



ELSEVIER

Contents lists available at ScienceDirect

Preventive Medicine

journal homepage: www.elsevier.com/locate/ypmed

Commentary

Education and training in physical activity research and practice

Steven P. Hooker^{a,*}, David M. Buchner^b^a Prevention Research Center and Department of Exercise Science, Arnold School of Public Health, University of South Carolina, 921 Assembly Street Room 117, Columbia, SC 29208, USA^b Department of Kinesiology and Community Health, University of Illinois at Urbana-Champaign, USA

ARTICLE INFO

Available online 7 July 2009

Keywords:

Public health competencies
MPH in physical activity
Transdisciplinary training

ABSTRACT

Despite rapid growth in resources devoted to physical activity promotion, the public health capacity to address physical inactivity is insufficient. Too few public health practitioners have the necessary skills to implement and evaluate evidence-based physical activity interventions, and schools of public health typically do not have adequate course content in physical activity. This commentary discusses the types of initiatives needed to improve the education and training of physical activity practitioners and researchers to effectively address one of the 21st century's greatest health problems—an inactive lifestyle.

© 2009 Elsevier Inc. All rights reserved.

Lack of regular physical activity in Americans is a major public health problem. Over the past two decades, there has been rapid growth in scientific evidence for the health benefits of physical activity. In 1995, the Centers for Disease Control and Prevention (CDC) and the American College of Sports Medicine (ACSM) issued a new physical activity recommendation focused on the health benefits of moderate-intensity physical activity (Pate et al., 1995). The landmark 1996 Surgeon General's report, *Physical Activity and Health*, provided conclusive evidence that regular physical activity has substantial health benefits (U.S. Department of Health and Human Services, 1996). In response, more financial and personnel resources have also been devoted to physical activity in the public health sector (Yee et al., 2006). For example, in 1996, CDC established a new unit, the Physical Activity and Health Branch, to address lack of physical activity as a public health issue. Since then, there has been a substantial increase in published research on physical activity and health (Bauman and Phongsavan, 2009).

Despite this rapid growth, the public health capacity to address physical activity is insufficient (Yancey et al., 2007). There are too few public health practitioners that have the necessary skills to implement and evaluate evidence-based physical activity interventions (Franks et al., 2005). Schools of public health typically do not have adequate course content in physical activity (Yancey et al., 2007). It has been a challenge to launch the cross-sector collaborations required for physical activity promotion (Booth et al., 2001). Clearly, we need to improve the education and training of physical activity practitioners and researchers to effectively address one of the 21st century's greatest health problems—an inactive lifestyle.

By discussing a few ongoing and highly successful initiatives to building capacity in public health and physical activity, we illustrate the types of initiatives that are needed. With collaboration and funding from CDC, the University of South Carolina (USC) provides two annual intensive courses in physical activity and public health—a 7-day course for researchers and a 5-day course for practitioners (Brown et al., 2001). The objectives of the practitioner's course are to give participants the ability to 1) use public health and scientific information to identify and prioritize community-based physical activity interventions, 2) develop and implement community-based partnerships, 3) develop and implement evidence-based individual behavioral and policy/environmental interventions to promote physical activity, and 4) evaluate interventions to increase physical activity. Objectives of the research course are to expand the participant's knowledge of 1) relationships between physical activity and chronic disease outcomes, 2) methods of measuring physical activity, 3) research designs for the study of physical activity, 4) current methods of physical activity promotion in individuals and populations, 5) applying knowledge to the study of special populations, and 6) developing research grant applications. Since 1996, 377 persons in the research course and 313 in the practitioner's course from 49 states, 21 countries, 140 universities, and 38 state health departments have participated (Franks et al., 2005). The success of this program is best exemplified by the fact that PAPH research course fellows have compiled 3596 publications and 182 funded grants since 1995. PAPH has also been a model for other training programs internationally. For example, the WHO Collaborating Center at CDC has facilitated similar courses in Brazil and Colombia.

More recently, the Emory University and San Diego Prevention Research Centers developed the Built Environment Assessment Training (BEAT) Institute (Built Environment Assessment Training Institute, n.d.). The goals are to 1) prepare investigators and practitioners to use observational and self-report measures of

* Corresponding author. Fax: +1 803 777 9007.

E-mail addresses: shooker@gwm.sc.edu (S.P. Hooker), dbuchner@illinois.edu (D.M. Buchner).

physical activity environments, and 2) increase the number of professionals qualified to conduct built environment assessments for physical activity. This 6-day course is an excellent example of the evolution of both physical activity research and practice. The course is now possible because of the vast growth in knowledge of the social and environmental determinants of physical activity. It illustrates how interventions can be conceptualized and implemented within the widely adopted social-ecological framework (McLeroy et al., 1988).

Some existing Master of Public Health (MPH) programs illustrate how education and training on physical activity and public health can be integrated into the MPH degree. In 2000, the USC Arnold School of Public Health created the first-ever Master of Public Health in Physical Activity and Public Health degree (University of South Carolina, n.d.). In addition to the required public health core courses, this dual-emphasis program combines course offerings from exercise science, health promotion and education, and epidemiology for students in two tracks: surveillance and programming. The practicum experience places students in health department, work-site wellness, nonprofit organization, and government settings where they gain experience in collecting and analyzing surveillance data or designing, implementing and evaluating physical activity programs. A few other Schools of Public Health (e.g., University of Massachusetts, George Washington University) also have departments of exercise science within the school. Recently, MPH programs have developed close associations with departments of exercise science, e.g., at the University of Illinois. The University of Texas (University of Texas, 2007), Kansas State University (Kansas State University, n.d.), and a few other Universities have initiated academic programs with enhanced training in the area of physical activity and public health.

Of course, a thorough understanding of the essential competencies of public health physical activity practitioners is critical to the success efforts to build capacity in physical activity and public health. Coursework and practical experiences should introduce students to as many competencies as possible. Building upon benchmarks established by the CDC's Physical Activity and Health Branch to guide and assess physical activity and public health practice in states and communities, a newly formed organization, the National Society of Physical Activity Practitioners in Public Health (NSPAPPH), has developed such competencies including:

- 1) Develop and sustain effective partnerships
- 2) Make use of public health data and scientific information in developing and prioritizing community-based interventions to address physical activity
- 3) Understand and implement a sound approach to physical activity planning and evaluation
- 4) Strategically implement evidence-based intervention strategies at the informational, behavioral and social, and environmental and policy levels
- 5) Develop an organizational structure that facilitates program growth and sustainability (e.g., staffing, professional development, resources, and successful internal and external collaborations).

In collaboration with ACSM, the NSPAPPH established a specialty credential for professionals promoting physical activity in public health settings. This credentialing process, based on the above competencies, will aid in identifying persons suitable for hire by government agencies, health departments and others, thereby creating a more robust infrastructure for physical activity promotion (Yancey et al., 2007).

The academic training of a new generation of physical activity researchers must also be realized. The complexities of adopting and maintaining behavior must be wholly recognized within graduate and postgraduate programs intended to produce successful physical

activity scientists. Not all academic-related programs with a physical activity research focus need to be comprehensive, but the multitude of potential settings, target groups/populations, types of interventions, forms of measurement, and behavioral theories associated with physical activity should be introduced to each student to some degree. In this regard, no one academic unit will be able to offer the breadth of coursework required to accomplish this goal, so programs must be flexible and interdisciplinary (Sallis et al., 2002). Students interested in pursuing physical activity research at the environmental or policy level should have access to courses in transportation planning, public policy, urban/city planning, and architecture. Students attracted to physical activity research at the community level should be exposed to community-based participatory research, quasi-experimental research design, and qualitative research methods. Students interested in exploring the utility of newer technologies to monitor and change physical activity behavior may need coursework in engineering, computer programming, or media/communications. Traditional disciplines of exercise science, kinesiology, or public health may be the "home" of such research training, but they cannot go it alone. When feasible, other disciplines should also be encouraged to integrate physical activity measurement and promotion into their degree programs.

Physical activity promotion will constitute an essential role for public health practice well into the future. As part of *Healthy People 2010*, the United States set national objectives for improving levels of physical activity in Americans. As confirmed in a recent review, we are not making much progress in meeting *Healthy People 2010* objectives for physical activity (U.S. Department of Health and Human Services, 2008). When representative population-based levels of physical activity are assessed using objective measures (i.e. accelerometers) as opposed to assessment by questionnaire, only 5–10% of adults meet recommended levels of physical activity (Troiano et al., 2008) indicating the serious challenge ahead.

Hence, academic preparation and ongoing professional development for physical activity researchers and practitioners is vital. Some exceptional education and training models exist, and as they continue to serve many, more programs are certainly needed to bolster the public health infrastructure and gain a deeper understanding of how to effectively promote physical activity at both the individual and population level. Academicians and practitioners should work with one another and other partners to efficiently use available resources to make these a reality.

Conflict of interest statement

Dr. Hooker is the Graduate Director of the Master of Public Health in Physical Activity and Public Health program at the University of South Carolina. Dr. Buchner is the Director of the new Master of Public Health program at the University of Illinois at Urbana-Champaign. The opinions expressed are those of the authors, and do not represent views of the University of Illinois or University of South Carolina.

References

- Bauman, A., Phongsavan, P., 2009. How can we increase physical activity levels. In: Lee, IM, Blair, SN, Manson, J, Paffenbarger, RS (Eds.), *Epidemiologic Methods in Physical Activity Studies*. In Oxford University Press, New York, pp. 302–316.
- Booth, S.L., Sallis, J.F., Ritenbaugh, C., et al., 2001. Environmental and societal factors affect food choice and physical activity: rationale, influences, and leverage points. *Nutr. Rev.* 59, S21–S39, S57–65.
- Brown, D.R., Pate, R.R., Pratt, M., et al., 2001. Physical activity and public health: training courses for researchers and practitioners. *Public Health Rep.* 116, 197–202.
- Built Environment Assessment Training Institute, n.d. Welcome to our website. Available at <http://www.sph.emory.edu/BEAT/index.htm> [accessed November 18 2008].
- Franks, A.L., Brownson, R.C., Bryant, C., et al., 2005. Prevention Research Centers: contributions to updating the public health workforce through training. *Prev. Chronic Dis.* 2, A26.
- Kansas State University, n.d. Master of Public Health: areas of emphasis: physical activity. Available at http://www.k-state.edu/mphealth/areas/physical_activity.htm [accessed November 18 2008].

- McLeroy, K.B., Bibeau, D., Steckler, A., Ganz, K., 1988. An ecological perspective on health promotion programs. *Health Educ. Q* 15, 351–377.
- Pate, R.R., Pratt, M., Blair, S.N., et al., 1995. Physical activity and public health. A recommendation from the Centers for Disease Control and Prevention and the American College of Sports Medicine. *JAMA* 273, 402–407.
- Sallis, J.F., Kraft, K., Linton, L.S., 2002. How the environment shapes physical activity: a transdisciplinary research agenda. *Am. J. Prev. Med.* 22, 208.
- Troiano, R.P., Berrigan, D., Dodd, K.W., Masse, L.C., Tilert, T., McDowell, M., 2008. Physical activity in the United States measured by accelerometer. *Med. Sci. Sports Exerc.* 40, 181–188.
- U.S. Department of Health and Human Services, 1996. Physical activity and health: a report of the Surgeon General. Atlanta, GA: Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion.
- U.S. Department of Health and Human Services, 2008. Progress review: physical activity and fitness. Available at <http://www.healthypeople.gov/Data/2010prog/focus22/> [accessed December 1 2008].
- University of South Carolina, n.d. MPH in physical activity and public health handbook. Available at http://www.sph.sc.edu/associatedean/pdfs/mph_paphHandbook.pdf [accessed November 18 2008].
- University of Texas, 2007. Health, activity and nutrition expert Bill Kohl joins UT School of Public Health and UT Austin Faculties. Available at <http://publicaffairs.uth.tmc.edu/media/newsreleases/nr2007/bkohl.htm> [accessed November 18 2008].
- Yancey, A.K., Fielding, J.E., Flores, G.R., Sallis, J.F., McCarthy, W.J., Breslow, L., 2007. Creating a robust public health infrastructure for physical activity promotion. *Am. J. Prev. Med.* 32, 68–78.
- Yee, S.L., Williams-Piehot, P., Sorensen, A., Roussel, A., Hersey, J., Hamre, R., 2006. The Nutrition and Physical Activity Program to Prevent Obesity and Other Chronic Diseases: monitoring progress in funded states. *Prev. Chronic Dis.* 3, A23.