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A program evaluation of existing and proposed American Heart Association nutrition education curricula

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A PROGRAM EVALUATION OF EXISTING AND PROPOSED AMERICAN HEART ASSOCIATION NUTRITION EDUCATION CURRICULA

by

Marie Meredith Kinley

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APPROVAL PAGE

This dissertation has been approved by the following committee of the Faculty of The Graduate School at The University of North Carolina at Greensboro.

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The purpose of this study was to plan and implement a program evaluation for the North Carolina Affiliate of the American Heart Association. A total design method mail survey was developed to collect demographic data on the survey respondents, summative data on an existing nutrition education curriculum, Culinary Hearts Kitchen, and formative data on a proposed nutrition education curriculum, "Takin' Care of Southern Hearts". The target population included 103 home economics extension agents employed by the Cooperative Extension Service in North Carolina and 1011 registered dietitians who were active members of the North Carolina Dietetic Association for a total of 1114 persons. The census survey attained an overall response rate of 71.6% (n=643).

Approximately 66% of the survey respondents reported direct responsibility for cardiovascular disease risk factor nutrition education for the public. The highest concentration of respondents (43.6%) were employed in the affiliate's eastern area. Demographics of the respondents showed them to be an experienced, well-educated group with a mean age of 39.9 years and a mean of 13 years working in the field of food and nutrition.

Previous users (n=146) of the Culinary Hearts Kitchen curriculum reported their classroom experiences

related to utilization of the curriculum and rated the usefulness of the curriculum components. Instructors gave the highest mean ratings to the Culinary Hearts Kitchen nutrition and food information slides, the nutrition information content, and the participant handouts. The entire curriculum package received a mean usefulness rating of 4.1 (SD=0.8) on a six point Likert scale of 0-5. The most frequently suggested change in the curriculum kit was the recipes.

All survey respondents (n=643) completed importance ratings for each of the components of the proposed curriculum, "Takin' Care of Southern Hearts". The highest mean importance rating was given to recipes of familiar southern foods modified for fat, cholesterol, and sodium ($\bar{X}$=4.7, SD=0.6). The survey respondents gave the second highest mean importance rating to food selection, handling/storage, and preparation information for reduction of dietary fat in familiar southern foods ($\bar{X}$=4.5, SD=0.8). A majority of the respondents (91.8%, n=590) indicated an interest in having the proposed curriculum; 82.9% (n=533) reported an interest in related training workshops; and 30% (n=196) expressed an interest in helping the affiliate complete the proposed curriculum.

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Special gratitude goes to my husband, Benny Kinley, for his unceasing prayers and steadfast love. Most of all, the author wishes to offer praise and thanksgiving to God for His divine guidance and unmerited favor.

TABLE OF CONTENTS

LIST OF TABLES

CHAPTER I

INTRODUCTION

Although statistics show that the mortality rates from cardiovascular disease (CVD) and stroke are declining in the United States, CVD still remains the number one cause of death nationwide (American Heart Association, 1992). CVD deaths are still responsible for more than 44% of all deaths in North Carolina. Every 21 minutes, someone in the state of North Carolina dies from cardiovascular disease or stroke (North Carolina Affiliate, 1990).

The American Heart Association (AHA) is a national voluntary health agency whose mission is to reduce disability and death from CVD and stroke. To support the accomplishment of its mission, the association engages in three enterprises: cardiovascular science, cardiovascular education and community programs, and revenue generation. The mission of the cardiovascular education and community programs enterprise is to improve health and prevent cardiovascular disease and stroke through public and professional education, community service programs, and public affairs initiatives.

The National Center of AHA has developed a wide array of curriculum packages. Schoolsite curriculum kits include Heart Treasure Chest (preschool), Getting to Know Your Heart and Racing with the Wind (elementary school), Heart Decisions (middle school), and Heart Challenges (senior high). Healthsite curriculum kits include the Cholesterol Education Program for Nurses and Active Partnership Program. The worksite curriculum kit is Heart at Work and the community curriculum kit is the Culinary Hearts Kitchen (CHK). In addition to the curriculum kits, the National Center publishes an extensive number of educational brochures, posters, manuals, and cookbooks. Each state has an affiliate office with a program department. The program director, program consultants, and administrative staff interact with volunteers throughout the state to disseminate the AHA program materials.

The National Center of AHA published its first dietary recommendations in 1961, advocating that Americans reduce the amount of fat in their diet. The AHA carefully and continuously reviews the scientific evidence concerning the relationship between diet and atherosclerosis, using it to revise their recommendations as needed. The most recent position statement formulated by the Nutrition Committee of AHA (1988) recommended the

following dietary guidelines for all healthy American adults:

1. Total fat intake should be less than 30% of calories.
2. Saturated fat intake should be less than 10% of calories.
3. Polyunsaturated fat intake should not exceed 10% of calories.
4. Cholesterol intake should not exceed 300 mg/day.
5. Carbohydrate intake should constitute 50% or more of calories, with emphasis on complex carbohydrates.
6. Protein intake should provide the remainder of the calories.
7. Sodium intake should not exceed 3 grams per day.
8. Alcoholic consumption should not exceed 1-2 oz of ethanol per day. Two ounces of 100 proof whiskey, 8 oz of wine, or 24 oz of beer each contain 1 oz of ethanol.
9. Total calories should be sufficient to maintain the individual's recommended body weight.
10. A wide variety of foods should be consumed.

The Culinary Hearts Kitchen (New York Affiliate of AHA, 1982 & AHA, 1985 & 1992) curriculum kit is based on the guidelines for fat, cholesterol, sodium, and total calories (Appendix A). This community program is the AHA's only nutrition education curriculum. The purpose of the program is to educate the adult public on how to plan and prepare attractive, tasty meals which adhere to the AHA's dietary recommendations.

The Diet Committee of the New York Affiliate of AHA, composed of registered dietitians (RDs) and physicians, collaborated with New York Heart Affiliate, two outside consultants, and Cinemakers Inc. over a period of three years to develop the curriculum. The curriculum kit, published in 1982, originally retailed for $95 and included an instructor's manual with reproducible handouts for participants, over 250 slides, 50 recipes, and 50 nutritional analyses. The original six session course (two hours per session) was designed to be taught by a dietitian, nutritionist, or home economist with a background in foods and nutrition. It was recommended that qualified health professionals work in teams so that each instructor's expertise and strengths could be used to their advantage and that the work load could be shared. The original version was field tested by the Northern Virginia Chapter, the Virginia Affiliate of AHA, and the

Department of Home Economics and Nutrition, New York University. Publication and distribution of the curriculum were taken over by the National Center of AHA in 1985.

The North Carolina Affiliate (NC Affiliate) established a CHK Task Force in 1987 to help implement the CHK curriculum in North Carolina. The task force conducted two workshops and developed a modification manual. In November 1988, the CHK Task Force members of the NC Affiliate decided to develop a new regional version of the CHK curriculum complete with up-to-date nutrition information, learning objectives, lesson plans, visuals, learning activities, participant handouts, evaluation tools, and southern recipes. In the spring of 1989 the NC Affiliate commissioned the CHK Task Force to proceed with this plan. The name "Takin' Care of Southern Hearts" was adopted for this revised, expanded, regional version of the CHK curriculum. During the next year, CHK Task Force members and other volunteers selected, tested, analyzed, field-tested, and formatively evaluated 104 recipes.

Simultaneously with the recipe development, the CHK Task Force members and affiliate program staff reviewed the CHK curriculum content and other CVD nutrition education materials. Task Force members determined that

the curriculum manual should be restructured to include an instructor's manual, a student's manual, and a cookbook. It was decided to reorganize the content into three major subject categories with stand alone mini-modules for flexibility. Task Force members established the general content of each major category; discussed the technique of writing learning outcomes; and reviewed potential lesson plan formats.

Train-the-trainer workshops were expected to play an important part in the diffusion of "Takin' Care of Southern Hearts". Evaluations from previous workshop participants were to be reviewed to improve the design of future training workshops. Demographic variables from the survey were to be used to select appropriate locations and respondents interest level to determine how many to implement. Topics were to be based on interest level as well. Home economics extension agents (extension agents) and RDs in counties which reported no CHK program activity to the NC Affiliate were to be targeted for training.

The NC Affiliate was to be the publisher for "Takin' Care of Southern Hearts". Development work was to be completed by volunteers. Additional volunteers were needed to help complete the cookbook; develop the instructor's manual and the student's manual; and plan, implement, and facilitate the related workshops.

Although the successful diffusion of the innovative CHK curriculum kit had been a program goal for the National Center of AHA and the NC Affiliate since 1985, diffusion had been hindered because of three instructor-identified needs: a separate student handbook, adequate training workshops, and appropriate recipes. Health professionals and participants in North Carolina had expressed concerns about various aspects of the CHK curriculum to the evaluator and the NC Affiliate. However, these concerns had never been documented.

It was recognized early in the development process that the viability of "Takin' Care of Southern Hearts" would depend upon its users' satisfaction with the content and its relevance to the population with which it is used. Both the affiliate and task force members wanted confirmation from the potential users that the structure and content of the proposed curriculum was appropriate for the target population and that there was sufficient interest in the proposed program to warrant its development.

Program evaluation is an effective means of providing decision makers with information needed to improve educational program. Useful information may be obtained using Scriven's strategies of summative and formative evaluations. A survey constructed and

implemented according to Dillman's total design method guidelines can generate a high response rate even when applied to a distant, relatively homogeneous population.

Objectives of the Study

The objective of this study was to conduct a program evaluation which could be used by the North Carolina Affiliate of American Heart Association for decision making. The program evaluation would provide the following:

1) summative data from the survey respondents about an existing AHA nutrition education curriculum, Culinary Hearts Kitchen.
2) formative data from the survey respondents about a proposed nutrition education curriculum, "Takin' Care of Southern Hearts".
3) demographic data about respondents (extension agents and RDs employed in North Carolina).
4) differences between extension agents and RDs relative to utilization and usefulness ratings of the existing curriculum and importance ratings and interest levels in the proposed curriculum.

Limitations

The survey population was limited to two special populations: home economics extension agents employed by the Cooperative Extension Service (CES) in North Carolina and employed registered dietitians classified as active members of the North Carolina Dietetic Association.

Definition of Terms

Culinary Hearts Kitchen Curriculum: The CHK, developed by AHA's New York Affiliate and currently published by the National Center of AHA, is a curriculum for teaching AHA dietary guidelines. Written for dietitians and home economists, the CHK program provides information for teaching six 2-hour class sessions. It includes an instructor's manual, lesson plans, class materials, handouts, recipes for food demonstrations, 265 slides, and a course evaluation form.

Home Economics Extension Agent in North Carolina: A person employed as field faculty of the Cooperative Extension Service of North Carolina State University who is responsible for helping others help themselves.

Registered Dietitian: A person who has earned at least a baccalaureate degree; completed a total of 900 hours of American Dietetic Association (ADA) approved supervised professional practice in hospitals, community

agencies, nursing homes, school systems, and other sites; passed the ADA registration examination; maintained a registered status by accumulating at least 75 hours of ADA approved continuing education every five years; and paid an annual registration maintenance fee.

Active member of North Carolina Dietetic Association: A person who has earned at least a baccalaureate degree; meets academic requirements specified by ADA; and is a registered dietitian or has completed a preprofessional experience program or a master's or doctoral degree from a regionally accredited institution.

Program Evaluation: The assessment of a complex of people, materials, and organization which make up a particular educational program.

Summative Evaluation: An assessment conducted at the end of a program which leads to decisions concerning program continuation, termination, expansion, and adoption.

Formative Evaluation: An assessment conducted during the development of a program to provide program directors information useful in improving the program.

Total Design Method (TDM): A set of procedures and techniques developed by Don Dillman for the construction

and administration of mail surveys to maximize response rate.

CHAPTER II

REVIEW OF LITERATURE

The literature will be reviewed in the following areas: (1) diffusion of the innovative Culinary Hearts Kitchen curriculum and (2) program evaluation and (3) applications of program evaluation to nutrition education curricula.

Diffusion of the Innovative Culinary Hearts Kitchen Curriculum

One way to conceptualize the transference of educational programs from one locale to another is by considering the programs to be innovations that are being diffused (Rogers, 1983). After reviewing several thousand research studies, Rogers (1971) identified the five attributes of innovation shown to affect the rate of adoption. Caffarella, Caffarella, Hart, Pooler, and Salesi (1982) reviewed and explained these attributes as follows: it is perceived as better than the idea to be replaced; it is perceived as consistent with the existing sociocultural beliefs and values, past experiences, and needs of the receivers; it can be tried on a small scale; it is simple enough to promote adoption; and observation of it promotes adoption. Graves, Farthing, Turchi, and

Smith (1989) pointed out that creation of awareness, establishment of a commitment, training, help with implementation, problem solving, monitoring, and evaluation are all critical to the adoption of an innovative idea.

Tilburg and Heimlich (1987) defined culture as the customs and civilizations of a particular group of people called the larger society. A subculture is a smaller, but not lesser, group of people who share unique life experiences or qualities within the larger society. Successful diffusion is more likely to occur if there is an acceptance of the subculture as different in size but not in quality, knowing the elements of the subculture, and helping the subculture members to assume the new behaviors within the framework of the existing rituals. Castelli (1990), director of the Framingham Heart Study, recognized this principle when he stated that most Americans need cooking classes which emphasize modification of favorite family recipes that have often been handed down from generation to generation.

A distinctive cookery has evolved in the South over five centuries which has consistently reflected its unique subculture. Egerton (1990) stated that care should be taken not to throw out the heritage and the incomparable Southern dishes. He recommended making sensible

modifications to the traditional Southern food habits. Lipsitz (1990) reported that three of the finest regional Southern cooks including Edna Lewis of Virginia, Bill Neal of Chapel Hill, and Roy Guste, Jr. of New Orleans have already demonstrated that the Southern cuisine can be successfully reconstructed to meet national dietary recommendations.

The Culinary Hearts Kitchen curriculum kit is an excellent example of an innovative nutrition education program which has encountered diffusion problems. It has been one of the most widely used nutrition education programs for instructing the public about CVD risk factor reduction. Developed by the New York Heart Affiliate of AHA in 1982, this nutrition and food preparation curriculum was designed to teach the general public how to select and prepare foods that look good and taste good while adhering to the AHA's Dietary Recommendations. The developers set out to accentuate the positive in their cooking classes by putting their emphasis on what people "can do" rather than on what they should not do.

In 1985, a revised version was published and distributed by the National Center of AHA. No attempt was made to make the recipes culturally appropriate to various regions of the country such as the south. A section on

sodium was included in the revised version and a separate diabetes supplement was made available in 1987. The price dropped dramatically to less than $50 when the National Center took over the distribution of the CHK curriculum.

As the diffusion of the CHK program took place, other AHA affiliates identified three instruction-related needs: a student handbook, training workshops, and culturally appropriate recipes. The Pennsylvania Affiliate prepared the Student Reference Book (1985) as a resource for students enrolled in a CHK course. The manual consists primarily of the contents, recipes, and graphs/charts from the original course. A section of 27 microwave adaptations of original CHK recipes and select other pages were added to each session. The NC Affiliate and the CHK Task Force prepared The Culinary Hearts Kitchen Course: A Modification Manual (1987). This resource manual offered tips for eliminating text and slides; new participant handouts; and a limited number of recipes which were more appropriate for the southern clientele. The Virginia Affiliate (1988) produced The Culinary Hearts Kitchen: Cooking Guide. Although there were some modifications and updates, the format, content, and general structure followed that of the Pennsylvania student manual.

Train-the-trainer seminars experienced a new wave of popularity in the late 1980s as a result of the highly competitive nature of many industries at that time. Management realized that workshops with quality facilitators could significantly enhance the effectiveness of a training program (Rosen, 1987). The NC Affiliate collaborated with the CHK Task Force to hold train-the-trainer workshops at the affiliate office in December 1987 and June 1988. Participants were primarily extension agents and RDs. The objective of the workshops was to train participants to act as resources for the NC Affiliate in training individuals who wished to use or teach the course. The one-day workshops included an overview of the CHK course, an update about cardiovascular research on lipids, round table-discussions about various aspects of the program, recipe tastings, and a panel discussion about the logistics of implementing a CHK course. Participants received a modification manual for the CHK curriculum.

In Alabama, volunteer nutrition experts became workshop facilitators to enhance the diffusion of the CHK curriculum kit. During the summer of 1988, they conducted four half-day train-the-trainer workshops for the Alabama Affiliate in four key metropolitan locations--Birmingham, Huntsville, Montgomery, and Mobile. More than half of the

254 attendees were RDs and home economics teachers. The agenda included an overview of the CHK course, an update about cardiovascular research and prevention, information about the AHA Physician's Cholesterol Education Program, a presentation of one of the six two-hour sessions from CHK, recipe demonstrations, tastings, and a discussion of the "how to's" of presenting a public education program. A resource guide was given to participants and the CHK curriculum kit was available for purchase (Monsen, 1990).

The 1985 edition of the CHK curriculum was outdated by new scientific findings. It was not until 1990 that the AHA decided to consider a revision of the 1985 edition of the CHK curriculum kit. They proposed the following three alternatives: (1) revising the program and accelerating National Center marketing and distribution; (2) collaborating with another agency who would take over marketing and distribution (e.g. ADA); and (3) discontinuing the program. Twelve of the 56 affiliates who were most active in their implementation of CHK programs were informally assessed regarding revision of the CHK curriculum kit. Affiliate Program Directors were asked to report to the National Center the way they marketed the program, the resources they allocated to it, and their reaction to the three options listed above to the National Center. North Carolina was one of the 12

affiliates. In the absence of any promotional efforts by the affiliate, health professionals in North Carolina reported reaching almost 1500 adult residents with this program between July 1989 and July 1990.

In the fall of 1991, the National Center announced their intention to revise the CHK curriculum with particular emphasis on the nutrition information. The revised CHK curriculum kit was available on the market during the summer of 1992. To improve the curriculum kit, text revisions were made based on the current scientific data regarding nutrition and on "AHA's Dietary Guidelines" (1988). A few original recipes were deleted and replaced with new recipes. The bibliography was updated and a number of slides were revised or deleted. The revisions did not resolve two of the three key instruction-related needs which had been identified by the affiliates: student handbooks and regionally appropriate recipes.

Program Evaluation

Definition of evaluation. Evaluation is a regularly occurring phenomenon in human behavior for identifying options for problem-solving (Worthen & Sanders, 1987). Intrinsic to program evaluation is this same problem-solving sequence which begins with identification of a problem. It continues with generation and implementation of alternatives to reduce its symptoms.

This is followed by evaluation of the alternatives. The process ends with adoption of those alternatives that results suggest will reduce the problem satisfactorily (Shadish, Cook, and Leviton, 1991). Program evaluation can be defined then as the assessment of a complex of people, materials, and organization which make up a particular educational program.

Evaluation is undertaken upon the request of a client so that it can lead to decisions. It seeks to describe a particular thing and its unique context with respect to one or more scales and attempts to assess the value or social utility of the object of evaluation. Evaluation contributes to the solution of practical problems through the estimation of worth, merit, or value of the object being evaluated (Scriven, 1986). In education, evaluation is used to formally determine the quality, effectiveness, or value of a program, product, project, process, objective, or curriculum (Worthen & Sanders, 1987). Gillespie and Brun (1992) stated that nutrition education evaluations could be improved if evaluators sought guidance from the significant developments in educational evaluation since 1965 and the work and writings of colleagues involved in formative and summative evaluation work in nutrition education.

Formative and summative evaluation. Most evaluators agree that evaluation can serve either a formative or summative role. The terms formative and summative evaluation, everyday vocabulary for evaluators, were introduced by Scriven (1967). These two evaluation strategies differ in focus, purpose, and timing. Formative evaluation is focused on program/process improvement. This strategy provides feedback for improvement or modification by providing information such as user/learner attitudes toward a curricular innovation or the usability of new instructional materials as they are tried out in the classroom for the first time. Summative evaluation is focused on program/process continuation or adoption. This strategy provides information for decision makers who need to know whether to fund, terminate, or purchase something. Formative evaluation is conducted during the development/ implementation of a program whereas summative evaluation is conducted after the product or program has been adopted in the marketplace. Evaluation generally has its greatest impact on program planning and implementation if the evaluation is done during the initial phases of program development. The longer a program is in existence, the more difficult it is to make changes to improve its performance (Edwards, Mullis, & Clarke, 1986).

Roles of formal evaluation. In education, some roles of formal evaluation studies have included the provision of a basis for decision making and policy formation, assessment of student achievement, evaluation of curricula, accreditation of schools, monitoring expenditure of public funds, and improvement of education materials and programs (Worthen & Sanders, 1987). Scriven (1967) identified curriculum development/improvement, teacher self-improvement, and product evaluation as three additional roles of evaluation in education. From the identified purpose or role, the evaluator has the responsibility to formulate questions, determine the best method(s) to answer the evaluation questions, gather information, analyze information, and draw conclusions from the data.

Evaluation approaches. There are a variety of evaluation approaches to chose from when designing a program evaluation. Worthen and Sanders (1987) classified the alternative approaches of the major current school of thought about educational evaluation into six categories as follows: objectives-oriented, management oriented, consumer-oriented, expertise-oriented, adversary-oriented, and naturalistic/participant-oriented. This classification is designed to help evaluators make the most appropriate choice for the study at hand.

Stufflebeam and Webster (1983) classified decision-oriented, consumer-oriented, and client-oriented approaches as values-oriented.

Edwards et al. (1986) proposed a model for evaluating innovative nutrition education programs throughout the development stages. The interdependence among preconditions participants bring to the learning process, elements of program delivery, and educational outcomes comprised the focus of this model. Evaluation questions were grouped under the following categories: extent and distribution of program participants, recruitment and qualification of instructors, appropriateness of program design and materials, and analysis of program outcomes.

Evaluation participants. In addition to choosing an appropriate evaluation approach, the evaluator must decide who will participate in the evaluation by supplying information. Geis (1987) suggested that there are two approaches to formative evaluation: developmental testing and expert review. He identified three sources of evaluation: learners, users, and experts.

Expertise can be sought at any point in the process of designing, developing, evaluating, and implementing an instructional system. Subject matter experts can enter the evaluation early to provide their opinions about

content of instruction, inclusion or exclusion of material, and audience. Users (teachers and trainers) can provide important information from their perspective about the acceptability, practicality, ease of use, and the relation of the curriculum package to the rest of the instructor's job. Typical changes which occur during this phase include the deletion of unsuccessful portions, the addition of content for clarification, substitution of one thing for another, or reorganization of content. Saroyan and Geis (1988) reported that publishers of instructional materials generally prefer a team of experts as a source of data. While the team of experts assemble and assess the materials, the publisher acts as the primary gatekeeper, decision maker, and implementor of revision decisions. Once the curriculum package is completely developed, a summative evaluation can be completed to provide potential consumers with judgments about that program's worth (Scriven, 1967).

Applications of Program Evaluation to Nutrition Education Curricula

Learner-based evaluations of the Culinary Hearts Kitchen curriculum

Although there have been no user-based program evaluations of this curriculum, the CHK curriculum kit has been the topic of two previous evaluations for effectiveness with learners in North

Carolina. Kinley (1985) evaluated the effectiveness of the CHK course on adults enrolled in a six week continuing education class at Guilford Technical Community College, Greensboro, NC. Fifteen students completed three measures (pretest, posttest, and 3-4 month follow-up) for changes in knowledge, attitudes, and reported behavior related to the selection and preparation of foods low in saturated fat, cholesterol, and sodium. The analyses showed a statistically significant effect on knowledge, a marginally significant effect of time on attitudes, and no significant effect on reported behavior.

The second evaluation of course effectiveness was conducted by Shepley (1990). Data were collected on 20 adults participating in a six week CHK course offered by the Wellness Program of the Craven County Health Department in New Bern, NC. The students were assessed three times (pretest, posttest, and 3 month follow-up) for changes of intake of three dietary components and for total blood cholesterol levels. The results showed a significant decrease in the percentage of calories from total fat, the percentage of calories from saturated fat, and cholesterol in the diets of the subjects. There was no significant change in total blood cholesterol levels.

Teacher-based summative evaluations of the Nutrition Education and Training program. Nutrition

Education and Training (NET) studies are the most frequently cited program evaluation studies of curriculum packages and dissemination of materials in the nutrition education literature. In 1977, Congress passed the National School Lunch Act and Child Nutrition Amendments. This legislation launched the first major national school-based nutrition education thrust. It also provided for this process to occur at the state level. The legislation's intent was as follows: to teach children the value of a nutritionally balanced diet through the creation of a positive daily lunchroom experience and appropriate classroom reinforcement; to develop curricula and materials; and to train teachers and school foodservice personnel to carry out this task. This created the challenge of combining teachers, foodservice personnel, students, parents, materials, and curricula into a system which would link the learner (who), the content (what), and pedagogy (how) with the question of why and where nutrition education connects with the real lives of children. The NET program was an invitation to educational innovation. Early NET evaluation studies described NET-funded activities and studied the NET program as it was being implemented as a nutrition education model in several states which were using different approaches.

The evaluation studies conducted in North Carolina have been particularly well reported. Farthing, Graves, Turchi, and Smith (1989) reported on the teacher component of the NET program in North Carolina. The study evaluated teacher perceptions of the effectiveness of both the curriculum materials provided and training programs related to their use. Teachers responded to questions based on their experiences with the NET program over a period of time to the following issues: the accessibility of training events and the incentives available to encourage teachers to participate in them; the extent to which NET program training in basic nutrition and in the use of curriculum materials met the perceived needs of teachers; the impact of NET program participation by teachers on nutrition education activities in the classroom; and the patterns of utilization of the NET materials by teachers attempting to integrate nutrition education into the existing curriculum. Farthing et al. (1989) reported attendance at training workshops resulted in positive teacher perceptions of the usefulness of nutrition education training and the materials provided. The same NET teachers expressed more satisfaction with their level of knowledge, felt somewhat less pressured for time to teach nutrition, and seemed more positive toward

school food services than those who had not attended training events.

Graves et al. (1989) also reported the results of a survey conducted to determine how many of the nutrition education materials distributed through the North Carolina NET program were in use in a sample of school systems, how each school system received these materials, and what procedures were used to distribute these materials within the system. The school food service/child nutrition director, rather than a curriculum specialist, was the person most often involved in the dissemination of nutrition education materials at the local level. The study found that the materials were distributed primarily through workshops. Respondents were given the opportunity to make recommendations concerning modifications to facilitate the dissemination of nutrition education materials.

In Texas, program staff for the NET program develop and conduct workshops, provide lending library service, and distribute materials to help school and child care personnel learn the fundamentals of nutrition, the principles of nutrition education, and food service management concepts and skills. In turn, the program participants were expected to use their newly acquired knowledge and resource to both teach children about food

and nutrition and serve meals and snacks that encourage good eating habits and improve nutritional status.

Roberts-Gray, Sparkman, Simmons, Buller, and Engquist (1989) evaluated the overall effectiveness of the Texas Net program and examined the strength of the first few links in the chain connecting NET resources with children's nutritional status. They reported the following findings from their study. (1) Full- or half-day workshops were conducted at no cost to participants, by RDs in their own communities. Uniformity was ensured by their attendance at special curriculum orientation training programs twice a year. Scores on knowledge tests and attitude scales were higher for participants than scores before the brief workshops. (2) There was a demonstrated need for better strategies to promote the use of NET materials. These materials were not being used as fully as expected. As teachers begin to implement workshop ideas and skills, they may feel more comfortable using materials already in their possession. However, as they move into integration and renewal states of behavioral change, they may be more open to new or additional resources.

Expert-based formative evaluations for curriculum and program development or improvement. The success of strategic planning or improvement of projected curriculum

projects and programs is often dependent on the collection of formative evaluation information from experts. Miller and Tricker (1991) surveyed 76 prominent health and fitness professionals about past and future priorities in health promotion in the United States. The participants completed an inventory which measured perceived importance of past and future practices in health promotion. Results indicated that future areas of health promotion will differ from those in the past. Women and the elderly were identified as the most important future markets. Staff positions for health promotion were expected to increase. Marketing personnel and health educators were reported as the most important future staff positions. Although standardization and certification of staff positions was beset by controversy, it appeared likely that competency standards would be more aggressively pursued in the future. Participants predicted that employers would offer voluntary participation in health promotion to all employees and that they would provide more healthful work environments.

Gillespie (1987) assessed the opinions of nutritionists about eight issues related to proposed objectives of a dietary guidance system. Approximately three-fourths of those responding to the survey agreed that a new dietary guidance system was needed. The

highest mean importance rating was given to the educational purpose of selecting diets. Almost half of the respondents preferred a food standard for a dietary guidance system. More than one third stated that the foods should be classified by the most traditional classification of commodity group. The diversity of opinions suggested that there is still no clear consensus on the objectives of a dietary guidance system.

Underbakke, Plane, and McBride (1993) surveyed all 1500 members of the Wisconsin Dietetic Association to assess their knowledge, attitudes, practices, experience, and educational interests regarding cholesterol management. The survey was conducted to provide guidance for the development of cholesterol education programming in the state. Most respondents were familiar with and supported the guidelines of the National Cholesterol Education Program (NCEP). Results showed that dietetics professionals understood the NCEP guidelines and wanted to learn more about cholesterol management. Respondents were interested in practical implementation of cholesterol guidelines and clarification of controversial areas. Interest in educational topics was related to the respondent's area of practice. Cholesterol management for children, women, and the elderly were areas of greatest interest. The American Heart Association step 1 and 2

diets were also identified as a priority cholesterol education program topic. Newsletters and regional workshops were cited as the best sources of cholesterol education.

Dietitians attending a clinical conference in California participated in a preliminary survey about a proposed nutrition practice doctorate curriculum. Christie and Kight (1993) assessed one hundred participants for the following factors: perceived barriers to use of dietetics-specific diagnostic assessments; interest in earning a practice doctorate; and course topics of perceived importance to selected subspecialties and a practice doctorate curriculum. Education was identified by 60 respondents as the most limiting barrier to use of diagnostic assessments. A practice doctorate was of interest to 55 respondents. Nutritional diagnosis, clinical nutrition examination procedures, advanced diet therapies/nutriotherapeutics, drug-nutrient interactions, and care process/diagnostic charting were perceived as the course topics of highest importance to respondents.

A comprehensive formative evaluation by learners, teachers, and experts. The National Dairy Council conducted a formative evaluation for development of a nutrition education curriculum, Food: Your Choice

(Talmage, Hughes, & Eash, 1978). Needs assessment data from teachers and administrators around the United States and concepts on nutrition from the 1970 White House Conference on Food, Nutrition, and Health established the basis for the nutrition education curriculum. Study participants suggested six essential characteristics of such a curriculum: sequential from grade level to grade level, correlated with the existing curriculum, activity centered, evaluated for effectiveness, comprehensive, and free of biases about people's food habits. Learner verification studies of curriculum segments under development were used to correct and validate learning activities under development. A nationwide field test provided formative data on the strengths and weaknesses of the curriculum as it was put into practice. Students reported interest in activities which called for active student participation. Teachers and team leaders found the curriculum easy to implement. Some teachers reported difficulty in completing some of the activities within suggested time schedules. The reading level was not appropriate for some children. A few activities proved to be too difficult for the designated grade level. Affective learning increased from the first to the third classroom observations. Statistically significant achievement gains of the experimental group from pretest

to posttest were noted at all levels of the curriculum. Detailed results were reported to curriculum revision teams and utilized for curriculum improvement.

Summary

Only two unpublished evaluation studies of the innovative CHK curriculum were located during the review of literature. Both of these studies examined program effectiveness on learners. Evaluations of the Nutrition Education Training program provided examples of summative evaluation issues related to the utilization of nutrition education curricula by teachers. Evaluations of experts pertaining to a variety of proposed curricula and program planning provided examples of formative evaluations issues related to the development process. A comprehensive formative evaluation demonstrated the use of learners, teachers, and experts for the development of a National Dairy Council nutrition education curriculum.

CHAPTER III

METHODS

The purpose of this study was to conduct a program evaluation which could be used by the North Carolina Affiliate of AHA for decision making. A total design method mail survey was developed to collect demographic data on the respondents; summative data on an existing AHA curriculum, CHK; and a proposed curriculum, "Takin' Care of Southern Hearts". Funding, subjects, survey instrument development, survey implementation, and data analyses are examined in the following sections.

Source of Funding

Funding for this project was obtained from three sources. The survey was sponsored by the NC Affiliate of AHA. The affiliate had acquired initial funding from two North Carolina commodity groups for the proposed "Takin' Care of Southern Hearts" curriculum project. Part of this funding was utilized by the affiliate to cover printing and mailing costs of the survey. The affiliate also provided personnel hours to develop a database from the mailing lists, prepare the mailings, and process the returns. Additional funding for graduate research was received from the School of Human Environmental Sciences

at the University of North Carolina and from the Institute of Nutrition through the Department of Foods, Nutrition, and Food Service Management.

Subjects

The total number of persons in the target population was 1114. The target population was divided as follows: 103 extension agents and 1011 RDs. A list of the extension agents was obtained from the CES in Raleigh, NC in December 1990. A NCDA membership list of RDs was purchased by the affiliate from ADA in December 1990. The NCDA list was generated from the ADA 1990 membership database which had been developed from a survey with an 87.3% response rate. Therefore the list was current but not complete. Both organizations granted the NC affiliate permission to use the lists for the survey.

The two groups in the target population were the most frequent users of the CHK curriculum. Survey recipients could be ineligible for the survey for the following reasons: no employment responsibilities for CVD risk factor nutrition education with no interest in training in this area or not employed. Dillman's use of the first question as a screening technique was utilized to overcome the problem related to ineligible survey recipients (1978). The first question was carefully worded to explain why the responses of some questionnaire

recipients were needed and others were not needed. The recipients who considered themselves ineligible were asked to circle answer number seven of question one and return the survey to the affiliate in the pre-addressed, postage paid envelope. This technique was employed to reduce the nonresponse bias so common to mail surveys.

The affiliate wanted to identify the subgroup who had used the CHK curriculum to teach a series of classes for the summative data collection. Professional opinion was also needed from all survey respondents for the formative data about the proposed "Takin' Care of Southern Hearts" curriculum. Under these conditions, a census survey was considered a more suitable alternative than random sampling.

Instrumentation

A questionnaire was developed to cover three categories of information: demographic variables of the survey respondents; summative data on the existing CHK curriculum; and formative data on the proposed curriculum, "Takin' Care of Southern Hearts". Survey respondents who had not taught the CHK course as a series of classes were asked to answer all demographic questions, one to three questions about the CHK curriculum, and all of the questions pertaining to "Takin' Care of Southern Hearts". Only the respondents who had taught the CHK course as a

series of classes were expected to complete the entire survey.

The evaluation questions were generated through informal meetings with CHK Task Force members and NC Affiliate program staff members. The demographic variables of interest were highest degree earned, major of highest degree, primary responsibilities for CVD risk factor nutrition education, primary place of employment, geographical location of employment, race, mean age, and mean years working in the field of foods and nutrition. Summative data collection included the level of awareness about the CHK curriculum, purposes for which it had been used, factors related to utilization of the curriculum in the classroom, perceived usefulness of the CHK components to its users, and suggested additions to or changes in the CHK curriculum. Formative data collection included perceived importance of the "Takin' Care of Southern Hearts" components to potential users; acceptability of the proposed nutrient analysis box with diabetic exchanges for the recipes; level of interest in the proposed curriculum and/or alternative products; level of interest in related training workshops and given topics; and interest in helping with completion of the proposed curriculum.

The data were to be used to identify volunteers for a new CHK Task Force. These volunteers would be responsible for recipe development, curriculum development, workshop planning, and workshop facilitation. The development of the proposed curriculum would be guided by the usefulness and importance ratings. A section on classroom management tips would be based on the classroom utilization data. Training workshops would be planned around topic preferences and demographic characteristics of the potential participants. The number of workshops and their location would be based on the interest level and the geographical location of the interested respondents. Finally, the affiliate would have an idea of the marketing potential of both the proposed curriculum and related training workshops. This information could in turn be used to submit proposals for additional funding for the project.

Wording, flow, and placement of questions in a mail survey are very important. Therefore, TDM guidelines developed by Dillman (1978) were carefully followed. Data were collected with yes/no questions, multiple choice questions, brief open-ended questions, and six point (0-5) Likert scales.

Cover letters explained that the NC Affiliate wanted recipients' expert opinions for program improvement

(Appendix C). Confidentiality was assured, but not anonymity, because of the nature of some of the questions. Trust was established by clearly associating the survey with the NC Affiliate of AHA. The AHA logo was used on the survey booklet cover, cover letters, reminder cards, and mailing envelopes. Results could be requested by writing the name and address of the respondent on the return envelope (Appendix E).

The questionnaire was initially reviewed by NC Affiliate program staff and a panel of nutritionists for content validity. It was pilot tested with 14 persons in the state of North Carolina. This group was made up of home economics extension agents, nutritionists, nutrition graduate students, and dietitians on the inactive list of ADA. Five of these people were associated with the task force and were on the mailing lists, so they were excluded from the survey.

The pilot test results were used to make the following changes in the survey questionnaire: (1) the spelling of the word dietitians (on the cover) was corrected; (2) adult education was added to the major of highest degree: (3) nutrition was changed to nutrition/dietetics and home economics and business education was changed to home economics; (4) all races/ethnic origins except black and white were listed as

other; (5) questions 9 and 10 were changed completely; (6) additional key words in the transitional boxes and directions were highlighted by changing the style to bold; (7) some transitions, directions, and questions were reworded; (8) the shading in the transition boxes was lightened; and (9) a maximum of 20 minutes response time was established. Some suggestions could not be implemented because of the design layout and the desire to keep the questionnaire close to 11 pages as suggested by Dillman (1978). The following problems were not detected until the data were analyzed: (1) respondents would skip page one requiring the evaluator to verify her interpretation of the response by phone; (2) the answers for the screening question on the first page could have been simplified and condensed; (3) a answer to question one could have been designed to include unemployed dietitians who were able to contribute information about CHK and helpful opinions about "Takin' Care of Southern Hearts"; (4) the term course needed to be defined as a series of at least two consecutive class meetings in question five to avoid the recoding of 43 surveys; (5) responses to question 16 were not usable because respondents did not interpret the question correctly; (6) the demographic question about primary places of employment should have been collapsed for hospitals and

categories for dialysis facilities and two or more locations should have been added; and (7) substantial coding time could have been saved if open-ended questions about CHK had been converted to closed questions.

Implementation

To maximize response rate for a mail survey, TDM guidelines developed by Dillman (1978) were also carefully followed when planning the implementation phase of the evaluation. All mailings were scheduled for Tuesdays to allow time for processing of returns from the previous weekend. The initial mailing included a cover letter, survey, and return envelope. Reminder postcards were sent one week after the initial mailing. Two follow-up mailings of a second letter, replacement survey, and return envelope were sent. Delays were experience in the scheduled mailings.

As completed surveys were received by the affiliate, the identification numbers on the return envelope were matched with those in the affiliate database and those names were removed from future mailings. The surveys were then forwarded to the evaluator to be opened and coded.

Data Analyses

Questions were all coded with numerical answers for statistical purposes. All open-ended answers were listed, analyzed for content, categorized, and assigned a number. Descriptive statistics were selected because these statistics answered the evaluation questions posed by the study. Most of the data were collected as categorical data and were summarized as frequencies and percentages. Data collected from Likert scales were treated essentially as interval data and were expressed as means and standard deviations. The Statistical Analysis System (SAS Institute, Inc., 1985) was used to analyze the data.

CHAPTER IV

RESULTS

The results of the Culinary Hearts Kitchen survey (Appendix B) are presented in five basic sections. The first section presents the results from the pilot study group. The second section discusses the calculation of the census survey response rate after adjustments to the survey target population. The remaining three sections present the results from the survey respondents as follows: demographics of the censused population; summative data related to the nutrition education curriculum published by the National Center of the American Heart Association (AHA) known as the Culinary Hearts Kitchen course; and formative data related to a proposed nutrition education curriculum named "Takin' Care of Southern Hearts", interest in the proposed curriculum, interest in related workshops, and interest in volunteer work related to the proposed curriculum and workshops.

Pilot Study

The target population for the study CHK Task Force members, extension agents, inactive RDs, and other nutritionists. All 16 persons in the target population

were residents of North Carolina. There was an 87.5% response rate for the group.

Twelve of the 14 respondents were white. Eleven had earned master's degrees and seven of these were in nutrition/dietetics. The respondents were employed in a wide variety of settings and were distributed almost equally between the three affiliate areas (Appendix D). The group reported a mean age of 39.8 years (SD = 8.1) with a mean of 8.6 years (SD = 5.6) working in the field of food and nutrition. Twelve of the 14 respondents reported that they were directly responsible for CVD risk factor nutrition education for the public.

Thirteen of the respondents were familiar with the CHK curriculum. Eleven respondents had used it as a nutrition education resource and eight had used the curriculum to teach a series of classes. These eight persons were defined as course instructors.

Seven of the eight instructors had taught the course five or more times. Six instructors used the name "Culinary Hearts Kitchen". Cooperative Extension Service and school facilities were the two most reported sites for classes. The most frequently used methods of recruitment included newspaper advertising and direct mail. The most commonly reported class sizes ranged from 11-20 participants. These participants were described by

instructors as having a moderate risk for cardiovascular disease. Both urban and rural residents participated in the classes.

Instructors agreed that fall, winter, and spring were all equally good times of the year to offer the course. Tuesday was reported as the best day of the week to offer the course. All eight instructors indicated that the course was offered during the evening hours. The course was offered most often over a four-week period with one session per week ranging from 1 hour 45 minutes to 2 hours per session. The most commonly reported class fee was $25.

Five instructors reported giving food demonstrations. Five instructors allowed students to participate in the food preparation. Tasting sessions were offered in every session by six instructors. The two most frequently reported potential barriers to teaching the course were the amount of preparation time and recruitment of class participants. When asked to rate the usefulness of each component of the CHK curriculum, instructors gave the nutrition information content the highest overall usefulness rating with a mean of 4.3 (SD = 1.0). The entire curriculum received a mean score of 3.8 (SD = 0.7) for usefulness. Instructors reported that the nutrition information and organization and amount of

course material were the two things that needed the most change.

All 14 respondents rated the importance of each component of the proposed training manual, "Takin' Care of Southern Hearts". Food selection, handling/storage, and preparation information for reduction of dietary fat received the highest mean importance rating of 4.8 (SD = 0.4) for the "Instructor's Manual". Food selection, handling/storage, and preparation information for reduction of dietary cholesterol and for the reduction of sodium had the same mean importance rating of 4.5 (SD = 0.8 and 0.7, respectively). The respondents rated the lesson plans as the most important proposed teaching aid with a mean of 4.1 (SD = 1.0). For the "Student Reference Manual", the respondents gave a mean importance rating of 4.4 (SD = 1.1) to the student handouts related to instructors' reference material. For the "Cookbook", recipes of familiar southern foods modified for fat, cholesterol, and sodium received a mean importance rating of 4.7 (SD = 0.5).

When presented with the proposed nutrient analysis box, respondents made almost no recommendations for changes. When asked if diabetic exchanges should be included in the recipe nutrient analysis box, all 14

respondents gave a "yes" answer. Twelve of the 14 respondents reported a preference for partial exchanges.

All 14 respondents were interested in acquiring all or part of the proposed training manual and nine preferred the three-part training manual. Eleven of the 14 respondents were interested in workshops related to the proposed curriculum. The preferred training topics included food labeling, food preparation skills, food demonstration techniques, and classroom management techniques. Ten of the respondents were interested in volunteering their time toward the completion of "Takin' Care of Southern Hearts". Their primary interests included field-testing and evaluating the recipes, planning and implementing workshops, and editing nutrition reference material in the training manual.

Survey Response Rate

Data pertinent to the response rate for the Culinary Hearts Kitchen survey are presented in Table 1. The mailing list acquired from the Cooperative Extension Service in Raleigh by the NC Affiliate of AHA for the CHK survey contained 103 home economics extension agents. Two of the extension agents were on the CHK Task Force of the NC Affiliate of AHA and had participated in a pilot test of the survey; one refused to participate in the survey; and six indicated that the survey was not applicable to

Table 1

Frequencies and Percentages of Survey Target Population, Censused Population, Respondents, Nonrespondents, and Survey Response Rate

Variable	Extension Agents		Registered Dietitians		Overall
	n	%	n	%	n
Target Population	103	9.2[a]	1011	90.8[a]	1114
Pilot Test	2		4		6
Moved Out of State	0		27		27
Refused to Participate	1		2		3
Survey Not Applicable	6		174		180
Censused Population	94	10.5[b]	804	89.5[b]	898
Nonrespondents	9		246		255
Respondents	85	13.2[c]	558	86.8[c]	643
Response Rate	**85 of 94**		**558 of 804**		**643 of 898**
	(90.4%)[d]		**(69.4%)[d]**		**(71.6%)[d]**

[a]Percent of total target population (n = 1114)
[b]Percent of total censused population (n = 898)
[c]Percent of total respondents from censused population (n = 643)
[d]Percent of respondents divided by the censused population

them. This reduced the target population of 103 extension agents to a censused population of 94. Since 85 extension agents responded to the survey and nine failed to respond, there was an 90.4% response rate for this group.

The mailing list acquired from ADA by the NC Affiliate for the CHK survey contained 1011 registered dietitians who were active members of NCDA. Four of the RDs were on the affiliate's CHK Task Force and had participated in a pilot test of the survey; 27 had moved out of state; two refused to participate; and 174 indicated that the survey was not applicable to them. This reduced the target population of 1011 RDs to a censused population of 804. Since 556 RDs responded to the survey and 246 failed to respond, there was a 69.4% response rate for this group.

The target population included a total of 1114 extension agents and RDs. After the adjustments described above, there was an overall censused population of 898 persons. Since 643 people responded to the survey and 255 failed to respond, there was an overall response rate of 71.6% for the CHK survey by extension agents and RDs in North Carolina.

Demographic characteristics of survey respondents

Race. The frequencies and percentages of the demographic characteristics of the survey respondents are

presented in Table 2. Sixty-six (77.7%) extension agents and 509 (91.3%) of the RDs indicated that they were Caucasian. Therefore while both groups were predominantly white, there was a larger percentage of blacks (African-Americans) employed as extension agents (17.6%) than as RDs (4.6%). Only 18 persons (2.8%) of the censused population indicated that they were of an ethnic origin other than white or black.

Highest degree earned. Thirty-six (42.4%) extension agents and 208 (37.3%) RDs had earned bachelors degrees, for a total of 244 persons (37.8%). Forty-eight (56.5%) extension agents had earned master's degrees and 317 (56.8%) RDs had earned master's degrees, for a total of 365 persons (56.8%). Thirty-one RDs (5.6%) had also earned doctoral degrees. The predominant degree for both groups was the master's degree.

Major of highest degree. Fifty-seven (67.0%) extension agents reported home economics as the major of their highest earned degree, whereas 22 (25.9%) reported adult education as their major. Four hundred twenty-six (76.3%) RDs reported nutrition/dietetics as the major of their highest earned degree, while 64 (11.5%) reported public health nutrition as their major. The predominant majors for the two groups, respectively, were home economics and nutrition/dietetics.

Table 2

Frequencies and Percentages of Demographic Characteristics of Survey Respondents

Variable	Extension Agents		Registered Dietitians		Overall	
	n	%	n	%	n	%
Race						
Black (African-American)	15	17.6[a]	26	4.6[b]	41	6.4[c]
White (Caucasian/Non-Hispanic)	66	77.7	509	91.3	575	89.6
Other	1	1.2	17	3.0	18	2.8
Missing Data	3	3.5	6	1.1	9	1.2
Highest Degree Earned						
Bachelors	36	42.4	208	37.3	244	37.8
Masters	48	56.5	317	56.8	365	56.8
Doctorate	0	0.0	31	5.6	31	4.8
Missing Data	1	1.1	2	0.3	3	0.5
Major of Highest Degree Earned						
Adult Education	22	25.9	6	1.1	28	4.4
Food Service	0	0.0	5	0.9	5	0.8
Health Education	0	0.0	8	1.4	8	1.2
Home Economics	57	67.0	22	3.9	79	12.3
Nutrition/Dietetics	5	5.9	426	76.3	431	67.0
Public Health Nutrition	0	0.0	64	11.5	64	10.0
Other	1	1.2	25	4.5	26	4.0
Missing Data	0	0.0	2	0.4	2	0.3

Table 2 (continued)

Variable	Extension Agents n	Extension Agents %	Registered Dietitians n	Registered Dietitians %	Overall n	Overall %
Primary Place of Employment						
Cooperative Extension Service	85	100.0[a]	1	0.2[b]	86	13.3[c]
Cardiac Rehabilitation (Free Standing)	0	0.0	5	0.9	5	0.8
College or University Faculty	0	0.0	31	5.6	31	5.0
Commercial or School Food Service	0	0.0	18	3.2	18	2.6
Dialysis Facility	0	0.0	14	2.5	14	2.2
Extended Care Facility	0	0.0	56	10.0	56	8.8
Hospital (In-Patient and Out-Patient)	0	0.0	224	40.1	224	35.3
Physician's Office	0	0.0	12	2.2	12	1.9
Private Practice Consulting or Counseling	0	0.0	40	7.2	40	6.1
Public Health Department	0	0.0	75	13.4	75	11.5
Two or More Locations	0	0.0	24	4.3	24	3.6
Other	0	0.0	56	10.0	56	8.6
Missing Data	0	0.0	2	0.4	2	0.3
Geographical Location of Employment						
Area (American Heart Association)						
Western (Regions 1, 2, & 10)	28	32.9	133	23.8	161	24.5
Central (Regions 3, 4, & 7)	23	27.1	142	25.5	165	25.6
Eastern (Regions 5, 6, 8, & 9)	34	40.0	245	43.9	279	43.6
Other (Multi-regions)	0	0.0	35	6.3	35	5.3
Missing Data	0	0.0	3	0.5	3	1.0

[a]Percent of home economics extension agents who responded from censused population (n = 85)
[b]Percent of registered dietitians who responded from censused population (n = 558)
[c]Percent of combined groups of censused survey respondents (n = 643)

Primary place of employment. All 85 extension agents were employed by the Cooperative Extension Service of North Carolina. The largest group of RDs, 224 (40.1%), were employed in hospitals, while 75 (13.4%) were employed by the Public Health Department of North Carolina, and 56 (10.0%) were employed by extended care facilities. Forty (7.2%) of the RDs indicated that they were self-employed as consultants or counselors.

Geographical location of employment. The NC Affiliate of AHA has divided the state of North Carolina into 3 areas and 10 regions corresponding to its staffing pattern (Appendix D). The western area encompasses regions 1, 2, and 10. The central area contains regions 3, 4, and 7. The eastern area consists of regions 5, 6, 8, and 9. Respondents were asked to specify the county in which they worked. This information was then coded for area and region.

By far, the highest concentration, 279 (43.6%) extension agents and RDs, reported working in the affiliate's eastern area. Thirty-four (40.0%) extension agents were employed in the affiliate's eastern area. Two hundred forty-five (43.9%) registered dietitians reported working in the affiliate's eastern area with 164 (29.4%) employed in region 5. The employment locations of the remaining 51 (60.0%) extension agents and 275 (49.3%) RDs

were approximately equally distributed in the affiliate's western and central areas. A small percentage of survey respondents, primarily registered dietitians, reported that they covered overlapping areas or regions or worked statewide. A detailed distribution of extension agents and RDs by area, region, and county can be found in Appendix D. These tables do not include survey respondents who had professional responsibilities in more than one area.

Mean age and mean number of years in food and nutrition. The means and standard deviations of the age and number of years that the survey respondents had worked in the field of food and nutrition are presented in Table 3. The mean age for the extension agents was 43.9 (SD = 9.2), whereas the mean age for the RDs was 39.3 (SD = 9.5). Extension agents reported working a mean of 15.5 (SD = 8.7) years in the field of food and nutrition, while RDs reported a mean of 12.6 (SD = 8.2), years in the field. The mean age for the extension agents in North Carolina was 4.6 years higher than the RDs and the extension agents had worked in the field of food and nutrition approximately 2.9 more years than the RDs.

Cardiovascular nutrition education responsibilities. The cardiovascular (CVD) nutrition education responsibilities reported by respondents of the

Table 3

Means and Standard Deviations of Demographic Characteristics of Survey Respondents

Variable	Extension Agents			RegisteredDietitians			Overall		
	n	Mean	SD[a]	n	Mean	SD	n	Mean	SD
Age	81[b]	43.9	9.2	543[c]	39.3	9.5	624[d]	39.9	9.6
Number of Years in Food & Nutrition	85	15.5	8.7	554	12.6	8.2	639	13.0	8.4

[a]SD = Standard deviation
[b]Number of home economics extension agents who responded from censused population (n = 85)
[c]Number of registered dietitians who responded from censused population (n = 558)
[d]Number of combined groups of censused survey respondents (n = 643)

CHK survey are presented in Table 4. Respondents were asked to circle all of the defined areas of responsibilities which applied to their current professional duties. The numbers presented represent the number of respondents who said "yes" to the described responsibility. Twenty-six (4.0%) of the survey respondents skipped this page.

Of the 643 survey respondents, 422 (65.6%) reported direct responsibilities for CVD risk factor nutrition education for the public. The second largest group, 212 (33.0%) respondents, indicated direct or indirect responsibilities for CVD risk factor nutrition education associated with food service employees. Only 49 (7.6) respondents had no professional duties related to CVD risk factor nutrition education.

Summative Data for The Culinary Hearts Kitchen

Extent of familiarity with and use of the CHK curriculum. The 643 survey respondents were asked a series of questions relating to their knowledge of and use of the CHK curriculum. The results are presented in Table 5. Four hundred one (62.4%) of the 643 survey respondents said "yes" they were familiar with the CHK curriculum. Seventy-one (83.5%) extension agents and 330 (59.1%) RDs were familiar with it. Of the 401 persons who were familiar with the curriculum, 234 (57.2%) reported that

Table 4

Frequencies and Percentages of CVD Nutrition Education Responsibilities of Survey Respondents

Variable	Extension Agents		Registered Dietitians		Overall	
	n	%[a]	n	%[b]	n	%[c]
I am directly responsible for CVD risk factor nutrition education for the public.	79	92.9	343	61.5	422	65.6
I am directly responsible for CVD risk factor nutrition education for other health professionals who are responsible for CVD risk factor nutrition education for the public.	4	4.7	101	18.1	105	16.3
I supervise other health professionals who are directly responsible for CVD risk factor nutrition education for the public.	6	7.1	89	16.0	95	14.8
I am directly or indirectly responsible for the instruction of students (enrolled for credit) about CVD risk factor nutrition education.	5	6.0	109	19.5	114	19.5
I am directly or indirectly responsible for CVD risk factor nutrition education for food service employees who prepare food which should adhere to American Heart Association guidelines.	6	7.1	206	36.9	212	33.0
My employment responsibilities do not include CVD risk factor nutrition education, but I would like training in this area.	1	1.2	48	8.6	49	7.6
Missing Data	4	4.7	22	3.9	26	4.0

[a]Percent of home economics extension agents who responded from censused population (n = 85)
[b]Percent of registered dietitians who responded from censused population (n = 558)
[c]Percent of combined groups of censused survey respondents (n = 643)

Table 5

Frequencies and Percentages of the Extent of Familiarity with and Use of the CHK Course as Reported by Survey Respondents

Variable	Extension Agents		Registered Dietitians		Overall	
	n	%	n	%	n	%
Familiar with CHK course	71	83.5[a]	330	59.1[b]	401	62.4[c]
Used CHK course as a nutrition education resource	49	69.0[d]	185	56.1[e]	234	58.4[f]

[a]Percent of home economics extension agents who responded from census population (n = 85)
[b]Percent of registered dietitians who responded from census population (n = 558)
[c]Percent of combined groups of censused survey respondents (n = 643)
[d]Percent of home economics extension agents familiar with CHK course (n = 71)
[e] Percent of registered dietitians familiar with CHK course (n = 330)
[f] Percent of combined groups of respondents familiar with CHK course (n = 401)

they had used CHK curriculum as a resource for CVD risk factor nutrition education.

The 234 survey respondents who had used the curriculum were asked to indicate all of the ways they had used the program. The results are presented in Table 6. The most common use of the CHK curriculum was to make presentations to groups. Forty-four (89.8%) extension agents and 146 (78.9%) RDs who had used the program reported using it for this purpose. Forty-two (85.7%) extension agents and 104 (55.7%) RDs had used the curriculum to teach a series of classes. In addition, 39 (79.6%) extension agents had used the CHK curriculum to supplement an existing program. Although the RDs had used it for all the purposes listed, the extent of their use was considerably less than that of the extension agents.

The NC Affiliate of AHA was particularly interested in identifying those respondents who had used the curriculum to teach a series of classes (defined when coded as 2 or more classes with the same group of participants). One hundred forty-six persons were defined as course instructors. Their answers to a series of questions were used to provide the following summative data regarding their experiences with and opinions of the CHK curriculum.

Table 6

Frequencies and Percentages of the Various Uses of the CHK Course by Survey Respondents

Variable	Extension Agents		Registered Dietitians		Overall	
	n	%[a]	n	%[b]	n	%[c]
To make a presentation to a group (s)	44	89.8	146	78.9	190	81.2
To counsel a patient (s) or client (s)	15	30.6	66	35.7	81	34.6
To supplement an existing program	39	79.6	96	51.9	135	57.7
To recommend it as a resource	27	55.1	100	54.1	127	54.3
To teach a course (series of classes)	42	85.7	104	56.2	146	62.4

[a]Percent of home economics extension agents who used CHK course (n = 49)
[b]Percent of registered dietitians who used CHK course (n = 185)
[c]Percent of combined groups who used CHK course (n = 234)

Instructors' experiences with The Culinary Hearts Kitchen curriculum. Fifty-nine of the 146 instructors had taught the course one to two times; 46 had taught it three to four times; and 40 had taught it five or more times. Seventy-two had used the name "Culinary Hearts Kitchen" for their course while 46 chose to use another name including the word "heart." Whereas 36 extension agents reported using CES facilities to teach their courses, only 21 RDs reported using this facility. RDs used a wider variety of facilities. Forty-two RDs used hospital classrooms, cafeterias, or adjacent dining rooms and 18 used school facilities such as home economics classrooms and community college kitchen classrooms (Table 7).

Twenty-nine extension agents recruited their participants through newspaper advertising and 23 by direct mail (i.e., newsletters) while 43 RDs depended on newspaper advertising and 41 on referrals for recruitment (Table 8). Class size ranged from less than 10 to more than 30 participants. The largest number, 67 extension agents and RDs, reported class sizes in the range of 11-20 participants. One hundred fourteen instructors described their course participants as predominantly female, and 82 instructors believed the participants were enrolled for themselves rather than for a significant other person (Table 9).

Table 7

Frequencies and Percentages of the Number of Times Course Was Taught, Names Used for Courses, and Facilities Used for Courses as Reported by CHK Course Instructors

Variable	Extension Agents		Registered Dietitians		Overall	
	n	%[a]	n	%[b]	n	%[c]
Times Instructors Taught Course						
One to Two Times	15	34.1	44	42.3	59	40.4
Three to Four Times	12	24.5	34	32.7	46	31.5
Five or More Times	15	30.6	25	24.0	40	27.4
Missing Data	0	0.0	1	1.0	1	0.7
Names Used for Courses						
Culinary Hearts Kitchen	20	47.6	52	50.0	72	49.3
Another Name with the Word "Heart"	17	40.5	29	27.9	46	31.5
Other	4	9.5	13	12.5	17	11.6
Missing Data	1	2.4	10	9.6	11	7.5
Facilities Used for Courses						
Medical Facilities	0	0.0	42	40.4	42	28.8
Cooperative Extension Service Facilities	36	85.7	21	20.2	57	39.0
School Facilities	1	2.4	18	17.3	19	13.0
Community Facilities	4	9.5	8	7.7	12	8.2
Other	1	2.4	14	13.5	15	10.3
Missing Data	0	0.0	1	1.0	1	0.7

[a]Percent of home economics extension agents who taught CHK course (n = 42)
[b]Percent of registered dietitians who taught CHK course (n = 104)
[c]Percent of combined groups of respondents who taught CHK course (n = 146)

Table 8

Frequencies and Percentages of Recruitment Methods as Reported by CHK Course Instructors

Variable	Extension Agents		Registered Dietitians		Overall	
	n	%[a]	n	%[b]	n	%[c]
Recruitment Methods						
Newspaper (advertising and/or news articles)	29	69.1	43	41.4	72	49.3
Direct Mail (newsletters, school bulletins, letters, brochures, and pamphlets)	23	54.8	29	27.9	52	35.6
Mass Media PSAs (radio and television)	13	31.0	16	15.4	29	19.9
Fliers, Notices, Posters, and Bulletin Boards	5	11.9	22	21.2	27	18.5
Referrals (physicians, screenings, other organizations, word of mouth)	3	7.1	41	39.4	44	30.1
Other	2	4.8	5	4.8	7	4.8

[a]Percent of home economics extension agents who taught CHK course (n = 42)
[b]Percent of registered dietitians who taught CHK course (n = 104)
[c]Percent of combined groups of respondents who taught CHK course (n = 146)

Table 9

Frequencies and Percentages of Participant Class Size and Participant Demographics as Reported by CHK Course Instructors

Variable	Extension Agents		Registered Dietitians		Overall	
	n	%[a]	n	%[b]	n	%[c]
Average Class Size						
01-10 Participants	6	14.3	40	38.5	46	31.5
11-20 Participants	23	55.8	44	42.3	67	45.9
21-30 Participants	10	23.8	15	14.4	25	17.1
> 30 Participants	2	4.8	3	2.9	5	3.4
Missing Data	1	2.4	2	1.9	3	2.1
Gender of Participants						
All Female	7	16.7	11	10.6	18	12.3
Predominantly Female	34	81.0	80	76.9	114	78.4
Other	1	2.4	11	10.6	12	8.2
Missing Data	0	0.0	2	1.9	2	1.4
For Whom Enrolled						
Self	30	71.4	52	50.0	82	56.2
A Significant Other Family Member	9	21.4	37	35.6	46	31.5
Other	2	4.8	10	9.6	12	8.2
Missing Data	1	2.4	5	4.8	6	4.1

[a]Percent of home economics extension agents who taught CHK course (n = 42)
[b]Percent of registered dietitians who taught CHK course (n = 104)
[c]Percent of combined groups of respondents who taught CHK course (n = 146)

The 146 course instructors were asked a series of questions about the scheduling of their courses. Respondents were asked to circle all answers which applied. Sixty-nine instructors reported that fall was a successful time of year and 64 agreed that spring was an equally good time to offer the course. Seventy-five instructors stated that Tuesday night was the best night to schedule the course. Of the 146 course instructors, 99 indicated that the course was offered most often in the evening hours (Table 10). The course was offered over a six week period by 50 instructors, whereas 43 offered it over a four week period. One hundred twenty-three instructors held one session per week. Seventy-five instructors reported their average class time from 1 hour 45 minutes to 2 hours (Table 11). The most frequently reported fee for the class was $25.

Food preparation is an important component of the CHK course. Instructors were asked a series of questions about how this component was handled in the classroom. One hundred fourteen instructors reported giving food demonstrations. Ninety-two percent of the extension agents used this teaching technique, whereas only 72.1% of the RDs used it. Forty-five instructors allowed students to participate in food preparation. Tasting sessions were

Table 10

Frequencies and Percentages Related to Course Timing as Reported by CHK Course Instructors

Variable	Extension Agents		Registered Dietitians		Overall	
	n	%[a]	n	%[b]	n	%[c]
Season of Year						
Fall (Sept, Oct, Nov)	18	42.9	51	49.0	69	47.3
Winter (Dec, Jan, Feb)	18	42.9	34	32.7	52	35.6
Spring (Mar, Apr, May)	16	38.1	48	46.2	64	43.8
Summer (June, July, Aug)	3	7.1	6	5.8	9	6.2
Days of the Week						
Monday	11	26.2	28	26.9	39	26.7
Tuesday	23	54.8	52	50.0	75	51.4
Wednesday	8	19.1	27	26.0	35	24.0
Thursday	16	50.0	36	34.6	57	39.0
Friday	4	9.5	3	2.9	7	4.8
Hours of the Day						
Morning (9:00 am - 12:00 noon)	15	35.7	6	5.8	21	14.4
Afternoon (12:00 noon - 5:30 pm)	7	16.7	15	14.4	22	15.1
Evening (5:30 - 9:00 pm)	27	64.3	72	69.2	99	67.8

[a] Percent of home economics extension agents who taught CHK course (n = 42)
[b] Percent of registered dietitians who taught CHK course (n = 104)
[c] Percent of combined groups of respondents who taught CHK course (n = 146)

Table 11

Frequencies and Percentages of Number of Weeks for Courses, Number of Sessions per Week, and Number of Hours per Session as Reported by CHK Course Instructors

Variable	Extension Agents		Registered Dietitians		Overall	
	n	%[a]	n	%[b]	n	%[c]
Number of Weeks for Courses						
One Week	1	2.4	1	1.0	2	1.4
Two Weeks	2	4.8	6	5.8	8	5.5
Three Weeks	4	9.5	9	8.6	13	8.9
Four Weeks	13	31.0	30	28.9	43	29.5
Five Weeks	4	9.5	4	3.8	8	5.5
Six Weeks	14	33.3	36	34.6	50	34.3
> Six Weeks	1	2.4	11	10.6	12	8.1
Missing Data	3	7.1	7	6.7	10	6.8
Number of Sessions per Week						
One Session	36	85.7	87	83.7	123	84.2
Two Sessions	2	4.8	13	12.5	15	10.3
Three Sessions	0	0.0	1	0.9	1	0.7
Four Sessions	1	2.4	0	0.0	1	0.7
Missing Data	3	7.1	3	2.9	6	4.1
Number of Hours per Session						
0.50-1.00	2	4.8	17	16.3	19	13.0
1.25-1.50	2	4.8	9	8.7	11	7.5
1.75-2.00	20	47.6	54	51.9	74	50.8
2.25-2.50	11	26.2	14	13.5	25	17.1
> 2.50	5	11.9	8	7.7	13	8.9
Missing Data	2	4.7	2	1.9	4	2.7

[a] Percent of home economics extension agents who taught CHK course (n = 42)
[b] Percent of registered dietitians who taught CHK course (n = 104)
[c] Percent of combined groups of respondents who taught CHK course (n = 146)

offered in every session by 82 of the course instructors (Table 12).

Since the CHK curriculum integrates food and nutrition, it requires a rather varied set of skills and a broad base of knowledge to implement it. Instructors were given a list of potential barriers which must be overcome to teach the course and were asked to circle all that applied. Eighty-seven instructors said "yes" to the amount of preparation time and 57 said "yes" to recruitment of class participants. Forty instructors also indicated that locating appropriate recipes for NC residents was a barrier (Table 13).

Because of their experience in the classroom, these 146 course instructors were also asked to rate the "usefulness" of each component of the CHK curriculum on a Likert scale from 0 (not at all important) to 5 (very important). The means and standard deviations of the usefulness of each component are presented in Table 14. The nutrition information slides received the highest overall rating with a mean of 4.0 (SD = 1.2). The nutrition information content, the food information slides, and the participant handouts all had overall means of 3.9 (SD = 1.0, 1.2, and 1.0, respectively). The entire CHK curriculum received a mean score of 4.1 (SD = 0.8) for usefulness.

Table 12

Frequencies and Percentages of Food Demonstrations, Food Preparation by Participants, and Tasting Sessions as Reported by CHK Course Instructors

Variable	Extension Agents		Registered Dietitians		Overall	
	n	%[a]	n	%[b]	n	%[c]
Food Demonstrations	39	92.9	75	72.1	114	78.1
Food Preparation by Participants	18	42.9	27	25.9	45	30.8
Tasting Sessions						
No Tasting Sessions	0	0.0	7	6.7	7	4.8
First Session Only	1	2.4	1	0.9	2	1.4
All Sessions but the First One	11	26.2	21	20.2	32	21.9
Every Session	26	61.9	56	53.9	82	56.2
Other	3	7.1	17	16.4	20	13.7
Missing Data	1	2.4	2	1.9	3	2.0

[a]Percent of home economics extension agents who taught CHK course (n = 42)
[b]Percent of registered dietitians who taught CHK course (n = 104)
[c]Percent of combined groups of respondents who taught CHK course (n = 146)

Table 13

Frequencies and Percentages of Barriers to Overcome in Teaching the CHK Course as Perceived by Course Instructors

Variable	Extension Agents		Registered Dietitians		Overall	
	n	%[a]	n	%[b]	n	%[c]
Content related to nutrition concepts	5	11.9	9	8.7	14	9.6
Content related to food preparation	1	2.4	4	3.9	5	3.4
Food demonstration skills	3	7.1	6	5.8	9	6.2
Amount of preparation time	32	76.2	55	52.9	87	59.6
Locating appropriate recipes for NC residents	18	42.9	22	21.2	40	27.4
Duplication of participant handouts	1	2.4	11	10.6	12	8.2
Recruitment of class participants	18	42.9	39	37.5	57	39.0
Other	3	7.1	15	14.4	18	12.3

[a] Percent of home economics extension agents who taught CHK course (n = 42)
[b] Percent of registered dietitians who taught CHK course (n = 104)
[c] Percent of combined groups of respondents who taught CHK course (n = 146)

Table 14

Usefulness Rating of Components of the Culinary Hearts Kitchen by Course Instructors

Variable	Extension Agents			Registered Dietitians			Overall		
	n	Mean	SD[a]	n	Mean	SD	n	Mean	SD
	Usefulness			**Usefulness**			**Usefulness**		
Components									
The introduction	40[b]	3.8	1.2	87[c]	3.5	1.1	127[d]	3.6	1.1
The nutrition information content	41	4.2	0.9	92	3.8	1.0	133	3.9	1.0
(primarily in session 1 and the beginning of session 2)									
The food selection and preparation information content (in all sessions)	39	3.4	1.1	94	3.8	0.9	133	3.7	1.0
The teaching notes which include the learning activities (in all sessions)	39	4.0	1.0	94	3.8	1.1	133	3.8	1.1
The nutrition information slides (primarily in session 1 and the beginning of session 2)	41	4.1	1.1	96	4.0	1.3	137	4.0	1.2
The food information slides (primarily in sessions 2-6)	38	3.5	1.3	97	4.0	1.2	135	3.9	1.2
The food demonstration slides (in all sessions)	38	2.7	1.5	96	3.3	1.5	134	3.1	1.5
The participant handouts (in all sessions)	39	3.7	1.1	98	4.0	1.0	137	3.9	1.0

Table 14 (continued)

Variable	Extension Agents n	Extension Agents Mean	Extension Agents SD[a]	Registered Dietitians n	Registered Dietitians Mean	Registered Dietitians SD	Overall n	Overall Mean	Overall SD
	Usefulness			**Usefulness**			**Usefulness**		
Components									
The recipes (in all sessions)	39[b]	2.9	1.4	96[c]	3.6	1.1	135[d]	3.4	1.3
The table of nutrient analyses (in the appendix)	37	3.2	1.3	94	3.1	1.4	131	3.2	1.3
Curriculum									
The entire Culinary Hearts Kitchen course	41	3.9	1.0	93	4.1	0.8	134	4.1	0.8

[a]SD = Standard deviation
[b]Number of home economics extension agents who taught CHK course (n = 42)
[c]Number of registered dietitians who taught CHK course (n = 104)
[d]Number of groups combined who taught CHK course (n = 146)

Course instructors were offered the opportunity to suggest additions to or changes in the CHK curriculum. Seventy-nine of the 146 instructors said "yes" there should be some changes. However, of the 79 who said "yes" there should be changes, only 49 gave suggestions. A total of 28 course instructors skipped this question. The responses of the 49 instructors were coded into six major categories and the results are presented in Table 15. Forty-six instructors reported that the category needing the most change was the recipes.

The NC Affiliate of AHA was also interested in what participants had to say about their experiences with the course. A course evaluation sheet was provided in the CHK curriculum for completion by participants at the end of the course. Sixty-seven of the 146 course instructors reported that they had used the evaluation sheets. Fifteen of these 67 instructors said the forms were still available and would be sent to the affiliate if requested.

Formative Data for "Takin' Care of Southern Hearts"

Importance rating of components of proposed curriculum. All of the 643 survey respondents were asked to rate the importance of each component of the proposed training manual, "Takin' Care of Southern Hearts" on a Likert scale from 0 (not at all important) to 5 (very important). The components were divided into the

Table 15

Frequencies and Percentages of Suggested Additions to or Changes in the CHK Curriculum by Course Instructors

Variable	Extension Agents		Registered Dietitians		Overall	
	n	%[a]	n	%[b]	n	%[c]
Recipes	20	52.6	26	37.7	46	43.0
Nutrition Information	3	7.9	12	17.4	15	14.0
Organization and Amount of Material	7	18.4	4	5.8	11	10.3
Slides	6	15.8	6	8.7	12	11.2
Shopping and Labeling	1	2.6	6	8.7	7	6.5
Other	7	18.4	6	8.7	13	12.2

[a]Percent of home economics extension agents who taught CHK course and wanted changes (n = 32)
[b]Percent of registered dietitians who taught CHK course and wanted changes (n = 47)
[c]Percent of combined groups of respondents who taught CHK course and wanted changes (n = 79)

following three sections: an "Instructor's Manual" including reference material and teaching aids; a "Student Reference Manual" including handouts and a bibliography of CVD reference material; and a "Cookbook" including recipes with nutrient analyses. The means and standard deviations of the survey respondents' ratings for each component are presented in Table 16.

For the "Instructor's Manual," both the extension agents and the RDs rated all of the reference material with means of 4.0 or above except for the glossary of cardiovascular terminology which received a mean score of 3.7 (SD = 1.2). Food selection, handling/storage, and preparation information for reduction of dietary fat in familiar southern foods received the highest importance ratings and had the smallest standard deviations for both groups with means of 4.6 (SD = 0.8) and 4.5 (SD = 0.9) respectively. Overall, the reference material appeared to be more important to the extension agents than to the RDs.

Both the extension agents and RDs rated the lesson plans, with student learning objectives and suggested learning activities, the most important proposed teaching aid for the "Instructor's Manual." This teaching aid received a mean importance rating of 4.2 (SD = 1.0) by the extension agents and a mean rating of 4.1 (SD = 1.0) by the RDs. Both groups gave master transparencies a mean

Table 16

Importance Rating of Components of Proposed Training Manual, "Takin' Care of Southern Hearts", by Survey Respondents

Variable	Extension Agents			Registered Dietitians			Overall		
	n	Mean	SD[a]	n	Mean	SD	n	Mean	SD
	Importance			Importance			Importance		
Instructor's Manual									
Reference Material:									
Risk factor identification information related to high blood cholesterol	80[b]	4.4	0.9	553[c]	4.1	1.1	633[d]	4.1	1.1
Risk factor indentification information related to high blood pressure	81	4.4	0.8	554	4.0	1.1	635	4.1	1.1
Glossary of cardiovascular terminology	80	3.7	1.0	554	3.7	1.2	634	3.7	1.2
AHA dietary guidelines & nutrition concepts	81	4.3	0.8	554	4.2	1.1	635	4.2	1.0
Food labeling	81	4.2	0.9	554	4.3	1.0	635	4.3	0.9
Food selection, handling/storage, & preparation information for reduction of dietary fat in familiar southern foods	81	4.6	0.8	554	4.5	0.9	635	4.5	0.8
Food selection, handling/storage, & preparation information for reduction of dietary cholesterol in familiar southern foods	81	4.6	0.7	553	4.3	1.0	634	4.3	1.0
Food selection, handling/storage, & preparation information for reduction of sodium in familiar southern food	81	4.4	0.8	554	4.3	0.9	635	4.3	0.9

Table 16 (continued)

Variable	Extension Agents n	Extension Agents Mean	Extension Agents SD[a]	Registered Dietitians n	Registered Dietitians Mean	Registered Dietitians SD[b]	Overall n	Overall Mean	Overall SD[c]
		Importance			Importance			Importance	
Instructor's Manual Continued									
Teaching Aids:									
Classroom management tips (e.g. advertising, budgeting, scheduling, food preparation & tasting sessions)	81[b]	3.8	1.2	553[c]	3.9	1.2	634[d]	3.9	1.2
Lesson plans with student learning objectives & suggested learning activities	81	4.2	1.0	555	4.1	1.0	636	4.1	1.0
Evaluation tools	81	4.1	1.0	554	3.9	1.1	635	3.9	1.1
Master transparencies	81	4.1	1.0	550	4.1	1.1	631	4.1	1.1
Instructions for giving food demonstrations	81	3.8	1.3	549	3.9	1.1	630	3.9	1.1
Student Reference Manual									
Content:									
Handouts related to reference material in instructor's manual	78	4.1	1.1	547	4.2	0.9	625	4.2	1.0
Bibliography of reference material for CVD nutrition information (e.g. AHA pamphlets, reference books, & cookbooks)	78	3.8	1.1	547	3.9	1.0	625	3.9	1.0

Table 16 (continued)

Variable	Extension Agents n	Extension Agents Mean	Extension Agents SD[a]	Registered Dietitians n	Registered Dietitians Mean	Registered Dietitians SD	Overall n	Overall Mean	Overall SD
		Importance			**Importance**			**Importance**	
Cookbook									
Content:									
Recipes of familiar southern foods modified for fat, cholesterol, and sodium	81[b]	4.7	0.6	548[c]	4.7	0.6	629[d]	4.7	0.6
Nutrient analysis information on each recipe page for the main recipe (Does not include variations of main recipe)	81	4.6	0.7	548	4.3	0.9	629	4.3	0.9
Appendix:									
Nutrient analysis information summary in chart form (Includes variations of main recipe)	80	4.1	1.2	543	4.0	1.1	623	4.0	1.1

[a]SD = Standard deviation
[b]Percent of home economics extension agents who taught CHK course (n = 42)
[c]Percent of registered dietitians who taught CHK course (n = 104)
[d]Percent of combined groups of respondents who taught CHK course (n = 146)

importance rating of 4.1 (SD = 1.0 and SD = 1.1, respectively). Overall, teaching aids appeared to be more important to the extension agents than to the RDs.

The extension agents gave a mean importance rating of 4.1 (SD = 1.1) to the student handouts which would be part of the "Student Reference Manual." The RDs gave handouts a rating of 4.2 (SD = 0.9). Both groups rated the bibliography of reference material with a mean below 4.0. Both respondent groups gave the recipes of familiar southern foods modified for fat, cholesterol, and sodium for the "Cookbook" the highest mean importance rating of any component in the proposed training manual. The mean importance rating for the recipes by extension agents was 4.7 (SD = 0.6), while the mean importance rating of the individual nutrient analyses of these recipes was 4.6 (SD = 0.7). The RDs gave the recipes a mean importance rating of 4.7 (SD = 0.6) while the mean importance rating for the individual nutrient analyses of these recipes was 4.3 (SD = 0.9).

Suggestions for the proposed recipe nutrient analysis box. The 643 survey respondents were presented an example of the proposed recipe nutrient analysis box (see page nine of survey in Appendix A). When asked if any nutrients in the box should be omitted or added, nine (10.7%) extension agents and 120 (21.6%) RDs responded

with a "yes" answer. A listing of their suggested omissions and additions for the proposed recipe nutrient analysis box are presented in Table 17.

Of the 129 people who suggested changes, three (23.1%) extension agents and 49 (37.2%) RDs suggested "omissions." The most frequently recommended omissions included percent of kcals from fat (n=6), saturated fat (n=12), monounsaturated fat (n=17), polyunsaturated fat (n=15), protein (n=6), carbohydrate (n = 6), and potassium (n=21). Seven respondents suggested that values be rounded off to the nearest gram for macronutrients and the nearest milligram for micronutrients. Seven (53.9%) extension agents and 79 (61.2%) RDs suggested "additions". The most frequent recommendations for additions included calcium (n=25), and iron (n=19), simple carbohydrates (n=11), phosphorus (n=8), soluble or insoluble fiber (n=7), vitamin A (n=5), and vitamin C (n=5).

The survey respondents were also asked if diabetic exchanges should be included in the recipe nutrient analysis box. Of the 643 survey respondents, 612 (95.6%) gave a "yes" answer. The respondents were also asked how much detail should be included about the diabetic exchange. Two hundred twenty-four (37.8%) of the 612 survey respondents who wanted to include diabetic exchanges reported a preference for whole exchanges only

Table 17

Survey Respondents' Suggested Omissions & Additions for the Proposed Recipe Nutrient Analysis Box for "Takin' Care of Southern Hearts"

Omissions:

% Cals from fat
Saturated fat
Monounsaturated fat
Polyunsaturated fat
Cholesterol
Protein
Carbohydrate
Fiber
Potassium
Round off to nearest g or mg

ADDITIONS:

Addition of "Per Serving" to calories
% Breakdown for all three types of fat
  (i.e. saturated, monounsaturated, polyunsaturated)
Combination of monounsaturated and polyunsaturated fats
  into one category as "Unsaturated"
Total fat in grams & teaspoons
% Calories from protein
% Calories from carbohydrate
Carbohydrates
  Simple
  Complex
  Sugars
  Refined carbohydrates
  Derivatives
  Grams & teaspoons
Specification of "Dietary" fiber
Specification of "Type" of fiber--soluble or insoluble
Vitamins
  Vitamin A
  Vitamin C
Minerals
  Calcium
  Iron
  Magnesium
  Phosphorus
Ingredients
RDA or % of Recommended intake levels
Format Changes
  Larger print for calories and fat
  CVD nutrients in bold lettering

and 337 (54.2%) wanted partial exchanges. In addition, 19 (3.5%) respondents suggested a third alternative of partial exchanges no lower than one-half exchange.

Interest of survey respondents in having the proposed curriculum. Five hundred ninety (91.8%) of the 643 survey respondents said "yes" they were interested in having all or part of the proposed curriculum, "Takin' Care of Southern Hearts", assuming that the cost is reasonable. The two groups were equally interested in the proposed curriculum. The 590 interested survey respondents were asked to indicate their preference among several alternative products. Results are presented in Table 18. Four hundred thirty-eight (72.0%) of the 590 interested respondents preferred the complete curriculum (training manual) which has been described previously under the importance ratings. One hundred thirteen (18.6%) of the interested survey respondents selected the cookbook with text option.

Interest in attending workshops related to the proposed curriculum. Five hundred thirty-three (82.9%) of the 643 survey respondents said "yes" they were interested in attending workshops related to "Takin' Care of Southern Hearts" in a location near them. Seventy-nine (92.9%) extension agents and 454 (81.4%) RDs were interested in the training workshops. Interested respondents were asked

Table 18

Frequencies and Percentages of Survey Respondents' Interest in the Proposed Training Manual, "Takin' Care of Southern Hearts", and Other Alternatives

Variable	Extension Agents		Registered Dietitians		Overall	
	n	%	n	%	n	%
Interest in "Takin' Care of Southern Hearts"	78	91.8[a]	512	91.8[b]	590	91.8[c]
Interest in Alternative Products						
Three-part training manual as described under the importance ratings	63	80.8[d]	375	73.2[e]	438	74.2[f]
Southern cookbook only without any reference text	0	0.0	18	3.5	18	3.1
Southern cookbook only with reference text	12	15.4	101	19.7	113	19.2
Missing data	3	3.8	18	3.5	21	3.5

[a]Percentage of home economics extension agents who responded from censused population (n = 85)
[b]Percentage of registered dietitians who responded from censused population (n = 558)
[c]Percentage of combined groups of censused survey respondents (n = 643)
[d]Percentage of home economics extension agents interested in training manual (n = 78)
[e]Percentage of registered dietitians interested in training manual (n = 512)
[f]Percentage of combined groups interested in training manual (n = 590)

to circle all of the topics on which they would like to receive training. Responses are presented in Table 19. The numbers represent the number of respondents who said "yes" to the topic. Sixty-three (81.0%) of the interested extension agents requested training on risk factor identification and 58 (73.4%) wanted training on nutrition concepts and dietary guidelines. Two hundred eighty-one (61.9%) of the interested RDs requested training on food preparation skills and 295 (65%) wanted to acquire food demonstration skills. There was enough positive response to all the topics listed to warrant their inclusion in training workshops.

Interest in participating in the completion of the proposed curriculum and workshops on a volunteer basis. One hundred ninety-six (30.5%) of the 643 survey respondents said "yes" they were interested in helping the NC Affiliate of AHA and its CHK Task Force complete "Takin' Care of Southern Hearts." Twenty-one (24.7%) of the 85 extension agents volunteered and 175 (31.2%) of the 558 RDs were interested in participating.

The 196 interested respondents were asked to circle all of the task force activities in which they were interested. The results are presented in Table 20. The primary interests were as follows: 12 (57.1%) extension agents and 70 (40.2%) RDs wanted to field-test and

Table 19

Frequencies and Percentages of Survey Respondents' Interest in Proposed Workshop Topics Related to "Takin' Care of Southern Hearts"

Variable	Extension Agents		Registered Dietitians		Overall	
	n	%[a]	n	%[b]	n	%[c]
Risk Factor Identification	64	81.0	174	38.3	238	44.7
Nutrition Concepts/Dietary Guidelines	58	73.4	220	48.5	278	52.2
Food Labeling	40	50.6	229	50.4	269	50.5
Food Preparation Skills	40	50.6	281	61.9	322	60.4
Food Demonstration Techniques	40	50.6	295	65.0	336	63.0
Classroom Management Tips	35	44.3	250	55.1	286	53.7
Other	4	5.1	20	4.4	24	4.5

[a]Percentage of interested home economics extension agents (n = 79)
[b]Percentage of interested registered dietitians (n = 454)
[c]Percentage of combined interested groups (n = 533)

Table 20

Frequencies and Percentages of Survey Respondents' Interest in Participating in CHK Task Force Activities Related to the Development of "Takin' Care of Southern Hearts"

Variable	Extension Agents		Registered Dietitians		Overall	
	n	%[a]	n	%[b]	n	%[c]
Writing reference material about CVD risk factor identification, AHA dietary guidelines, & related nutrition concepts	1	4.8	29	16.7	30	15.3
Developing learning objectives, lesson plans, visuals, handouts, learning activities, & evaluation tools for the nutrition-related reference material	2	9.5	33	19.0	35	17.9
Editing nutrition reference material in the training manual	2	9.5	45	25.9	47	24.0
Writing reference material about food selection, handling/storage, & preparation	1	4.8	11	6.3	12	6.1
Developing learning objectives, lesson plans, visuals, handouts, learning activities, & evaluation tools for the food-related reference material	2	9.5	20	11.5	22	11.2
Editing food reference material in the training manual	3	14.3	27	15.5	30	15.3
Field-testing & evaluating the training manual	12	57.1	70	40.2	82	41.8
Developing & revising recipes	7	33.3	57	32.8	64	32.7
Calculating diabetic exchanges for the recipes	0	0.0	53	30.5	53	27.0
Field-testing & evaluating the recipes	16	76.2	78	44.8	94	48.1

Table 20 (continued)

Variable	Extension Agents		Registered Dietitians		Overall	
	n	%[a]	n	%[b]	n	%[c]
Developing a database & an index for the recipes	0	0.0	14	8.0	14	7.1
Developing graphics for the training manual	1	4.8	11	6.3	11	5.6
Working with the layout & design of the training manual	1	4.8	23	13.2	23	11.8
Planning & implementing training workshops related to "Takin' Care of Southern Hearts"	10	47.6	55	31.6	65	33.3

[a]Percentage of interested home economics extension agents (n = 21)
[b]Percentage of interested registered dietitians (n = 174)
[c]Percentage of combined interested groups (n = 196)

evaluate the manual; 16 (76.2%) extension agents and 78 (44.8%) RDs wanted to field-test and evaluate the recipes; seven (33.3%) extension agents and 57 (32.8%) RDs wanted to develop and revise recipes. In addition, 10 (47.6%) extension agents and 55 (31.6%) RDs were interested in planning and implementing training workshops related to "Takin' Care of Southern Hearts." Two more areas were of significant interest to the RDs. Fifty-three (30.5%) RDs offered to calculate diabetic exchanges for the recipes and 45 (25.9%) were interested in editing nutrition reference material for the training manual. In summary, there were interested respondents for every CHK Task Force activity listed in the questionnaire.

One hundred sixty-three (84.0%) of the potential 196 volunteers said "yes" they could attend task force meetings in selected locations. The interested respondents were asked to indicate their first and second choice of days for CHK Task Force meetings. The first choice was Tuesday and the second was Friday (Table 21).

Summary. The demographic, summative, and formative data collected through a census survey of home economics extension agents and registered dietitians in North Carolina could be a valuable aid in decision making for the NC Affiliate of the AHA. The response rate of 71.6% indicated that there was considerable interest from both

Table 21

Frequencies of Interested Survey Respondents' Preferred Days for Task Force Meetings

Variable	Extension Agents[a]		Registered Dietitians[b]		Overall[c]	
	1st Choice	2nd Choice	1st Choice	2nd Choice	1st Choice	2nd Choice
Monday	1	3	30	9	31	12
Tuesday	3	2	32	23	35	25
Wednesday	4	3	28	24	32	27
Thursday	3	2	17	32	20	34
Friday	4	4	25	39	29	43
Saturday	0	0	6	4	6	4
Sunday	0	0	0	1	0	1
Missing Data	0	1	10	16	10	17

[a]Number of interested home economics extension agents (n = 15)
[b]Number of interested registered dietitians (n = 148)
[c]Number of persons in combined interested groups (n = 163)

groups in providing data for both the existing curriculum, the Culinary Hearts Kitchen, and the proposed curriculum, "Takin' Care of Southern Hearts." The 643 survey respondents provided beneficial information on the usefulness and importance ratings for the two curricula. They also indicated strong interest in acquiring the proposed curriculum, "Takin' Care of Southern Hearts"; attending related workshops; and volunteering time and expertise to complete the project.

CHAPTER V

DISCUSSION

The purpose of this study was to conduct a program evaluation which could be used by the North Carolina Affiliate of the AHA for decision making. The NC Affiliate wished to provide appropriate nutrition education materials and training workshops for interested extension agents and RDs. A mail survey was sent to extension agents employed by the North Carolina CES and Rds who were classified as active members of the NCDA. The survey instrument was utilized to collect the following evaluation information for the NC Affiliate: demographics of the censused population; summative data on the existing nutrition education curriculum, CHK; and formative data on a proposed nutrition education curriculum, "Takin' Care of Southern Hearts".

Survey Response Rate

Dillman's (1978) TDM strategies which offer a fully integrated, planned sequence of procedures and techniques were used as guidelines for survey development and implementation. These guidelines were designed to increase the response rates to mail surveys category.

This survey varied from the Dillman techniques in that it was less personalized and the administration plan was not closely adhered to. The survey generated a 71.6% response rate. The following factors may have had a positive impact on the survey response rate: (1) the strong association of the survey with the NC Affiliate of AHA who was the sponsoring organization and (2) the relationships with two professional organizations established in the greetings on the cover letters.

Demographic Characteristics of Survey Respondents

Prior to the survey the NC Affiliate had no database of extension agents or RDs who had responsibilities either directly or indirectly for CVD risk factor nutrition education. This information was elicited on the first page of the survey (Appendix B) through the screening question. Whereas 92.9% (n=79) of the extension agents reported direct responsibility for CVD risk factor nutrition education for the public, only 61.5% (n=343) of the Rds reported this responsibility. However, a total of 65.6% (n=422) of the survey respondents were involved in this function so vital to the affiliate program department's mission of improving health and preventing cardiovascular diseases and stroke through public and professional education and community service programs.

To plan for training workshops, the affiliate wanted to know where the respondents were employed. The state is divided into three areas: western, central, and eastern (Appendix D). The survey respondents were employed primarily (43.6%, n=271) in the eastern region. Since Wake, Durham, and Orange counties are all part of the eastern region, the clustering of respondents in this region was not surprising.

To plan appropriate activities for the training workshops, the affiliate wanted to know more about the respondents on a personal basis. The respondents were primarily well educated with degrees in home economics and nutrition/dietetics. They were an experienced group with a mean age of 39.9 years and a mean of 13 years working in the field of food and nutrition. For training purposes then, the focus should be on adult learners with a problem-centered orientation to learning. Field experience, team projects, and other action-learning activities should supersede lectures and pre-recorded audiovisuals for adult training workshops (Knowles, 1978).

Summative Data for the Culinary Hearts Kitchen

Although home economicse extension agents and RDs had been the most frequent users of the CHK curriculum kit, there were only partial lists of these persons. There were no records at the affiliate of who had

purchased the program in North Carolina. Even if there had been a list of purchasers, many of the names would have been institutions such as hospitals and community colleges. Therefore, the affiliate could neither identify the users or report on their utilization of the CHK curriculum in the state of North Carolina prior to this survey. Graves et al. (1989) also found it necessary to survey teachers to determine how many of the nutrition education materials distributed through the North Carolina NET program were in use in the school system.

Panel discussions at previous affiliate sponsored CHK workshops had been led by a few people with field experience and had proved helpful to the attendees. Through the survey, the affiliate was able to identify a large number of CHK users who could potentially serve as facilitators for future training workshops statewide. It was expected that this would significantly enhance the effectiveness of the training programs as suggested by Rosen (1987).

The summative data collection section of this survey was concerned with the utilization of the CHK curriculum by extension agents and RDs in North Carolina. Similar studies of the NET program have been reported. Graves et al. (1989) described the patterns of utilization of the NET materials in North Carolina by teachers

attempting to integrate nutrition education into the existing curriculum. Rogers-Gray et al. (1989) reported on the utilization of curriculum materials in Texas. In both cases, teachers responded to questions based on their experiences with the NET program. A large number of survey respondents (n=242) reported that they were not familiar with the CHK curriculum. Whereas 62.4% (n=401) of the survey respondents reported being familiar with the CHK curriculum, only 58.4% (n=234) of these same persons reported using it as a nutrition education resource. This finding agreed with Roberts-Gray et al. (1989) who reported a demonstrated need for better strategies to promote the use of NET materials which were not being used as fully in Texas as expected. The two primary uses reported by these respondents were making presentations to groups and teaching a series of classes. One hundred forty six respondents reported actually using the CHK curriculum to teach a series of classes. These CHK course instructors shared their experiences about their utilization of the curriculum in their particular employment setting.

Instructors reported the amount of preparation time as the most frequently encountered barrier to teaching the CHK course. Farthing et al. (1989) reported amount of time as the barrier which NET teachers said made it difficult to include nutrition education in the curriculum. Survey respondents reported recruitment of participants as the second most frequently encountered teaching obstacle.

Scriven (1986) stated that the goal of evaluation is always to estimate the worth, merit, or value of the object being evaluated. To complete the summative evaluation, CHK course instructors were asked to rate the usefulness of the various components of the curriculum package. Instructors gave the highest mean usefulness ratings to the CHK nutrition and food information slides, the nutrition information content, and the participant handouts. The entire CHK curriculum kit was given a mean usefulness rating of 4.1 (SD=0.8) on a six point Likert scale of 0-5. The most frequently suggested change in the CHK curriculum kit by course instructors was the recipes. The reported need for more regionally acceptable recipes verified one of the primary difficulties encountered with the diffusion of this innovative curriculum. Caffarella et al. (1982) defined compatibility as the perception of an innovation which is consistent with the existing

sociocultural beliefs and values, past experiences, and the needs of the receivers.

Formative Data for Takin' Care of Southern Hearts

Edwards et al. (1986) proposed a model for evaluating innovative nutrition education programs throughout the development stages. One of the categories for evaluation questions was appropriateness of program design and materials. Geis (1987) recommended that evaluators include experts at an early stage in a formative evaluation to provide their opinions about content of instruction and inclusion or exclusion of material. Geis also noted that potential customers can supply information about content which would be relevant to their target population.

Both groups of survey respondents were considered experts as well as potential customers. The respondents were asked to give perceived importance ratings for each of the components of the proposed curriculum. This formative evaluation technique was also used by Miller et al. (1991) for future directions in health promotion program planning; by Christie et al. (1993) for course topics related to a proposed practice doctorage curriculum; and by Gillespie (1989) for objectives of a dietary guidance system. The highest mean importance rating was given to recipes of familiar southern foods

modified for fat, cholesterol, and sodium ($\underline{X}$=4.7, $\underline{SD}$=0.6). This agreed with Castelli (1990), director of the Framingham Heart Study, who recognized that most Americans need cooking classes which emphasize modification of favorite family recipes which have often been handed down from generation to generation. This rating also confirmed the CHK Task Force decision made at the outset of the developmental process to begin with the development and field-testing of recipes for "Takin' Care of Southern Hearts". The survey respondents gave the second highest mean importance rating to food selection, handling/storage, and preparation information for reduction of dietary fat in familiar southern foods ($\underline{X}$=4.5, $\underline{SD}$=0.8).

The respondents were also asked to review the proposed recipe nutrient analysis box and offer recommendations for additions or deletions. The most frequently recommended deletions included saturated fat, monounsaturated fat, polyunsaturated fat, and potassium. The most frequently recommended additions included calcium, iron, and simple carbohydrates. While 95.6% of survey respondents agreed that diabetic exchanges should be in the nutrient analysis box, 54.2% expressed a preference for partial exchanges.

A high percentage (91.8%, n=590) of the survey respondents reported an interest in acquiring having all or part of the proposed curriculum with a majority reporting a preference for the complete training manual. A high percentage, 82.9% (n=533), also reported an interest in related training workshops. In the present study, extension agents expressed greater interest in receiving training on risk factor identification, nutrition concepts, and dietary guidelines, while RDs were more interested in food preparation and demonstration skills. Underbakke et al. (1993) reported that Wisconsin dietitians cited regional workshops as one of the two best sources of cholesterol education. The high level of interest in training agreed with Graves et al. (1989) and Roberts-Gray et al. (1989) findings that training was critical to the adoption of the innovative NET materials. Christie et al. (1993) also reported a lack of education as an important limiting factor in the use of diagnostic assessments by clinical dietitians.

Unlike the National Center of AHA which employs staff specifically for curriculum development, the NC Affiliate program department was staffed only with a program director, program consultant, and administrative secretaries. The primary activities of the program department include fund raising and implementation of

national programs through the help of volunteers. Although the New York Affiliate had hired two consultants to aid in the development of CHK initially, the NC Affiliate hoped to develop and implement "Takin' Care of Southern Hearts" solely through volunteers. A task analysis provided a list of 14 activities for which volunteers would be recruited. Survey respondents were asked to indicate whether there was an interest in volunteering time to complete the project and to specify activities of interest. Achterberg (1988)) encouraged practitioners to "join up" with organizations such as a local university, a land-grant university, the Cooperative Extension Service or the Dairy Council, American Heart Association, or other community organizations to develop a study or program that can address a problem/issue. Of the 643 survey respondents, 30.5% (n=196) reported an interest in forming a cooperative relationship with the NC Affiliate. The primary interests of the respondents included field-testing and evaluating the recipes and training manual and planning and implementing related training workshops.

CHAPTER VI

SUMMARY AND RECOMMENDATIONS

Summary

The purpose of this study was to conduct a program evaluation which could be used by the North Carolina Affiliate of the American Heart Association for decision making. Information was collected to assist program staff in carrying out its mission to improve health and prevent CVD and stroke through public and professional education and community service programs. The following information was collected with a mail survey: demographics of the censused population; summative data related to utilization and usefulness of an existing nutrition education curriculum, Culinary Hearts Kitchen; and formative data related to a proposed nutrition education curriculum known as "Takin' Care of Southern Hearts", and interest in the proposed curriculum, related workshops, and volunteer work related to the proposed curriculum and workshops. The populations under study were extension agents employed by the North Carolina CES and employed RDs who were classified as active members of the NCDA. The decisions of the client, the NC Affiliate, were to be based on opinions of two groups who had previously played an

important role in the development and implementation of the AHA's educational programs.

As there were no listings which specifically identified the subgroups of extension agents and RDs who had responsibilities for CVD risk factor nutrition education for the public, the survey was implemented as a census. Mailing lists were provided by the North Carolina CES and the ADA. Ineligible survey respondents were identified with the first question and asked to answer only the first question and return the survey to the NC Affiliate.

The survey instrument was developed and administered using Dillman's total design method. Modifications to Dillman's total design method were most evident in two areas: personalization and adherence to the administration plan. In spite of these modifications, the survey attained a 71.6% response rate which was deemed adequate to meet the needs of the affiliate.

The data collected with this survey instrument were divided into three categories: demographics of the censused population, summative data about the CHK curriculum package, and formative data about the proposed "Takin' Care of Southern Hearts" curriculum package and related topics. The demographic information identified respondents with direct CVD risk factor reduction

responsibilities, described how the respondents were distributed throughout the state, and characterized them as experienced, well-educated professionals.

The summative data segmented the respondents into the following categories: not familiar with CHK; familiar with but had not used CHK; had used CHK as a nutrition education resource; and had taught a series of classes with CHK. The 146 respondents identified as course instructors shared their experiences in utilizing the curriculum and were considered potential facilitators for affiliate sponsored training workshops. The course instructors gave the entire CHK curriculum a high mean rating for usefulness and suggested that the most important change needed was the recipes.

Whereas only 146 respondents answered the CHK curriculum section, all 643 survey respondents completed the formative data section for the proposed curriculum. It was reported that the content of most importance to them in the proposed "Takin' Care of Southern Hearts" curriculum was the familiar Southern recipes modified for fat, cholesterol, and sodium. Information on the selection, storage/handling, and preparation of these familiar foods was also requested. The respondents expressed a high level of interest in acquiring the proposed curriculum and attending related training

workshops. Almost one third of the respondents were willing to volunteer time and expertise to complete the project.

This mail survey gave extension agents and RDs in North Carolina an opportunity to rate the usefulness of the Culinary Hearts Kitchen and to share their experiences related to the utilization of the existing curriculum. Survey respondents were also given the opportunity to evaluate the importance of the content of the NC Affiliate's proposed curriculum, "Takin' Care of Southern Hearts". Both the extension agents and the RDs reported a strong interest in the proposed curriculum and related training workshops.

Recommendations

The following recommendations are made based on the findings of the study:

1. Dillman's use of the first question to screen for ineligible survey recipients is recommended as an effective technique for minimizing nonresponse bias so common to survey methodology.
2. Close adherence to Dillman's total design method techniques and strategies for mail survey development and administration is recommended to maximize survey response.

3. The availability of training workshops for dissemination of innovative curriculum materials is recommended to enhance the possibility of adoption by potential users.
4. The compatibility of national curriculum materials with the existing sociocultural values is recommended to enhance the possibility of adoption by potential users.
5. The utilization of learners, teachers, and experts as nutrition education evaluation participants is encouraged for identification of target material for curriculum and program development/improvement.
6. The provision of frequent interim reports, nontechnical final evaluation reports, and verbal interpretation of evaluation data may contribute to the usability of evalution data by clients.
7. Assessment of a client's mission, funding, staffing, interdepartmental resources, and commitment could prove beneficial to the evaluator in the selection of appropriate clients to collaborate with for program evaluations.

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APPENDIX A

CHK COURSE OUTLINE

Course Outline

Goal: To learn how to plan and prepare attractive, tasty meals that adhere to the American Heart Association's dietary recommendations.

Session 1 Introducing the New Way of Eating: Basic Principles
1. Orientation to Staff, Facilities, Course Outline and Goal
2. Basic Concepts About Nutrition and Health
3. Definitions of Cardiovascular Disease and Risk Factors
4. AHA Dietary Recommendations: Reducing the Risk

Session 2 The New Way of Cooking: Meats and Poultry
1. How to Shop Wisely and Read Labels
2. How to Purchase and Prepare Lean Red Meats
3. How to Purchase and Prepare Poultry

Session 3 Entrees with a Lighter Touch: Soups and Fish
1. How to Enhance Foods with Broths and Sauces
2. How to Create Nutritionally Complete Hearty Soups
3. How to Select and Prepare Fish and Seafood Specialties

Session 4 Healthy Alternatives: Complementary Proteins and Complex Carbohydrates
1. Principles of Preparing Meatless Meals
2. How to Incorporate Grains, Legumes and Starchy Vegetables into Everyday Meals
3. How to Add Variety to Meals with Vegetables
4. How to Select and Store Salad Ingredients and Prepare Salads and Dressings.

Session 5 You Don't Have to Give Up the Goodies: Baking and Desserts
1. How to Select and Prepare Breakfast Foods
2. How to Select and Prepare Baked Goods
3. How to Select and Prepare Desserts
4. How to Select, Prepare and Use Fruits Throughout the Menu

Session 6 Putting It All Together: Meal Planning
1. How to Coordinate Menus
2. How to Select Foods When Dining Out
3. How to Prepare Meals for One (or Two)
4. How to Select and Prepare Quick Meals
5. How to Prepare Foods for Special Occasions

The Intended Audience

This course is designed for a general audience. While it can extend and support dietary counseling, it should not be viewed as a replacement for such counseling. Those individuals following a prescribed diet (e.g., weight-reduction, low-cholesterol, modified-fat, sodium-restricted, diabetic) can benefit from this course, but further adjustments may be necessary to meet their particular dietary needs.

The supplementary materials are designed to instruct people who have been told by their doctors to follow a low-sodium diet (2000–3000 mg per day). Some will have hypertension; others will have had heart attacks or bypass surgery. Those attending the course should already understand their own diet prescriptions. If participants demonstrate a lack of knowledge or confusion about their special diet, refer them to their physician and suggest nutritional counseling.*

For a further discussion of the audience, see the section titled "Some Notes on Adapting This Course."

*Appropriate dietary consultants can be found through Consulting Nutritionists in Private Practice, a practice group of the American Dietetic Association. The booklet from the American Heart Association titled "How To Choose a Nutrition Counselor for Cardiovascular Health" can help evaluate dietary consultation. Some American Heart Association offices also have information on local resources.

APPENDIX B

CHK SURVEY

What's Cooking With The

CULINARY HEARTS KITCHEN®

A Statewide Survey of Registered Dietitians & Home Economics Extension Agents in North Carolina

SPONSORED BY:

American Heart Association
North Carolina Affiliate, Inc.
P.O. Box 2636
300 Silver Cedar Court
Chapel Hill, NC 27515-2636

You have received this questionnaire because you are a home economics extension agent or a registered dietitian who is currently an active member of the North Carolina Dietetic Association. Please complete the first question to determine if this survey applies to you.

Q-1 Diet-related cardiovascular disease (CVD) risk factors include atherosclerosis ,diabetes, heart disease, high blood cholesterol, high blood pressure, obesity, and stroke. Using this information, which of the following best describes your employment responsibilities? (Circle all numbers that apply).

1 I AM DIRECTLY RESPONSIBLE FOR NUTRITION EDUCATION FOR THE PUBLIC FOR DIET-RELATED CVD RISK FACTORS.

2 I AM DIRECTLY RESPONSIBLE FOR NUTRITION EDUCATION FOR OTHER HEALTH PROFESSIONALS WHO ARE RESPONSIBLE FOR NUTRITION EDUCATION FOR THE PUBLIC FOR DIET-RELATED CVD RISK FACTORS.

3 I SUPERVISE OTHER HEALTH PROFESSIONALS WHO ARE DIRECTLY RESPONSIBLE FOR NUTRITION EDUCATION FOR THE PUBLIC FOR DIET-RELATED CVD RISK FACTORS.

4 I AM DIRECTLY OR INDIRECTLY RESPONSIBLE FOR THE INSTRUCTION OF STUDENTS (ENROLLED FOR CREDIT) ABOUT NUTRITION EDUCATION FOR DIET-RELATED CVD RISK FACTORS.

5 I AM DIRECTLY OR INDIRECTLY RESPONSIBLE FOR NUTRITION EDUCATION FOR FOOD SERVICE EMPLOYEES WHO PREPARE FOOD WHICH SHOULD ADHERE TO THE AMERICAN HEART ASSOCIATION DIETARY GUIDELINES.

6 MY EMPLOYMENT RESPONSIBILITIES DO NOT INCLUDE NUTRITION EDUCATION FOR DIET-RELATED CVD RISK FACTORS, BUT I WOULD LIKE TRAINING IN THIS AREA.

7 MY EMPLOYMENT RESPONSIBILITIES DO NOT INCLUDE NUTRITION EDUCATION FOR DIET-RELATED CVD RISK FACTORS AND I AM NOT INTERESTED IN TRAINING IN THIS AREA *OR* I AM NOT EMPLOYED.

(If you circled 7) This study applies to persons who have direct or indirect employment responsibilities for nutrition education for diet-related CVD risk factors. Therefore, you do not need to answer the remainder of this questionnaire. However, if at any time in the future your employment situation changes so that you have these responsibilities, we would like to hear from you. Please contact the Program Department of the North Carolina Affiliate of the American Heart Association (AHA) so that we can change your status in our database. Above all, PLEASE RETURN THIS INQUIRY *to us so that we will know your current status.*

Next we would like to ask you some questions about The Culinary Hearts Kitchen (CHK) course published by the American Heart Association (AHA).

Q-2 Are you familiar with The Culinary Hearts Kitchen course? (Circle one number)

1 NO → IF NO, SKIP FROM HERE TO THE TRANSITION BOX PRIOR TO Q-33
2 YES

Q-3 Have you used The Culinary Hearts Kitchen course as a resource for nutrition education about the reduction of diet-related CVD risk factors? (Circle one number)

1 NO → IF NO, SKIP FROM HERE TO THE TRANSITION BOX PRIOR TO Q-33
2 YES

Q-4 Have you used any parts of The Culinary Hearts Kitchen course for the following purposes? (Circle all numbers that apply)

1 TO MAKE A PRESENTATION TO A GROUP(S)
2 TO COUNSEL A PATIENT(S) OR CLIENT(S)
3 TO SUPPLEMENT AN EXISTING PROGRAM
4 TO RECOMMEND IT AS A RESOURCE
5 NONE OF THE ABOVE

Q-5 How many times have you used The Culinary Hearts Kitchen course as a resource to teach a series of classes, including the times you have called the course by another name? (Circle one number)

1 NONE → IF NONE, SKIP FROM HERE TO THE TRANSITION BOX PRIOR TO Q-33
2 ONE TO TWO TIMES
3 THREE TO FOUR TIMES
4 FIVE OR MORE TIMES

Now we would like to ask you some questions about your experiences with The Culinary Hearts Kitchen course.

Q-6 What was the name that you used most often for your course(s)? (Fill in the blank)

_____

Q-7 What method did you use most often for recruiting course participants? (Fill in the blank)

_____

Q-8 What was the average number of participants per course? (Fill in the blank)

_____

Q-9 Which of the following best describes the gender of your class participants? (Circle one number)

1 ALL FEMALE
2 PREDOMINANTLY FEMALE
3 OTHER (specify) _____

Q-10 For whom were the class participants primarily enrolled? (Circle one number)

1 SELF
2 A SIGNIFICANT OTHER FAMILY MEMBER
3 OTHER (specify) _____

Q-11 How many times did your class usually meet to complete a course? (Fill in the blanks)

TIMES PER WEEK _____
NUMBER OF WEEKS _____

Q-12 How many hours did your class usually meet per session? (Fill in the blank)

_____

Q-13 What did you find to be the best timing for a course? (Fill in the blanks)

MONTH(S) OF YEAR _____
DAY (S) OF WEEK _____
HOURS OF DAY _____

Q-14 How much did you usually charge participants per course? (Fill in the blanks)

TUITION _____
FOOD _____
OTHER (specify) _____

Q-15 What type of facility(s) did you use for teaching your course(s)? (Fill in the blank)

_____

Q-16 Did you usually give live food demonstrations in your course(s)? (Circle one number)

1 NO
2 YES

↳ (If yes) For what topics did you give demonstrations? (Fill in the blank)

_____
_____

Q-17 Did your students participate in food preparation? (Circle one number)

1 NO
2 YES

Q-18 To what extent did you generally incorporate tasting sessions in your course(s)? (Circle one number)

1 NONE
2 FIRST SESSION ONLY
3 ALL SESSIONS EXCEPT THE FIRST ONE
4 EVERY SESSION
5 OTHER (specify) _____

Q-19 What did you find was the greatest barrier(s) to overcome in teaching the course? (Circle all numbers that apply)

1 THE CONTENT—NUTRITION CONCEPTS
2 THE CONTENT—FOOD PREPARATION SKILLS
3 FOOD DEMONSTRATION SKILLS
4 AMOUNT OF PREPARATION TIME
5 LOCATING APPROPRIATE RECIPES FOR N.C. RESIDENTS
6 DUPLICATING HANDOUTS FOR CLASS PARTICIPANTS
7 RECRUITING CLASS PARTICIPANTS
8 OTHER (specify) _____

Q-20 Did you have participants complete The Culinary Hearts Kitchen end-of-course evaluation sheets, page 170 in the instructor's manual? (Circle one number)

1 NO
2 YES

↳ (If yes) If requested, would you be willing to share these evaluations with the Program Department of the N.C. Affiliate of AHA? (Circle one number)

1 NO
2 YES
3 INDIVIDUAL EVALUATIONS NO LONGER ON FILE

In the following section, you will find a listing of the general components of The Culinary Hearts Kitchen (CHK) course. Based on your **experiences**, we would like for you to rate the **usefulness** of each component and of the entire curriculum. Please feel free to consult a CHK manual.

DIRECTIONS

Circle a number between 0 (NOT AT ALL USEFUL) and 5 (VERY USEFUL) on the scale to the right of the component.

COMPONENT	USEFULNESS
Q-21 THE INTRODUCTION	0 1 2 3 4 5 (NOT AT ALL USEFUL — VERY USEFUL)
Q-22 THE NUTRITION INFORMATION CONTENT (Primarily in Session 1 and the beginning of Session 2)	0 1 2 3 4 5
Q-23 THE FOOD SELECTION AND PREPARATION INFORMATION CONTENT (In all Sessions)	0 1 2 3 4 5
Q-24 THE TEACHING NOTES WHICH INCLUDE THE LEARNING ACTIVITIES (In all Sessions)	0 1 2 3 4 5
Q-25 THE NUTRITION INFORMATION SLIDES (Primarily in Session 1 and the beginning of Session 2)	0 1 2 3 4 5
Q-26 THE FOOD INFORMATION SLIDES (Primarily in Sessions 2-6)	0 1 2 3 4 5
Q-27 THE FOOD DEMONSTRATION SLIDES (In all Sessions)	0 1 2 3 4 5
Q-28 THE PARTICIPANT HANDOUTS (In all Sessions)	0 1 2 3 4 5

COMPONENT, continued — **USEFULNESS**

Q-29 THE RECIPES (In all Sessions)
|__|__|__|__|__|__|
0 1 2 3 4 5
NOT AT ALL USEFUL — VERY USEFUL

Q-30 THE TABLE OF NUTRIENT ANALYSES (In the Appendix)
|__|__|__|__|__|__|
0 1 2 3 4 5

CURRICULUM — **USEFULNESS**

Q-31 THE ENTIRE CULINARY HEARTS KITCHEN COURSE
|__|__|__|__|__|__|
0 1 2 3 4 5

Q-32 Do you think anything should be changed about the latest edition (1985) of The Culinary Hearts Kitchen course? (Circle one number)

1 NO
2 YES

(If yes) Please describe the additions or changes you would suggest. Use the back cover of this booklet if necessary.

_____
_____
_____

The N.C. Affiliate and the CHK Task Force are collaborating to develop nutrition education materials and related training workshops about the reduction of diet-related CVD risk factors. The task force is considering the development of a **three-part training manual** (instructor's manual, student's manual & a cookbook), Takin' Care of Southern Hearts. A mini-module format should provide greater flexibility of use. Please tell us how **important** each component of the proposed training manual is to you.

DIRECTIONS

Circle a number between 0 (NOT AT ALL IMPORTANT) and 5 (VERY IMPORTANT) on the scale to the right of the component.

INSTRUCTOR'S MANUAL — **IMPORTANCE**

Q-33 REFERENCE MATERIAL: RISK FACTOR IDENTIFICATION INFORMATION RELATED TO **HIGH BLOOD CHOLESTEROL**
|__|__|__|__|__|__|
0 1 2 3 4 5
NOT AT ALL IMPORTANT — VERY IMPORTANT

INSTRUCTOR'S MANUAL, continued	IMPORTANCE
Q-34 REFERENCE MATERIAL: RISK FACTOR IDENTIFICATION INFORMATION RELATED TO **HIGH BLOOD PRESSURE**	|_|_|_|_|_|_| 0 1 2 3 4 5 NOT AT ALL IMPORTANT VERY IMPORTANT
Q-35 REFERENCE MATERIAL: GLOSSARY OF CARDIOVASCULAR TERMINOLOGY	|_|_|_|_|_|_| 0 1 2 3 4 5
Q-36 REFERENCE MATERIAL: AHA DIETARY GUIDELINES & RELATED NUTRITION CONCEPTS	|_|_|_|_|_|_| 0 1 2 3 4 5
Q-37 REFERENCE MATERIAL: FOOD LABELING	|_|_|_|_|_|_| 0 1 2 3 4 5
Q-38 REFERENCE MATERIAL: FOOD SELECTION, HANDLING/STORAGE, & PREPARATION INFORMATION FOR REDUCTION OF **DIETARY FAT** IN FAMILIAR SOUTHERN FOODS	|_|_|_|_|_|_| 0 1 2 3 4 5
Q-39 REFERENCE MATERIAL: FOOD SELECTION HANDLING/STORAGE, & PREPARATION INFORMATION FOR REDUCTION OF **DIETARY CHOLESTEROL** IN FAMILIAR SOUTHERN FOODS	|_|_|_|_|_|_| 0 1 2 3 4 5
Q-40 REFERENCE MATERIAL: FOOD SELECTION, HANDLING/STORAGE, & PREPARATION INFORMATION FOR REDUCTION OF **SODIUM** IN FAMILIAR SOUTHERN FOODS	|_|_|_|_|_|_| 0 1 2 3 4 5
Q-41 TEACHING AIDS: CLASSROOM MANAGEMENT TIPS (e.g. Advertising, Budgeting, Scheduling, Food preparation & Tasting sessions)	|_|_|_|_|_|_| 0 1 2 3 4 5
Q-42 TEACHING AIDS: LESSON PLANS WITH STUDENT LEARNING OBJECTIVES & SUGGESTED LEARNING ACTIVITIES	|_|_|_|_|_|_| 0 1 2 3 4 5
Q-43 TEACHING AIDS: EVALUATION TOOLS	|_|_|_|_|_|_| 0 1 2 3 4 5

INSTRUCTOR'S MANUAL, continued	IMPORTANCE
Q-44 TEACHING AIDS: MASTER TRANSPARENCIES	|__|__|__|__|__|__| 0 1 2 3 4 5 (NOT AT ALL IMPORTANT ... VERY IMPORTANT)
Q-45 TEACHING AIDS: INSTRUCTIONS FOR GIVING LIVE FOOD DEMONSTRATIONS	|__|__|__|__|__|__| 0 1 2 3 4 5

STUDENT REFERENCE MANUAL	IMPORTANCE
Q-46 CONTENT: HANDOUTS RELATED TO REFERENCE MATERIAL IN INSTRUCTOR'S MANUAL	|__|__|__|__|__|__| 0 1 2 3 4 5
Q-47 CONTENT: BIBLIOGRAPHY OF REFERENCE MATERIAL FOR CVD NUTRITION INFORMATION (e.g. AHA Pamphlets, Reference Books, Cookbooks)	|__|__|__|__|__|__| 0 1 2 3 4 5

COOKBOOK	IMPORTANCE
Q-48 CONTENT: RECIPES OF FAMILIAR SOUTHERN FOODS **MODIFIED** FOR FAT, CHOLESTEROL, AND SODIUM	|__|__|__|__|__|__| 0 1 2 3 4 5
Q-49 CONTENT: NUTRIENT ANALYSIS INFORMATION ON EACH RECIPE PAGE FOR THE MAIN RECIPE (Does not include variations of main recipe)	|__|__|__|__|__|__| 0 1 2 3 4 5
Q-50 APPENDIX: NUTRIENT ANALYSIS INFORMATION SUMMARY IN CHART FORM (Includes variations of main recipe)	|__|__|__|__|__|__| 0 1 2 3 4 5

We would like to make the **nutrient analysis box** on each recipe as useful as possible by providing the information you need for CVD nutrition education.
Please review the box below and answer the related questions.

CHILI WITH BEANS

Yield: 6 servings
Each Serving Size: 1 cup

CALORIES:	333	CHOLESTEROL	62.3 Mg	DIABETIC EXCHANGES:
% CALS FROM FAT:	20 %	PROTEIN:	31.9 G	
TOTAL FAT:	7.6 G	CARBOHYDRATES	36.1 G	2 1/4 STARCHES
SATURATED:	2.5 G	FIBER:	14.9 G	
MONOUNSATURATED:	2.8 G	SODIUM:	502.0 Mg	2 1/2 LEAN MEATS
POLYUNSATURATED:	1.0 G	POTASSIUM:	1242.0 Mg	

Q-51 Are there any nutrients in the above box which should be omitted or added? (Circle one number)

1 NO
2 YES

(If yes) Please list the nutrient(s) which should be

OMITTED _____
ADDED _____

Q-52 Should diabetic exchanges be included in the nutrient box? (Circle one number)

1 NO
2 YES

(If yes) How much detail should be included for each diabetic exchange? (Circle one number)

1 WHOLE EXCHANGES ONLY
2 WHOLE AND PARTIAL EXCHANGES

Now that you have given us your opinions on the proposed content of a three-part training manual, we would like to know **how interested you are** in the manual, alternative products, and related workshops (assuming cost is reasonable).

Q-53 Would you like to have all or part of Takin' Care of Southern Hearts? (Circle one number)

1 NO
2 YES

(If yes) Which of the following alternative products are you the most interested in having? (Circle one number)

1 THREE-PART TRAINING MANUAL as described earlier
2 SOUTHERN COOKBOOK ONLY without any reference text
3 SOUTHERN COOKBOOK ONLY with reference text

Q-54 Would you be interested in attending a training workshop for Takin' Care of Southern Hearts in a location near you? (Circle one number)

1 NO
2 YES

(If yes) Which of the following topics would you like to receive training on? (Circle all numbers that apply)

1 RISK FACTOR IDENTIFICATION
2 NUTRITION CONCEPTS/DIETARY GUIDELINES
3 FOOD LABELING
4 FOOD PREPARATION SKILLS
5 FOOD DEMONSTRATION TECHNIQUES
6 CLASSROOM MANAGEMENT TIPS
7 OTHER (specify) _____

Next, we would like to know if you have any interest in helping the N.C Affiliate & the CHK Task Force complete Takin'Care of Southern Hearts?

Q-55 Are you interested in helping the N.C. Affiliate & the CHK Task Force with the development of Takin' Care of Southern Hearts? (Circle one number)

1 NO
2 YES

IF NO, SKIP FROM HERE TO THE TRANSITION BOX PRIOR TO Q-58

Q-56 Which of the following task force activities are you most interested in? (Circle all numbers that apply)

1 WRITING REFERENCE MATERIAL ABOUT CVD RISK FACTOR IDENTIFICATION, AHA DIETARY GUIDELINES, & RELATED NUTRITION CONCEPTS

2 DEVELOPING LEARNING OBJECTIVES, LESSON PLANS, VISUALS, HANDOUTS, LEARNING ACTIVITIES, & EVALUATION TOOLS FOR THE NUTRITION-RELATED REFERENCE MATERIAL

3 EDITING NUTRITION REFERENCE MATERIAL IN THE TRAINING MANUAL

4 WRITING REFERENCE MATERIAL ABOUT FOOD SELECTION, HANDLING/STORAGE, & PREPARATION

5 DEVELOPING LEARNING OBJECTIVES, LESSON PLANS, VISUALS, HANDOUTS, LEARNING ACTIVITIES, & EVALUATION TOOLS FOR THE FOOD-RELATED REFERENCE MATERIAL

6 EDITING FOOD REFERENCE MATERIAL IN THE TRAINING MANUAL

7 FIELD-TESTING & EVALUATING THE TRAINING MANUAL

8 DEVELOPING & REVISING RECIPES

9 CALCULATING DIABETIC EXCHANGES FOR THE RECIPES

10 FIELD-TESTING & EVALUATING THE RECIPES

11 DEVELOPING A DATABASE & AN INDEX FOR THE RECIPES

12 DEVELOPING GRAPHICS FOR THE TRAINING MANUAL

13 WORKING WITH THE LAYOUT & DESIGN OF THE TRAINING MANUAL

14 PLANNING & IMPLEMENTING TRAINING WORKSHOPS RELATED TO TAKIN' CARE OF SOUTHERN HEARTS

Q-57 Would you be able to attend task force meetings in Chapel Hill, Raleigh, or Greensboro? (Circle one number)

1 NO
2 YES

(If yes) What would be your **best days** of the week for meetings? (Fill in the blank)

FIRST CHOICE (day) _____
SECOND CHOICE (day) _____

Finally, we would like to ask some questions **about yourself** to help us interpret the information you have provided.

Q-58 What is the highest degree you have received? (Circle one number)

1 BACHELORS
2 MASTERS
3 DOCTORATE

Q-59 What was the major of your highest degree? (Circle one number)

1 ADULT EDUCATION
2 FOOD SERVICE
3 HEALTH EDUCATION
4 HOME ECONOMICS
5 NUTRITION / DIETETICS
6 PUBLIC HEALTH NUTRITION
7 OTHER (specify) _____

Q-60 Which of the following best describes your **primary** place of employment? (Circle one number)

1 AGRICULTURAL EXTENSION SERVICE
2 CARDIAC REHABILITATION (FREE STANDING)
3 CARDIAC REHABILITATION (IN HOSPITAL)
4 COLLEGE OR UNIVERSITY FACULTY
5 COMMERCIAL OR SCHOOL FOOD SERVICE
6 EXTENDED CARE FACILITY
7 HOSPITAL (IN-PATIENT / ACUTE CARE)
8 HOSPITAL (OUT-PATIENT / OTHER THAN CARDIAC REHAB)
9 PHYSICIAN'S OFFICE
10 PRIVATE PRACTICE CONSULTING OR COUNSELING
11 PUBLIC HEALTH DEPARTMENT
12 OTHER (specify) _____

Q-61 What county(s) do you work in? (Fill in the blank)

_____

Q-62 Approximately how many years have you worked in the field of foods/nutrition? (Fill in the blank)

_____

Q-63 What year were you born? (Fill in the blanks)

19___ ___

Q-64 What is your race/ethnic origin? (Circle one number)

1 BLACK OR AFRICAN-AMERICAN
2 WHITE OR CAUCASIAN (NON-HISPANIC)
3 OTHER (specify) _____

Is there anything else you would like to tell us about your employment responsibilities or The Culinary Hearts Kitchen course? If so, please use this space for that purpose.

Also, any comments you wish to make that you think may help us provide what you want in Takin' Care of Southern Hearts and the related training workshops, will be appreciated, either here or in a separate letter.

Nº 0945

THANK YOU FOR YOUR COOPERATION!

*Your contribution to this effort is greatly appreciated. Please return this completed questionnaire in the enclosed postage-paid, pre-addressed business envelope. If you would like a summary of the results, please print your name and address on the back of the return envelope (**NOT ON THIS QUESTIONNAIRE**).* We will see that you receive them.

APPENDIX C

COVER LETTERS AND POSTCARD

American Heart Association
North Carolina Affiliate, Inc. P. O. Box 2636, Chapel Hill, NC 27515-2636 919/968-4453

April 30, 1991

Dear

Congratulations! Health professionals in North Carolina reported reaching over 1500 adult residents statewide with heart healthy nutrition and food preparation classes from August 1989 through July 1990. However, much of the public still does not know how to translate the recommended dietary guidelines into healthy food choices to reduce their risk of cardiovascular disease.

One of the most widely used nutrition education tools for this purpose is The Culinary Hearts Kitchen (CHK) course, 1985 edition. The North Carolina Affiliate of the American Heart Association has commissioned a volunteer task force to develop a revised, expanded, more flexible, and regional version entitled Takin' Care of Southern Hearts. Registered dietitians have played an important role in the development and implementation of the American Heart Association's educational programs. The N.C. Affiliate and the Culinary Hearts Kitchen Task Force need your assistance now in making this proposed training manual and related workshops more effective.

For the results of this questionnaire to be truly representative of the opinions of the registered dietitians of this state, it is very important that each questionnaire be completed. Your questionnaire is numbered so that we may check your name off of the mailing list when your questionnaire is received. Follow-up letters will be sent to all nonrespondents. We will hold your responses in strict confidence, analyzing them only as a group.

Our pilot test population indicated that this questionnaire should take no more than 20 minutes of your time. Thank you for completing the enclosed survey promptly and returning your response to the N.C. Affiliate in the enclosed postage paid, pre-addressed business envelope. If you have any questions, please call us at 1-919-968-4453.

Sincerely,

Kim Dove
Kim Dove, R.D.
Director of Programs
N.C. Affiliate

Cheryl Jacobs
Cheryl Jacobs
Program Consultant
N.C. Affiliate

Marie Kinley
Marie Kinley, R.D.
Chairperson
CHK Task Force

American Heart Association
North Carolina Affiliate, Inc. P. O. Box 2636, Chapel Hill, NC 27515-2636 919/968-4453

June 4, 1991

Dear

Approximately one month ago we wrote to you about The Culinary Hearts Kitchen (CHK) course which is published by the American Heart Association. We were seeking information about your experiences with the course and your opinions about the usefulness of its various components. We also wanted your opinions about a proposed regional version entitled Takin' Care of Southern Hearts.

The Programs Department of the North Carolina Affiliate of the American Heart Association has undertaken this study because of the belief that the opinions of registered dietitians can help us be more effective in meeting the needs of cardiovascular nutrition educators in North Carolina. In order for the results of this study to be truly representative of the opinions of all registered dietitians in this state, it is essential that each person return their questionnaire. In the event that your questionnaire has been misplaced, a replacement is enclosed.

Thank you for completing the enclosed survey promptly and returning your response to the N.C. Affiliate in the enclosed postage paid, pre-addressed business envelope. Your cooperation is greatly appreciated. If you have any questions, please call us at 1-919-968-4453. If you have already returned your survey, thank you for doing so and please disreguard this letter.

Sincerely,

Kim Dove
Kim Dove, R.D.
Director of Programs
N.C. Affiliate

Cheryl Jacobs
Cheryl Jacobs
Program Consultant
N.C. Affiliate

Marie Kinley
Marie Kinley, R.D.
Chairperson
CHK Task Force

American Heart Association
North Carolina Affiliate, Inc. P.O. Box 2636, Chapel Hill, NC 27515-2636 919/968-4453

July 11, 1991

Dear

Approximately one month ago we mailed you a second letter concerning a study of The Culinary Hearts Kitchen (CHK) course which is published by the American Heart Association. Through a questionnaire, we were seeking information about your experiences with the course and your opinions about the usefulness of its various components. We also wanted your opinions about a proposed regional version entitled Takin' Care of Southern Hearts.

It is the belief of the Programs Department of the North Carolina Affiliate of the American Heart Association that the opinions of registered dietitians will help us to be more effective in meeting the needs of cardiovascular nutrition educators in North Carolina. In order for the results of this study to be truly representative of the opinions of all registered dietitians in this state, it is essential that we receive every questionnaire. In the event that your questionnaire has been misplaced, a replacement is enclosed.

In our attempt to gather as many opinions as possible, we will mail a certified copy of the questionnaire to all registered dietitians who do not reply by July 31. Therefore, we thank you for completing the enclosed survey promptly and returning your response to the N.C. Affiliate in the enclosed postage paid, pre-addressed business envelope. Your cooperation is greatly appreciated. If you have any questions, please call us at 1-919-968-4453. If you have already returned your survey, thank you for doing so and please disregard this letter.

Sincerely,

Kim Dove, R.D.
Director of Programs
N.C. Affiliate

Cheryl Jacobs
Program Consultant
N.C. Affiliate

Marie Kinley, R.D.
Chairperson
CHK Task Force

American Heart Association
North Carolina Affiliate, Inc.
P.O. Box 2636
Chapel Hill, NC 27515-2636

GSO, NC 270-274 PM 05/12/91

Non-Profit Organization
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Chapel Hill, N.C.
Permit No. 22

Marie M. Kinley, R.D.
6140 Jonquil Dr.
Greensboro, NC 27407

WE'RE FIGHTING FOR YOUR LIFE

Last week we sent you a survey about The Culinary Hearts Kitchen, a nutrition education curriculum for diet-related cardiovascular risk factor reduction.

If you haven't filled it out yet, please take the time--right now, if possible--to complete the questionnaire and return it to us in the postage paid, pre-addressed business envelope we provided. Your responses must be included in the study if the results are to accurately represent the opinions of the registered dieticians and home economics extension agents in North Carolina.

If you have already completed and returned your questionnaire, please accept our sincere thanks.

Kim Dove, R.D.
Program Director

Cheryl Jacobs
Program Consultant

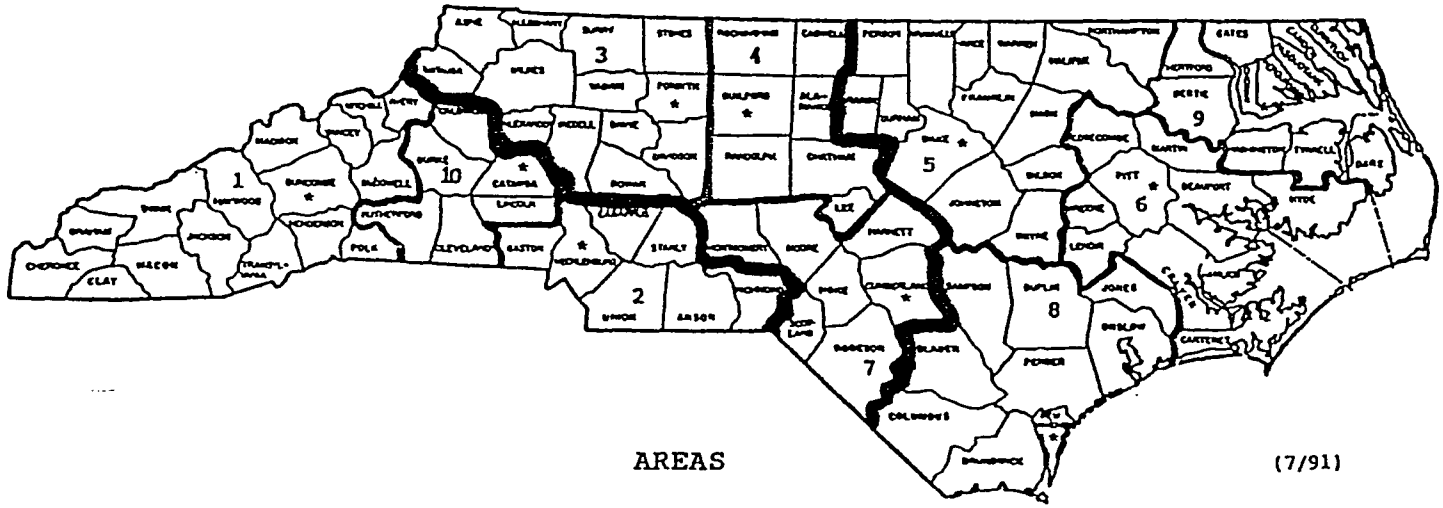
REMINDER POSTCARD

APPENDIX D

GEOGRAPHICAL INFORMATION

REGIONAL STAFFING PATTERN

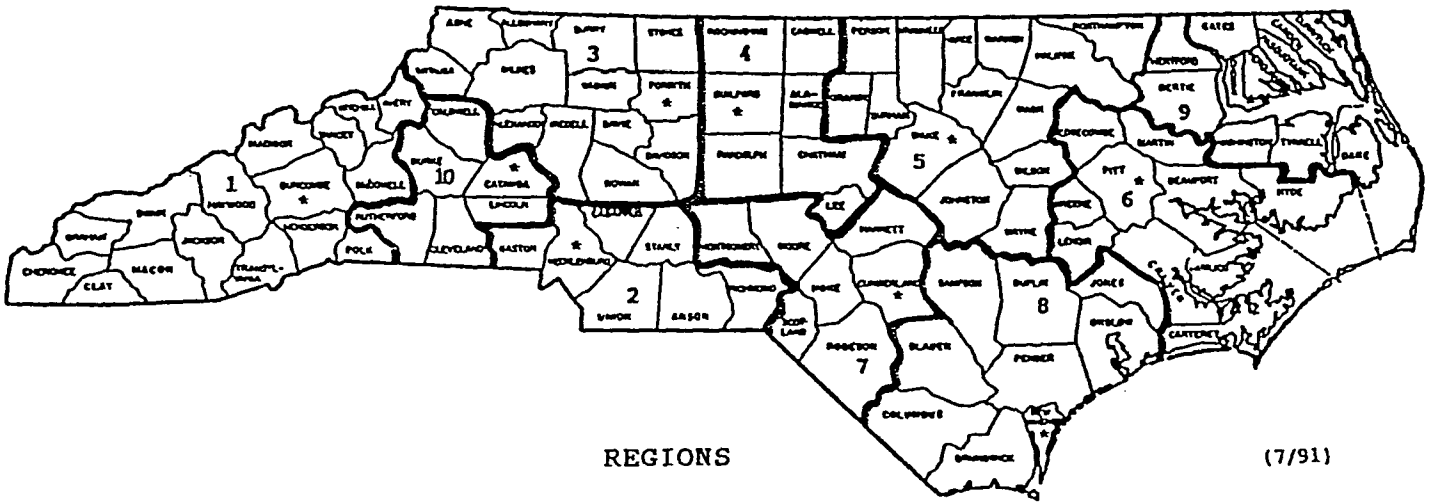
WESTERN CENTRAL EASTERN



AREAS (7/91)

* Indicates the locations of regional offices

REGIONAL STAFFING PATTERN



REGIONS (7/91)

* Indicates the locations of regional offices

Table D-1

Frequencies and Percentages of Survey Respondents in Western Area by Region and County

Western Area	Extension Agents		Registered Dietitians		Overall	
	n	%	n	%	n	%
Region 1						
Avery	1		0		1	
Buncombe	1		22		23	
Cherokee	1		0		1	
Clay	0		0		0	
Graham	1		0		1	
Haywood	1		3		4	
Henderson	1		5		6	
Jackson	1		1		1	
McDowell	1		0		1	
Macon	0		1		1	
Madison	1		0		1	
Mitchell	1		2		3	
Polk	1		1		2	
Swain	1		0		1	
Transylvania	1		1		2	
Yancey	1		0		1	
Multi-Counties	1		5		7	
Subtotal for Region 1	15	53.6[a]	42	31.6[b]	58	35.4[c]
Region 2						
Anson	1		0		1	
Cabarrus	1		5		6	
Gaston	0		9		9	
Mecklenburg	1		48		49	
Richmond	1		0		1	
Stanley	1		0		1	
Union	1		2		3	
Subtotal for Region 2	6	21.4	69	51.9	75	46.6

Table D-1 (continued)

Western Area	Extension Agents n	Extension Agents %	Registered Dietitians n	Registered Dietitians %	Overall n	Overall %
Region 10						
Burke	1		6		7	
Caldwell	1		2		3	
Catawba	1		7		8	
Cleveland	1		7		8	
Lincoln	1		0		1	
Rutherford	1		0		1	
Subtotal for Region 10	6	21.4[a]	22	16.5[b]	28	17.4[c]
Multi-Regions	1	3.6	0	0.0	1	0.6

[a] Percent of home economics extension agents in specified region of western area (n = 28)
[b] Percent of registered dietitians in specified region of western area (n = 133)
[c] Percent of total respondents specified region of western area (n = 161)

Table D-2

Frequencies and Percentages of Survey Respondents in Central Area by Region and County

Central Area	Extension Agents		Registered Dietitians		Overall	
	n	%	n	%	n	%
Region 3						
Alexander	1		0		1	
Alleghany	1		0		1	
Ashe	1		0		1	
Davidson	1		4		5	
Davie	1		0		1	
Forsyth	1		28		29	
Iredell	0		3		3	
Rowan	0		2		2	
Stokes	1		1		2	
Surry	1		2		3	
Watauga	1		5		6	
Wilkes	1		0		1	
Yadkin	0		2		2	
Multi-Counties	0		4		4	
Subtotal for Region 3	10	43.5[a]	51	35.9[b]	61	37.0[c]
Region 4						
Alamance	1		3		4	
Caswell	1		1		2	
Chatham	1		1		2	
Guilford	1		42		43	
Lee	1		2		3	
Randolph	1		2		3	
Rockingham	1		2		3	
Multi-Counties	0		8		8	
Subtotal for Region 4	7	30.4	61	43.0	68	41.2

Table D-2 (continued)

Central Area	Extension Agents		Registered Dietitians		Overall	
	n	%	n	%	n	%
Region 7						
Cumberland	1		18		19	
Harnett	1		0		1	
Hoke	1		2		3	
Montgomery	1		0		1	
Moore	1		1		2	
Robeson	0		2		2	
Scotland	1		0		1	
Multi-Counties	0		2		0	
Subtotal for Region 7	6	26.1[a]	25	17.6[b]	31	18.8[c]
Multi-Regions	0	0.0	5	3.5	5	3.0

[a] Percent of home economics extension agents in specified region of central area (n = 23)
[b] Percent of registered dietitians in specified region of central area (n = 142)
[c] Percent of total respondents specified region of central area (n = 165)

Table D-3

Frequencies and Percentages of Survey Respondents in the Eastern Area by Region and County

Eastern Area	Extension Agents		Registered Dietitians		Overall	
	n	%	n	%	n	%
Region 5						
Durham	1		51		52	
Franklin	0		0		0	
Granville	1		7		8	
Halifax	0		3		3	
Johnston	1		2		3	
Nash	1		3		4	
Northampton	1		1		2	
Orange	0		19		19	
Person	0		1		1	
Vance	1		1		2	
Wake	1		50		51	
Warren	1		0		1	
Wayne	0		12		12	
Wilson	0		3		3	
Multi-Counties	0		11		11	
Subtotal for Region 5	8	23.5[a]	164	69.2[b]	172	63.5[c]
Region 6						
Beaufort	1		3		4	
Cartaret	1		4		5	
Craven	1		2		3	
Edgecombe	1		3		4	
Greene	1		0		1	
Hyde	1		0		1	
Lenoir	1		6		7	
Martin	1		1		2	
Pamlico	1		0		1	
Pitt	0		20		20	
Multi-Counties	0		2		2	
Subtotal for Region 6	9	26.5	41	17.2	50	18.5

Table D-3 (continued)

Eastern Area	Extension Agents		Registered Dietitians		Overall	
	n	%	n	%	n	%
Region 8						
Bladen	0		1		1	
Brunswick	1		1		2	
Columbus	0		2		2	
Duplin	0		0		0	
Jones	0		0		0	
New Hanover	1		15		16	
Onslow	1		4		5	
Pender	1		2		3	
Sampson	1		2		3	
Multi-Counties	0		2		2	
Subtotal for Region 8	5	14.7[a]	29	12.2[b]	34	12.5[c]
Region 9						
Bertie	1		0		1	
Camden	1		0		1	
Chowan	2		1		3	
Currituck	1		0		1	
Dare	1		0		1	
Gates	1		0		1	
Hertford	1		1		2	
Pasquotank	1		0		1	
Perquimans	1		0		1	
Tyrrell	1		0		1	
Washington	1		1		2	
Subtotal for Region 9	12	35.3	3	0.4	15	5.5

[a] Percent of home economics extension agents in specified region of eastern area (n = 34)
[b] Percent of registered dietitians in specified region of eastern area (n = 237)
[c] Percent of total respondents specified region of eastern area (n = 271)

APPENDIX E

SURVEY RESULTS SUMMARY

CULINARY HEARTS KITCHEN SURVEY

RESULTS SUMMARY

The Culinary Hearts Kitchen (CHK) census survey was developed by the researcher and sponsored by the North Carolina Affiliate of the American Heart Association (NC Affiliate of AHA). The printing and mailing were funded by the North Carolina Cattlemen's Association and the North Carolina Pork Producers. The data analyses were funded by The Institute of Nutrition. The census survey was mailed to a target population of 103 home economics extension agents (extension agents) and 1011 registered dietitians (RDs) in North Carolina over a three month period in 1991. The target population of 1114 extension agents and RDs was adjusted to a censused population of 898 persons by subtracting those who participated in the pilot study, moved out of state, refused to participate, or indicated that the survey was not applicable to them. The following summary contains the highlights of the survey results.

Response Rate

- There were 643 survey respondents, representing an overall response rate of 71.6%. (extension agents = 90.4% and RDs = 69.4%)

Demographic Characteristics of Survey Respondents

- 89.6% of the survey respondents were white (Caucasian/Non-Hispanic).
- The predominant degree was the master's degree.
- The predominant majors were home economics for extension agents and nutrition/dietetics for RDs.
- All extension agents were employed by the Cooperative Extension Service and the largest group of RDs (40.1%) were employed in hospitals.
- 43.6% of the survey respondents worked in the affiliate's eastern area.
- Mean age of survey respondents was 39.9 years.
- Mean years in food & nutrition of survey respondents was 13.0.
- 65.6% of the survey respondents were directly responsible for CVD risk factor nutrition education for the public.

Summative Data for the Culinary Hearts Kitchen

- 62.4% (401) of the survey respondents were familiar with the CHK course and 58.4% (234) of those familiar with the CHK course had used it as a nutrition education resource.
- The two primary uses of the course were making presentations to groups (n=190) and teaching a series of classes (n=146). (Note: The 146 respondents who taught a series of classes provided the remaining information about the CHK course.)
- The Culinary Hearts Kitchen or another name containing the word "heart" were the most frequently reported course names.
- Course instructors primarily utilized the Cooperative Extension Service facilities and medical facilities.
- The most frequently used recruitment method was newspaper.
- The most frequently reported class size was 11-20 students.
- Students were predominantly female and enrolled for self.
- Courses were taught most frequently in the fall and spring, on Tuesdays and Thursdays, and in the evening after 5:30 pm.

Summative Data for the Culinary Hearts Kitchen (continued)

- The courses were most frequently taught for 4 or 6 weeks, with 1 session per week, for 1 3/4 to 2 hours per session.
- 114 course instructors gave food demonstrations, 45 involved students in food preparation, and 82 included tasting sessions during every class period.
- Amount of preparation time and recruitment of participants were reported as the two most frequent teaching obstacles.
- Instructors gave the highest mean usefulness ratings to the CHK nutrition and food information slides, the nutrition information content, and the participant handouts.
- Course instructors gave the entire CHK course a mean usefulness rating of 4.1 (SD = 0.8) on a scale of 0-5.
- The most frequently suggested change in the CHK course by course instructors was the recipes.

Formative Data for Takin' Care of Southern Hearts

(Note: All of the 643 survey respondents provided the following formative information for the proposed training manual, "Takin' Care of Southern Hearts.")

- The two components of the proposed training manual which received the highest mean importance rating were recipes of familiar southern foods modified for fat, cholesterol, and sodium ($\bar{X}$ = 4.7, SD = 0.6). and food selection, handling/ storage, and preparation information for reduction of dietary fat in familiar southern foods ($\bar{X}$ = 4.5, SD = 0.8).
- For the proposed recipe nutrient analysis box, the most frequently recommended omissions included saturated fat, monounsaturated fat, polyunsaturated fat, and potassium. The most frequently recommended additions included calcium, iron, and simple carbohydrates.
- 95.6% of the survey respondents agreed that diabetic exchanges should be in the nutrient analysis box and 54.2% expressed a preference for partial exchanges.
- Assuming that the cost was reasonable, 91.8% of the survey respondents were interested in having all or part of the proposed training manual. 72.0% preferred the complete training manual described under the importance ratings.
- 82.9% of the survey respondents were interested in attending related training workshops in a location near them. Extension agents expressed greater interest in receiving training on risk factor identification, nutrition concepts, and dietary guidelines, while RDs were more interested in food preparation and demonstration skills.
- 30.5% of the survey respondents indicated an interest in helping the NC Affiliate of AHA and its CHK Task Force complete "Takin' Care of Southern Hearts." The primary interests were in field-testing and evaluating the recipes, field-testing and evaluating the training manual, and planning and implementing related training workshops.