

Editorial

The Role of Behavioral Science in Cancer Prevention Research: Planning the Next Steps in the Collaborative Process

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Thirty years ago, the founding members of the American Society of Preventive Oncology (ASPO) showed foresight in recognizing that cancer prevention and control is, inherently, an enterprise requiring the expertise of scientists trained in a variety of disciplines, including anthropology, biostatistics, communications, economics, environmental science, epidemiology, genetics, health behavior, medical oncology, biology/carcinogenesis, nursing, nutrition, occupational health, pathology, preventive medicine, psychology, radiation, sociology, and surgical oncology, as well as others. As we now celebrate the 30-year anniversary of ASPO, it seems timely to reflect on the role, representation, and contributions of the behavioral science component to the broader organization (and vice versa) and to consider ways that the contributions of behavioral science and behavioral scientists can continue to further stimulate and consolidate ASPO's mission as "a multidisciplinary society which ... is primarily committed to serving as an advocate for cancer prevention and control research" (www.aspo.org).

The primary venues through which ASPO accomplishes its mission are the annual meeting and cosponsorship of this journal. Our questions are how well have the behavioral sciences been represented in these two venues, and is there more that can be done to promote the role of behavioral science in cancer prevention research? We describe here a brief retrospective on behavioral science within ASPO and suggest ways to further realize the key contributions of behavioral science in cancer prevention research.

A review of ASPO program themes and content since 1979 (provided by Heidi Sahel) shows that topics relevant to the behavioral aspects of cancer control have been consistently included in the program. Further, program committees have organized symposia that are interdisciplinary. Interdisciplinary approaches involve the intentional application of methods, language, and philosophy from more than one research discipline to solve a specific problem; however, each researcher works from his or her own perspective (1). Examples of interdisciplinary sessions from recent ASPO meetings include symposia on how to incorporate genetics/genomic data in population studies and on obesity and

cancer. The 2004 and 2005 meetings focused on transdisciplinary approaches to cancer prevention and on transdisciplinary research in evolution. A transdisciplinary approach involves development of a shared conceptual framework that draws together discipline-specific theories, concepts, and approaches to address a common problem (2). This approach is a challenge for the field as a whole, and one that requires shifts in our thinking about how we conduct research. The Transdisciplinary Tobacco Use Research Centers, funded by the National Cancer Institute, are an example of an explicit effort to develop conceptual and methodologic approaches that bridge two or more fields (3).

One important and unique way in which ASPO has fostered the development of interdisciplinary communication and collaboration (and which holds the potential to promote transdisciplinary research) is through its study groups, which convene during the annual meeting. There are currently seven study groups, including chemoprevention, tobacco, screening, nutrition, molecular epidemiology, behavioral oncology and cancer communications, and junior career development. It is important that behavioral scientists continue to be active participants in the study groups that bring together cancer researchers from many disciplines (e.g., screening, chemoprevention study groups). On the other hand, one of the more recently formed study groups, behavioral oncology and cancer communications, is unique in that it provides a home specifically for behavioral scientists and illustrates some of the challenges and opportunities in a multidisciplinary organization. This group was formed in 2001 explicitly to bring together behavioral scientists in ASPO to discuss cross-cutting issues and thereby facilitate a coherent approach to the potential contributions of behavioral science to cancer prevention and control. This study group fulfills an important need to have a forum for behavioral scientists to come together and "talk among themselves" about a range of research topics with a behavioral component and to draw linkages between the application of behavioral science to cancer and the basic behavioral and social science base that has spawned the principles and paradigms that guide these applications. For example, the premeeting workshops organized by this study group illustrate the broad-ranging applications of behavioral science to cancer prevention and control and have led to delineating research agendas and priorities in several key areas of relevance to advancing research in behavioral oncology and communications, including behavioral approaches to cancer genetic risk, biobehavioral mechanisms in cancer, the role of risk perceptions in cancer screening adherence, and the effect of targeted and tailored interventions on cancer-related outcomes (4). The goal of this study group is not only to provide cross-talk within the behavioral and social sciences, but also to strategize about how to promote effectively the role of behavioral oncology and communication

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within all aspects of cancer prevention and control, and to facilitate links to the broader organization. This study group has also fostered the development of the *Handbook of Behavioral Science and Cancer*, edited by Suzanne Miller, Deborah Bowen, Robert Croyle, and Julia Rowland, designed to describe the theoretical, methodologic, and empirical contributions of behavioral science to cancer prevention and control (5).

These examples illustrate that ASPO has been a trendsetter in developing and supporting mechanisms to facilitate interdisciplinary collaborations. Other organizations have followed this lead and have recently established initiatives that share common ground with efforts of ASPO to better integrate behavioral science and behavioral scientists into cancer research. One year after the formation of the behavioral oncology group at ASPO, the Society of Behavioral Medicine special interest group on cancer was formed. The overall goal of the Society of Behavioral Medicine cancer special interest group is to develop priorities, directions, interactions, and mechanisms to further a comprehensive and distinctive behavioral agenda in cancer prevention and control research for Society of Behavioral Medicine members. The Society of Behavioral Medicine provides a linkage for behavioral scientists working in the area of cancer to learn from colleagues who are applying similar concepts and methods to other health problems. It also provides a unique opportunity to raise the profile of research opportunities for behavioral scientists in cancer prevention and control.

More recently, the American Association for Cancer Research (AACR) Task Force on Behavioral Science was formed in 2005. It seeks to increase the role of behavioral science and the participation of behavioral scientists in AACR and particularly in its annual Frontiers in Cancer Prevention Research meeting through the work of its program and outreach subcommittees. The program subcommittee of the Task Force is charged with working with the AACR Program Committee to expand the representation of behavioral science research in the Frontiers meeting, whereas the outreach subcommittee is charged with building relations with other professional societies, among other activities. The Frontiers meeting provides another opportunity for behavioral scientists to interact with cancer researchers in other disciplines. AACR is the largest professional organization of cancer researchers and has an international membership. However, few behavioral scientists are members of AACR and, until recently, the behavioral sciences were not represented in meeting programs. With a large membership of basic and clinical scientists and epidemiologists, AACR offers another venue for behavioral science to have a broader reach into all areas of cancer research.

Clearly, these multiple initiatives speak to the commitment and interest of behavioral scientists in interdisciplinary cancer research and to the interest of professional organizations in supporting them. The challenge is to find the ways in which these initiatives can be coordinated and be viewed as complementary opportunities to act collectively, thereby reducing fragmentation and duplication of effort and resources. Because of its history and experience, ASPO is well positioned to take the lead in coordinating the work of these groups.

From its inception in 1991, the editors of *Cancer Epidemiology, Biomarkers & Prevention* have welcomed contributions from all areas of cancer research, including mechanisms of carcinogenesis, prevention, and survivorship. The journal offers untapped opportunities for behavioral scientists to publish their cancer-related research. The editors of the journal have made consistent efforts to solicit the submission of high-quality manuscripts on behavioral aspects of cancer from primary prevention (e.g., behavioral interventions to reduce risk) to survivorship. Although the number of manuscripts on topics relevant to behavior and cancer has increased over the past several years, the number of submitted manuscripts with a

behavioral science focus lags submissions on other topics, such as the use of biomarkers, molecular epidemiology, and chemoprevention. In 2004 to 2005, there were 1,950 manuscripts submitted to *Cancer Epidemiology, Biomarkers & Prevention*, of which 99 (5%) were classified as "behavior." Of the 99, 49 (49%) were accepted compared with an overall acceptance rate of ~30%. The Senior Editors for Behavior (Ellen Gritz and Sally Vernon) welcome more submissions and suggestions about how to encourage investigators to submit their work to the journal. Another opportunity for behavioral scientists to use *Cancer Epidemiology, Biomarkers & Prevention* to communicate is through the pages designated to ASPO. The ASPO Publications Committee is discussing ways to use those pages and welcomes suggestions from all members of ASPO. In the past, these pages have been used for meeting announcements, for example, to advertise the annual meeting, but they can be used for other purposes such as additional editorials and commentaries.

Ultimately, the extent to which it is possible to more comprehensively and systematically integrate behavioral science into the activities of any professional organization depends, in large part, on how well behavioral science is recognized as an integral component of cancer-related research activities in the broader scientific community. A true partnership involves the inclusion and integration of behavioral scientists into the research team at all phases of the research enterprise—from the development of the research questions to the interpretation of the research findings. The challenge is how to involve behavioral scientists in cancer research that does not have an evident or immediate role for behavioral science (4, 6). Past experience has shown us how opportunities for advances in cancer prevention and control were lost when human behavior and social context were not considered as part of the development of new technology or treatment regimens. For example, despite the availability of successful technology for cancer control, we have learned the lesson that simply recommending (or discouraging) the use of a given preventive regimen, screening test, or treatment does not automatically achieve patient, provider, or population receptivity or adherence (6). For example, effective tests to screen for colorectal cancer have been available since at least 1993 (7), yet the uptake of screening has remained low (8). A more recent example is the impending release of a vaccine for human papillomavirus for prevention of cervical cancer; we know little about the public's receptivity to such a vaccine (9). If we are to effectively implement such regimens in the future, it is critical that behavioral scientists are involved as an integral part of the research teams that are developing and testing new regimens and technologies.

The strong movement toward transdisciplinary approaches in cancer prevention and control is a call for behavioral scientists to play a more prominent role in multidisciplinary organizations. We should take advantage of the current support and leadership from these multidisciplinary organizations to build a solid infrastructure that recognizes the importance of behavioral research in improving cancer-related outcomes. Active participation in planning meeting programs is one opportunity to showcase the contribution of behavioral research and facilitate interdisciplinary collaborations. Publication of well-designed behavioral studies in journals such as *Cancer Epidemiology, Biomarkers & Prevention* is another way to increase the visibility of behavioral science contributions to the field of cancer prevention. Formal partnerships across organizations will reinforce the integration of the behavioral sciences with other disciplines in cancer prevention research.

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