

Physical Activity and Public Health: Training Courses for Researchers and Practitioners

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SYNOPSIS

The authors explore development of courses in continuing education intended to provide additional research and practice capacity for addressing the growing burden of chronic disease and disability from physical inactivity. Two annual training courses on physical activity and public health are described. The courses are developed with funding from the Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Division of Nutrition and Physical Activity. The University of South Carolina, School of Public Health, Prevention Research Center has been an active collaborator and was responsible for developing and implementing the courses. An eight-day "Course on Research Directions and Strategies," is offered to postdoctoral researchers, and practitioners may take a six-day "Practitioners' Course on Community Interventions." Both courses are designed to increase the number of professionals qualified to implement physical activity community interventions and conduct physical activity and public health research.

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Scientific evidence has shown that physical inactivity is a risk factor for several health problems, including obesity, cardiovascular disease, non-insulin-dependent (type 2) diabetes mellitus, osteoporosis, some forms of cancer (e.g., colon cancer), and depression and anxiety.¹ Nonetheless, 60% of the US population is either inactive or active at less than recommended levels, and about one-third of students in grades 9 through 12 do not engage in vigorous physical activity for a minimum of 20 minutes at least three days per week.^{1,2} Furthermore, the prevalence of obesity among Americans, which may, in part, reflect sedentary lifestyles, has increased since the mid-1970s.^{3,4} A national study that used actual measurements of height and weight estimated that 59.4% of men and 50.7% of women were overweight or obese (i.e., having a body mass index ≥ 25).³ These data are of concern because overweight and obesity are associated with such chronic health problems and disabilities as type 2 diabetes, hypertension, and arthritis.^{3,5}

Nationally, the high rates of physical inactivity and obesity reinforce the need for health professionals to try to increase the physical activity of the general population. In addition, such efforts are needed to respond to *Healthy People 2010* national objectives 22-1 through 22-15, which seek to “improve health, fitness, and quality of life through daily physical activity.”⁶ Unfortunately, efforts to increase physical activity in communities or community-based settings may suffer because so few people are trained in both exercise science (kinesiology; physical education) and public health. A further impediment is that the translation and dissemination of user-friendly basic and applied science to practitioners in physical activity, including those in state health departments, is often haphazard or completely lacking. A training forum where state-of-the-art research findings and information about effective programs can be communicated to a diverse network of health care professionals dedicated to increasing physical activity may, over time, build capacity that will increase physical activity in the US population.

This report describes a unique training opportunity for health professionals. Two courses on physical activity and public health, one for researchers and one for practitioners, have been developed pursuant to an agreement between the Centers for Disease Control and Prevention and the University of South Carolina, School of Public Health, Prevention Research Center. The overarching purpose of the two courses is to enhance the professional growth of people working in the related disciplines of exercise science and public health and to provide them with an experience that will enhance their efforts to promote and increase

physical activity among the population. Research is particularly needed on how to help inactive people initiate and maintain physical activity. Such efforts should be driven by knowledge of the health benefits associated with active lifestyles and predicated on the ability to measure physical activity behaviors accurately. These issues are central to the researchers' course. A focus of the practitioners' course is to convey scientific findings on multi-level interventions (e.g., personal, interpersonal, organizational, environmental, legislative/policy levels) and best-practice approaches to professionals who can translate what is known and what works to the development, implementation, and evaluation of programs designed to assist people in initiating or increasing physical activity.

BACKGROUND

In 1995, the American Heart Association (AHA) issued its *Strategic Plan for Promoting Physical Activity*, which includes a goal to “develop and implement research and training initiatives on the role of physical activity in the prevention and treatment of cardiovascular disease (CVD) and stroke.”⁷ The courses described here go beyond the AHA goal by focusing on benefits of physical activity that include not only CVD and stroke prevention but also many other disease prevention and health promotion outcomes. The courses are modeled on the highly successful training program sponsored by AHA and the National Heart Lung and Blood Institute in epidemiology and prevention of cardiovascular disease.

The design and implementation of the courses has been guided by advisory panels of experts with national and international reputations in exercise science and public health. Periodically, support for the two training courses has been provided by the South Carolina Department of Health and Environmental Control.

Eight-day courses for postdoctoral researchers were offered at Seabrook Island, South Carolina, in 1995 and 1996; at Sea Pines, Hilton Head Island, South Carolina, in 1997-1999 and 2001; and in Park City, Utah, in 2000. A companion five-day course (six days beginning in 2000) for practitioners was offered concurrently with the 1996-2001 researchers' course. The practitioners' course is for public health professionals who may be working in such settings as state or local health departments, schools, worksite fitness programs, or hospital/health maintenance organization wellness programs.

The courses are designed primarily to bridge the gap between people trained in exercise science but

with limited training in public health and those trained in public health but with little training in exercise science. The organizers hope that training a cadre of professionals each year in both areas will increase the number of public health researchers and practitioners qualified to (a) develop, implement, and evaluate physical activity initiatives and programs in communities, and (b) conduct research on community interventions to increase physical activity. A primary goal is that the training experience will translate into increased physical activity research, effective programs, and the promotion of physical activity within communities and at specific sites (e.g., schools, worksites, medical settings).

In addition to enhancing individual professional growth, the courses are intended to further the development of strong, well-connected research and practice communities for physical activity and public health. Few schools of public health have departments or majors that focus on physical activity, and very few exercise science departments include a public health focus within their curricula or research and programmatic efforts. Increasing the number of well-trained researchers and practitioners through short-duration comprehensive training opportunities is a first step toward improving this situation. A second step is to facilitate communication and provide support for researchers and practitioners in the relatively new combined field of physical activity and public health. Fellows who have graduated from either the researchers' or practitioners' course are linked by both formal and informal networks such as e-mail listservs and reunions at the American College of Sports Medicine annual meetings.

Admission to the courses is competitive, as only 20 to 25 candidates are chosen annually for each course. This approach promotes a high quality educational experience and more personal student-faculty interactions. Selection criteria include professional credentials, experience, current professional position, and potential to enhance public health research and practice. Candidates accepted for the researchers' course are almost exclusively postdoctoral applicants, because a primary goal of the course is the career development of scholars who have excellent potential to obtain grant funding and direct research programs that will advance the scientific evidence related to physical activity and public health.

In the past, the American Heart Association has sponsored a fellow to attend the courses. Also, as the courses have gained visibility and popularity, the number of international faculty and students has increased. In 1999, the World Health Organization (WHO) and the CDC WHO Collaborating Center for Physical Ac-

tivity and Health Promotion sponsored four students. WHO continues to enrich the courses by sponsoring students, thereby broadening attendees' experience to include the perspective of physical activity initiatives outside the United States.

Since 1995, students from diverse employment settings have attended. Students in the researchers' course ($N = 168$) have come from universities ($n = 120$), small colleges ($n = 6$), hospitals ($n = 11$), state departments of health ($n = 5$), nonprofit organizations ($n = 4$), and government agencies ($n = 22$). Since 1996, students in the practitioners' course ($N = 142$) have come from state departments of health ($n = 74$), universities ($n = 16$), hospitals ($n = 10$), private practice/consultation ($n = 6$), nonprofit organizations ($n = 2$), government agencies ($n = 31$), private foundations ($n = 2$), and a health and fitness club ($n = 1$).

Current plans are to continue both courses on an annual basis. The site has most often been Sea Pines, Hilton Head Island, South Carolina, but the year 2000 courses were held in Park City, Utah. Course organizers plan to alternate the course site between Sea Pines and a western location. The courses are advertised by targeted mailings to appropriate professional organizations and on physical activity and public health listservs. Many applicants report first learning about the courses from course alumni; they then obtained more information from the University of South Carolina website at: <http://prevention.sph.sc.edu/seapines/index.htm>.

METHODS

Both courses include didactic lectures followed by time for questions and answers, readings of key research articles related to physical activity and public health, informal "meet the expert" discussions with faculty, and the actual development of a research proposal or projects related to physical activity and public health. Collaborations between course faculty and students are possible and are facilitated by informal interactions at meals and during limited free-time or leisure-time activities. Sharing research findings, research and project ideas, and best practices helps participants to establish networks and develop collaborative relationships that will persist during the years ahead.

Practitioners and researchers attend joint after-dinner talks and optional morning sessions designed as information sharing or tutorial sessions. Topics during morning sessions have included measurement and research design issues, principles of basic exercise physiology, epidemiology, or public health research, description of national data sources, challenges associ-

ated with objective monitoring of physical activity, psychosocial determinants of physical activity, mass media campaigns to promote physical activity, and new and emerging issues such as the *Healthy People 2010* national physical activity objectives. After dinner talks typically focus on physical activity and related health topics such as obesity, diabetes, cardiovascular disease, cancer, and mental health, and have also extended to risks of physical activity, genetics of health-related fitness, and physical activity advocacy. Descriptions of the specific goals, objectives, and content for each course are presented below.

Researchers' course

Goal. The goal of the postgraduate researchers' course is to enhance the public's health by expanding the nation's capacity for conducting research on the health implications of physical activity and the promotion of physical activity in populations.

Objectives.

To expand the student's knowledge of:

- relationships between physical activity and chronic disease outcomes;
- accepted methods for measurement of physical activity;
- appropriate research designs for the study of physical activity in populations;
- current methods for promotion of physical activity in individuals and populations;
- specific applications of the aforementioned knowledge areas to studies of physical activity in special populations including ethnic minorities, women, children, and older people.

To enhance the student's ability to:

- identify important research issues pertinent to physical activity and health;
- identify sources of funding to support research on physical activity and health;
- design and develop research grant applications.

Content. Daily themes emphasized during the 2001 researchers' course included:

1. Physical activity research designs: examples and issues
2. Physical activity: dose-response issues
3. Physical activity: individual interventions
4. Physical activity: community interventions
5. Physical activity: rationale and measurement issues related to policy and environmental in-

terventions (joint session with practitioner's course)

6. Physical activity among special populations: children and youth, and women
7. Physical activity among special populations: older adults and minority populations

Practitioners' course

Goal. The goal of the practitioners' course is to enhance the public's health by developing the nation's capacity for implementing community-based interventions to increase physical activity.

Objectives. By the end of the course, the participant will be able to:

- make use of public health data and scientific information as tools in developing and prioritizing community-based interventions;
- develop and implement community partnerships;
- develop and implement individual behavioral interventions and community policy/environmental interventions to promote physical activity;
- understand the key components of a sound approach to evaluation.

Content. Physical activity topics and issues emphasized during the 2001 practitioners' course included:

1. Introduction to the model and defining the problem: a need for evidenced-based practice
2. Defining the options for change: planning and implementation—Part I
3. Physical activity: rationale and measurement issues related to policy and environmental interventions (joint session with researcher's course)
4. Evaluation: planning and implementation—Part II
5. Resources: materials and methods; review of the model

Course evaluations

Participants evaluate their course activities and content at the end of each day and the overall experience at course completion. Participants are asked not to put their names on the written evaluations unless they wish to do so. Evaluations are analyzed and the responses summarized within three to four weeks; this information is used to modify and improve the courses for the following year. To date, feedback based on exit interviews has been very constructive. It has led to improvements in the courses from year to year, and has consistently reinforced the need for this type of

professional training and development experience. Student feedback has resulted in course changes such as limiting journal club to a comprehensive analysis of one article rather than a less detailed discussion of two articles; ensuring adequate time for discussion after each faculty presentation; arranging appointment times for students to meet with faculty for one-on-one consultations; and creating greater opportunities for students in the researchers' and practitioners' courses to interact.

It is also important to determine course effectiveness based on the impact that the educational experience has on the career growth and productivity of alumni. This type of evaluation requires some lag time between taking one of the courses and the opportunity to make contributions to the field (e.g., activities related to physical activity networking and collaborating, attaining positions of leadership, grant/research activities, development of projects, and the like). This evaluation will be pursued during the months ahead in conjunction with the completion of the first five-year funding cycle (i.e., with students who took the courses during the years 1995–1999).

CONCLUSIONS

Two courses are available that address a clear need for the career development of researchers and practitioners with training and experience in the relatively new combined field of physical activity and public health. Feedback from students, faculty, and funding organizations has demonstrated that the courses are bridging this gap. Several lessons learned from the first seven years of the training courses may well be useful to other advanced training courses in public health:

- An in-depth, specialized curriculum can be developed to match specific needs in a select field.
- A curriculum of this type can be delivered effectively in an intense one-week format.
- Maximizing interaction between course participants and faculty and engaging participants in active discussions, debate, and presentations enhances learning.
- Formal and informal networking and communicating are useful for extending and reinforcing the training provided in the course itself.
- A remote residential setting for the training courses greatly facilitates the fellow-faculty interactions critical to the course's success and to maintaining the focus of participants on the course goals.

The Centers for Disease Control and Prevention will continue supporting the courses in physical activity and public health to help develop additional research and practice capacity to address the growing burden of chronic disease and disability from physical inactivity.

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