shows. The audiocassettes ranged in length from five to eight minutes. The principal investigator and her husband narrated the audiocassettes.

Simple language written in a conversational style was used in the teaching materials. Information was phrased in a positive rather than negative manner whenever possible. The illustrations for the slides and handouts consisted of simple black and white line drawings; color was used only for emphasis or highlighting such as

red circles and green and yellow signal lights. Printed materials used a large, simple typestyle (such as orator); text followed standard rules of capitalization and paragraphs had ragged right margins. The handouts had ample "white" (or blank) space and were duplicated on colored paper. The printed materials repeated information given in slide shows and audiocassettes and thus provided participants with a written copy of the main points.

Each participant was given a set of plastic, nested measuring cups at the session when serving sizes were discussed. Participants were encouraged to measure their food to see how much they were eating. However, since always measuring food would be impractical, participants were also told that they could learn to estimate the recommended serving sizes to help them avoid eating too much.

The recipes used were selected based on cultural appropriateness, cost and availability of ingredients, and cooking methods which decreased the caloric content. Written copies of the recipes were provided and discussed while the dish was being tasted by the participants.

Games were played at two of the sessions to reinforce learning while having fun, as well as to provide some physical activity during the session. The game format was similar to that of a cake walk in that participants walked around the table while the music played and stood at a number when the music stopped. A number was drawn, and the participant at that number had the opportunity to answer a

question about the basic food groups, serving sizes, and/or shopping tips. The participant won a prize for answering the question correctly. Game prizes consisted of useful yet inexpensive items such as clothespins, nail files, combs, pens, and pencils.

A door prize was awarded at each session. Door prizes consisted of items which usually followed the theme of the lesson that day. For example, a pair of cotton socks was awarded at the session when exercise was discussed; a set of measuring spoons was given at the session on serving sizes. Door prizes were awarded randomly to the woman whose number on the sign-in sheet matched the number which was drawn by the instructor at the session.

The Shape Up Dallas program had its own theme song written to the melody of "Camptown Races" by Stephen Foster. The words were written by the principal investigator. The music was used at the beginning and end of the slide shows and audiocassettes. The song was also sung by the group at the end of each session. The song was included to allow for participant involvement as well as to provide a "jingle" to maybe jog the participant's memory about weight control while away from the sessions. The words for the Shape Up Dallas Song may be found in Appendix B.

Several awards were presented at the final session. Each participant who completed her diary at least 70 percent of the possible time received either a matching kitchen towel, dishcloth, and pot holder set or a clipboard and zipper bag filled with school

supplies. Certificates for attendance and red ribbons for weight loss were also awarded. Participants with perfect attendance received a gold star on their certificates. In addition, the participant at each site who had lost the most weight during the program was awarded a blue ribbon and a grand prize of a chrome pen engraved with the participant's name or the name of the program.

Development of the Spanish Program

The Shape Up Dallas program was carefully modified (before it was translated into Spanish) to increase cultural appropriateness and ethnic sensitivity. A dietitian, health educator, and social worker (who were all Hispanic and bilingual and employed by the sponsoring agency) and the principal investigator worked on the modifications. The modifications included adding appropriate ethnic foods, stressing the importance of health for the entire family, and reformatting some of the materials. Several of the pamphlets for the Spanish program were changed to a comic book format. The audiocassettes were changed from the radio show format used in the Shape Up Dallas program to a format which used two good friends (or "comadres") talking.

The Spanish program was named "Pierda peso/gane salud" (Lose Weight/Gain Health) and was translated by a professional translator. A bilingual, Hispanic health educator and the principal investigator (who spoke some Spanish) proofread the program and made the necessary changes to increase consistency and simplicity of vocabulary. An

outline of the Lose Weight/Gain Health program may be found in Appendix C.

The audiocassettes for the Spanish program were written by a health educator, social worker, and elementary school teacher (all of whom were Hispanic and bilingual) with input from the principal investigator and dietitian from the sponsoring agency. A health educator, social worker, and graphic artist (all of whom were bilingual, Hispanic, and employed by the sponsoring agency) narrated the Spanish audiocassettes which ranged in length from five to 11 minutes. A bilingual, Hispanic health educator narrated the Spanish slide shows which ranged in length from two to ten minutes. Inaudible tones were used to advance the slides.

Part of the melody from the folk song "Las Chiapanecas" was used for the song for the Spanish program. The words to the song were written by the principal investigator and staff from the sponsoring agency. The music was used at the beginning of the slide shows and audiocassettes. The song was also sung by the group at the end of each session. The words to the Lose Weight/Gain Health Song may be found in Appendix D.

Selection of the Locations for the Shape Up Dallas Program

The Shape Up Dallas program was offered to black women in intact groups at five sites in Dallas in an effort to increase the sample size for the study. Four of the sites were with a literacy program

and one site was with a neighborhood recreational center. Three of the four sites with the literacy program were located in housing projects; the fourth site was a church in a low-income area in Dallas. The neighborhood recreational center was also located in a low-income area of Dallas; the group here consisted of middle-aged and older black women who met weekly for a pot-luck lunch. The literacy program and the recreational center had previously contacted the sponsoring agency about offering nutrition or weight control classes. A minimum of 40 black women were to receive treatment.

Selection of the Locations for the Spanish Program

Before deciding where to offer the Spanish program, several churches in low-income areas in Dallas were visited by the principal investigator and dietitian and health educator from the sponsoring agency. Key personnel from the churches were interviewed concerning their interest in the program as well as their willingness and ability to help recruit and enroll participants. Surveys were distributed at the churches to determine the number of women interested, the language preferred for the sessions to be taught in, and the time and day desired for the sessions to be held. Based on the results of the surveys and interviews, two churches were selected as locations for the Spanish program to be offered at three different times; thus, the program was offered twice at the same church. Also, the decision was made to teach the program in Spanish but to have the

English version of the handouts available at the sessions. A minimum of 40 Hispanic women were to receive treatment. A sample of the survey tool may be found in Appendix E.

Recruitment of the Participants for the Shape Up Dallas Program

Since the small-scaled studies of the program for black women utilized intact groups, recruitment was at a minimum. A large poster with information sheets about the program was placed in the neighborhood recreational center. An information session was scheduled at the recreational center; however, the weather was so stormy that the session was cancelled based upon the recommendation of a staff member from the center. The same staff member later informed the principal investigator that no one had shown up for the information session.

Recruitment of the Participants for the Spanish Program

Recruitment for the Spanish programs included articles in Spanish and English newspapers, public service announcements on Spanish radio stations, bilingual flyers, and announcements in the bulletins of various churches. Interested women enrolled by telephoning the sponsoring agency or by signing up at the churches where the program was to be offered. An information session was held at each site to help people decide if they wanted to attend.

Implementation of the Shape Up Dallas Program

The Shape Up Dallas program for black women began the week of February 13, 1989, at the four literacy program sites and ended the week of May 1, 1989. Sessions were held in the morning during the weekly time scheduled for nutrition class at each site. Since the literacy program followed the calendar for the Dallas Independent School District, there was one week of vacation between March 20 and 24, 1989; thus, the Shape Up Dallas program also observed the week's vacation. The program at the neighborhood recreational center began and ended one week later than those at the literacy program sites; the week of vacation was also observed at the center. The sessions at the center were held on Thursday mornings before the group met for a pot-luck lunch. A follow-up session was held three weeks after the final session at each site. Participants were weighed, given the post-test again, and allowed to ask questions about weight control. Small gifts (sugarless gumballs and magnet) were given to each participant at the follow-up session.

Child care was not provided at the sessions; participants were encouraged to make other arrangements for child care so that they could devote their full attention during the sessions. Informed consent forms for Texas Woman's University and the sponsoring agency were signed by participants at the initial session attended. The forms were read aloud to participants before being signed.

The principal investigator taught the Shape Up Dallas program at four sites. The dietitian from the sponsoring agency taught at one site because the program was offered at the same time at two locations for the literacy program.

A balance beam scale was stored at each site throughout the program. Each week, the remaining equipment and materials were transported to the site by the principal investigator or dietitian from the sponsoring agency. This included the slide projector, overhead projector, handouts, door prize, food for tasting, and other miscellaneous supplies. The principal investigator prepared most of the dishes for tasting; the dietitian from the sponsoring agency also prepared some of the dishes. During sessions, participants were seated around rectangular tables; the instructor either sat or stood at the end of one table. Participants and instructors were on a first-name basis.

The diaries were originally designed to be completed with colored dot-shaped stickers (with a different color signifying each of the food groups and a gold star for exercise). However, due to the expense of the stickers along with the time involved to separate them into a week's supply, the decision was made to see if colored pencils could be used. Thus, the black women at one of the five sites for the Shape Up Dallas program were asked to complete their diaries with colored pencils. Each of these women received a set of five colored pencils along with a small pencil sharpener. They were

to use the appropriate colored pencil to color dots (with each color signifying a different food group) and stars (to signify exercise).

Implementation of the Spanish Program

The Spanish program began the week of September 4, 1989, and ended the week of November 20, 1989. The information sessions were held one week prior to the initial sessions. A one-week vacation was also observed with the Spanish program in order to be able to compare the results with those from the black program. Sessions were held on Wednesday mornings at one church and on Tuesday and Wednesday evenings at the other church. A follow-up session was also held approximately three weeks after the final session at each site; participants were weighed, given the post-test again, and allowed to ask questions about weight control. In addition, the slides which had been taken at the final sessions were shown. Each participant received small gifts (sugarless gumballs, magnet, and miniature first-aid kit) at the follow-up session.

The implementation of the Spanish program was identical to that of the Shape Up Dallas program regarding child care, informed consent forms, on-site storage of the balance beam, etc. The Hispanic women at one of the three sites were asked to complete their diaries with colored pencils instead of stickers. The sponsoring agency hired a bilingual, Hispanic dietitian to teach the sessions since the principal investigator was limited in her Spanish-speaking skills.

However, the principal investigator served as the teacher's assistant at the sessions.

Collection of the Data for the Black Women

The pre-test was given orally at the first session attended. Participants circled the answers on their own papers while the instructor showed the test on the overhead projector and pointed to questions and possible answers while reading them out loud. This procedure was followed to allow for participants who had limited reading skills. The post-test and evaluation were given at the final session in the same manner. The pre-test and post-test contained pictures with words for possible answers. The evaluation utilized a hedonic scale of five faces. The pre- and post-test and evaluation form used in the study had been used previously (Smith, 1987). A sample of the pre-/post-test tool and the participant evaluation form may be found in Appendices F and G, respectively.

Weight and height were determined and recorded at the initial session attended; weight was determined and recorded at the remaining sessions. Weight was measured on a balance beam scale while participants were wearing light clothing without shoes. Height was measured with a head block and non-stretchable tape measure while participants were standing without shoes on a hard surface. The number of days that the diary was kept during the previous week was also recorded at each session.

Follow-up measurements were obtained three weeks after the final session. A three-week time increment was selected because it was the longest amount of time that could be allowed for the black participants before the literacy program began its summer vacation. During the three weeks between the final and follow-up sessions, program instructor(s) did not interact with program participants. Follow-up measurements consisted of weight and post-test score and were determined in the manners described previously.

Initial measurements for the control groups consisted of weight, height, and pre-test score. Final measurements consisted of weight and post-test score. These measurements were determined in the manners described previously.

Collection of the Data for Hispanic Women

Data collection for Hispanic women was identical to that described for black women with two exceptions. Since the Spanish program included an information session, initial weight, height, and pre-test score were all determined at the first session attended after the information session. In addition to the written evaluation, a discussion was led by the instructor of the Spanish sessions at each site to ask specific questions about the appropriateness of the terminology, language, teaching materials, etc. These discussions were tape-recorded after permission was granted from the participants. This format was used to gain input

about the Spanish program yet limit additional writing by participants.

Formation of the Control Groups

The two control groups each consisted of a minimum of 15 participants. Each participant was monetarily compensated with \$25 for providing initial and final measurements (11 to 12 weeks later). They were told that if the program proved to be of benefit, then it would be offered to them at a future time by the sponsoring agency. One or two letters were mailed to each participant to remind her to come to the meeting for final measurements. Telephone calls were also made to each participant one to three days before the meeting for final measurements to remind her to come. Each participant received a small gift (such as a pen, pencil with eraser top, sugarless gumballs, magnet, and/or miniature first-aid kit) at the initial and final meeting.

The black control group was recruited from a site of the literacy program where the Shape Up Dallas program was not offered. This site consisted of women who had finished the literacy classes held in the housing projects and were attending classes at a community college in Dallas. The group met on a monthly basis for announcements and paperwork. Initial and final measurements were obtained on February 28 and May 23, 1989, respectively.

The Hispanic control group was recruited from a neighborhood recreational center located in a low-income, Hispanic area of Dallas where the Spanish program was not being offered. The director of the center was very helpful in recruiting participants for the Hispanic control group. Initial and final measurements were obtained on September 21 and December 7, 1989, respectively.

Criteria for Inclusion in Study

The women were required to be either black or Hispanic, to have a BMI of 27.3 or greater, and to attend seven or more of the 11 sessions and at least one of the last three sessions (sessions number nine, ten, or eleven) to be considered part of the treatment groups. A woman was considered a drop-out if she met the BMI criteria and attended at least three sessions but less than seven sessions or failed to attend one of the last three sessions. To be considered part of the control groups, women were required to be either black or Hispanic, to have a BMI of 27.3 or greater, and to attend both the first and second meeting.

Approval for the Study

The study met the guidelines of the Human Subjects Review Committee at Texas Woman's University. A copy of the approval letter from the Human Subjects Review Committee may be found in Appendix H.

The principal investigator received permission from the sponsoring agency to use the data collected from the Shape Up Dallas

program as well as the Spanish program for research purposes. A copy of the approval letter from the sponsoring agency may be found in Appendix I.

Tabulation and Analysis of the Data

The data were statistically analyzed using BMDP software on an IBM personal computer. Statistical procedures included multi-variate analysis of variance with covariates and descriptive statistics.

Revisions for the Programs

Recommendations for revising the curriculum and teaching materials were primarily made by the principal investigator, the dietitian (from the sponsoring agency) who had taught the Shape Up Dallas program at one site, and the bilingual dietitian who taught the Spanish program. Statistical results, comments made by participants, and experience from the small-scaled studies of the program for black women and from the pilot-testing of the Spanish program all influenced the recommendations for revisions.

CHAPTER IV

PRESENTATION OF THE FINDINGS WITH DISCUSSION

Description of Participants

The black treatment group consisted of 31 women while there were 14 women in the black control group. The mean age was 37.2 years for the black treatment group and 34.9 years for the black control group. The mean, self-reported educational level was 11.1 years for the black treatment group and 11.9 years for the black control group.

The Hispanic treatment group consisted of 20 women while there were 14 women in the Hispanic control group. The mean age was 41.5 years for the Hispanic treatment group and 41.7 years for the Hispanic control group. The mean, self-reported educational level was 8.9 years for the Hispanic treatment group and 7.7 years for the Hispanic control group. Table 1 describes the age and educational level for the four groups.

Analysis of variance indicated that the mean ages of the black and Hispanic treatment and control groups were not significantly different. Analysis of variance on the mean educational levels of the groups indicated an overall significant difference with $F(3,75) = 9.09$, $p < 0.0001$. Scheffé post hoc analysis indicated that the significant differences were between groups of different races; thus, treatment and control groups of the same race were not significantly

TABLE 1
AGE AND EDUCATIONAL LEVEL OF PARTICIPANTS

	Range	M	SD
<u>Age (in years)</u>			
Black Treatment (N = 31)	19-73	37.2	14.57
Black Control (N = 14)	22-51	34.9	8.95
Hispanic Treatment (N = 20)	21-70	41.5	15.90
Hispanic Control (N = 14)	23-62	41.7	9.70
<u>Educational Level (in grades)</u>			
Black Treatment (N = 31)	8-13	11.1	1.39
Black Control (N = 14)	11-12	11.9	0.36
Hispanic Treatment (N = 20)	3-15	8.9	3.42
Hispanic Control (N = 14)	3-16	7.7	4.07

different. The mean educational levels of the Hispanic treatment and control groups were significantly lower than those of the black treatment and control groups. Similarly, data from the 1982 Census indicated that more Hispanics than blacks aged 25 years and over had completed fewer years of school (McGrail, 1984). The results of the Scheffé test for educational level are found in Table 2.

TABLE 2
SCHEFFE POST HOC ANALYSIS FOR EDUCATIONAL LEVEL

Means Compared	Mean Difference
Black Treatment vs Black Control	-0.8
Black Treatment vs Hispanic Treatment	2.16 *
Black Treatment vs Hispanic Control	3.35 **
Black Control vs Hispanic Treatment	2.96 *
Black Control vs Hispanic Control	4.15 **
Hispanic Treatment vs Hispanic Control	1.19

* p < .05
** p < .01

Attendance of the Program Participants

A total of 79 black women attended at least one session. Of the 79, 29 failed to meet the criteria for BMI for inclusion in the study. Of the remaining 50, seven attended less than three sessions and thus were not considered as participants. Therefore, there were 43 total possible black program participants. Of the 43, 31 met the attendance criteria and were included in the statistical analyses. The 31 attended an average of 9.1 of 11 sessions (SD = 1.29). The follow-up session was attended by 27 of the 31 black women.

The attrition rate for the black treatment group was 27.9 percent as 12 of 43 women failed to meet the attendance criteria. The attrition rate was similar to the 25 percent attrition rate found during the pilot-testing of the program (Smith, 1987) but less than the 40 percent attrition rate found by Sullivan and Carter (1985). Fardin and Tyson (1985) reported higher attrition as 71 women attended at least one session, 28 attended at least four sessions, but only 15 attended eight or more sessions. Holm et al. (1983) reported higher attrition as 45 percent of their group participants attended ten or more sessions. The use of intact groups of black women may have helped keep the attrition rate low in this study.

A total of 66 Hispanic women attended at least one session. Of the 66, 11 failed to meet the criteria for BMI for inclusion in the study. Of the remaining 55, 11 attended less than three sessions and thus were not considered as participating in the program. Therefore, there were 44 total possible Hispanic program participants. Of the 44, 20 met the attendance criteria and thus were included in the statistical analyses. The mean number of sessions attended by the 20 women was 10.2 of 11 sessions ($SD = 1.89$). The follow-up session was attended by 14 of the 20 Hispanic women.

The attrition rate for the Hispanic treatment group was 54.6 percent as 24 of 44 women failed to meet the attendance criteria. Telephone calls to the 24 Hispanic women who dropped out indicated that the reasons for attrition included illness (five women),

transportation (four women), work (three women), personal problems (two women), childcare (one woman), out of the country (one woman), and English class (one woman). Seven of the 24 women could not be reached for comment.

Weight Change Results

The mean initial weight was 208.1 pounds for the black treatment group, 226.5 pounds for the black control group, 187.8 pounds for the Hispanic treatment group, and 195.1 pounds for the Hispanic control group. Table 3 describes the initial weight of the groups.

TABLE 3
INITIAL WEIGHT
(in pounds)

	Range	M	SD
Black Treatment (N = 31)	146.5-304.0	208.1	37.64
Black Control (N = 14)	153.8-334.5	226.5	54.09
Hispanic Treatment (N = 20)	142.8-230.0	187.8	24.11
Hispanic Control (N = 14)	153.0-242.5	195.1	23.26

Analysis of variance indicated an overall significant difference between the mean initial weights of the four groups with $F(3,75) = 3.55$, $p = 0.0184$. Scheffé post hoc analysis revealed a significant difference at $p < .05$ between the mean initial weights of the black control group and the Hispanic treatment group. Therefore, mean final weights had to be adjusted. As shown in Table 4, the mean final weights of the black treatment and control groups were adjusted downward while those of the Hispanic treatment and control groups were adjusted upward.

TABLE 4
INITIAL, FINAL, AND ADJUSTED FINAL MEAN WEIGHTS
(in pounds)

	Initial	Final	Adjusted Final
Black Treatment (N = 31)	208.1	205.2	201.0
Black Control (N = 14)	226.5	226.3	203.5
Hispanic Treatment (N = 20)	187.8	179.1	195.4
Hispanic Control (N = 14)	195.1	195.9	204.8

Analysis of covariance (ANCOVA) on the adjusted mean final weights indicated a significant difference between the groups with $F(3,74) = 7.5928$, $p < 0.001$. Scheffé post hoc analysis revealed that the differences at $p < .05$ were between the Hispanic treatment and control groups as well as the Hispanic treatment group and the black control group. The results of the Scheffé test for initial and adjusted final mean weights are in Table 5.

The black treatment group had a mean initial BMI of 35.3 and a mean final BMI of 34.7. The black control group had a mean initial BMI of 37.8 and a mean final BMI of 37.7. The Hispanic treatment group had a mean initial BMI of 34.9 and a mean final BMI of 33.3. The Hispanic control group had a mean initial BMI of 37.1 and a mean final BMI of 37.2. There were no significant differences between the mean initial or final BMIs of the groups. The initial and final BMI of the groups are in Table 6.

The mean weight loss for the black treatment group was 3.1 pounds in 10.6 weeks, or 0.29 pounds per week. Weight change for the program ranged from a gain of 7.0 pounds to a loss of 19.5 pounds for the black treatment group. The black control group lost an average of 0.3 pounds in 12 weeks, or 0.03 pounds per week. Twelve (38.7 percent) of the 31 women in the black treatment group lost five or more pounds during the program, nine (29 percent) lost less than five pounds, and ten (32.3 percent) gained weight (0.3 to 7.0 pounds). At follow-up, the black treatment group averaged a 0.5 pound gain.

TABLE 5
SCHEFFE POST HOC ANALYSIS FOR INITIAL AND ADJUSTED FINAL WEIGHTS

Means Compared	Mean Difference
<u>Initial Weight</u>	
Black Treatment vs Black Control	-18.38
Black Treatment vs Hispanic Treatment	20.36
Black Treatment vs Hispanic Control	13.02
Black Control vs Hispanic Treatment	38.74 *
Black Control vs Hispanic Control	31.40
Hispanic Treatment vs Hispanic Control	-7.34
<u>Adjusted Final Weight</u>	
Black Treatment vs Black Control	-2.48
Black Treatment vs Hispanic Treatment	5.60
Black Treatment vs Hispanic Control	-3.77
Black Control vs Hispanic Treatment	8.08 *
Black Control vs Hispanic Control	-1.28
Hispanic Treatment vs Hispanic Control	-9.37 *

* $p < .05$

TABLE 6
INITIAL AND FINAL BMI

	Range	M	SD
<u>Initial BMI</u>			
Black Treatment (N = 31)	27.7-51.1	35.3	6.35
Black Control (N = 14)	28.7-57.0	37.8	8.24
Hispanic Treatment (N = 20)	28.5-42.8	34.9	4.05
Hispanic Control (N = 14)	31.2-52.0	37.1	5.86
<u>Final BMI</u>			
Black Treatment (N = 31)	24.4-50.9	34.7	6.69
Black Control (N = 14)	27.5-55.6	37.7	8.18
Hispanic Treatment (N = 20)	28.0-40.3	33.3	3.91
Hispanic Control (N = 14)	30.8-51.3	37.2	5.70

The mean weight loss for the Hispanic treatment group was 8.7 pounds in 10.9 weeks, or 0.80 pounds per week. Weight change ranged from a gain of 1.3 pounds to a loss of 22.5 pounds. The Hispanic control group gained an average of 0.8 pounds in 11 weeks, or 0.07 pounds per week. Eleven (55 percent) of the 20 women in the Hispanic treatment group lost five or more pounds during the program, seven (35 percent) lost less than five pounds, and two (10 percent) gained

weight (1.0 to 1.3 pounds). At follow-up, the Hispanic treatment group averaged a 1.0 pound loss. Table 7 describes the weight change overall and at follow-up.

TABLE 7
WEIGHT CHANGE OVERALL AND AT FOLLOW-UP
(in pounds)

	Range	M	SD	Mean Weeks	Weekly Change
<u>Overall</u>					
Black Treatment (N = 31)	+7.0 to -19.5	-3.1	6.51	10.6	-0.29
Black Control (N = 14)	+7.8 to -8.5	-0.3	4.81	12.0	-0.03
Hispanic Treatment (N = 20)	+1.3 to -22.5	-8.7	7.57	10.9	-0.80
Hispanic Control (N = 14)	+8.6 to -5.0	+0.8	3.62	11.0	+0.07
<u>At Follow-up</u>					
Black Treatment (N = 27)	+6.0 to -7.3	+0.5	3.50	3.0	+0.17
Hispanic Treatment (N = 14)	+4.5 to -3.8	-1.0	2.15	3.0	-0.33

The first research question asked if completion of the treatment program resulted in a minimum average weight loss of five to ten pounds per person over a minimum of ten calendar weeks. Results indicated that the black women who completed the Shape Up Dallas program had an average weight loss of 3.1 pounds in 10.6 weeks while the Hispanic women who completed the Spanish program had a mean loss of 8.7 pounds in 10.9 weeks.

The second research question asked if there was a significant difference in weight loss between the treatment and corresponding control groups. Results indicated that the Hispanic treatment group lost significantly more weight than the Hispanic control group; however, the black treatment group did not lose significantly more weight than the black control group.

The third research question asked if there was a significant difference in weight loss between the black and Hispanic treatment groups. Results indicated that the differences between the adjusted mean final weights of the black and Hispanic treatment groups did not reach statistical significance.

The fourth research question asked if women who completed the program maintained their weight loss at follow-up (approximately three weeks later). Results indicated that women in the Hispanic treatment group maintained their weight loss at follow-up and continued to lose weight (at a slower rate). However, the women in the black treatment group gained back approximately 16 percent of the

weight they had lost during the program. These data indicate that additional follow-up may be necessary for black women.

The weekly weight loss of 0.29 pounds by the black treatment group was very similar to the weekly weight loss of 0.36 pounds by the six black women who completed the pilot program (Smith, 1987). The weight loss results of the study may be compared to other group approaches; however, comparisons are difficult because many authors failed to specify weekly weight changes. The weight loss of the black treatment group was similar to the 10.1 pound loss in 32 weeks found by Wassertheil-Smoller et al. (1985) and much greater than the 0.4 pound loss in eight weeks of sessions found by Sullivan and Carter (1985). The weight loss results of the study were slightly less than the 6.5 pound loss in 12 weeks of sessions found by Holm et al. (1983) and much less than the 20.9 pound loss in 16 weeks of sessions found by McGee and Davis (1989). Studies of individual treatment for black women have reported slightly greater and much greater weight losses of 4.2 pounds in seven weeks and two to five pounds per week (Kaul et al., 1979; Kaul et al., 1982). The weight loss of the Hispanic participants was slightly more than the 7.2 pound loss in three months in the Cuidando El Corazon program (Personal communication, R. Reeves, 1989).

Perhaps the smaller weight loss among the black compared to the Hispanic treatment groups was due to the use of intact groups for the black women. Using intact groups seemed logical to increase the

sample size; however, weight loss may have been negatively impacted for several reasons. The women in the intact groups were not given the option of deciding if the time was right for them to try to lose weight. In addition, there were women in the literacy groups who failed to meet the BMI criteria for inclusion in the study; some of these women wanted to gain instead of lose weight. This may have been discouraging to the women who wanted to lose weight. In contrast, the Hispanic women were recruited to come to the weight control classes and thus were given the option of deciding if the time was right for them to try to lose weight. Perhaps intact groups where all members were overweight would have been more successful in regards to weight loss. The result that 32 percent of the women in the black treatment group gained weight (from .3 to seven pounds) was very disturbing but could be due to the use of intact groups.

Another factor which may influence weight loss (but was not investigated in this study) is attitudes towards overweight. Results from the 1985 National Health Interview Survey (NHIS) indicated that fewer black than white women perceived themselves as overweight; in addition, the percentage of overweight women who perceived themselves as overweight decreased as the level of education and income decreased (Stephenson et al., 1987). Findings from the Health Promotion Disease Prevention Supplement to the NHIS indicated that overweight white women were more likely to perceive themselves as overweight, followed by Hispanic women and finally by black women.

However, once women perceived themselves as overweight, all three races were equally likely to attempt weight loss (Dawson, 1988). According to the results of the Behavioral Risk Factor Telephone Surveys, approximately nine of ten overweight white women perceived themselves as overweight compared to approximately seven of ten black women (Forman et al., 1986). Thus, black women might use a different standard for determining if they are overweight. Perhaps this standard negatively influences their desire to lose weight.

Food Diary Completion Results

The program covered a time span of 11 calendar weeks. Thus, the diaries could be completed for a possible 77 days if the women joined at the first session, 70 days if they joined at the second session, and so on. The diary completion rate was calculated by dividing the number of days the diary was actually completed by the number of possible days and multiplying by 100.

The black treatment group had a diary completion rate of 57.1 percent. During the pilot program, the diary completion rate was much higher at 92.6 percent (Smith, 1987). Perhaps the diary completion rate was lower in this study because four of the five sites for black women were with a literacy program. Thus, the women had homework for their other classes in addition to the diary.

The Hispanic treatment group had a very high diary completion rate of 94.6 percent. The possible diary days, actual diary days,

and diary completion rate of the black and Hispanic treatment groups are described in Table 8.

TABLE 8
POSSIBLE DAYS, ACTUAL DAYS, AND COMPLETION RATE FOR DIARY

	Range	M	SD
<u>Black Treatment</u> (N = 31)			
Possible Days (in days)	63- 77	73.9	4.56
Actual Days (in days)	0- 77	42.2	26.76
Completion Rate * (in %)	0-100	57.1	0.36
<u>Hispanic Treatment</u> (N = 20)			
Possible Days (in days)	70- 77	76.4	1.57
Actual Days (in days)	54- 77	72.3	7.14
Completion Rate * (in %)	71-100	94.6	0.09
* Completion Rate = $\frac{\text{Actual Days}}{\text{Possible Days}} \times 100$			

The black women who completed their diaries with colored stickers (N = 24) or colored pencils (N = 7) had completion rates of 52.5 and 75.1 percent, respectively. The Hispanic women who completed their diaries with stickers (N = 10) or pencils (N = 10)

had completion rates of 92.4 and 96.6 percent, respectively. Thus, both black and Hispanic women who used colored pencils had higher diary completion rates than those who used stickers.

Results of the Pre- and Post-tests

The highest possible score on the nutrition knowledge pre- and post-test was 21. A copy of the pre- and post-test may be found in Appendix F. The black treatment group had a mean score of 14.6 on the pre-test and 17.3 on the post-test. The black control group had a mean score of 14.8 on the pre-test and 15.2 on the post-test. The mean percent of improvement from the pre- to the post-test was 18.4 percent for the black treatment group and 2.9 percent for the black control group. The mean follow-up post-test score for the black treatment group was 17.0.

The Hispanic treatment group had a mean score of 14.8 on the pre-test and 18.6 on the post-test. The Hispanic control group averaged 14.5 on both the pre- and post-test. The percent of improvement was 25.3 for the Hispanic treatment group and 0.0 for the Hispanic control group. The Hispanic treatment group had a mean score of 18.9 on the follow-up post-test. Table 9 describes the pre- and post-test scores for the four groups.

Analysis of variance did not indicate any significant differences between mean pretest scores among the groups. An assumption check of correlation between pre- and post-test scores

TABLE 9
PRE- AND POST-TEST SCORES

	Range	M*	SD
<u>Black Treatment Group</u>			
Pre-test (N = 30)	9-20	14.6	2.53
Post-test (N = 31)	13-20	17.3	2.07
Follow-up Post-test (N = 27)	10-21	17.0	2.94
<u>Black Control Group</u>			
Pre-test (N = 14)	12-18	14.8	1.72
Post-test (N = 14)	12-18	15.2	1.85
<u>Hispanic Treatment Group</u>			
Pre-test (N = 20)	11-18	14.8	1.85
Post-test (N = 20)	13-21	18.6	2.04
Follow-up Post-test (N = 14)	12-21	18.9	2.82
<u>Hispanic Control Group</u>			
Pre-test (N = 14)	10-18	14.5	2.21
Post-test (N = 14)	12-17	14.5	1.83

* The highest possible score was 21.

indicated $r = .339$; thus, ANCOVA could not be used since r was not greater than $.40$. Analysis of variance indicated an overall significant difference between the mean post-test scores among the four groups with $F(3,75) = 15.05$, $p < .0001$. Scheffé post hoc analysis revealed significant differences between the black treatment group and the black control group at $p < .05$ as well as between the Hispanic treatment group and the Hispanic control group, the black treatment group and the Hispanic control group, and the Hispanic treatment group and the black control group at $p < .01$. Thus, the treatment groups scored significantly higher on the post-test than the control groups. Table 10 describes the results of the Scheffé test for post-test scores.

Seven of the 21 questions on the pre-test were missed by 50 percent or more of the black treatment group. The three questions missed most often asked how many servings an adult should have from the bread and cereal group every day, how many servings an adult should have from the fruit and vegetable group every day, and what the serving size for cooked pinto beans was. The three questions were missed by 90, 76.7, and 70 percent of the black treatment group, respectively. On the post-test, only two of the 21 questions were missed by 50 percent or more of the black treatment group. The two questions asked what the serving size for cooked pinto beans was and how many servings an adult should have from the fruit and vegetable group every day. The two questions were missed by 70 and 50 percent

TABLE 10
SCHEFFE POST HOC ANALYSIS FOR POST-TEST SCORES

Means Compared	Mean Difference
Black Treatment vs Black Control	2.08 *
Black Treatment vs Hispanic Treatment	-1.26
Black Treatment vs Hispanic Control	2.79 **
Black Control vs Hispanic Treatment	-3.34 **
Black Control vs Hispanic Control	0.71
Hispanic Treatment vs Hispanic Control	4.05 **
* p < .05	
** p < .01	

of the black treatment group, respectively. Each question missed on the pre-test was missed by fewer women in the black treatment group on the post-test except for the question which asked what the serving size was for pinto beans. This question was missed by the same number of women in the black treatment group on the post-test as on the pre-test (70 percent).

During the pilot program, the women in the black treatment group improved their post-test scores by an average of 40.5 percent, which was considerably more than the black women from the present study.

During the pilot study, the average pre-test score was lower and post-test score higher than that from the present study (13.2 and 18.5, respectively). The questions missed most often on the post-test during the pilot program asked about balanced meals, recommended number of servings each day, and serving sizes. The question missed most often asked about the serving size for cooked pinto beans (Smith, 1987). The results of the present study indicated that black women in the program still had trouble answering the question about the serving size of pinto beans.

Fifty percent or more of the women in the Hispanic treatment group also missed seven of the 21 questions on the pre-test. The three questions missed most often asked how many servings an adult should have from the bread and cereal group every day, what the serving size for cooked pinto beans was, and how many servings an adult should have from the fruit and vegetable group every day. The three questions were missed by 95, 90, and 75 percent of the women in the Hispanic treatment group. On the post-test, none of the questions were missed by 50 percent or more of the women. Each question on the pre-test was missed by fewer women in the Hispanic treatment group on the post-test except for the questions which asked which food was in the fruit-vegetable group and what the serving size was for a cooked pork chop. These two questions were missed by the same number of women on the post-test as on the pre-test (5 and 35 percent, respectively).

The fifth research question asked if completion of the treatment program resulted in an increase in knowledge as measured by improvement on pre- to post-test scores averaging at least 25 percent. Results indicated that the black treatment group only gained 18.4 percent; however, the Hispanic treatment group gained 25.3 percent.

The sixth research question asked if there was a significant difference in knowledge gain between the treatment groups and corresponding control group. Results indicated that both the black and Hispanic treatment groups scored significantly higher on the post-test than did their corresponding control group. Thus, the program significantly increased knowledge.

The seventh research question asked if there was a significant difference in knowledge gain between the black and Hispanic treatment groups. Results indicated that the difference between the mean post-test scores of the black and Hispanic treatment groups was not statistically significant. Thus, the program was equal in its effect on increasing the knowledge of both black and Hispanic women.

Significant Relationships

Spearman correlations at $p < .05$ were used to test for significant relationships between weight loss and initial BMI, attendance, and diary completion rate. (Pearson correlations were not used because of the small sample sizes.) Two significant

relationships were found among the black treatment group; weight loss was greater as attendance increased ($r = -0.43$) and as diary completion increased ($r = -0.42$). These relationships seemed logical since the more frequently a woman attended the sessions, the more she was exposed to information about losing weight. In addition, the more frequently a woman kept her diary, the more aware she became of her eating and thus could more easily identify her problem areas.

No significant relationships were found among the Hispanic treatment group between weight loss and initial BMI, attendance, and diary completion rate. This was surprising but could have been due to the high attendance rate of 10.2 of 11 possible sessions as well as the extremely high diary completion rate of 94.6 percent of the Hispanic treatment group.

Evaluation

For the first 17 questions on the evaluation, the women were asked to indicate how much they liked the program, the teaching methods, and the topics by marking one of five responses. The responses consisted of a facial hedonic scale which included a large smile, small smile, straight mouth, small frown, and large frown. The faces indicated liked a lot, liked, neither liked nor disliked, disliked, and disliked a lot, respectively. For statistical analysis, the responses were coded from a high of "1" for the large smile to a low of "5" for the large frown.

For the black treatment group, the mean score for question one (how much did you like the program?) was 1.07. Thus, the Shape Up Dallas program was liked a lot by most of the black treatment group.

The mean scores for the various teaching methods ranged from 1.10 to 1.58 for the black treatment group; thus, all of the teaching methods were liked a lot or liked by most of the women. The order of preference and scores of the black treatment group for the teaching methods (beginning with the most liked) was as follows: games (1.10), pamphlets (1.16), song (1.36), slides (1.42), weekly weigh-ins (1.52), announcing changes in weight to the group (1.52), audiocassettes (1.58), and keeping the food diary (1.87).

The mean scores for the various topics discussed ranged from 1.13 to 1.27 for the black treatment group; thus, all of the topics were liked a lot or liked by most of the women. The order of preference and scores of the black treatment group for the topics discussed (beginning with the most liked) was as follows: basic food groups (1.13), balanced meals (1.13), exercise (1.17), choosing low-calorie foods (1.17), balanced days (1.17), shopping tips (1.20), serving sizes (1.23), and cooking methods (1.27).

For the Hispanic treatment group, the mean score for question one (how much did you like the program?) was a perfect 1.00. Thus, the Spanish program was liked a lot by all of the women.

The mean scores given by the Hispanic treatment group for the various teaching methods ranged from 1.00 to 1.25; thus, all of the

teaching methods were liked a lot or liked by most of the women. The order of preference and mean scores for the various teaching methods (beginning with the most liked) for the Hispanic treatment group was as follows: games (1.00), pamphlets (1.00), audiocassettes (1.05), keeping the food diary (1.05), weekly weigh-ins (1.10), announcing changes in weight to the group (1.10), slides (1.20), and song (1.25).

The Hispanic treatment group had mean scores ranging from 1.00 to 1.05 for the topics discussed; thus, most of the topics were liked a lot by most of the women. The order of preference and mean scores for the topics discussed (beginning with the most liked) for the Hispanic treatment group was as follows: exercise (1.00), cooking methods (1.00), serving sizes (1.00), choosing low-calorie foods (1.00), balanced meals (1.00), shopping tips (1.05), basic food groups (1.05), and balanced days (1.05). Appendix J describes the scores for questions one through 17 for the black and Hispanic treatment groups.

For questions 18 and 19, the women were asked to mark one of three responses which consisted of faces with either a large smile, a straight mouth, or a frown. The faces indicated yes, maybe, and no, respectively. For statistical analysis, the faces were coded from a high of "1" for the large smile to a low of "3" for the frown.

The mean score for question 18 (do you think you would have liked the slide shows more if they were in color?) was 1.57 for the

black treatment group. For question 19 (do you think the slide shows would have helped you to lose more weight if they were in color?), the mean score was 2.42 for the black treatment group.

For the Hispanic treatment group, the mean scores for questions 18 and 19 were 1.60 and 2.55, respectively. Thus, both the black and Hispanic treatment groups were slightly more than halfway between "yes" and "maybe" as to liking the slides more if they were in color and about halfway between "maybe" and "no" that the slides would have helped them to lose more weight if they were in color. Appendix K describes the scores for questions 18 and 19 for the black and Hispanic participants.

For question 20, the women were asked to circle the things from the program that had helped them to lose weight. For statistical analysis, circled items were coded as "1" and uncircled items were coded as "2"; thus, as more women circled an item, the closer its mean score would be to 1. For the black treatment group, the items to choose from included slide shows, pamphlets, audiocassettes, games, diary, overheads, worksheets, group sessions, song, weekly weigh-ins, and announcing changes in weight to the group. The order of preference and mean scores for the things from the program that had helped them to lose weight (beginning with what helped the most) for the black treatment group was as follows: pamphlets (1.23), diary (1.23), weekly weigh-ins (1.23), group sessions (1.32), slides (1.36), worksheets (1.36), announcing changes in weight to the group

(1.45), games (1.48), overheads (1.55), audiocassettes (1.61), and song (1.68).

For the Hispanic treatment group, the items to choose from for question 20 were the same as the items listed above plus recipes and tasting low-calorie foods. The order of preference and mean scores for things from the program that had helped them to lose weight (beginning with what helped the most) for the Hispanic treatment group was as follows: tasting low-calorie foods (1.15), weekly weigh-ins (1.20), diary (1.20), worksheets (1.25), slides (1.35), pamphlets (1.35), audiocassettes (1.35), recipes (1.40), group sessions (1.45), announcing changes in weight to the group (1.45), overheads (1.65), song (1.65), and games (1.70). Appendix L describes the mean scores for each item in question 20 for the black and Hispanic treatment groups.

For question 21, the women were asked to circle the topics in the program that had helped them to lose weight. Items circled were coded in the same manner as for question 20. The order of preference and mean scores for the topics that had helped them to lose weight (beginning with the most helpful) for the black treatment group was as follows: tips for eating less (1.13), exercise (1.19), cooking methods (1.19), serving sizes (1.23), choosing low-calorie foods (1.26), shopping tips for weight control (1.29), basic food groups (1.36), balanced meals (1.42), rewards (1.61), balanced days (1.65), review (1.68), and buddies (1.84).

The order of preference and mean scores for the topics that had helped them to lose weight (beginning with the most helpful) for the Hispanic treatment group was as follows: serving sizes (1.10), choosing low-calorie foods (1.15), cooking methods (1.20), balanced meals (1.20), exercise (1.25), basic food groups (1.25), tips for eating less (1.25), shopping tips for weight control (1.50), review (1.50), balanced days (1.55), rewards (1.65), and buddies (1.65). Appendix M describes the scores for each of the items in question 21 for the black and Hispanic treatment groups.

For question 22, the women were asked to write comments (good or bad) about the program. Written comments made by most of the women in the black and Hispanic treatment groups about the program as well as the instructor(s) were very positive.

A discussion was held at each of the Spanish program sites at the final session to gain more specific input about the program. Comments made by the Hispanic treatment group indicated that they felt the program overall was very culturally appropriate. In addition, they felt that the Spanish translations and vocabulary were very good.

Recommendations for Revisions

Several revisions were deemed appropriate based upon the experience and results from the small-scaled studies of the Shape Up Dallas program for black women and the pilot-testing of the Spanish

program. Diaries will be completed with colored pencils rather than dot-shaped stickers to save money and instructor preparation time. The diary recording form will be revised to include one area at the bottom of the page for "snacks" instead of an area for snacks between each meal. The worksheets on each of the basic food groups will be revised to incorporate more of a variety of foods on each sheet. Since canned peaches are used in the one of the recipes, some other type of canned fruit, such as fruit cocktail, will be tasted to compare the heavy syrup to the fruit juice pack. Reconstituted nonfat dry milk will be included at the session where whole, two percent, and skim milk are tasted.

Since participants seem to have trouble remembering serving sizes, recommended servings each day, and determining whether or not a meal is balanced, these topics will be reviewed during later sessions. Also, illustrations used in slide shows and on hand-outs will reflect the actual serving size (when possible) to help increase retention of this information. For example, five crackers will be pictured when crackers are discussed. The content of the session on shopping tips will be condensed to include only those tips that pertain to weight control.

The audiocassettes and slide show narrations will be re-recorded to improve the quality. In addition, the format of the audiocassettes for the program for black women may be changed to one which uses two good friends talking instead of a radio show format

with a disc jockey and guest speaker. Several of the pamphlets from the program for black women may be revised to use a comic strip format as well. Some of the scripts for the audiocassettes for the Spanish program will be shortened. Also, the comic strip pamphlets for the Spanish program will be reworded to use "we" and "us" more often than "you" and "I". The slide flats will be redone with a thicker black pen so they may be seen more easily when projected.

CHAPTER V

SUMMARY AND RECOMMENDATIONS

Summary

Small-scaled studies of a weight control program developed for low-income, low-literate black women were conducted with intact groups from a literacy program or a neighborhood recreational center in Dallas. In addition, the weight control program was carefully modified, translated into Spanish, and pilot-tested in Dallas with Spanish-speaking women at two churches. The 11 weekly sessions included nutrition education and behavior modification and were conducted by a Registered Dietitian. The program was offered free-of-charge to participants. Topics discussed included food diaries, exercise, basic food groups, serving sizes, balanced meals, recommended servings each day, cooking methods, shopping tips, rewards, buddies, tips for eating less, and choosing low-calorie foods. Teaching methods included slides, discussion, pamphlets, audiocassettes, overheads, worksheets, games, recipes, tasting low-calorie foods, and participant commitment.

The 31 women in the black treatment group had a mean age of 37.2 years, a mean educational level of 11.1 years, and a mean initial BMI of 35.3. They lost an average of 3.1 pounds during the program (or 0.29 pounds per week). Weight change ranged from a gain of seven

pounds to a loss of 19.5 pounds. The 14 women in the black control group lost an average of 0.3 pounds for the program (or 0.03 pounds per week). The weight loss of the black treatment group was not statistically different from that of the black control group. At three weeks follow-up, the black treatment group had gained back an average of 0.5 pounds.

The 20 women in the Hispanic treatment group had a mean age of 41.5 years, a mean educational level of 8.9 years, and a mean initial BMI of 34.9. They lost an average of 8.7 pounds during the program (or 0.80 pounds per week). Weight change ranged from a gain of 1.3 pounds to a loss of 22.5 pounds. The 14 women in the Hispanic control group gained an average of 0.8 pounds during the program (or 0.07 pounds per week). The adjusted final weight of the Hispanic treatment group was significantly different than that of the Hispanic as well as the black control groups ($p < .05$, Scheffé). At three weeks follow-up, the Hispanic treatment group had an average weight loss of an additional pound.

The black treatment group scored significantly higher on the post-test than the black control group ($p < .05$, Scheffé); scores improved by 18.4 and 2.9 percent, respectively. The black treatment group completed food diaries with colored stickers or colored pencils 57.1 percent of the time. The mean attendance was 9.1 sessions; the attrition rate was 28 percent. Weight loss was greater as attendance increased ($r = -0.43$) and as diary completion increased ($r = -0.42$);

these relationships were significant at $p < .05$ (Spearman). The black treatment group indicated that receiving pamphlets, keeping the diary, and being weighed weekly, as well as presentations on the topics of "tips for eating less," "exercise," and "cooking methods" had helped them the most in losing weight. The use of intact groups of black women may have negatively influenced weight loss and diary completion rate.

The Hispanic treatment group scored significantly higher on the post-test than the Hispanic control group (.01, Scheffé); scores improved by 25.3 and 0.0 percent, respectively. The Hispanic treatment group completed food diaries 94.6 percent of the time. The mean attendance was 10.2 sessions; attrition was high at 54.6 percent. Relationships between weight loss and initial BMI, attendance, and diary completion rate were not significant. The Hispanic treatment group indicated that tasting low-calorie foods during sessions, being weighed weekly, and keeping the diary, as well as presentations on the topics of "serving sizes" and "choosing low-calorie foods" had helped them the most in losing weight.

The adjusted mean final weights of the black and Hispanic treatment groups were not significantly different. Furthermore, the mean post-test scores of the black and Hispanic treatment groups were not significantly different.

Results indicated that a multi-component weight control program for low-income, low-literate black and Hispanic women significantly

increased nutrition knowledge. In addition, the program significantly decreased the weight of Hispanic participants. Revisions in the program have been recommended based on the results of the study.

Recommendations for Future Studies

There is a basic need for additional weight control studies with low-income women to be conducted and reported in the literature. In addition, published results of weight control programs need to specify race and income or educational level. Nutrition education materials currently in use with low-literate black and Hispanic women need to be evaluated for readability, clarity, and appropriateness and revised if necessary. Nutrition professionals need tested materials to help low-literate women achieve weight control.

Additional studies are needed to determine the most effective methods for helping low-income black and Hispanic women lose weight. The attitudes of low-income women (especially black women) towards obesity and weight control need to be assessed to determine how they impact weight control efforts. Follow-up weights at periods longer than three weeks (such as one and two years) are needed to determine if more support is needed by participants to help them to maintain their weight loss or to continue losing weight. Researchers need to carefully consider the pros and cons before using intact groups for weight control programs. (Perhaps intact groups with only overweight

members could be used.) In addition, small-scaled studies of the revised Spanish program are needed.

REFERENCES

- Alford, B.B., and Bogle, M.L. (1982). Nutrition During the Life Cycle. Englewood Cliffs, NJ: Prentice-Hall, Inc.
- Bell, T.H. (1984). Toward a learning society. Am Educ 20(3):2.
- Blake, A. (1976). Group approach to weight control: Behavior modification, nutrition, and health education. J Am Diet Assoc 69:645.
- Bray, G.A., ed. (1980a). Obesity in America. DHEW Publ. No. (NIH) 80-359.
- Bray, G.A., ed. (1980b). Obesity: Comparative Methods of Weight Control. Westport, Connecticut: Technomic Publishing Co., Inc.
- Bray, G.A. (1983). Diet and exercise as treatment for obesity. In Kuo, P.T., Conn, H.L., and DeFelice, E.A., eds. Health and Obesity. New York: Raven Press.
- Brownell, K.D. (1984). The psychology and physiology of obesity: Implications for screening and treatment. J Am Diet Assoc 84(4):406.
- Brun, J.K. (1987). Where we are going. J Am Diet Assoc 87(9-Supplement):S81.
- Burton, B.T., and Foster, W.R. (1985). Health implications of obesity: An NIH consensus development conference. J Am Diet Assoc 85(9):1117.
- Comas-Diaz, L., Thorngren, M., Roy, I., Rudner, N., Siefken, S., Dieguez, M.T., and Colson, K. (1988). Delivering Preventive Health Care to Hispanics: A Manual for Providers. Washington, D.C.: The National Coalition of Hispanic Health and Human Services Organizations (COSSMHO).
- Daniel, E.L. (1989). A multi-intervention weight management program for low-income rural women. J Am Diet Assoc 89(9):1310.
- Dawson, D.A. (1988). Ethnic differences in female overweight: Data from the 1985 National Health Interview Survey. Am J Public Health 78(10):1326.

Doak, C.C., Doak, L.G., and Root, J.H. (1985). Teaching Patients with Low Literacy Skills. Philadelphia: J.B. Lippincott Co.

Duggan, P. (1985). Literacy at Work. Developing Adult Basic Skills for Employment. Northeast-Midwest Institute. Center for Regional Policy. Education-Economic Development Series.

Fardan, L.D.A., and Tyson, Y. (1985). Drew program for obesity treatment. J Natl Med Assoc 77(9):737.

Forman, M.R., Trowbridge, F.L., Gentry, E.M., Marks, J.S., and Hogelin, G.C. (1986). Overweight adults in the United States: The Behavioral Risk Factor Surveys. Am J Clin Nutr 44:410.

Fullarton, J.E. (1980). Obesity: A new social policy perspective. In Bray, G.A., ed. Obesity: Comparative Methods of Weight Control. Westport, Connecticut: Technomic Publishing Co.

Fulwood, R. (1981). Height and weight of adults, age 18-74 years, by socioeconomic and geographic variables, United States. National Center for Health Statistics. Vital Health Stat 11(234).

Gayle, M.E. (1987). Applying futures' research to nutrition education. J Am Diet Assoc 87(9-Supplement):S78.

Grant, W.V. (1982). Statistic of the month: Illiteracy in the U.S. Am Educ 18(Aug/Sept).

Haan, M.N., and Kaplan, G.A. (1985). The contribution of socioeconomic position to minority health. In Report of the Secretary's Task Force on Black and Minority Health. Volume II. Crosscutting Issues in Minority Health, USDHHS, pp 69-104.

Hazuda, H.P., Haffner, S.M., Stern, M.P., and Eifler, C.W. (1988). Effects of acculturation and socioeconomic status on obesity and diabetes in Mexican Americans. Am J Epid 128:1289.

Holm, R.P., Taussig, M.T., Carlton, E. (1983). Behavioral modification in a weight-reduction program. J Am Diet Assoc 83(2):170.

Kannel, W.B. (1983). Health and obesity: An overview. In Kuo, P.T., Conn, H.L., and DeFelice, E.A., eds. Health and Obesity. New York: Raven Press.

- Kaul, L., Standard, D.B., Rao, M.S., and Ulep, E.D. (1979). Management of obesity in black females in a community model clinic: A preliminary study. *J Natl Med Assoc* 77(1):81.
- Kaul, L., Standard, D.B., Ulep, D.E., and Nidiry, J.J. (1982). Nutritional management of obesity in an inner-city population. *Urban Health* 11(6):30.
- Kumanyika, S.K., and Helitzer, D.L. (1985). Nutritional status and dietary patterns of racial minorities in the United States. In Report of the Secretary's Task Force on Black and Minority Health. Volume II. Crosscutting Issues in Minority Health, USDHHS, pp 118-190.
- Kumanyika, S. (1987). Obesity in black women. *Epid Reviews* 9:31.
- Lecca, P.J., Greenstein, T.N., and McNeil, J.S. (1987). A Profile of Mexican American Health: Data from the Hispanic Health and Nutrition Examination Survey 1982-84. Arlington, TX: Health Services Research.
- Linet, O.I., Metzler, C.M., and van Tassel, M. (1979). Evaluation of a "free" weight control clinic. *Obesity/Bariatric Med* 8(5):152.
- Loughrey, L. (1983). Dealing with the illiterate patient...you can't read him like a book. *Nursing* 83 13:65.
- Manley, A., Lin-Fu, J.S., Miranda, M., Noonan, A., and Parker, T. (1985). Special health concerns of ethnic minority women. In Women's Health: Report of the Public Health Service Task Force on Women's Health Issues, Volume II, DHHS, PHS.
- McGee, B.B., and Davis, T.H. (1989). Scaling pounds away (SPA): Development of a nutrition education program for weight control in black women. *J Am Diet Assoc* 89(9-Supplement):A-61 (Published Abstract).
- McGrail, J. (1984). Adult Illiterates and Adult Literacy Programs: A Summary of Descriptive Data. ERIC Document Reproduction Service No. ED 254 756.
- Najjar, M.F., and Kuczmarski, R.J. (1989). Anthropometric data and prevalence of overweight for Hispanics: 1982-84. National Center for Health Statistics. *Vital Health Stat* 11(239).

Najjar, M.F., and Rowland, M. (1987). Anthropometric Reference Data and Prevalence of Overweight, United States, 1976-80. National Center for Health Statistics. Vital Health Stat 11(238).

National Center for Health Statistics (1985). Health. United States, 1985. DHHS Publ. No. (PHS) 86-1232.

National Research Council (U.S.). Committee on Diet and Health (1989). Diet and Health: Implications for Reducing Chronic Disease Risk. Washington, D.C.: National Academy of Sciences.

Nitzke, S., Shaw, A., Pingree, S., and Voichick, S.J. (undated, personal communication - 1986). Writing for Reading: Guide for Developing Print Materials in Nutrition for Low Literacy Adults. University of Wisconsin-Madison: Department of Agricultural Journalism.

Nutrition and obesity (1983). In Annual Report of the National Institutes of Health Program in Biomedical and Behavioral Nutrition Research and Training. DHHS, PHS, NIH Publ. No. 83-2633.

Personal communication (1988). Dr. Catherine Wotekie, National Center for Health Statistics.

Personal communication (1989). Rebecca S. Reeves, Baylor College of Medicine, Houston, Texas.

Personal communication (1990). Office of Disease Prevention and Health Promotion, Washington, D.C.

Pi-Sunyer, F.X. (1988). Obesity. In Shils, M.E. and Young, V.JR., eds. Modern Nutrition in Health and Disease, 7th ed. Philadelphia: Lea & Febiger.

Rodin, J. (1982). Obesity: Why the losing battle? In Wolman, B.B., ed. Psychological Aspects of Obesity. New York: Van Nostrand Reinhold Co.

Rowan, P. (1986). Program provides ABCs of literacy. Fort Worth Star-Telegram. November 9.

Sims, E.A.H. (1980). Definitions, criteria, and prevalence of obesity. In Bray, G.A., ed. Obesity in America. DHEW Publ. No (NIH) 80-359.

- Smith, S.B. (1987). Shape Up Dallas: Development of a Weight Control Program for Low-income Women. Thesis, Texas Woman's University.
- Sorenson, A.W., Kavet, J., and Stephenson, M.G. (1987). Health objectives for the nation: Moving toward the 1990s. *J Am Diet Assoc* 87(7):920.
- Stephenson, M.G., Levy, A.S., Sass, N.L., and McGarvey, W.E. (1987). 1985 NHIS Findings: Nutrition knowledge and baseline data for the weight-loss objectives. *Public Health Reports* 102(1):61.
- Stern, M.P., Gaskill, S.P., Allen, C.R., Garza, V., Gonzales, J.L., and Waldrop, R.H. (1981). Cardiovascular risk factors in Mexican Americans in Laredo, Texas. 1. Prevalence of overweight and diabetes and distributions of serum lipids. *Am J Epid* 113(5):546.
- Stern, M.P., Gaskill, S.P., Hazuda, H.P., Gardner, L.I., and Haffner, S.M. (1983). Does obesity explain excess prevalence of diabetes among Mexican Americans? Results of the San Antonio Heart Study. *Diabetologia* 24:272.
- Sticht, T.G. (1984). Strategies for Adult Literacy Development. ERIC Document Reproduction Service No. ED 240 300.
- Sullivan, J. and Carter, J.P. (1985). A nutrition-physical fitness intervention program for low-income black parents. *J Natl Med Assoc* 77(1):39.
- Surgeon General's Report on Nutrition and Health: Summary and Recommendations (1988). DHHS, PHS, Publ. No. 88-50211.
- Van Itallie, T.B. (1985). Health implications of overweight and obesity in the United States. *Ann Intern Med* 103(6 pt 2):983.
- Vasselli, J.R., Cleary, M.P., and Van Itallie, T.B. (1983). Modern concepts of obesity. *Nutr Reviews* 41(12):361.
- Virostek, K.A., and Guiler, N.V. (1989). WIC-exercise and weight control. *J Am Diet Assoc* 89(9-Supplement):A-130, (Published Abstract).
- Wassertheil-Smoller, S., Langford, H.G., Blaufox, M.D., Oberman, A., Hawkins, M., Levine, B., Cameron, M., Babcock, C., Pressel, S., Caggiula, A., Cutter, G., Curb, D., and Wing, R. (1985). Effective dietary intervention in hypertensives: Sodium restriction and weight reduction. *J Am Diet Assoc* 85(4):423.

Weisenberg, M. and Fray, E. (1974). What's missing in the treatment of obesity by behavior modification? J Am Diet Assoc 65:410.

Zambrana, R.E. (1987). A research agenda on issues affecting poor and minority women: A model for understanding their health needs. Woman and Health 12(3-4):137.

APPENDICES

APPENDIX A

Outline of The Shape Up Dallas Program

SHAPE UP DALLAS OUTLINE

I. PR Session

- A. Brief Review of Program
 - 1. Purpose
 - 2. Cost
 - 3. Length
 - 4. Meeting Day and Time
 - 5. Session Topics
 - 6. Teaching Materials
- B. Shape Up Dallas Song
 - 1. Handout: The Shape Up Dallas Song
- C. Taste Test: Spiced Peaches
 - 1. Handout: Spiced Peaches
- D. Drawing for Door Prize
- E. Apples (one for each person)
- F. Sign-up Sheet for Interested Persons

II. Session One

Part One: Welcome to Shape Up Dallas

- A. Measurements of Weight and Height
- B. Consent Forms
 - 1. Handout: Consent Form (TWU)
 - 2. Handout: Consent Form (City of Dallas)
- C. Pretest
 - 1. Handout: Shape Up Dallas Pretest
 - 2. Overhead: Shape Up Dallas Pretest
- D. What is Shape Up Dallas?
 - 1. Introduction
 - 2. Expected weight loss
 - 3. Self-responsibility
 - 4. Contract

Part Two: Becoming Aware of What You Eat

- E. Food Diaries
 - 1. Overhead: Daily Food Diary
 - 2. Handout: Daily Food Diary
 - 3. Overhead: Food Diary Dots
 - 4. Handout: Food Diary Dots
 - 5. Food Diary Practice
 - 6. Food Diary Folders
 - 7. Handout: Weight Change Record
- F. Drawing for Door Prize
- G. Song
 - 1. Overhead: The Shape Up Dallas Song
 - 2. Handout: The Shape Up Dallas Song
- H. Empty Folder (one per participant)
- I. Fruit (one piece per participant as they leave)

III. Session Two: The Basic Food Groups

- A. Weigh-in
- B. Announcements of Weight Changes
- C. Milk Group and Meat Group
 - 1. Slide Show: Basic Food Groups--Part One:
The Milk Group and The Meat Group
 - 2. Worksheet: Milk Group Practice Sheet
 - 3. Overhead: Milk Group Practice Sheet
 - 4. Worksheet: Meat Group Practice Sheet
 - 5. Overhead: Meat Group Practice Sheet
- D. Fruit-Vegetable Group and Bread-Cereal Group
 - 1. Slide Show: Basic Food Groups--Part Two:
The Fruit-Vegetable Group and the Bread-Cereal Group
 - 2. Worksheet: Fruit-Vegetable Group Practice Sheet
 - 3. Overhead: Fruit-Vegetable Group Practice Sheet
 - 4. Worksheet: Bread-Cereal Group Practice Sheet
 - 5. Overhead: Bread-Cereal Group Practice Sheet
- E. Other Group
 - 1. Slide Show: Basic Food Groups--Part Three:
The Other Group
 - 2. Worksheet: Other Group Practice Sheet
 - 3. Overhead: Other Group Practice Sheet
- F. Taste Test: Creole Beans
 - 1. Handout: Creole Beans
- G. Drawing for Door Prize
- H. Song

IV. Session Three: Serving Sizes

- A. Weigh-in
- B. Announcements of Weight Changes
- C. Servings/Day
 - 1. Overhead: Servings Each Day
 - 2. Handout: Servings Each Day
- D. Serving Sizes
 - 1. Slide Show: What Is A Serving?
 - 2. Handout: Serving Sizes
- E. Measuring Cups (one set per participant)
- F. Food Groups Game
- G. Drawing for Door Prize
- H. Song

V. Session Four: Balanced Meals and Exercise

- A. Weigh-in
- B. Announcements of Weight Changes
- C. Review of Serving Sizes

- D. Balanced Meals
 - 1. Slide Show: Balanced Meals
 - 2. Worksheet: Balanced Meals Practice Sheet
 - 3. Overhead: Balanced Meals Practice Sheet
 - E. Exercise
 - 1. Radio Show: Weight Control for Life--Exercise
 - 2. Pamphlet: Exercise and Weight Control
 - F. Participant Commitment
 - G. Taste Test: Minestrone Soup
 - 1. Handout: Minestrone Soup
 - H. Drawing for Door Prize
 - I. Song
- VI. Session Five: Choosing Low-Calorie Foods
- A. Weigh-in
 - B. Announcements of Weight Changes
 - C. Calories
 - 1. Overhead: Calories #1
 - 2. Overhead: Calories #2
 - 3. Overhead: Calories #3
 - 4. Overhead: Calories #4
 - D. Choosing Low-Calorie Foods
 - 1. Slide Show: What to Eat and What Not to Eat to Lose Weight
 - 2. Pamphlet: What to Eat and What Not to Eat to Lose Weight
 - E. Taste Test: Peaches (canned fruit juice & heavy syrup)
 - F. Participant Commitment
 - 1. Report of Session 4 Commitment
 - 2. New Commitment
 - G. Drawing for Door Prize
 - H. Song
- VII. Session Six: Making Low-Calorie Foods
- A. Weigh-in
 - B. Announcements of Weight Changes
 - C. Making Low-Calorie Foods
 - 1. Radio Show: Weight Control for Life--How to Cook to Lose Weight
 - 2. Pamphlet: How to Cook to Lose Weight
 - D. Taste Test: Milk (whole, 2%, and skim)
 - E. Participant Commitment
 - 1. Report of Session 5 Commitment
 - 2. New Commitment
 - F. Drawing for Door Prize
 - G. Song

VIII. Session Seven: Tips for Eating Less

- A. Weigh-in
- B. Announcements of Weight Changes
- C. Tips for Eating Less
 - 1. Radio Show: Weight Control for Life--Tips for Eating Less
 - 2. Pamphlet: Tips for Eating Less
- D. Participant Commitment
 - 1. Report of Session 6 Commitment
 - 2. New Commitment
- E. Taste Test: Spicy Blackeyed Peas
 - 1. Handout: Spicy Blackeyed Peas
- F. Drawing for Door Prize
- G. Song

IX. Session Eight: Balanced Days and Rewards and Buddies

- A. Weigh-in
- B. Announcement of Weight Changes
- C. Review of Serving Sizes
- D. Balanced Days
 - 1. Review of Serving Sizes (with flashcards)
 - 2. Review of Servings/Day
 - 3. Slide Show: Balanced Days
 - 4. Worksheet: Balanced Days
 - 5. Overhead: Balanced Days
- E. Rewards and Buddies
 - 1. Radio Show: Weight Control for Life--Rewards & Buddies
 - 2. Pamphlet: Rewards and Buddies for Weight Control
 - 3. Discussion: Participant ideas for rewards
- F. Participant Commitment
 - 1. Report of Session 7 Commitment
 - 2. New Commitment
- G. Taste Test: Marinated Green Beans
 - 1. Handout: Marinated Green Beans
- H. Drawing for Door Prize
- I. Song

X. Session Nine: Shopping Tips

- A. Weigh-in
- B. Announcements of Weight Changes
- C. Shopping Tips
 - 1. Slide Show: Shopping Tips
 - 2. Pamphlet: Shopping Tips
 - 3. Overhead: Buying Meat
 - 4. Handout: Buying Meat

- 5. Nutrition Labels
 - a. Overhead: Nutrition Labels #1 and #2
 - D. Participant Commitment
 - 1. Report of Session 8 Commitment
 - 2. New Commitment
 - E. Smart Shopping Game
 - F. Drawing for Door Prize
 - G. Song
- XI. Session Ten: Putting It All Together
- A. Weigh-in
 - B. Announcements of Weight Changes
 - C. Putting It All Together
 - 1. Slide Show: Putting It All Together
 - 2. Overhead: Putting It All Together
 - 3. Pamphlet: Putting It All Together
 - D. Participant Commitment
 - 1. Report of Session 9 Commitment
 - 2. New Commitment
 - E. Taste Test: Orange Glazed Carrots
 - 1. Handout: Orange Glazed Carrots
 - F. Discussion of end of program
 - G. Drawing for Door Prize
 - H. Song
- XII. Session Eleven: Conclusion of Shape Up Dallas
- A. Weigh-in
 - B. Announcements of Weight Changes
 - C. Post-test
 - 1. Worksheet: Shape Up Dallas Post-test
 - 2. Overhead: Shape Up Dallas Post-test
 - D. Awards
 - E. Taste Test: Frozen Fruit Treats
 - 1. Handout: Frozen Fruit Treats
 - F. Program Evaluation
 - 1. Worksheet: Shape Up Dallas Evaluation Form
 - 2. Overhead: Shape Up Dallas Evaluation Form
 - G. Drawing for Door Prize
 - H. Song

APPENDIX B

The Shape Up Dallas Song

The Shape Up Dallas Song



(Tune: Camptown Races)

We work real hard to watch our weight--
all day, all week.

We work real hard to watch our weight--
so we will look our best.

We want to lose to win.

We want to lose to win.

We work real hard to watch our weight--
so we will look our best.

APPENDIX C

Outline of The Lose Weight/Gain Health Program

LOSE WEIGHT/GAIN HEALTH OUTLINE

I. PR Session

- A. Brief review of program
 - 1. Purpose
 - 2. Cost
 - 3. Length of program
 - 4. Meeting day and time
 - 5. Session topics
 - 6. Teaching materials
- B. Importance of weight control
 - 1. Health risks of obesity
 - 2. Setting a healthy example
- C. Baby-sitting arrangements
- D. Lose Weight/Gain Health Song
 - 1. Handout: Lose Weight/Gain Health Song
- E. Taste test: Spiced Peaches
 - 1. Handout: Spiced Peaches
- F. Drawing for door prize
- G. Sign-up sheet for interested persons

II. Session One

Part One: Welcome to Lose Weight/Gain Health

- A. Measurements of weight and height
- B. Consent Form
 - 1. Handout: Consent Form
- C. Pretest
 - 1. Worksheet: Lose Weight/Gain Health Pretest
 - 2. Overhead: Lose Weight/Gain Health Pretest
- D. What is Lose Weight/Gain Health?
 - 1. Introduction
 - 2. Expected weight loss
 - 3. Self-responsibility
 - 4. Contract

Part Two: Becoming Aware of What You Eat

- E. Food Diaries
 - 1. Overhead: Daily Food Diary
 - 2. Handout: Daily Food Diary
 - 3. Overhead: Food Diary Dots
 - 4. Handout: Food Diary Dots
 - 5. Food diary practice
 - 6. Food diary folders
 - 7. Weight Change Record
- F. Drawing for door prize
- G. Song
 - 1. Overhead: Lose Weight/Gain Health Song
 - 2. Handout: Lose Weight/Gain Health Song

- H. Empty folder
 - 1. Handout: Empty folder (one per participant)
- I. Apples (one for each person)

III. Session Two: The Basic Food Groups

- A. Weigh-in
- B. Announcements of weight changes
- C. Milk Group and Meat Group
 - 1. Slide show: Basic Food Groups--Part One:
The Milk Group and the Meat Group
 - 2. Worksheet: Milk Group Practice Sheet
 - 3. Overhead: Milk Group Practice Sheet
 - 4. Worksheet: Meat Group Practice Sheet
 - 5. Overhead: Meat Group Practice Sheet
- D. Fruit-Vegetable Group and Bread-Cereal Group
 - 1. Slide show: Basic Food Groups--Part Two:
Fruit-Vegetable Group and Bread-Cereal Group
 - 2. Worksheet: Fruit-Vegetable Group Practice Sheet
 - 3. Overhead: Fruit-Vegetable Group Practice Sheet
 - 4. Worksheet: Bread-Cereal Group Practice Sheet
 - 5. Overhead: Bread-Cereal Group Practice Sheet
- E. Other Group
 - 1. Slide show: Basic Food Groups--Part Three:
The Other Group
 - 2. Worksheet: Other Group Practice Sheet
 - 3. Overhead: Other Group Practice Sheet
- F. Taste test: Frijoles a la charra
 - 1. Handout: Frijoles a la charra
- G. Drawing for door prize
- H. Song

IV. Session Three: Serving Sizes

- A. Weigh-in
- B. Announcements of weight changes
- C. Servings Each Day
 - 1. Overhead: Servings Each Day
 - 2. Handout: Servings Each Day
- D. Serving Sizes
 - 1. Slide show: What is a Serving?
 - 2. Handout: Serving Sizes
- E. Measuring cups (one set per participant)
- F. Food Groups Game
- G. Drawing for door prize
- H. Song

- V. Session Four: Balanced Meals and Exercise
 - A. Weigh-in
 - B. Announcements of weight changes
 - C. Review of serving sizes
 - D. Balanced Meals
 - 1. Slide show: Balanced Meals
 - 2. Worksheet: Balanced Meals Practice Sheet
 - 3. Overhead: Balanced Meals Practice Sheet
 - E. Exercise
 - 1. Audiocassette: The Comadres Talk about Exercise
 - 2. Pamphlet: The Comadres Talk about Exercise
 - F. Participant commitment
 - G. Taste test: Carne con papas
 - 1. Handout: Carne con papas
 - H. Drawing for door prize
 - I. Song
- VI. Session Five: Choosing Low Calorie Foods
 - A. Weigh-in
 - B. Announcements of weight changes
 - C. Calories
 - 1. Overhead: Calories #1
 - 2. Overhead: Calories #2
 - 3. Overhead: Calories #3
 - 4. Overhead: Calories #4
 - D. Choosing low-calorie foods
 - 1. Slide show: Choosing Low-Calorie Foods
 - 2. Pamphlet: Choosing Low-Calorie Foods
 - E. Taste test: Peaches (canned in fruit juice & heavy syrup)
 - F. Participant commitment
 - 1. Report of Session 4 commitment
 - 2. New commitment
 - G. Drawing for door prize
 - H. Song
- VII. Session Six: Making Low-Calorie Foods
 - A. Weigh-in
 - B. Announcements of weight changes
 - C. Making Low-Calorie Foods
 - 1. Audiocassette: The Comadres Talk about How to Cook to Lose Weight
 - 2. Pamphlet: The Comadres Talk about How to Cook to Lose Weight
 - D. Taste test: Milk (whole, 2%, and skim)

- E. Participant commitment
 - 1. Report of Session 5 commitment
 - 2. New commitment
 - F. Drawing for door prize
 - G. Song
- VIII. Session Seven: Tips for Eating Less
- A. Weigh-in
 - B. Announcements of weight changes
 - C. Tips for Eating less
 - 1. Audiocassette: The Comadres Talk about Tips for Eating Less
 - 2. Pamphlet: The Comadres Talk about Tips for Eating Less
 - D. Participant commitment
 - 1. Report of Session 6 commitment
 - 2. New commitment
 - E. Taste test: Baked tostada shells
 - 1. Handout: Baked tostada shells
 - F. Taste test: Frijoles refritos
 - 1. Handout: Frijoles refritos
 - G. Drawing for door prize
 - H. Song
- IX. Session Eight: Balanced Days and Rewards and Buddies
- A. Weigh-in
 - B. Announcement of weight changes
 - C. Review of serving sizes (with flashcards)
 - D. Balanced Days
 - 1. Review of Servings Each Day
 - 2. Slide show: Balanced Days
 - 3. Worksheet: Balanced Days
 - 4. Overhead: Balanced Days
 - E. Rewards and Buddies
 - 1. Audiocassette: The Comadres Talk about Rewards and Buddies for Weight Control
 - 2. Pamphlet: The Comadres Talk about Rewards and Buddies for Weight Control
 - F. Participant commitment
 - 1. Report of Session 7 commitment
 - 2. New commitment
 - G. Taste test: Albóndigas
 - 1. Handout: Albóndigas
 - H. Drawing for door prize
 - I. Song

- X. Session Nine: Shopping Tips
 - A. Weigh-in
 - B. Announcements of weight changes
 - C. Shopping Tips
 - 1. Slide show: Shopping Tips
 - 2. Pamphlet: Shopping Tips
 - 3. Overhead: Buying Meat
 - 4. Handout: Buying Meat
 - 5. Nutrition Labels
 - a. Overhead: Nutrition Labels #1 and #2
 - D. Participant commitment
 - 1. Report of Session 8 commitment
 - 2. New commitment
 - E. Smart Shopping Game
 - F. Drawing for door prize
 - G. Song
- XI. Session Ten: Putting It All Together
 - A. Weigh-in
 - B. Announcements of weight changes
 - C. Putting It All Together
 - 1. Slide show: Putting It All Together
 - 2. Overhead: Putting It All Together
 - 3. Pamphlet: Putting It All Together
 - D. Participant commitment
 - 1. Report of Session 9 commitment
 - 2. New commitment
 - E. Taste test: Sopa de arroz
 - 1. Handout: Sopa de arroz
 - F. Discussion of end of program
 - G. Drawing for door prize
 - H. Song
- XII. Session Eleven: Conclusion of Lose Weight/Gain Health
 - A. Weigh-in
 - B. Announcements of weight changes
 - C. Post-test
 - 1. Worksheet: Lose Weight/Gain Health Post-test
 - 2. Overhead: Lose Weight/Gain Health Post-test
 - D. Awards
 - 1. Attendance Certificates
 - 2. Food Diary Prizes
 - 3. Weight Loss Winners
 - 4. Grand Prize Weight Loss Winner

- E. Taste test: Frozen Fruit Treats
 - 1. Handout: Frozen Fruit Treats
- F. Program Evaluation
 - 1. Worksheet: Lose Weight/Gain Health Evaluation Form
 - 2. Overhead: Lose Weight/Gain Health Evaluation Form
- G. Drawing for door prize
- H. Song

APPENDIX D

Cancion de Pierda peso/gane salud
(The Lose Weight/Gain Health Song)

Canción de Pierda peso/gane salud

¡ ¡ ¡ Y sí podemos! ! !

(Melodía: Las chiapanecas)

Queremos perder peso.
Cuidamos nuestro peso.
Hacemos un esfuerzo,
porque queremos salud.

¡ Y sí, sí, sí podemos!
¡ Y sí, sí, sí podemos!
¡ Y sí, sí, sí podemos,
porque queremos salud!

APPENDIX E

Sample of Survey Tool

(on one side)



We are interested in offering a FREE twelve week weight loss program for our congregation and the community beginning the last week of August.

The program consists of 1½ hour classes each week.

If you are interested in attending, please complete the following:

1. Which day is better for you?

_____ Tuesday _____ Wednesday

2. What time is best for you?

_____ 10:00-11:30 a.m. _____ 1:00-2:30 p.m. _____ 6:30-8:00 p.m.

Would you be comfortable attending a class taught entirely in Spanish?

_____ Yes _____ No

(We need the following information so that we can contact you about the classes:)

Name _____ Work Phone _____

Address _____ City _____ Zip _____ Home Phone _____

Program Sponsored by: City of Dallas Health Education and Nutrition Services and Texas Woman's University.

(on other side)



Estamos interesados en ofrecer a nuestra congregación y a la comunidad un programa para perder peso. El programa dura 12 semanas y es GRATIS. Empezarán la última semana de agosto.

El programa consiste de una clase de hora y media cada semana. Las clases son en español.

Si Ud. está interesado en asistir éste programa, por favor conteste las siguientes preguntas:

1. ¿En qué día le gustaría asistir las clases?

_____ martes _____ miércoles

2. ¿Durante cuáles horas le gustaría asistir?

_____ 10:00-11:30 a.m. _____ 1:00-2:30 p.m. _____ 6:30-8:00 p.m.

(Necesitamos la siguiente información para comunicarnos con Ud. tocante las clases.)

Nombre _____ Número (en casa) _____ Número (del trabajo) _____

Dirección _____ Ciudad _____ Código Postal _____

Este programa es patrocinado por: Los Servicios Educativos de Salud Y Nutrición de la Ciudad de Dallas y La Universidad "Texas Woman's."

APPENDIX F

Sample of Pre-test/Post-test Tool

Shape Up Dallas

Pre-test

Directions: Please circle the letter of the correct answer.
Each question has only one correct answer.

1. Which food is from the milk group?



eggs



cheese



biscuits



apple

2. Which food is from the meat group?



cornbread muffin



macaroni



celery



chicken

3. Which food is from the fruit and vegetable group?



banana



cookies



milk



nuts

4. Which food is from the bread and cereal group?



grapes



crackers



pork chop



watermelon

5. Your lunch has ham, corn, and biscuits. Which food group is missing?



milk



meat



fruit and vegetable



bread and cereal

6. Your dinner has pinto beans, cornbread, and milk. Which food group is missing?



milk



meat



fruit and vegetable

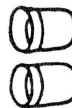


bread and cereal

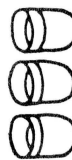
7. How many servings should an adult have from the milk group every day?



one



two



three



four

8. How many servings should an adult have from the meat group every day?



one



two



three



four

9. How many servings should an adult have from the fruit and vegetable group every day?



one



two



three



four

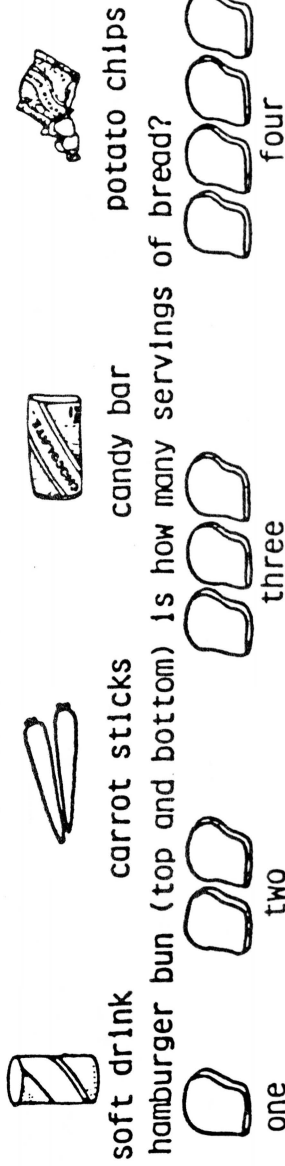
10. How many servings should an adult have from the bread and cereal group every day?



11. Which dessert is lower in calories?



12. Which snack is lower in calories?



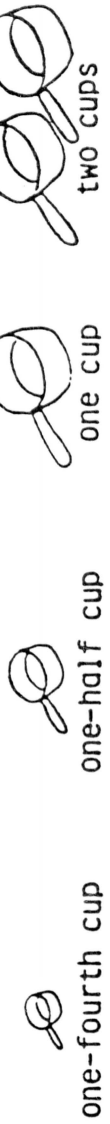
13. A hamburger bun (top and bottom) is how many servings of bread?







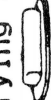







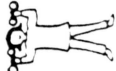





14. One serving of pork chops would be about the size of:



15. One serving of cooked pinto beans is:



16. One serving of cooked okra is:  one-fourth cup  one cup  two cups
17. One serving of cooked rice is:  one-fourth cup  one cup  two cups
18. Which way would be the best for you to season your green beans if you are trying to lose weight?  with butter or margarine  with bacon  with lemon juice
19. Which way would be the best for you to cook your chicken if you are trying to lose weight?  baked (with skin)  fried  baked (no skin)
20. Which kind of milk is lower in calories?  lowfat milk  whole milk
21. Which exercise is recommended for weight loss or weight control?  lifting weights  walking  bowling  softball

APPENDIX G

Sample of Participant Evaluation Form

Shape Up Dallas Evaluation Form



Directions: Mark an "X" on one face by each question.

1. How much did you like the Shape Up Dallas Program?



2. How much did you like the slide shows?



3. How much did you like the pamphlets?



4. How much did you like the radio shows?



5. How much did you like the games?



6. How much did you like keeping a food diary?



7. How much did you like learning about exercise?



8. How much did you like learning about how to cook to lose weight?



9. How much did you like learning about shopping tips for weight control?



10. How much did you like learning about the Basic Food Groups?



11. How much did you like learning about serving sizes?



12. How much did you like learning about what to eat and what not to eat to lose weight?



13. How much did you like learning about balanced meals?



14. How much did you like learning about balanced days?



15. How much did you like being weighed each week?



16. How much did you like having the changes in your weight announced to the group each week?



17. How much did you like the song?



18. Do you think you would have liked the slide shows more if they were in color?



19. Do you think the slide shows would have helped you to lose more weight if they were in color?



20. Circle the things in the Shape Up Dallas Program that helped you to lose weight.

slide shows	pamphlets	radio shows	games	food diary
overheads	worksheets	group sessions	song	
being weighed each week	announcing changes in weight to the group each week			

21. Circle the topics in the Shape Up Dallas Program that helped you to lose weight.

exercise	cooking methods	shopping tips	Basic Food Groups
serving sizes	rewards	buddies	tips for eating less
what to eat and what not to eat to lose weight			putting it all together
balanced meals	balanced days		

22. Please write down any comments (good or bad) that you have about the Shape Up Dallas Program in the space below. Or, you can tell your comments to the group leader.

APPENDIX H

Approval Letter from the Human
Subjects Review Committee

TEXAS WOMAN'S UNIVERSITY
P.O. Box 22939, TWU Station
OFFICE OF RESEARCH AND GRANTS ADMINISTRATION
DENTON, TEXAS 76204

107

HUMAN SUBJECTS REVIEW COMMITTEE

Name of Investigator: Suzanne B. Smith Center: Denton
Address: 2215 Foxcroft Date: 1-17-89
Arlington, TX 76014

Dear Suzanne B. Smith:

Your study entitled Weight Control for Low-Income Black and
Hispanic Women

has been reviewed by a committee of the Human Subjects Review Committee and appears to meet our requirements in regard to protection of individuals' rights.

Be reminded that both the University and the Department of Health, Education, and Welfare regulations typically require that signatures indicating informed consent be obtained from all human subjects in your study. These are to be filed with the Human Subjects Review Committee. Any exception to this requirement is noted below. Furthermore, according to DHEW regulations, another review by the Committee is required if your project changes.

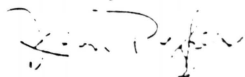
Special provisions pertaining to your study are noted below:

 The filing of signatures of subjects with the Human Subjects Review Committee is not required.

 Other:

 X No special provisions apply.

Sincerely,



Chairman
Human Subjects Review
Committee at Denton

cc: Graduate School
Project Director
Director of School or
Chairman of Department

10/1/87

APPENDIX I

Approval Letter from the Sponsoring Agency



CITY OF DALLAS

109

January 17, 1989

Betty Alford, Ph.D., R.D., L.D.
Department of Nutrition
and Food Sciences
P.O. Box 23564
Texas Woman's University
Denton, Texas 76204

Dear Dr. Alford:

Suzi Smith, M.S., R.D., L.D. has permission to use the data from the Shape Up Dallas program and related information for graduate work (dissertation) at Texas Woman's University.

Sincerely,

Hazel Cattlett

Hazel Cattlett
Public Health Nutritionist

/ch

pc: Suzi Smith

APPENDIX J

Evaluation (Questions One through 17)

EVALUATION (QUESTIONS ONE THROUGH 17)

	Range	M*	SD
1. How much did you like the program?			
Black (N = 31)	1-2	1.07	0.25
Hispanic (N = 20)	0	1.00	0.00
2. How much did you like the slides?			
Black (N = 31)	1-3	1.42	0.62
Hispanic (N = 20)	1-2	1.20	0.41
3. How much did you like the pamphlets?			
Black (N = 31)	1-2	1.16	0.37
Hispanic (N = 20)	0	1.00	0.00
4. How much did you like the cassettes?			
Black (N = 31)	1-3	1.58	0.77
Hispanic (N = 20)	1-2	1.05	0.22
5. How much did you like the games?			
Black (N = 31)	1-2	1.10	0.30
Hispanic (N = 20)	0	1.00	0.00
6. How much did you like keeping the diary?			
Black (N = 30)	1-5	1.87	0.97
Hispanic (N = 20)	1-2	1.05	0.22
7. How much did you like learning about exercise?			
Black (N = 29)	1-2	1.17	0.38
Hispanic (N = 20)	0	1.00	0.00
8. How much did you like learning about cooking methods?			
Black (N = 30)	1-3	1.27	0.52
Hispanic (N = 20)	0	1.00	0.00

(continued)

	Range	M*	SD
9. How much did you like learning about shopping tips for weight control?			
Black (N = 30)	1-3	1.20	0.48
Hispanic (N = 20)	1-2	1.05	0.22
10. How much did you like learning about the Basic Food Groups?			
Black (N = 30)	1-2	1.13	0.35
Hispanic (N = 20)	1-2	1.05	0.22
11. How much did you like learning about serving sizes?			
Black (N = 30)	1-2	1.23	0.43
Hispanic (N = 20)	0	1.00	0.00
12. How much did you like learning about choosing low-calorie foods?			
Black (N = 30)	1-2	1.17	0.38
Hispanic (N = 20)	0	1.00	0.00
13. How much did you like learning about balanced meals?			
Black (N = 30)	1-2	1.13	0.35
Hispanic (N = 20)	0	1.00	0.00
14. How much did you like learning about balanced days?			
Black (N = 30)	1-2	1.17	0.38
Hispanic (N = 20)	1-2	1.05	0.22
15. How much did you like being weighed each week?			
Black (N = 31)	1-4	1.52	0.81
Hispanic (N = 20)	1-2	1.10	0.31

(continued)

	Range	M*	SD
16. How much did you like having the changes in your weight announced to the group each week?			
Black (N = 31)	1-3	1.52	0.63
Hispanic (N = 20)	1-2	1.10	0.31
17. How much did you like the song?			
Black (N = 31)	1-4	1.36	0.66
Hispanic (N = 20)	1-3	1.25	0.64

* 1.00 is high and 5.00 is low.

APPENDIX K
Evaluation (Questions 18 and 19)

 EVALUATION (QUESTIONS 18 AND 19)

	Range	M*	SD
18. Would you have liked the slides more if they were in color?			
Black (N = 30)	1-3	1.57	0.78
Hispanic (N = 20)	1-3	1.60	0.75
19. Would the slides have helped you to lose more weight if they were in color?			
Black (N = 31)	1-3	2.42	0.62
Hispanic (N = 20)	1-3	2.55	0.69

* 1.0 = yes, 2.0 = maybe, and 3.0 = no.

APPENDIX L
Evaluation (Question 20)

EVALUATION (QUESTION 20)

	M*	SD
20. Circle the things in the Program that helped you to lose weight:		
a. Slide Shows		
Black**	1.36	0.49
Hispanic***	1.35	0.49
b. Pamphlets		
Black	1.23	0.43
Hispanic	1.35	0.49
c. Audiocassette Tapes		
Black	1.61	0.50
Hispanic	1.35	0.49
d. Games		
Black	1.48	0.51
Hispanic	1.70	0.47
e. Food Diary		
Black	1.23	0.43
Hispanic	1.20	0.41
f. Overheads		
Black	1.55	0.51
Hispanic	1.65	0.49
g. Worksheets		
Black	1.36	0.49
Hispanic	1.25	0.44

(continued)

	M*	SD
h. Group Sessions		
Black	1.32	0.48
Hispanic	1.45	0.51
i. Song		
Black	1.68	0.48
Hispanic	1.65	0.49
j. Being weighed each week		
Black	1.23	0.43
Hispanic	1.20	0.41
k. Announcing changes in weight to the group each week		
Black	1.45	0.51
Hispanic	1.45	0.51
l. Recipes		
Black	not asked	
Hispanic	1.40	0.50
m. Tasting low-calorie foods		
Black	not asked	
Hispanic	1.15	0.37

* 1 means the item was circled; 2 means the item was not circled.

** N = 31 Black women.

*** N = 20 Hispanic women.

Note: The range for each item was 1 to 2.

APPENDIX M

Evaluation (Question 21)

 EVALUATION (QUESTION 21)

	M*	SD
21. Circle the topics in the Program that helped you to lose weight:		
a. Exercise		
Black**	1.19	0.40
Hispanic***	1.25	0.44
b. Cooking Methods		
Black	1.19	0.40
Hispanic	1.20	0.41
c. Shopping Tips for Weight Control		
Black	1.29	0.46
Hispanic	1.50	0.51
d. Basic Food Groups		
Black	1.36	0.49
Hispanic	1.25	0.44
e. Serving Sizes		
Black	1.23	0.43
Hispanic	1.10	0.31
f. Rewards		
Black	1.61	0.50
Hispanic	1.65	0.49

(continued)

	M*	SD
<hr/>		
g. Buddies		
Black	1.84	0.37
Hispanic	1.65	0.49
h. Tips for Eating Less		
Black	1.13	0.34
Hispanic	1.25	0.44
i. Choosing Low-calorie Foods		
Black	1.26	0.45
Hispanic	1.15	0.37
j. Putting It All Together (Review)		
Black	1.68	0.48
Hispanic	1.50	0.51
k. Balanced Meals		
Black	1.42	0.50
Hispanic	1.20	0.41
l. Balanced Days		
Black	1.65	0.49
Hispanic	1.55	0.51

* 1 means the item was circled; 2 means the item was not circled.

** N = 31 Black women.

*** N = 20 Hispanic women.

Note: The range for each item was 1 to 2.
