

Extending the Reach of Public Health Nutrition: Training Community Practitioners in Multilevel Approaches

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ABSTRACT

Background: Cardiovascular disease (CVD) is a major public health concern in the United States. We developed an annual training course, Nutrition and Public Health, A Course for Community Practitioners (NPH), to address the identified training needs of state staff responsible for designing and implementing the Well-Integrated Screening and Evaluation for Women Across the Nation (WISEWOMAN) program and to support other health professionals working in programs that address chronic disease prevention and management.

Methods: After conducting a needs assessment with state-level WISEWOMAN staff in 2001 to identify topics of interest, we formed an advisory committee to provide guidance on topics, theoretical frameworks, training concerns, and multilevel intervention approaches. The first week-long training course, which included an intensive field practicum, was implemented in the fall of 2002.

Results: Participants rated three fourths of the elements listed in a posttraining evaluation as a course strength, giving particularly high ratings to various indicators of course quality (100%) and networking opportunities (95%). Just over half (55%) rated the field practicum as a course strength. Four fifths (83%) of participants responded to a 6-month follow-up evaluation, and most indicated that the course had increased their knowledge and skills and increased their confidence in planning programs.

Conclusions: Unique features of the course include its suitability for public health practitioners not previously trained in nutrition, its promotion of multilevel interventions, and its focus on CVD risk reduction and nutrition interventions for underinsured and uninsured populations.

INTRODUCTION

CARDIOVASCULAR DISEASE (CVD) is a major public health concern in the United States, and poor nutrition is a significant contributing fac-

tor.^{1,2} Minority and low-income populations are at particularly high risk for CVD, and women appear to be less likely than men to receive lifestyle modification counseling.^{3,4} The Well-Integrated Screening and Evaluation for Women Across the

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Nation (WISEWOMAN) program, funded by the Centers for Disease Control and Prevention (CDC), addresses the needs of a vulnerable segment of the population by providing CVD risk factor screening and lifestyle interventions to underinsured and uninsured women aged 40–64.⁵

WISEWOMAN projects, currently operating in 14 settings, have developed and implemented a variety of training activities for providers and staff. However, most site-level trainings have addressed program implementation issues (e.g., adherence to study protocols, data collection, and reporting requirements) rather than updating providers' nutrition knowledge or offering training on multilevel intervention approaches. To supplement the training efforts of individual projects, we developed and implemented an intensive week-long training course for WISEWOMAN providers and other public health practitioners that we intend to offer annually. The course, titled Nutrition and Public Health, A Course for Community Practitioners (NPH), is designed to enhance public health professionals' ability to provide nutrition counseling and education to low-income, underserved women.

This paper describes the NPH course rationale and objectives and reviews the lessons we learned from the course's implementation and evaluation in 2002. Our insights may be helpful in further refining WISEWOMAN provider training efforts and are also likely to be of interest to health professionals seeking multilevel nutrition-related training models for other health promotion programs.

BACKGROUND

A systematic evidence review of primary care-based nutrition counseling recently completed by the U.S. Preventive Services Task Force concluded that individuals at elevated risk for chronic disease and those receiving more intensive counseling than generally available from primary care providers are most likely to successfully achieve dietary change.⁶ This conclusion suggests the need to screen for those at risk and then involve those identified in appropriately designed nutrition interventions of adequate strength. To achieve screening, the American Dietetic Association recommends that healthcare professionals integrate nutrition services into their practices and that training curricula for healthcare professionals include principles of

identifying patients with nutrition risk factors to ensure their appropriate and timely referral to qualified dietetics professionals for comprehensive nutrition services.⁷

At present, however, limited nutrition referral resources are available, particularly for underserved populations. Moreover, a 1999–2000 survey of the public health nutrition work force in the United States and its territories showed that 82% of public health nutritionists are employed by maternal and child health programs, such as the Women, Infants and Children (WIC) and Food Stamp programs.⁸ Few additional resources are available to hire nutritionists to participate in health promotion and disease prevention programs for adults or to provide services to other populations in primary care settings. Because chronic care nutritionists are in short supply and because the first healthcare professional most patients encounter is rarely a registered dietitian or nutritionist, other healthcare professionals must become proficient in providing basic nutrition counseling services for patients at risk for CVD.

Traditionally, nutrition counseling has focused on individual behavior change. Increasingly, however, public health experts recognize that individually oriented interventions are inadequate to address the multiple factors that affect dietary behavior, including family dynamics, the availability of fruits and vegetables, and such policies as those regulating food labeling. Several theoretical frameworks can help nutritionists and other health professionals understand the potential contribution of nutrition interventions that extend beyond one-on-one counseling in clinical settings. The Chronic Care Model,⁹ a guide to clinic-based chronic disease management and prevention, promotes productive interactions between a "prepared, proactive practice team" and an "informed, activated patient" but also emphasizes linking the clinical care system with community resources. The socioecological framework¹⁰ for health promotion identifies five levels of influence on health behavior (individual, interpersonal, organizational, community, public policy) and recommends that individual behavior change approaches, such as counseling, be supported and supplemented by upstream (e.g., community-level and policy-level) interventions. A third model, Multilevel Approach to Community Health (MATCH),¹¹ is a planning framework that can guide the development and implementation of effective health promotion interventions

at multiple levels. MATCH consists of five steps: goal selection, intervention planning, program development, implementation preparation, and evaluation. Users of all three models require specialized training if they are to implement the models effectively. To link low-income and high-risk patients with affordable, culturally sensitive, and comprehensive interventions to promote dietary change, it is, therefore, essential to provide multilevel public health nutrition training to nutritionists with primarily clinical training and other health professionals with limited nutrition background.

COURSE DEVELOPMENT

Needs assessment

To tailor the NPH course to providers' interest and needs, CDC WISEWOMAN staff and staff from the University of North Carolina Center for Health Promotion and Disease Prevention conducted a written assessment in 2001. The assessment sought to identify topic areas perceived by state health department staff as crucial to the development and implementation of the WISEWOMAN program. Specifically, respondents were asked to indicate their level of knowledge concerning specific topics, their desire for training on those topics, the immediacy of their training needs, and other topics for consideration. The assessment was sent by e-mail to the directors of the 10 WISEWOMAN projects funded at that time. Project directors were asked to compile responses from their staff and return one assessment to CDC. Eight directors returned assessments, which identified nutrition science training needs as well as training needs in five additional areas: choosing appropriate interventions, program evaluation, theory/models of behavior change, medical referrals for WISEWOMAN participants, and physical activity science.

Course objectives and design

The overall goal of the NPH course is to enhance the capacity of WISEWOMAN providers and other public health professionals to implement multilevel interventions to increase healthy eating among adults with little or no access to health-care.¹² Table 1 outlines specific course objectives.

We used several strategies to develop our training approach and design the course content. First,

TABLE 1. NPH COURSE AND PRACTICUM OBJECTIVES

Course objectives	
1.	Identify and make use of public health and epidemiological data as a tool in developing and prioritizing individual and community-based nutrition interventions.
2.	Use the socioecological and MATCH models as frameworks for designing and implementing nutrition interventions at multiple levels.
3.	Identify community nutrition assets and resources and implement partnerships to promote healthy eating.
4.	Develop and implement individual behavioral, community, environmental, and policy interventions to promote healthy eating among underserved populations.
5.	Develop and implement a feasible and sound program evaluation strategy for multiple levels of interventions.
Practicum objectives	
1.	Describe a basic framework for planning a nutrition intervention by applying the MATCH and socioecological models to a real-life setting.
2.	Demonstrate knowledge of issues to consider when planning a nutrition intervention.
3.	Create a set of program options to promote healthy eating for low-income and minority women at increased risk for chronic disease associated with dietary and lifestyle practices.

we modeled the course structure after the highly successful Physical Activity and Public Health Practitioner Course (PAPH),¹³ which was funded by CDC and developed and implemented by the Prevention Research Center at the University of South Carolina. We adopted several distinguishing characteristics of the PAPH as central components of the NPH course, including a field practicum that links theory and practice, an intensive small group training experience, and networking opportunities with leading experts and other course participants. Second, we used the needs assessment to identify training topics that would help course participants develop their intervention skills and learn about nutrition (Table 2). Third, we formed an advisory committee to provide guidance on specific nutrition topics, training concerns (e.g., training approaches for public health professionals, curriculum, and materials development), and intervention approaches (e.g., environmental and policy interventions, culturally appropriate health promotion with underserved and minority populations). The committee comprised a broad-based spectrum of national, state, and local experts, including one staff member from a state WISEWOMAN project and two technical advisors from the CDC WISEWOMAN

TABLE 2. 2002 NPH COURSE: SELECTED TOPICS

Nutrition-related topics
Cardiovascular disease and diabetes: dietary recommendations
Obesity as a national epidemic
5 A Day campaign
The DASH ^a diet and hypertension
Food politics
Intervention skills
Health literacy
Cultural considerations in intervention design and implementation
Community-based environmental interventions
Lay health advisor approaches

^aDietary Approaches to Stop Hypertension.

staff. Fourth, with the advisory committee's input, we selected two theoretical models to use in developing the curriculum: the MATCH model¹¹ and the socioecological framework.¹⁰ Training modules were supplemented by practical examples from community settings to illustrate the models' applications to public health nutrition programs and interventions and emphasized how agency-community partnerships could be used to define problems and develop solutions.

COURSE IMPLEMENTATION

Setting

The first NPH course was offered in the fall of 2002 at the University of North Carolina at Chapel Hill (UNC-CH). Training took place at the university's Rizzo Conference Center, an executive education center that provides a self-contained learning environment. The intimacy of the setting made it possible for participants to get to know one another quickly, an advantage given the course's strong emphasis on small group work.

Faculty and participants

UNC-CH faculty taught core sessions, and health professionals from state and local programs presented examples of best practices and exemplary programs. The course instructors also included nationally known guest faculty recruited to present specific areas of expertise.

State WISEWOMAN staff were encouraged to attend the course during WISEWOMAN conference calls and discussions with CDC WISEWOMAN staff, and each project's budget included funding for course attendance. To attract

health professionals from other programs, the course was advertised on nutrition and public health listserves and through fliers sent to national meetings of public health organizations. To ensure a high-quality educational experience, the course was limited to no more than 25 participants. Selection criteria included professional credentials, experience, current position, and potential to enhance public health practice. Because we reserved half of the available slots for personnel from state WISEWOMAN projects, 13 of the eventual participants in the course were affiliated with WISEWOMAN. Of the remaining participants, 4 were from state, regional, or local departments of health, 3 provided community health services for special populations, 2 were from federal agencies, and 1 was from a university. Twenty participants worked in applied public health settings serving low-income and minority populations, 9 had program administration responsibilities, and 11 were dietitians.

In preparation for the course, participants received advance readings of faculty-recommended papers. To promote interaction between faculty and participants on-site, the course schedule accommodated numerous opportunities for informal discussion, including roundtable breakfast discussions to discuss "hot topics." Participants could also sign up for individual consultation with faculty to obtain feedback, guidance, and suggestions pertaining to their projects.

Field practicum

The goal of the field practicum was to provide participants with hands-on training in planning multilevel nutrition programs in a designated North Carolina community. Participants were assigned to three teams of 7 or 8 persons with professionally diverse experiences. Each team was given a "nutrition challenge" and asked to develop a program plan for an innovative, feasible, and culturally appropriate nutrition intervention to address that challenge. In addition to being given course lecture materials, participants were provided with the following background information and resources: a description of the context (e.g., the community and the group or geographic area to be targeted), a description of the nutrition challenge (e.g., the nature of the problem, the critical issues associated with the problem, and the barriers to overcoming the problem), the goal of the proposed nutrition program, and a program planning toolkit. The ingredients of

the toolkit (Table 3), included MATCH worksheets to guide each phase of planning.

Field trips provided participants with an opportunity to assess the selected community. To facilitate the field trips, we chose a community within easy driving distance of the conference center. A community tour on the first day of the course identified historical sites and major influences shaping the community's character and allowed participants to visit the local agencies or institutions participating in each of the nutrition challenges (a county health department, an African American church, and a Latino community-based organization). Teams returned to the community the following day to conduct in-depth discussions (focus groups or structured interviews) about issues relevant to nutrition and to listen to presentations by community members or visit other community sites. Following the field visits, teams began to design their program plans.

Initially, each team was asked to prepare and deliver a 30-minute presentation describing its nutrition program. Because of the limited time available to complete all phases of program planning, however, the presentation requirements were revised to allow participants to focus on selected phases of program development.

COURSE EVALUATION

Participants anonymously evaluated course content daily and completed an overall evaluation at the end of the course. The evaluation ques-

tions sought feedback on the quality of the course content and faculty presentations, the extent to which course and practicum objectives were met, and how satisfied participants were with course logistics. In addition to asking participants to rate various elements of the course on a scale of 1–5 (1 = poor; 5 = excellent), we encouraged participants to provide extensive open-ended comments.

Table 4 summarizes participants' ratings (*n* = 20) for selected elements of the 2002 course. We define course strengths as elements that at least 80% of respondents rated as 4 or 5. Using this definition, we found that participants rated three fourths of the elements as a course strength. In addition to giving unanimously high ratings to various indicators of course quality, 95% of participants rated opportunities to network with faculty and other participants as a course strength. In contrast, only 55% rated the field practicum as a course strength.

In open-ended comments, most participants expressed satisfaction with the course's variety and practicality and indicated that the course had provided them with knowledge and skills that would be useful in their professional settings. One participant who had recently received a WIC special interest projects grant for Hispanic outreach noted, "I was in the practicum group that visited the grass-roots Hispanic organization and will use this experience to create, run and evaluate a culturally sensitive program." Another participant wrote, "I will be revising my project in a couple of areas because of the information and knowledge I gained in this course." Participants also offered suggestions for improving the course, such as scheduling more time for some presenters, increasing orientation and planning time for the field practicum, and allowing more free time.

To further assess the course's effectiveness, we conducted a 6-month follow-up by e-mail to determine how participants were using what they had learned, to identify the course experiences perceived as most and least helpful, and to identify training needs for the 2003 course. The response rate was 83%. Participants were asked to rate various elements of the course on a scale of 1–5 (1 = not at all, 5 = a great deal). As shown in Table 5, participants found what they learned to be useful in their jobs. In addition, all respondents reported that they had shared knowledge or skills (or both) acquired in the course with co-workers and others.

TABLE 3. EXAMPLES OF RESOURCES IN THE PROGRAM PLANNING TOOLKIT FOR THE NPH FIELD PRACTICUM

Community data resources
Community map
Description of targeted institutions
County demographics
Health, nutrition, and physical activity data
North Carolina 2010 health objectives for cardiovascular disease, nutrition, and physical activity
Scientific resources
Research publications relevant to the nutrition challenge
Descriptions of relevant interventions
Other resources
Directory of nutrition and public health organizations and websites
Overview of health behavior theories
Program evaluation examples
MATCH ^a worksheets

^aMultilevel Approach to Community Health.

TABLE 4. SUMMARY OF EVALUATION RATINGS FOR SELECTED COURSE ELEMENTS ($n = 20$)

<i>Course element</i>	<i>4 or 5 (%)^{a,b}</i>
Course strength ($\geq 80\%$ of responses = 4 or 5)	
Quality of	
Training course	100
Faculty presenters	100
Information	100
Adequacy of handouts	100
Course objectives met	95
Networking opportunities	
With faculty/presenters	95
With other participants	95
Course format and teaching methods	85
Course length	80
Not rated as course strength ($< 80\%$ of responses = 4 or 5)	
Adequacy of reading materials received prior to course	65
Usefulness of	
"Hot topic" roundtables	64
Individual counseling sessions	58
Field practicum	55
Amount of free/recreation time	21

^a% of respondents who responded either 4 or 5 to the element.

^bElements rated on a scale of 1–5, with 1 = poor; 5 = excellent.

Through the follow-up evaluation, we also sought to measure the course's impact on participants' confidence (results not shown). Participants reported increased confidence in their ability to conduct community assessments and program planning, most likely as a result of using MATCH during the field practicum. However, they reported less confidence in their ability to perform activities that they did not have an opportunity to apply within the scope of the practicum, such as evaluating programs and advocating for policy change.

After reviewing the evaluation results and participants' recommendations, several aspects of the NPH course were revised. We reduced the number of topics to minimize overscheduling and lessen demands on participants; decided to adjust the length of sessions according to the timeliness or complexity of the topic; strengthened the field practicum by allowing more time for orientation and team planning; and revised practicum assignments, materials, and team facilitation methods.

TABLE 5. APPLICATION OF KNOWLEDGE AND SKILLS FROM THE NPH COURSE ($n = 19$)

<i>Skill</i>	<i>Used during prior 4–6 months (n)^a</i>	<i>Plan to use during next 6–8 months (n)^a</i>
Assessing health materials or programs for plain language	17	12
Networking with other programs	14	12
Using nutrition science information	13	0
Developing program strategies for specific populations	11	11
Incorporating cultural considerations in intervention design or implementation	10	11
Building coalitions	9	12
Conducting community needs and resources assessments	0	15

^aNumber of participants using or planning to use a skill; participants were able to select more than one skill.

DISCUSSION

The nutrition and public health training course developed for WISEWOMAN providers and other public health professionals addresses multifaceted training needs. Unique features of the course include its suitability for public health practitioners not previously trained in nutrition, its promotion of multilevel interventions, and its focus on CVD risk reduction and nutrition interventions for underinsured and uninsured populations.

Through our participation in the development and evaluation of this course, we learned four main lessons. First, we learned that a single curriculum can be used to train nutritionists and nonnutritionists. Most participants in both categories reported benefiting from the review of theoretical models, the field practicum, and the sessions on culture, literacy, the social environment, and policy. The only course components receiving mixed reviews were the nutrition science updates. As might be expected, nutritionists were more interested in presentations containing research findings and nutrition updates. Nonnutritionists reported some difficulty with research terminology, generally were less interested in research studies and outcomes, and preferred receiving more basic nutrition information. Future courses will offer a preconference basic nutrition education course to all participants.

Second, we learned a great deal about the challenges of implementing a field practicum. Planned practicum activities require extensive cooperation from community-based organizations (CBOs), which must be willing to provide resources and an environment for assessment and program planning. It is critical that CBOs receive something in return for their participation. For example, at the request of one of the CBOs involved in the 2002 course, university graduate students provided nutrition education classes for a women's group. In addition, for field practica to be effective, course participants must be given appropriate course materials to help them with the program planning process. Because the field teams have limited time to carry out assessments and propose an intervention, they need targeted information and a well-defined assignment, yet participants also need well-designed materials that allow them to apply their new skills to larger and more complex program planning challenges in their own work settings. From the 2002 course,

we learned that our efforts to provide adequate information and tools to facilitate the MATCH assessments and planning steps may have overwhelmed participants. In future training courses, we will attempt to distinguish clearly between the information provided to participants as a direct resource for the field practicum and information provided as a resource for later use. It is encouraging that despite the relatively low ratings given to the field practicum in course evaluations, responses to the 6-month follow-up survey indicated that participants had already applied (or intended to apply) much of the knowledge and experience gained in the practicum.

Third, our experience suggests that public health practitioners want course content that strongly emphasizes practical advice, lessons learned, program applications, and usable knowledge and ideas. Presentations that provided real-world examples illustrating various stages of the MATCH planning framework were well received. Moreover, the self-contained course setting and small number of participants greatly facilitated interactions among participants and between participants and faculty. Both types of interactions were highly valued by course participants, who appreciated the opportunities to exchange practice-oriented ideas and examples of nutrition resource materials with fellow practitioners. Participants also voiced appreciation for the course's informal atmosphere and the accessibility of the faculty.

Finally, the results of our course evaluation indicate a need to further assess WISEWOMAN program training. Although WISEWOMAN projects have tended to intervene on the individual level, CDC is encouraging projects to adopt a multilevel intervention approach. In keeping with this emphasis, the NPH course focuses on nutrition interventions that address multiple factors affecting dietary behavior. At the state level, however, WISEWOMAN staff continue to identify a need for opportunities to attend training focused on individual behavior change strategies. This represents an important challenge for future training. At the same time that projects are considering strategies to broaden their focus beyond the individual level, frontline providers continue to face the day-to-day challenges of providing clients with the knowledge and skills needed to make lifestyle changes. Training events, such as the NPH course, will need to sell the idea that individual behavior change is facilitated by an en-

vironment where it is easier to make the right choices and should encourage participants to collaborate with other projects or organizations working at different levels of the socioecological model to promote behavioral change.

CDC and the UNC Center for Health Promotion and Disease Prevention plan to continue offering the NPH course on an annual basis. The intensive week-long course offered in 2002 was well received by participants who generally reported that the knowledge and skills they gained during the course proved valuable and resulted in the application of new knowledge and skills in the 6 months following the training. Courses such as the NPH have the potential to broaden the outlook of health professionals to consider community and policy influences on dietary behavior in addition to the more traditional focus on individual services. By extending the reach of public health nutrition, community practitioners will be better able to reach women at high risk for chronic illness with programs and services designed to keep them healthy.

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