

Editorial:

National Efforts to Promote Behavior Change Research:  
Views from the Office of Behavioral and Social Research

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## Editorial: National Efforts to Promote Behavior Change Research:

### Views from the Office of Behavioral and Social Research

The most prominent causes of death in the United States have been found to be behavior related (e.g., tobacco, diet, activity levels, etc.) ( McGinnis & Foege, 1993). Health expenditures in the United States total approximately \$1 trillion (U.S. Health Care Financing Administration, 1996). While nearly 12 per cent (\$83 billion) of this amount is spent on pharmaceuticals, approximately 60 per cent (or \$593 billion) is accounted for by behavior or lifestyle factors, such as smoking, alcohol abuse, sedentary lifestyle, and unhealthy diets (Prochaska, 1997). It has been further estimated that behavior-health programs, such as cancer prevention and control, mitigate less than five per cent of the healthcare costs due to behavior (Prochaska, 1997). In October, 1997, the National Institutes of Health (NIH) Office of Behavioral and Social Sciences Research (OBSSR) announced a special Request for Applications (RFA) focusing on "Innovative Approaches to Disease Prevention Through Behavior Change." The goal of this initiative was to stimulate investigation of innovative strategies designed to achieve long-term healthy behavior change by focusing on tobacco use, sedentary lifestyle, poor diet, and alcohol abuse. This RFA solicited intervention studies aimed at either a comparison of theoretical approaches to behavior change or assessment of the utility of specific behavior change theory in a multibehavioral framework.

Coordinated by the OBSSR, this four-year research grant program represents an unprecedented partnership among 17 Offices and Institutes of the NIH, including the Office of Disease Prevention (ODP), the Office of Research on Women's Health (ORWH), the Office of Dietary Supplements, the National Cancer Institute, the National Center for Complementary and Alternative Medicine, the National Heart, Lung, and Blood Institute, the National Institute on Aging, the National Institute on Alcohol Abuse and Alcoholism, the National Institute of Allergy and Infectious Diseases, the National Institute of Arthritis and Musculoskeletal and Skin Diseases , the National Institute of Child Health and Human Development, the National Institute

of Dental and Craniofacial Research, the National Institute of Diabetes and Digestive and Kidney Diseases, the National Institute of Mental Health, the National Institute of Neurological Disorders and Stroke, and the National Institute of Nursing Research. Additional support outside NIH has come from The American Heart Association (AHA). The AHA contributed to the development of the RFA's conceptual framework based on an AHA Expert Panel Report on "Awareness and Behavior Change" (Carleton et al., 1996) and through its ongoing support of bi-annual meetings of the Behavior Change Consortium (BCC).

These organizations jointly issued this RFA because the focal behaviors of tobacco use, lack of exercise, poor diet, and alcohol abuse are behaviors with implications for a wide range of negative health outcomes for men, women and children, including cardiovascular disease, cancer, infectious and allergic diseases, osteoporosis, diabetes, arthritis, periodontal diseases, obesity, and kidney diseases, as well as secondary outcomes such as depressive mood and affect, functional impairment, disability, reduced quality of life, and increased health care utilization. These behaviors also share many common conceptual theoretical models for change, and experts in the field believed that scientific inquiry on behavior change interventions would benefit from new models that supported the integration of multiple models and recognition that risk-reduction efforts may need to address multiple behaviors.

The immediate impetus for this activity was the release of the July 1996 document entitled "Physical Activity and Health: A Report of the Surgeon General," which concluded that a daily regimen of moderate exercise could reduce the risk of several diseases and other physical problems. A further incentive to expedite the RFA was the Clinton Administration's commitment to reduce adolescent tobacco use. The AHA Expert Panel Report (Carleton et al., 1996) noted that voluntary health agencies must move beyond their previously successful efforts of increasing awareness of the link between unhealthy behaviors and increased risk of chronic diseases to the development of impactful, evidence-based behavior change programs. The report encouraged the AHA and other voluntary health organizations to

partner with federal agencies in disseminating and translating research into actionable intervention programs.

This initiative was also responsive to recommendations of other reports calling for increased research on key health behaviors and lifestyle factors affecting disease, including: the Human Capital Initiative Strategy Report, "Doing the Right Thing: A Research Plan for Healthy Living," sponsored by the American Psychological Association and NIMH, and prepared through a collaboration among representatives of 23 organizations (Baum & Gallant, 1995); the 1993 NIH Office of Disease Prevention and Health Promotion Conference, "Disease Prevention Research at NIH: An Agenda for All" (Harlan, Kalberer & Vogel, 1994); the "Report of the National Institutes of Health: Opportunities for Research on Women's Health" (U.S. Department of Health and Human Services 1991); the 1992 Office of Alternative Medicine-sponsored workshop, "Alternative Medicine, Expanding Medical Horizons" (NIH, 1994); the 1996 NCI "Working Group Report on Priorities in Behavioral Research in Cancer Prevention and Control" (Lerman, Rimer & Glynn, 1997); and the NIA report, "the National Invitational Conference on Research Issues Related to Self-Care and Aging" (Ory, DeFries, & Duncker, 1996). Each one of these reports called for increased research on key health behaviors and life style factors affecting disease.

The recommendations of these reports were initially consolidated into a lengthy list of research topics, which was presented to representatives of organizations within and outside NIH, as the proposed basis for an RFA. This group wanted to go beyond the concept of funding small piecemeal grants that would simply replicate the efforts currently funded by individual institutes, noting that past research has already demonstrated the roles of social and behavioral factors in negative health behaviors. Most of these existing studies have examined only single health behaviors (e.g., increased exercise or smoking cessation) or focused on individual-level intervention approaches (e.g., skill-building techniques), despite complex interactions between

various health habits and their reinforcement across several levels: the individual, family, and community.

Similarly, investigators are often characterized by their familiarity with and advocacy of a particular theoretical approach (e.g., social learning models, social ecological research models, decision making models, transtheoretical behavior change models, etc). These models are applied to different behaviors and populations, but rarely tested against one another, although some of the hypothesized mediating processes are quite similar (e.g., role of self-efficacy or social support).. Furthermore, most previous research has targeted populations of convenience, rather than testing the effectiveness and applicability of interventions for at-risk populations of diverse ethnic/minority backgrounds, age cohorts, and geographic regions.

The group also noted that relapse rates were very high for all of these behaviors, despite the fact that immediate success rates for many behavior change programs are very good. Still, past efforts have typically focused on short-term behavioral change, yielding little information on how change, once achieved, can reach long-term maintenance.

In response to these concerns, an RFA was drafted to address effective disease prevention strategies related to tobacco use, excessive alcohol consumption, unhealthy eating patterns, and inactivity. The RFA solicited intervention studies aimed at either comparing alternative theories related to mechanisms involved in behavior change, or assessing the utility of a single theoretical model for changing two or more health-related behaviors. A further goal of this solicitation was to stimulate research that addressed the difficult problems of long-term behavior change maintenance. In recognition of the fact that interventions were to take place in real-world settings, the RFA required multidisciplinary partnerships between behavior change experts, intervention specialists, and appropriate health professionals.

This initiative took advantage of a unique opportunity, by inviting projects so large in scope that they could only be funded through a trans-NIH partnership. It was this partnership

that permitted NIH to encourage studies costing up to \$700,000 in annual total cost per individual grant.

Response to the RFA was substantial, resulting in the submission of over 60 applications. Selected on the basis of the scientific peer review, the sponsoring organizations have awarded approximately \$8 million annually from 1999-2002 to fund the 15 research grants featured in this supplemental issue. The grantees attend bi-annual meetings co-sponsored by the American Heart Association, in order to report progress, discuss problems, and share information related to the conduct of their grants. A Behavior Change Consortium (BCC) composed of NIH program staff, research investigators from the 15 sites, and representatives from AHA and Robert Wood Johnson Foundation has been established to explore the opportunities for collaboration across the 15 sites.

To bring visibility to this area of research, a WWW site has been developed to highlight the activities of this group and to serve as a communication mechanism both within and outside of the formal BCC membership. In addition to separate workgroups for each major behavior (physical activity/exercise, nutrition /eating behaviors; and tobacco dependence), several cross-cutting workgroups have been established to deal with common issues such as: 1) sharing strategies for recruitment and retention; 2) building in attention to treatment fidelity of intervention efforts; 3) identifying and measuring major mediator and trans-behavioral outcomes, 4) contributing to lessons learned about translating research to practice.

### **Summary**

The BCC has served as a model of collaborative research and funding across NIH Institutes as well as across different settings, populations, and intervention strategies. It also addresses several areas of research that are central to OBSSR's mission. The thinking of our Office has been guided by several recent reports from the Institute of Medicine/National Academy of Sciences relating to behavioral and social science. The IOM report entitled *Promoting Health: Intervention Strategies from Social and Behavioral Research*, offers a

blueprint to follow in guiding the coming generation of NIH behavioral and social science research. We embrace their vision of the research program of the future. This program of research must:

- focus on generic social and behavioral determinants of disease , injury and disability
- use multiple approaches ( e.g., education, social support, laws, incentives, behavior change program)
- address multiple levels of influence simultaneously (i.e. individuals families, communities, nations)
- take account of the special needs of target groups ( i.e., based on age, gender, race ethnicity, social class)
- take the “long view” of health outcomes, as changes often take many years to become established
- involve a variety of sectors in our society that have not traditionally been associated with health promotion efforts, including law, business, education, social services, and the media.

OBSSR recently joined with others to commission two other reports from the National Academy of Sciences (NAS). These reports were undertaken to help guide the Office in its mission to increase the scope of behavioral and social sciences research supported by the National Institutes of Health. Both reports identified a broad domain of questions at the interface of social, behavioral, and biomedical sciences, whose resolution could lead to major improvements in the health of the U.S. population, and both stressed the importance of approaching these questions from an interdisciplinary perspective. In creating their visions of future directions, the two NAS committees emphasized research priorities that cut across institute boundaries at the National Institutes of Health (NIH), thereby underscoring the broad significance of behavioral and social science research for multiple disease outcomes as well as for health promotion.

The first of these reports, entitled *Health and Behavior: The Interplay of Biological, Behavioral, and Societal Influences*, updated scientific findings about the links between biological, psychosocial and behavioral factors, and health. The goal was to identify areas where additional research on these factors, as well as on effective behavioral and psychosocial interventions in a variety of settings, is needed. The report noted the need for interventions to recognize that people live in social, political, and economic systems that shape behaviors and access to the resources they need to maintain good health. Report recommendations stressed the need for the kind of intervention research exemplified by the projects funded through this initiative: i.e., programs that place individuals in their primary social context, and that take into account interactions at the individual, familial, organizational, community, and societal level, as these affect disease outcomes. The report also underlined the need for studies that, like these, go beyond short-term behavior change to examine how such change can be maintained over time.

The second commissioned NAS report is called *New Horizons in Health: An Integrative Approach* (2001). The background criteria guiding the development of research priorities for this report were that they should represent areas of great scientific opportunity and address pressing health problems, including health concerns of the general public. The report's discussion of interventions noted that while many studies of preventive and therapeutic interventions aimed at decreasing behaviors associated with health risk (e.g., smoking), or increasing behaviors associated with health promotion (e.g., exercise, dietary practices) have been implemented in the past, most such studies have focused on the assessment of single interventions. In contrast, the Committee noted the need for interventions targeted at multiple levels (e.g., individual, family, organizational, population) and pertinent to large segments of the population, not just high-risk groups. They emphasized including work site and school-based programs in community-level intervention packages.

While both of these reports were published well after the inception of the studies described in this Journal supplement, it is clear that these studies exemplify the new generation of intervention research called for by the National Academy of Sciences. Yet even if the BCC interventions fully realize their early promise, there will still be much to be learned.. The *New Horizons* report has offered OBSSR a blueprint to follow in guiding the coming generation of behavioral and social intervention research to be supported by NIH. We embrace their vision of the intervention research program of the future, one that emphasizes:

- early identification of persons at risk
- adaptability to changing personal, social, and environmental circumstances
- health-related decision making and health communications
- integration of behavioral, psychosocial, and biomedical approaches
- integration of multiple levels, from the individual to the societal
- capitalization on new opportunities created by technological innovation, and
- implementation and dissemination activities (to reduce the gap between research progress and practice).

We believe these are the ingredients for a program of behavioral and social science research that will advance our ability to change behavior in ways that will prevent disease over the long term.

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