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GRANT NO: DAMD 17-94-J-4207

TITLE: Reaching Black Women for a Dietary Intervention to Reduce Breast Cancer Risk

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REPORT DATE: September 14, 1995

TYPE OF REPORT: Annual

PREPARED FOR: U.S. Army Medical Research and Material Command
Fort Detrick, Maryland 21702-5012

REPORT DOCUMENTATION PAGE

Form Approved
OMB No. 0704-0188

1. AGENCY USE ONLY (Leave blank)	2. REPORT DATE	3. REPORT TYPE AND DATES COVERED
	September 14 1995	Annual 15 Aug 94 - 14 Aug 95

4. TITLE AND SUBTITLE
Reaching Black Women for a Dietary Intervention to Reduce Breast Cancer Risk

5. FUNDING NUMBERS
DAMD17-94-J-4207

6. AUTHOR(S)
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8. PERFORMING ORGANIZATION REPORT NUMBER
523219 - 1

9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)
U.S. Army Medical Research and Materiel Command
Fort Detrick, Maryland 21702-5012

10. SPONSORING/MONITORING AGENCY REPORT NUMBER

11. SUPPLEMENTARY NOTES
Prepared in collaboration with Susan Rossi, Ph.D.; Joseph Rossi, Ph.D.; David Schlundt, Ph.D.; Maciej Buchowski, Ph.D.

12a. DISTRIBUTION/AVAILABILITY STATEMENT
Approved for public release; distribution unlimited

12b. DISTRIBUTION CODE

13. ABSTRACT *(Maximum 200 words)*

Fat and fiber have been implicated as important food factors associated with breast cancer. Black Americans have a high mortality rate for breast cancer and preferentially select high fat, low fiber diets. The purpose of this project is to extend the Transtheoretical Model (TTM) of behavioral change to dietary fat reduction in black women. The target population was approximately 2,000 black women from Historically Black Colleges and Universities, senior citizen centers, and black churches in Nashville. A total of 174 (9%) women responded to a screening questionnaire designed to determine percent fat intake and stage of change. Forty-one women participated in stage-matched focus groups designed to understand black food habits; ensure that the TTM constructs of Stage, Process, Decisional Balance, Self Efficacy, and Situational Temptation are meaningful and valid in a black population; and obtain suggestions on how to lower fat intake within the context of cultural food habits. Exploratory questionnaire development analyses reveal that the TTM measures for dietary fat reduction are relevant in large part. Some modifications have been made, and the scale questionnaires are being subjected to confirmatory analyses in a sample of 200 women. These analyses will be completed in 6 to 8 weeks.

14. SUBJECT TERMS
breast cancer risk reduction, reaching black women, low-fat intervention, black food habits, stage of change model, health access, Breast Cancer

15. NUMBER OF PAGES
46

16. PRICE CODE

17. SECURITY CLASSIFICATION OF REPORT	18. SECURITY CLASSIFICATION OF THIS PAGE	19. SECURITY CLASSIFICATION OF ABSTRACT	20. LIMITATION OF ABSTRACT
Unclassified	Unclassified	Unclassified	Unlimited

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Barbara V K Hargreaves 9/14/95

PI - Signature Date

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INTRODUCTION

NATURE OF THE PROBLEM

Fat and fiber have been implicated as important food factors associated with cancers of the colon, breast and prostate (1,2). The National Cancer Institute (NCI), in its support of dietary guidelines to reduce fat and increase fiber in the American diet, has calculated that "at a minimum, 30,000 lives could be saved by the year 2,000 if Americans would modify their dietary habits" (3). Recent reports indicate that Black Americans have a high burden for these cancers (4), and preferentially select high fat, low fiber diets (5). When compared with Whites, Black Americans (cumulative to age 70 years, 1979-81 data) suffered 8,118 excess deaths from cancer (6). It is believed that modification of dietary intakes for these food factors could have enormous benefit for cancer prevention; however, the evidence is inconclusive.

Recently, two multi-center clinical trials were implemented to determine whether a low fat eating pattern would reduce the risk of breast cancer, colon cancer, and heart disease. The Women's Health Trial was an 18 month initiative funded in 1991/92 at three sites to determine whether Blacks and Hispanics (50 - 69 years of age) could participate in a low fat clinical trial as successfully as Whites. A trial implemented in 1984 had shown that Whites could successfully lower their fat intakes by 30% [to ≤20% of total calories] in 24 months, their serum cholesterol by 20%, and their plasma estradiol by 17% (7-10). The Women's Health Initiative, funded in 1992 will follow 48,000 women at 45 sites over 9 years. Minority women will be represented in at least the proportion found in the general population of women 50-79 years of age (17% by the 1990 census). The overall protocol and nutrition program of these Trials are based upon those developed in the first trial with Whites (7-10).

The purpose of the proposed study is to develop and test a culturally-sensitive low-fat dietary program for Black women because of their unique culture and food choices as described below, and the known difficulties of reaching blacks for their participation in risk reduction/health promotion programs (11- 15).

BACKGROUND OF PREVIOUS WORK

Black Food Choices

Personal and socio-cultural factors appear to affect black food choices. The typical Black diet has its origins in the slave culture of the South (16). It is high in fat and low in fiber. The diet is characterized by fried meats and vegetables, greens boiled at length with fat back or salt pork, grits eaten with butter, and sweetened fruit drinks or pop instead of fresh fruit. Such a pervasive cultural force is expected to be hard to change. Indeed, Goldsmith and Davidson reported on the success of incorporating ethnic preferences for foods such as pig ears, pig's feet, hog maw, pig tails, crackling, chitterlings, pig brain, fried and boiled chicken, collards, green beans, black-eyed peas, and turnip greens into a Diabetic Exchange List for Black diabetics attending Grady Hospital in Atlanta (17). Success was achieved through the weight lost by patients over five years of treatment. These practices are believed to satisfy important psychological needs (18,19)

Jerome has reported on the changes made by southern rural Blacks becoming acculturated to a northern urban setting in Centralia, Milwaukee (20). Her classic work describes four 'micro-cultural' groups in different states of change: those "surviving" (I); "making it" (II); "enjoying it" (III); and "living passively" (IV). These groups differed in their food choices and relationships to the original southern pattern. It is possible that many American Blacks are in a state of acculturation to the new foodstuffs on the market in relation to their traditional or "soul" foods. Yep and Hollenbeck (21) identified three intercultural lifestyles--assimilation, pluralism, and separateness--that they encountered while providing extension services to racial minorities, and which affected program content and approaches. The questions arise: How well can Blacks who have difficulty becoming acculturated to new food patterns be changed with respect to dietary risk factors? Which groups change? How can resistant Blacks be encouraged to change for their health's sake? These are ultimate questions to which we hope our approach will begin to provide some answers. The data indicate that different loci of control are operating in Blacks, and therefore different strategies should be used to reach them.

According to Hertzler (22), nutrition educators need to know more about the cultural context in

which foods are selected if they expect to change food behaviors and ultimately nutritional and health status. Hertzler defines the content and context of food selection. The content describes the actual food intake--what it is, how it is prepared, and by whom. Content is generally classified as food habits/patterns, food groups, nutrients, etc.--items that can be seen or easily measured. The context describes the meanings given to food--they may be connotative (those dealing with the physical and economic properties of food), or based on imagery (those dealing with the emotional feelings which the food engenders).

Models for Dietary Behavior Change

Several factors influence food choice (23-26). Models developed to show the relationships between these factors include variables from many sources. Sims, for example, developed a model for examining food choice within an ecological system perspective (26). In this model, the external environment is affected by natural (food production), technological (food availability), and socio-cultural influences; the internal environment is affected by personal attributes such as knowledge, attitudes, beliefs, and values. Shepherd (27,28), and Baranowski (29) have argued that a number of these influences operate through the attitudes and beliefs held by individuals, and our earlier arguments indicate that socio-cultural influences are important for Blacks (4-20).

To examine the many influences, one needs to adopt an appropriate framework within which to study them (22). But until recently, most studies of dietary behavior change and nutrition education had focused on knowledge dissemination and had largely been a theoretical (30-33). Nitzke and Athens (34) found only 30 of 157 studies of dietary behavior change specified the use of any identifiable theory or model. Theoretical frameworks which have been used in nutrition include Bandura's Social Learning Theory (31,32,35), Ajzen and Fishbein's Theory of Reasoned Action (36), Becker's Health Belief Model (37,38), Marlatt and Gordon's relapse prevention model (39), and Bandura's Theory of Self-Efficacy (37). Behavioral skills-oriented approaches from Social Learning Theory have been utilized in weight control and diabetes education programs with mixed success (40,41). The Health Belief Model has been effective in predicting dietary adherence in some (37,42) but not all studies (38). Self-efficacy appears to be an important intervening variable for initiating and maintaining dietary change (38,39,42). However, none of these models has been effective in predicting specific dietary changes such as reduction in dietary fat intake to $\leq 30\%$ of calories and these models have failed to explain why most people fail to adhere to modified diets.

A model which has not been much used in nutrition but has been effective in describing change in a variety of other health related areas is the Transtheoretical Model of Behavior Change (44-46). This Model describes *when*, *how* and *why* people change behavior over time. Longitudinal studies of change have found that people pass through the following five *stages*: *precontemplation* (no intention to change), *contemplation* (seriously considering change), *preparation* (taking steps to change), *action* (actively involved in meaningful change), and *maintenance* (maintaining meaningful change) (45). The concept of *stages* describes *when* change occurs and is central to the Transtheoretical Model. However, the progression through stages to maintenance is rarely linear; some people become stuck at one stage and most people *relapse* and recycle back to a previous stage several times before successfully changing their behavior (Prochaska, in press). Studies have shown the *processes* (activities or strategies) people utilize to change vary according to stage of change (45,47). These processes describe *how* people change their behavior. Although not as clearly defined as stages and processes, results suggest that *Why* people change can be explained in part by *decisional balance* positive aspects (pros) versus negative aspects (cons) of changing the behavior (48) and, to a more stage specific extent, by perceived *self-efficacy* to resist temptations to engage in the target behavior. *Self-efficacy* has been particularly important in predicting relapse (49) and may be an important variable for understanding dietary change as well (37). The *decisional balance* dimension of the model has been successful in predicting the decision to move from precontemplation to contemplation (50,51).

Not only is The Transtheoretical Model a predictive model, it also is an integrative model that shows where *other models* fit into the change process. The Transtheoretical Model incorporates aspects of the Health Belief Model (52) and Fishbein's (53) Behavioral Intentions Model into processes of change used by precontemplators moving to the contemplation stage of change (50).

Behavioral processes derived from Social Learning Theory (54) are useful for people in the action or maintenance stage of change (55). The pros and cons of behavior change (decisional balance) were developed from Janis and Mann's (56) decision making model. Bandura's (57) model of self-efficacy and Shiffman's (58) coping models have been incorporated into the self-efficacy to resist temptations component of the Transtheoretical Model. Thus the Transtheoretical Model is a "meta" model incorporating aspects of other models into its theoretical core. Such integration constitutes an inherently strong approach to model building and has been advocated for model building in general (42) and for dietary change in particular (32,59).

Dietary Change Program to Reduce Fat Intake

Dietary intervention programs aimed at reducing fat intake have had a mixed record of success. The Multiple Risk Factor Intervention Trial (MRFIT) (60), the Oslo study (61) and the Hypertension Control Program (HCP) (62) targeted fat reduction among other dietary goals; the Breast Dysplasia Intervention Trial (BDIT) (63), Nutrition Adjuvant Study (NAS)(64), and the Women's Health Trial (WHT)(7-9) focused on dietary fat reduction to approximately 20% of calories as the only dietary intervention.

The BDIT, NAS and WHT followed highly selective recruitment protocols in selecting women with or at high risk for breast cancer who were likely to comply with the rigorous data collection procedures (9,63,64). The BDIT and NAS set a goal of dietary fat at 15% of calories in contrast to the WHT's goal of 20% of calories. Nevertheless, the studies demonstrated similar results at follow-up ranging from 3 months to 2 years. The intervention groups (combined n=209) reduced dietary fat to 22 - 23% of calories; this level of dietary fat was significantly lower than the control groups' (combined n=140) intake of 36 - 37% of calories. All three studies utilized intensive intervention programs with trained professionals and detailed educational materials. The WHT study found that changes in eating patterns in dairy products, red meats and fats/oils accounted for 70% of the observed decrease in fat intake.

Women in the WHT demonstrated that dietary interventions can be effective in reducing dietary fat intake to $\leq$ 30% of calories; 85% of the intervention group met this criterion at the 2 year follow-up. However, only 44% of these women could be defined as adhering to their dietary prescription of $\leq$ 20% calories from fat, an adherence rate similar to the 40% found in MRFIT and in other studies of dietary adherence (31).

PURPOSE OF PRESENT WORK

Although the Women's Health Trial, Breast Dysplasia Intervention Trial, and Nutrition Adjuvant Study demonstrated that dietary fat reduction to $\leq$ 30% of calories was feasible for highly selected groups of women, other interventions to reduce dietary fat have been less successful. Because of their food habits, Blacks are expected to find it even more difficult to adopt a low-fat diet. The National Cancer Institute has targeted dietary fat reduction as a major priority; however, existing models of dietary change have been unsuccessful in predicting change. The Transtheoretical Model has been effective in describing change in a variety of health related areas and, if extended to dietary fat reduction, and for Blacks, offers the potential for increasing our understanding of the process of change for this population group. Research on other behaviors explains why highly effective interventions only work for a small proportion of the population. Interventions designed to move people from one stage to the next can be highly effective. Action oriented programs are likely to fail for the majority of the population that is just thinking about change. People who progressed just one stage in a six month period doubled the chances they would move into the action stage of quitting smoking during the subsequent six months (65).

METHODOLOGICAL APPROACH

Overview

This proposal will develop and validate an algorithm that defines stages of change in reducing dietary fat intake to $\leq$ 25% of calories and will develop instruments measuring processes, decisional balance, temptation, and self-efficacy in Black women. In addition, we will conduct a longitudinal study to determine how the constructs of the model can be used to move these women from stage to stage. Strecher et al. (66) have successfully used this model in a computer format with Blacks attending a health clinic in North Carolina. Our approach will test a multi-strategic interpersonal approach.

A substantial amount of work has already been conducted on adapting the transtheoretical model to the problem of dietary fat reduction (67-70). This work has resulted in the development of a reliable and valid set of instruments for measuring all of the transtheoretical model constructs in primarily white populations. The first stage of our work will be to adapt these instruments to a population of black women living in Nashville, Tennessee.

Project Design

Year 1: Instrument Development Two studies will be conducted to develop Transtheoretical Model based dietary fat reduction measures applicable to Black women. ***Study 1*** is divided into 2 parts. Part 1 will use stage matched focus groups to adapt measures previously developed on Whites to our target population of Black Women. Part 2 focuses on exploratory instrument development. ***Study 2*** will validate the instruments developed in ***Study 1***. ***Study 2*** is also divided into 2 parts. Part 1 is devoted to Confirmatory Instrument Development. Part 2 focuses on external validation of the instruments.

Year 2: Intervention Program Development and Pilot Testing (***Study 3***)

Years 2 and 3: Small-scale Community Demonstration Trial with Longitudinal follow-up (***Study 4***)

BODY OF THE REPORT

HYPOTHESIS/PURPOSE

Purpose

This study will extend the Transtheoretical Model of Behavior Change to dietary fat reduction in Black women.

Hypothesis to be tested

A culturally-sensitive protocol based on stage-of-change theory will increase the participation of Black women in a low fat dietary intervention trial, and decrease their high fat intakes.

Expected Results

We expect to increase participation by at least 10% and reduce low fat dietary indicators (serum cholesterol and triglyceride by 10%, serum estradiol by 17%, and reported dietary intake - total dietary fat to ≤25% of corresponding daily calories; saturated fats to less than 7% of calories; increased complex carbohydrate and fiber-containing foods to five or more daily servings of vegetables and fruits and to six or more daily servings of grain products.)

TECHNICAL OBJECTIVES

1. To develop and test instruments for African American women based on the Transtheoretical Stages of Change Model that assesses behaviors and intentions to reduce dietary fat intake to ≤25% of calories (Year 1).
2. To develop and pilot test an intensive intervention program based on the stage of change model and using the modified instruments (Year 2).
3. To implement the tested intervention program in an 18 month community demonstration trial to see how these women change over time (Years 2-3).

This report covers activities during the first year of the grant.

EXPERIMENTAL METHODS

Target Population

For experimental design and budgetary reasons, the target population was changed from that of a low income to a middle-high income population. During the start-up and planning phase of project activities, it became apparent that gathering a low income sample would require more resources than were available through this grant. Furthermore, it seemed that there would be a better test of the model itself if we did not have to grapple with issues that extreme poverty brought with it (difficulties of reach, insufficient funds to buy more expensive foods, etc.). Lists of eligible women were obtained from historically-black universities and sororities in Nashville (Table 1). Also, in order to reach people over 60, members of Senior Citizen Homes were contacted. This yielded a total of 1572 people from which the needed target groups could be drawn. These numbers are being extended by contacting black churches in Nashville, as needed. Already, one Baptist Church has provided 400 subjects to the pool.

Screening for Dietary Fat and Stage of Change

A screening instrument was developed to include 1) demographic information, 2) the Quick Screen Questionnaire of Krystal from which dietary fat and fiber could be calculated, and 3) staging and re-staging questions based on the Transtheoretical Model of Behavior Change.

Screening questionnaires were distributed by different mechanisms. At Meharry, they were distributed with pay checks. At Fisk and TSU, they were distributed by campus mail. At the senior citizen centers, they were distributed directly to members during a member activity. These elderly

members received assistance in filling out the questionnaires. Sorority members received screening questionnaires in the mail. Using telephone numbers derived from the lists on file, people were contacted twice and reminded to submit their screening questionnaire. The number and percent responding are shown in Table 2. Dietary fat and fiber were calculated using the Quick Screening Algorithm (78) People were placed by stage of behavior in change according the Transtheoretical Model as shown in Table 3.

Study # 1:

Dietary Intake and Stage of Change Analyses

Analyses were conducted on 174 women from whom completed dietary screening focus were obtained. Means and standard deviations were calculated from percent fat and grams of fiber by age, education, income, and stage of change. Differences between groups were calculated by one-way analysis of variance, Chi Square analysis, and the Tukey Honestly Significant Difference Comparison.

Study # 2:

Stage-Matched Focus Groups

Purpose

The purpose of the Stage-Matched Focus Groups was to:

1. understand black food habits;
2. ensure that the Transtheoretical Model constructs of Stage, Process, Decisional Balance, Self Efficacy, and Situational Temptation were meaningful and valid in a black population; and
3. obtain suggestions on how to lower fat intake within the context of cultural food habits

Procedures

Subjects

All subjects were initially screened by their response to a brief series of questions for their stage-of-change level before being assigned to a focus group. A stage of change algorithm classified respondents into one of five discrete categories of change with respect to dietary fat: (1) precontemplation (PC); (2) contemplation (C); (3) preparation (P); (4) action (A); and (5) maintenance (M) (Table 3).

Forty-one participants, 25-65 years of age, were invited by their stage of behavior change to participate in a focus group. These participants were recruited from the target population (n=174) described earlier. Stage One participants (Precontemplators) came on Day One, Stage Two participants (Contemplation) came on Day Two, Stage Three (Preparation) came on Day Three Stage Four (Action) came on Day Four, and Stage Five (Maintenance) came on Day Five.

Procedures were identical for each group. All participants filled out the scales questionnaires (temptation, decisional balance, process, and situational confidence) before the focus group procedures were initiated. The sample questionnaires developed and used on whites had been modified slightly for readability for the new population. The Transtheoretical Model constructs on which the scale questionnaires are based are described below.

Focus Group Sessions

The session content is shown in Tables 4-6. Each stage matched focus group assisted us to understand how the Transtheoretical Model constructs can be applied to Blacks, and contributed to our ability to develop instruments that could be tested in the exploratory and confirmation instrument development phases. The text below outlines the session content.

Overview of Black Food Habits

The moderator used the outline to prompt discussion:

1) What are "black food habits?" (Table 5)
2) What problems might be associated with changing "black food habits?"

Changing Behaviors

The moderator briefly presented the five stages of change, said that we are learning that it was easier to change behaviors by stage, and that we would like their opinions on how to make these changes among persons who were like them. Each person understood that they had come together because they were all at the same stage of change. All were asked to name the benefits of reducing fat, barriers to lowering fat intake, motivators for change, and some strategies that might work for them (Table 6).

Clarity of the Questionnaires

Each group was asked:

1) how easy were the questionnaires to understand;
2) what should be clarified; and
3) what should be added or modified?

The questionnaires were modeled on the Transtheoretical Model constructs described below.

- *Processes of Change*. These represent strategies and techniques that individuals engage in during attempts to reduce fat consumption. These processes include: (1) Consciousness Raising; (2) Dramatic Relief; (3) Self Liberation; (4) Social Liberation; (5) Counterconditioning; (6) Stimulus Control; (7) Self-Reevaluation; (8) Environmental Reevaluation; (9) Reinforcement Management; (10) Helping Relationships; and (11) Interpersonal Systems Control (79).
- *Decisional Balance*. This measure represents the relative weight given to the pros and cons of changing behavior to reduce fat consumption. Pros may be thought of as facilitators of change and represent the positive aspects of changing behavior, while cons represent barriers or negative aspects of behavior change (79).
- *Temptation*. The temptation inventory is designed to measure how tempted an individual is to eat high fat foods in three specific situations: positive/social situations, negative/affective situations, and situations that involve difficulty in obtaining or preparing alternative lower fat foods (79).
- *Self-efficacy*. The self-efficacy inventory is designed to measure how confident an individual is that she can resist eating high fat foods in three specific situations: positive/social situations, negative/affective situations, and situations that involve difficulty in obtaining or preparing alternative lower fat foods (79).

Analysis

Focus group data

Content analysis was applied to the records made by the research assistant and tape recorder.

Revision and adaptation of pre-existing instruments

Among resource personnel at Meharry Medical College and the Cancer Prevention Research Center at the University of Rhode Island are health promotion and health education experts who advised on instrument adaptation. Based on the focus groups, the Transtheoretical Model based instruments developed on Whites were adapted for Black women. Design, presentation, appropriateness of item content and questionnaire instructions, reading level, appropriate use of language and sensitivity to content expression was examined. The qualitative review of items concentrated on item pool content validity, reading level, expression clarity, and use of unambiguous language. A team of judges well versed in the Transtheoretical Model was employed to establish content validity through intersubjectivity of item selection and scale assignment.

Study # 3

Questionnaire Development Process

Goals

One of the primary aims of project year 01 was to adapt Transtheoretical Model (TTM) measures developed on majority populations for use with African-American women. Two studies were designed for this purpose. The first study involved approximately 40 women in stage-matched focus groups designed to evaluate the applicability of Transtheoretical Model constructs for dietary fat reduction in the African-American population. In addition, this sample was used for exploratory instrument

development for Transtheoretical Model measures of dietary fat reduction. Results of Study 1 are described below. The second study will validate the results of Study 1 using a larger sample of women (approximate N = 200) , and will employ confirmatory psychometric procedures (e.g., confirmatory factor analysis, structural equation modeling, etc.) and external validation procedures (e.g., discriminant function analysis, multivariate analysis of variance, etc.). Study 2 is currently under way and results should be available in approximately 6 to 8 weeks.

Procedures

Exploratory Instrument Analyses

Analysis for instrument development included content validity, item ratings, principal components analysis, item analysis, Coefficient Alpha, and scale intercorrelations. These procedures were applied to the major Transtheoretical Model measures for dietary fat reduction, including the Processes of Change, Decisional Balance, Temptation, and Confidence. In addition, exploratory measurement procedures using structural equation modeling techniques were also conducted.

Principal Components Analyses

Principal components analysis (PCA) was performed to ascertain each instrument's factor structure using the matrix of interitem correlation coefficients. These analyses were conducted for the Decisional Balance, Temptation and Confidence inventories. Both Horn's (71) parallel analysis and Velicer's (72) MAP rule were used for component extraction since simulation studies have shown they perform best over a wide range of conditions (73). In addition to the use of these statistical guidelines, component extraction was also guided, based on the number of component scales theoretically expected. The small size of the focus group sample precluded the use of PCA for the Processes of Change instrument, due to the large number of items on which this measure is based. However, PCA's will be conducted on the confirmatory sample which consists of a larger number of subjects.

Exploratory Measurement Structural Analyses

Additional measurement analyses using structural modeling techniques were used following the PCAs. While a traditional approach to exploratory instrument development typically involves the use of principal components or factor analyses, the use of structural equation modeling techniques in an exploratory mode has recently become recognized as a more powerful and sophisticated approach to instrument development when it is based on a strong theoretical model and is followed up with a confirmatory investigation (74-76). The Transtheoretical Model of Behavior Change has been demonstrated to be a robust model. To date, replication of the measurement structure of Transtheoretical based instruments has repeatedly been demonstrated across a wide variety of problem areas, populations, and settings. Use of such sophisticated analyses were added to exploratory analyses in this project as it has now become accepted standard procedure in the development of Transtheoretical Model based instruments (77). These analyses were conducted for the Decisional Balance, Temptation and Confidence inventories. Again, the limited size of the focus group data precluded the use of this type of analysis for the Processes of Change measure. However, measurement models using structural modeling techniques will be conducted when the larger confirmatory sample becomes available.

Procedure Used for Scale Revision

Scales were revised including the elimination or addition of items for any of the following reasons. 1) Items were deleted based on PCA results (e.g., low or complex item loadings), or item analyses which resulted in too few items for any scale; this might then require either that the scale be eliminated or that new items be added to a revised version of the instrument. 2) As a result of PCAs, all scales which were expected to be distinct emerged so that no revision was required. 3) No previously unexpected components emerged as a result of principal components analyses. New items were written and scales revised based on PCA and exploratory measurement analysis results, reflecting issues which emerged as important in focus groups. 4) No skewed items emerged (i.e., items with means of less than 2.0 or greater than 4.0).

Internal Consistency Analyses

Scale homogeneity, the degree of internal consistency for each of the retained components, was determined using Cronbach's coefficient Alpha.

Stage of Change

The stage of change algorithm was administered to all subjects so that they could be classified into one of five stages of change: Precontemplation, Contemplation, Preparation, Action or Maintenance.

Fat Intake Analyses

The Dietary Quick Screen Questionnaire (78) was used to calculate percent of energy from fat.

RESULTS

Study # 1

Dietary Intake and Stage of Change Analyses

Description of the Sample

The sample consisted of 174 women from whom completed dietary screening forms were obtained. The mean age was 44.5 years (S.D. 14.8). The average number of years of education was 15.9 years (S.D. 3. 1). Annual salary was reported by 154 of the women with 43% making less than $20,000 a year, 32% making between $20,000 and $30,000 per year, 14% making between $40,000 and $50,000 a year, and 3% making over $50,000 per year. Seventeen percent had a high school education or less, 46% had gone to college, and 36% had gone to graduate school. On the whole, this sample is one of well educated, middle-aged African American women.

Stages of Change

Figure 1 displays the assignment of subjects to the five change stages of the transtheoretical model. Fifty-nine percent of the subjects reported that they were in the action or maintenance phases. Stage of change was examined as a function of age (over or under 45) and there was a significant association between age and stage of change (Chi Square = 9.24, df = 4, $p < .05$). Younger women were more likely to be in the precontemplation, contemplation, or preparation stages than older women while there was no association between age and being in the action phase but older women were much more likely to be in the maintenance phase. There was no association between education or income and stage of change.

Fat and Fiber Intake

The data from the quick dietary screen was used to calculate the percent of calories from fat and the typical daily intake of fiber in grams. Table 7 presents the means and standard deviations of fat and fiber intake overall, by age, by education, and by income. Age, income, and education were analyzed using one-way analysis of variance, and the only variable significantly associated with fat intake was age. Older women (over 45) reported consuming significantly less fat than younger women. There were no associations between the independent variables and fiber intake.

Fat and Fiber Intake by Stage of Change

Table 8 presents the means and standard Deviations of fat and fiber intake by stage of change. Fat and fiber were analyzed separately using a one-way analysis of variance. There was a significant difference between fat intake by stage, but no difference in fiber consumption. Using the Tukey Honestly Significant Difference comparison, stages 1-3 did not differ from each other, stages 4 and 5 did not differ, but 1-3 differed significantly from 4 and 5.

Misclassification of Subjects

The value of 30% of calories from fat was selected as a cutoff to define two subject groups. Subjects reporting less than 30% of calories from fat were classified as compliant with a low fat diet while subjects consuming more than 30% of calories from fat were classified as consuming a high fat diet. Table 3 presents dietary compliance as a function of stage of change.

Ideally, subjects in stages 1-3 should be on high fat diet. The data clearly confirm this expectation. There were no subjects in stages 1-3 whose fat intake was below 30%. Ideally, subjects in stages 4 and 5 (action and maintenance) should be on low fat diets. The data show that compliance is poor. In the action phase, only 19% of subjects reported fat intakes of less than 30% of calories. Those in the maintenance phase showed better compliance that the action stage. However, there were 64% of the people who claimed to be in the maintenance phase who had fat intakes above 30% of calories. These data clearly indicate that an individual's reported self-perception of following a low fat diet may not correspond very well to their eating behavior.

An additional analysis was conducted to examine the differences between three groups of subjects. One group (n = 30) were individuals who claimed to be on a low fat diet, and who were consuming fewer than 30% of their calories from fat as assessed by the quick dietary screen. This group was labeled the compliant subjects. The second group, the noncompliant subjects (n = 73) were people who claimed to be on a low fat diet, but who had fat intakes greater than 30% of their calories. The third group, those who were not trying to lower their fat intake (n = 70), had measured fat intakes of greater than 30% of calories. The percentage of subjects in group responding "yes" to each food on the quick dietary screen is summarized in Table 9. Table 9 also presents the results of a chi-square test examining whether the percentage reporting yes differed as a function of the group. Significantly fewer compliants (stages 4 and 5 under 30% of fat) reported eating hot dogs, hamburgers, chicken with skin, bacon, lunch meat, whipped cream, ice cream, potato and corn chips, fried food (restaurant and home), pastries, pies/cakes/cookies, fast food, regular cheese, margarine, butter, salad dressing/mayonnaise, and red meat; and significantly more compliants reported eating yogurt, low calorie mayonnaise, cereal, low fat milk, low fat cheese, a vegetable at lunch, two or more vegetables per day, and two or more fruits per day.

Study #2

Stage - Matched Focus Groups

Description of the Sample

Of the 41 women invited to the Focus Group sessions, only 21 (51%) attended (Table 10). Although fewer in number, participants appeared to be representative of the stage-matched group by age range and percent fat. With respect to reasons for participating, stage 2 to 5 members gave reasons of health for participating, while stage 1 members gave professional reasons.

Black Food Habits

The characterization of black food habits was similar between stages (Table 11). Groups 3 and 4 offered somewhat more detail relating to tradition and emotion, and their relationship to southern foods. There was great consistency of response between groups regarding types of food and drink popular among blacks, where purchased, modes of cooking, and use of food around special occasions.

Changing Dietary Behavior

Benefits of reducing fat were consistently related to health by each stage of change group (Table 12). There were some differences in the expressions regarding barriers, motivators and strategies. Stage one group was not specific about barriers except for watching TV. While stage 1 members, felt that information would be helpful, stage 2 mentioned the need for guidance, motivational strategies and visual material showing physical effects of not eating right. Groups 3 to 5 mentioned a range of

barriers including a stressful or busy lifestyle, family support, tradition, flavor, costs, time, peer pressure, and counting calories. These groups (3 to 5) also made very specific suggestions for motivators and strategies. The level of sophistication of the suggestions appeared to increase with stage, denoting some previous thought and action.

Clarity of the Questionnaire

Almost everyone stated that they had no trouble understanding the questionnaires. Only two people in group 5 recommended that the formats could be modiified to increase clarity.

Study #3

Questionnaire Development Process

Sample

Exploratory data on Stage of Change, Decisional Balance, Temptation, Confidence and Processes were analyzed based on completed data from 39 Black women participating in the stage-matched focus groups. The mean age of the sample was 45 years old.

Stage of Change

The stage of change distribution for this sample was as follows: Precontemplation = 19%, Contemplation = 17%, Preparation = 19%, Action = 25%, and Maintenance = 19%.

Dietary Fat Intake

The 53-item Dietary Quick Screen Questionnaire (78) was used to assess the relative amount of fat subjects consumed in their diet. In accordance with the stage definition for Action, early staged subjects had higher fat intakes than true Action and Maintenance stage subjects. Mean fat intake for the Focus group was 35%.

Decisional Balance

Focus group data indicated that Black women found the decisional balance construct representing the relative weight given to the pros and cons of changing behavior to reduce fat consumption relevant. An 8 item decisional balance measure for dietary fat reduction previously developed on Whites (79,82) was adapted and administered to Black women. Results of exploratory analyses on data from Black women confirmed the two factor pros and cons structure previously identified and validated in White populations (79, 82). Internal consistency (Alpha) coefficients for the two decisional balance scales on the instrument developed in Black women (pros = .86, cons .89, mean = .88) were similar to results found in Whites: (pros =.82, = .83, mean = .82). Item means were good (above 2.0 and below 4.0). Exploratory analyses were conducted using PCAs and measurement models using structural equation modeling techniques. PCA indicated the adapted measure designed for Black women accounted for 76% of the total item variance. Factor loadings from the PCA were good and are presented in Table 13 (range .60 to .96, mean = .82). Factor loadings obtained from measurement analyses using structural equation modeling were also good (range = .70 to .92, mean = .81 for Blacks; range = .60 to .84, mean = .74 for Whites) . However, overall model goodness-of-fit (see Figure 3) was not as high as has been found on White populations (CFI = .83 for Blacks and .96 for Whites). Since goodness-of-fit indicators are known to be affected by sample size, the poorer fit of the model for the sample of Black women may be an artifact. This issue will be resolved in Study 2. The correlation between pros and cons (r = .70) for Blacks as opposed to Whites (r =.45) suggested the instrument could be improved. Data from focus groups was used to develop additional pros and cons found to be of importance to Black women. New pros were concerned with health and many of the cons centered around family issues. The initial instrument adapted for Black women was revised and confirmatory studies on the new scale are currently in progress.

Temptation

Focus group data indicated that Black women found the temptation construct representing how tempted an individual is to eat high fat foods in three specific situations: positive/social situations, negative/affective situations and difficult situations relevant to Black women. The temptation instrument adapted for Black women was based on the situational temptation measure for dietary fat reduction previously developed on Whites (79). The three factor structure was confirmed (81) in whites and has been replicated in Black women. Internal consistency (Alpha) coefficients for the three temptation scales ranged from .72 to .90, mean = .78 (range in whites .80 to .92, mean = .86. The overall 9 item Temptation scale was found to have an acceptable internal consistency coefficient of .81. Item means were good (above 2.0 and below 4.0). Exploratory analyses were conducted using PCA and measurement models employing structural modeling techniques. PCA indicated the adapted measure designed for Black women accounted for 74% of the total item variance. Factor loadings from the PCA were acceptable and are presented in Table 14 (range = .60 to .96, mean = .83). One item designated for the difficulty scale loaded on the positive social situation scale. However, this item loaded adequately on the difficulty scale in the measurement model (see Figure 4) obtained using structural modeling techniques. Measurement model loadings obtained using structural modeling techniques were also acceptable (range = .60 to .96, mean = .75 in Blacks; range = .74 to .88, range = .74 to .96, mean = .87 in Whites). Model fit was acceptable (.92), indicating that the theoretical model fit the data very well. No further revisions were found to be necessary for this 9 item scale. Confirmatory studies are currently in progress.

Self-efficacy.

Focus group data indicated that Black women found the self-efficacy construct representing how confident an individual is that she can resist eating high fat foods in three specific situations: positive/social situations, negative/affective situations and difficult situations relevant. This instrument was adapted for Black women based on a situational confidence measure for dietary fat reduction being developed on Whites (79). The three factor structure found previously (82) in whites was replicated in Black women. Internal consistency (Alpha) coefficients for the three confidence scales ranged from .85 to .96, mean = .92. The overall 12 item Self-efficacy scale was found to have good internal consistency (Alpha = .86). Item means were good (above 2.0 and below 4.0) Exploratory analyses were conducted using PCA and measurement models using structural modeling techniques. PCA indicated the adapted measure designed for Black women accounted for 84% of the total item variance. Factor loadings from the PCA were acceptable and are presented in Table 15 (range = .52 to .99, mean = .83). The measurement model (see Figure 5) obtained using structural modeling techniques indicated all but one factor loading (difficulty scale) was acceptable (range = .41 to .99, mean = .88 in Blacks; range = .53 to .95, mean = .80 in Whites). Model fit was excellent (.97), indicating that the theoretical model fit the data very well. Confirmatory studies are currently in progress using 2 new difficulty scale items.

Processes of Change

Focus group data indicated that the Processes of Change construct representing strategies and techniques which individuals engage in during attempts to reduce fat consumption was relevant to Black women. A 25-item initial Processes of Change measure adapted from one previously developed on Whites (Rossi, 1993) was administered to Black women. Preliminary data suggests that the 11 process structure found in White populations replicates in the measure adapted for Black women. Internal consistency (Alpha) coefficients for Black women were similar to those found in Whites and are presented in Table 16 . The majority of the scale Alphas were acceptable, especially considering that only two items per scale were employed to measure each construct (range = .47 to .91, mean = .76). Revision was required for three scales: Stimulus Control, Environmental Reevaluation, and Reinforcement Management.

CONCLUSIONS

Three studies were conducted over the first year:

1. Dietary Fat Intake and Stage of Change Analysis
2. Focus Group Analysis
3. Exploratory Instrument Development

Focus Groups analyses reveal that black or "soul" food is still an important way of life for African Americans living in Nashville. This cultural phenomenon is felt in all its traditional weight - and bears important emotional/ psychological connotations. Focus Group participants at stages 1-5 of the Transtheoretical Model construct consistently indicated that soul food was characterized by its high fat and deep spicy flavor. This flavor must be replicated in food that is being presented on a special diet. Besides this, other key suggestions were made for overcoming barriers to adopting a low fat diet for good health. These include showing physical evidence of harm, enlisting family support, having interactive tasteing sessions using chefs who know how to satisfy the black palate, having a broad education program for chefs, restaurateurs, and at churches, and explaining to people why they are likely to lapse. Health problems appeared to be an important motivation for change, while lack of family support appeared to be the most important barrier to change.

The dietary intake analysis indicated that fat intake decreased with stage of change (1,2 & 3 vs. 4 & 5), as predicted by the Transtheoretical Model, and with age. Fat intake was not associated with income or education. It may be that it is associated with the health problems that come with age. The most important finding was that many people who reported themselves to be at stages 4 (action) and 5 (maintenance) of eating a low fat diet were not. Sixty-four percent of people in the maintenance phase were in fact eating diets having more than 30% of fat; and similarly, 81% of people in the action phase. It is apparent that these people exhibit a lack of knowledge of low fat foods.

Exploratory Analyses related to the Transtheoretical Model constructs indicate that the instruments are relevant in large part to be black women. No revisions were required to the temptation scale. Revisions was required for some items, including additional pros and cons of importance to black women, 2 new difficulty scale items for self-efficacy, and 3 Process of Change Factors-Stimulus Control, Environmental Reevaluation, and Reinforcement Management. Confirmatory studies on the revised scales are expected to be completed in six to eight weeks.

Evidence from the Focus Groups showed that Kristal's questionnaire may not be assessing dietary fat efficiently in African American women. Therefore, we applied for additional funds from the National Action Plan on Breast Cancer that would allow us to develop a culturally sensitive screening instrument to measure fat intake in African American women. Dr. Kristal has agreed to serve as a consultant to this project. In addition, we found that overcoming obstacles to dietary change in African American women requires a more systematic and culturally sensitive approach. Therefore we applied for funds from the Department of the Army. If funded, these two additional projects would enhance this project.

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TABLES AND FIGURES

List of Tables and Figures

Table 1. Target Population Pool

Name	n
1. Meharry Medical College	720
2. Tennessee State University	472
3. Fisk University	96
4. Sigma Gamma Rho Sorority	92
5. Delta Sigma Theta Sorority	64
6. Zeta Phi Beta Sorority	55
7. Hadley Park Senior Center	51
8. Elizabeth Senior Center	22
9. Temple Baptist Church	400
Total	1,972

Table 2: Respondents to Screening Questionnaire

Name	n	Response	% Response
1. Meharry Medical College	720	98	14
2. Tennessee State University	472	20	4
3. Fisk University	96	7	7
4. Sigma Gamma Rho Sorority	92	0	0
5. Delta Sigma Theta Sorority	64	0	0
6. Zeta Phi Beta Sorority	55	0	0
7. Hadley Park Senior Center	51	17	33
8. Elizabeth Senior Center	22	8	36
9. Temple Baptist Church	400	24	6
Total:	1,972	174	9

Table 3: Behavior Change Stages of Screened Population by the Transtheoretical Model

			n	%
Stage 1:	Precontemplation	People eating >30% dietary fat who had no intention of changing fat intake in the next 6 months	23	13
Stage 2:	Contemplation	People eating >30% dietary fat who intended to change in the next 6 months	27	16
Stage 3:	Preparation	People eating >30% dietary fat who intended to change in the next 30 days	21	12
Stage 4:	Action	People eating <30% dietary fat who had done so for less than 6 months (misclassified, n= 34)*	42	24
Stage 5:	Maintenance	People eating <30% dietary fat who had done so for more than 6 months (misclassified, n = 39)*	61	35
Total			174	100

*Misclassified: people who classified themselves at stages 4 or 5, but who were really eating >30% dietary fat.

Table 4. Outline of Focus Group Session

A. Introductions and Interest in Participating

B. Overview of Black Food Habits

C. Stages of Behavior Change

D. Changing "Stages"

E. Closure

Table 5. Overview of Black Food Habits

- Let's talk about this for awhile:
  - What does this expression, " black food habits" mean to you/ definition:
  - Each person says in turn what it means to them: Do they exist? Are they real? Who practices eating "black"?
  - What foods?: meats, vegetables, drinks, staples
  - Where purchased?
  - How cooked?
  - How prepared?
  - How/When served
  - Where eaten?
  - With whom eaten?
  - Associated with specific groups? Older/Poorer?
  - How related to fast foods?

Table 6. Changing Black Food Habits

A. Benefits of Reducing Fat

B. Barriers to Reducing Fat

C. Motivations and Strategies for Reducing Fat

Table 7: Fat and fiber intake by age, education, and income.

Variable	*%fat*	*S.D.*	*P*		*Fiber*	*S.D.*	*P*
Overall	37.1	7.0			15.4	6.7	
Age			.0001				0.11
Under 45	39.2	6.6			14.7	6.7	
Over 45	34.0	6.3			16.4	6.7	
Education			0.14				0.10
High School	37.5	7.2			15.3	4.3	
College	38.0	7.6			16.5	7.9	
Graduate	35.8	5.7			14.1	5.8	
Income			0.17				0.40
< 20,000	38.0	6.7			16.5	7.6	
20,000-30,000	37.6	7.1			14.8	6.6	
30,000-40,000	35.4	7.0			14.1	4.8	
>40,000	33.2	7.8			16.2	6.0	

Table 8: Fat and Fiber Intake by Stage of Change

Stage of Change	*% fat*	*S.D.*	*P*		*Fiber*	*S.D.*	*P*
Precontemplation	42.0	5.0	0.001		15.2	7.1	0.54
Contemplation	42.3	5.9			17.4	8.6	
Preparation	38.6	5.6			15.7	5.8	
Action	36.2	6.2			14.7	7.5	
Maintenance	33.1	6.2			14.9	5.2	

Table 9: Item by item analysis of success in adhering to a low fat diet.

Food Item	Compliant	Noncompliant	Not Trying	P-value
Squash 1/wk	40	35	34	0.83
Broccoli, cauliflower 1/wk	90	82	72	0.09
Green beans/peas 1/wk	93	85	86	0.49
Legumes 1/wk	63	40	54	0.06
Brown rice 1/wk	30	28	28	0.98
Tofu 1/wk	7	1	8	0.14
Bananas 1/wk	77	60	60	0.22
Raisins, prunes, etc. 1/wk	60	43	45	0.25
Melons 1/wk	60	49	49	0.56
Hot dogs 1/wk	7	38	49	0.0002
Hamburger 1/wk	27	56	69	0.0005
Chicken with skin 1/wk	43	71	73	0.009
Bacon 1/wk	13	38	52	0.001
Lunch meant 1/wk	7	43	73	0.00001
Tuna fish 1/wk	53	51	56	0.79
Fried fish 1/wk	33	55	54	0.11
Other fish 1/wk	56	38	44	0.23
Grains, pasta 1/wk	67	51	61	0.26
Cream, whipped cream 1/wk	7	11	34	0.0004
Ice cream 1/wk	27	44	54	0.05
Sour cream 1/wk	13	25	24	0.42
Yogurt 1/wk	63	33	41	0.02
Low cal mayo, dressing 1/wk	70	41	32	0.002
Low cal margarine 1/wk	53	32	34	0.09
Potato & corn chips 1/wk	30	60	69	0.001
Fried food/ restaurant 1/wk	20	63	86	0.00001
Fried food/ home 1/wk	7	41	76	0.00001
Pastries 1/wk	20	48	70	0.00001
Pies, cakes, cookies 1/wk	36	62	78	0.0004
Fast food 1/wk	36	74	85	0.00001

Food Item	Compliant	Noncompliant	Not Trying	P-value
Cereal 5/wk	63	33	42	0.05
Citrus fruit 5/wk	57	34	39	0.11
Eggs 5/wk	10	16	28	0.07
Lowfat milk 5/wk	76	27	32	0.00005
Lowfat cheese 5/wk	43	15	9	0.0006
Regular cheese 5/wk	23	38	55	0.009
Dark breads 5/wk	83	71	65	0.17
Rice, spaghetti 5/wk	60	55	63	0.59
Margarine 5/wk	33	70	86	0.00001
Butter 5/wk	3	40	49	0.00006
Lard 5/wk	0	3	9	0.20
Green salad 5/wk	80	58	59	0.08
Salad dressing, mayo 5/wk	13	43	58	0.0002
Red meat 5/wk	13	52	63	0.00002
Vegetable at lunch 5/wk	83	52	55	0.01
Vegetable at dinner 5/wk	93	90	79	0.06
2 or more vegies 5/wk	93	79	70	0.01
2 or more fruits 5/wk	83	51	47	0.002
Peanut butter, nuts 5/wk	26	27	35	0.53
Cookies 5/wk	23	37	42	0.20

FOCUS GROUP RESULTS

Table 10: Participant Backgrounds

Stage of Change	1		2		3		4		5	
Subjects	Invited	Attended	Invited	Attended	Invited	Attended	Invited	Attended	Invited	Attended
n	8	3	7	4	7	6	10	4	9	4
age range	28-65	35-65	26-58	26-58	34-76	34-76	28-65	40-65	45-56	51-56
% fat	41	42	41	36	38	37	30	30	27	27
Reasons for Participation	research assistant drug counselor sociology professor therefore understood project needs		breast cancer, high blood pressure high cholesterol		holistic health weight, blood pressure, arthritis, changing diet		overweight, high blood sugar, friends health, eating problems, thyroid problems		health educator, healthy eating, exposure to health problems in sickle cell center	

FOCUS GROUP RESULTS

Table 11: Black food Habits

Stage of Change	1	2	3	4	5
Defintion, Characterization	"good" food; a way of life; has a special flavor	"soul food"; using a lot of oil and spices	some differences from "southern" foods; using a lot of spices and fat; carry over from slavery (not good cuts of meats); traditional cookery	"soul" food high in oils; some similarities to southern food; goes back to slavery days (worst cuts of meats); lots of tradition and emotion; "good" food, nothing measured, meat marinades, long cooking times	food with lots of fat; heavy with oils and spices; soul food, must have a certain flavor
What foods?					
Meats	fried foods, bacon, sausage, country ham, pork chops, pigs feet, pig ears, neck bones, chitterlings, fried catfish; gravy	pork chops, neck bones, pigs feet, chitterlings, chicken	chitterlings, pork chops, BBQ, possum, beef, lamb, mutton; gravy	pork, hogmaws, chitterlings, pig feet, pig ears, meatloaf beef, chicken	hamhocks, chicken, beef chitterlings
Vegetables	greens (turnip, collard, mustard), green beans	broccoli, brussels sprouts, greens, green beans, salads, blackeyed peas	greens, cabbage	greens, fried corn	green beans
Starches/ Staples	grits	rice, potatoes, spaghetti	macaroni and cheese, potatoes, rice	grits, potatoes, yams, macaroni and cheese, crackling cornbread	macaroni & cheese, grits, yams

FOCUS GROUP RESULTS

Table 11 (cont'd): Black Food Habits

Stage of Change	1	2	3	4	5
Drinks	kool-aid, coke, iced tea	iced tea, lemonade, kool aid, soda, sweetened juices	coke, kool aid	tea, kool aid, colas	iced tea, kool aid colas, juices
Special/Other Occasions	chicken, baked ham, dressing, green beans, turnip greens, rolls, corn bread, macaroni and cheese, yams, after chruch on Sunday at mother's house	fast foods	black restaurants, city buffets	black restaurants white sourthern restaurants	city restaurants
Where Purchased?	black neighborhood supermarkets or corner stores	black neighborhood stores	black communities some white stores	inner city grocery store	black corner stores, but more frequently at white stores
Most Popular Mode of Cooking	some have to be fried others have to be baked	soul food; younger generation most likely to eat fast foods	fried food	fried food, nothing is measured	

FOCUS GROUP RESULTS

Table12: Changing Dietary Behaviors

Stage of Change	1	2	3	4	5
Benefits of Reducing Fat	good health	good health	longer life, feeling better, less illness fewer health risks	weight loss, self esteem, longerity, lower blood pressure living better	better health
Barriers to Reducing Fat	not aware of any, depends on the degree of change; watching TV	lack of guidance lack of self-motivation taste of some food	stressful or busy lifestyle, significant other's attitude, job uncertainty, TV, fast foods	cooking style (fried preferred for flavor), tradition, food costs, family support, time needed to prepare special dishes, counting calories peer pressure	food availability, amount of time to prepare; family support especially from men
Motivators and Strategies	more information, medical problems, special flavor retained, tasteing sessions	show effects on the body of not eating right	use "Pam" for frying, yogourt and cornflakes for coating foods, target black restaurants, advocate exercise and recipes, have low fat eaters give testimony, have tasteing sessions; lessen feeling of deprivation	share recipes, have taste tests, involve creative chefs, make it easy to measure fat grams, show pictures of clogged arteries, explain why people lapse, share knowledge of how to cut fat in foods	creation of new foods by corporate America, advertise low fat foods available, create new recipes, provide food alternatives, provide continuous education, have tasteing sessions, help churches plan holistic health programs, educate kids to like vegetable casseroles, educate restaurant owners and chefs, get doctors to stress the importance of reducing fat intake, have one-time maxi-events for sharing information, experiences, and foods

Table 13. Principle Component Factor Loadings for Decisional Balance

Scale Designation	Item	Factor Loading	Factor Loading
Cons	6	.96	
Cons	8	.92	
Cons	2	.81	
Cons	4	.71	
Pros	7	.60	.34
Pros	3		.94
Pros	1		.84
Pros	5		.81

Table 14. Principle Component Factor Loadings for Temptation

Scale Designation	Item	Factor Loading	Factor Loading	Factor Loading
Neg	8	.96		
Neg	2	.94		
Neg	5	.83		
Pos	1		.89	
Pos	7		.82	
Diff	3		.63	
Pos	4		.60	
Diff	6			.90
Diff	9			.87

Pos = Positive Social Situations
Neg = Negative Affective Situations
Diff = Difficult Situations

Table 15. Principle Component Factor Loadings for Self-Efficacy

Scale Designation	Item	Factor Loading	Factor Loading	Factor Loading
Pos	1	.97		
Pos	4	.96		
Pos	2	.93		
Pos	3	.92		
Neg	6		.99	
Neg	7		.96	
Neg	5		.94	
Neg	8		.89	
Diff	10			.95
Diff	11			.93
Diff	9			.88
Diff	12			.52

Pos = Positive Social Situations
Neg = Negative Affective Situations
Diff = Difficult Situations

Table 16. Comparison of Processes of Change Internal Consistency Analyses (Coefficient Alpha)

2 Item Process of Change	Alpha African-American Women	Alpha Whites
Consciousness Raising	.84	.65
Dramatic Relief	.76	.72
Self-Reevaluation	.91	.82
Self-Liberation	.86	.81
Social Liberation	.78	.70
Environmental Reevaluation	.64	.77
Helping Relationships	.87	.50
Reinforcement Management	.47	.74
Interpersonal Systems Control	.82	.69
Counterconditioning	.84	.64
Stimulus Control	.61	.61

Figure 1: Assignment to the Stages of the Transtheoretical Model

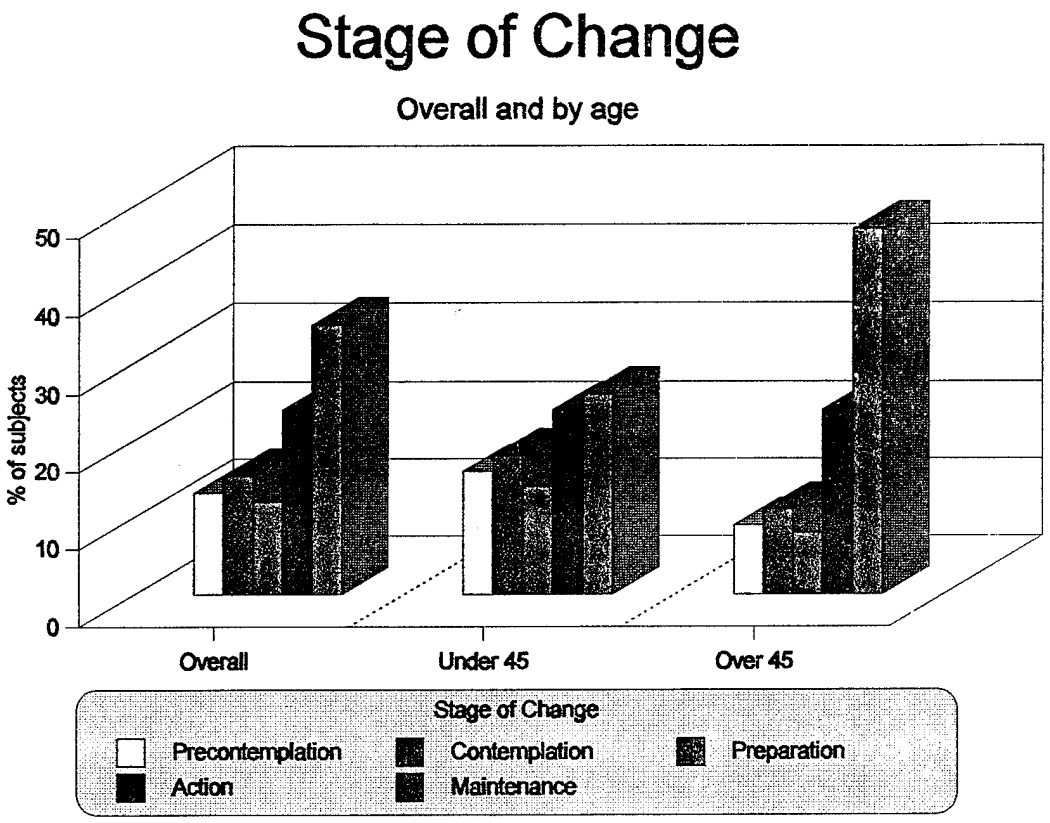


Figure 2: Dietary Compliance by Stage of Change

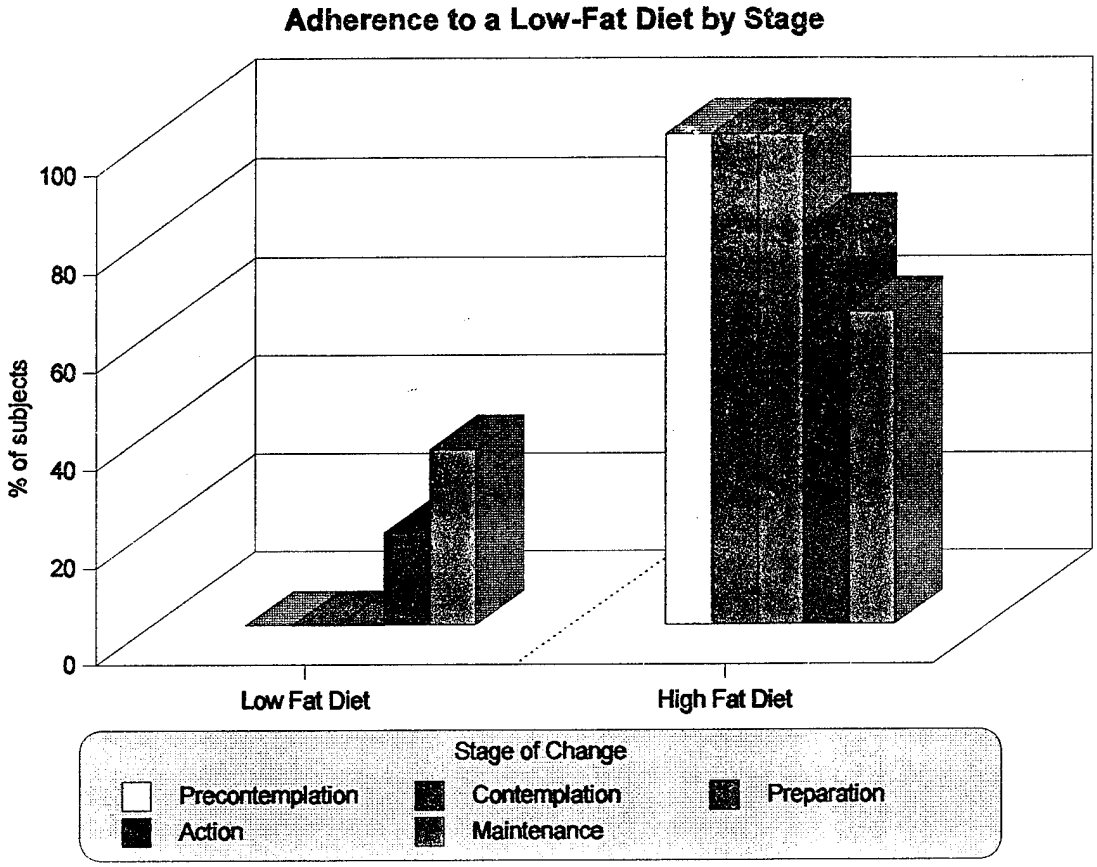


Figure 3

Decisonal Balance Model For Dietary Fat Reduction
in African-American Women: Focus Group

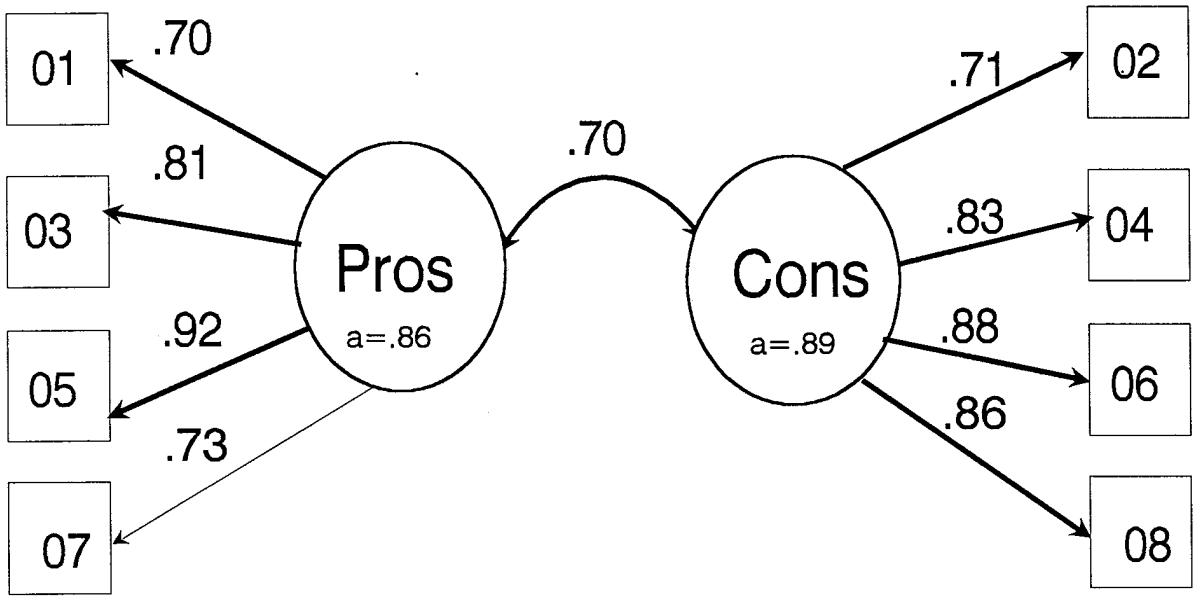


Figure 4

Situational Temptation Model For Dietary Fat Reduction in African-American Women: Focus Group

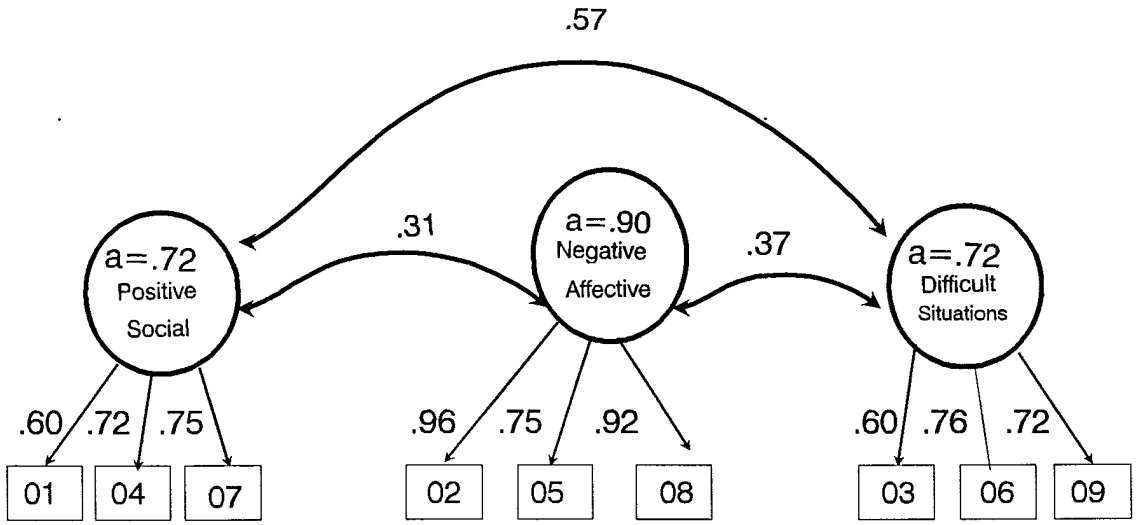
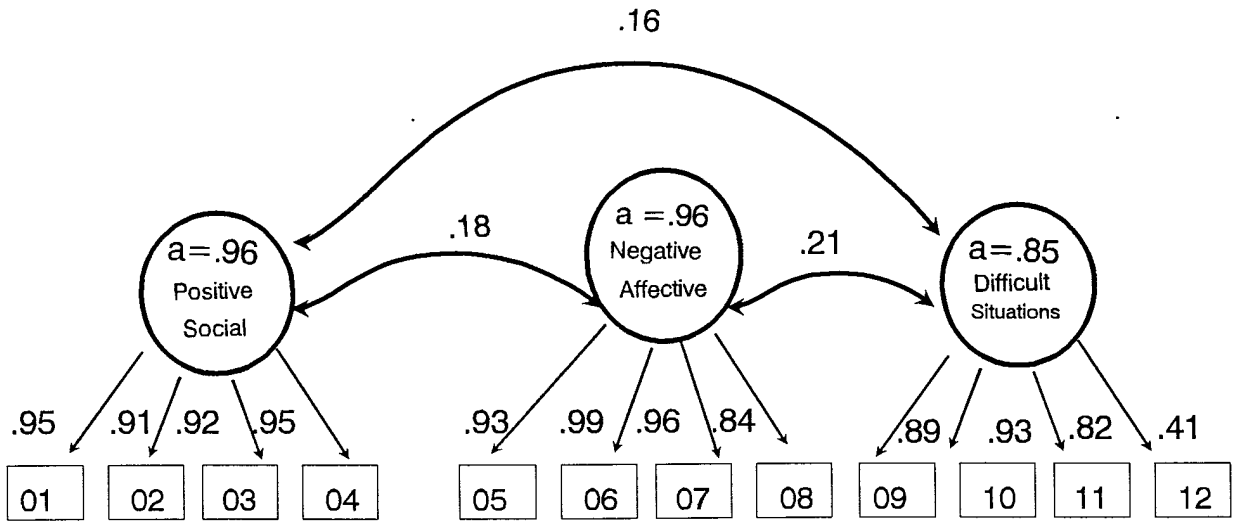


Figure 5

Situational Self-Efficacy Model For Dietary Fat Reduction in African-American Women: Focus Group



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