



The Role of Social and Behavioral Science in Public Health Practice: A Study of the New York City Department of Health

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ABSTRACT *Studies over the last decade have demonstrated the effectiveness of public health interventions based on social and behavioral science theory for many health problems. Little is known about the extent to which health departments are currently utilizing these theories. This study assesses the application of social and behavioral science to programs in the New York City Department of Health (NYCDOH). Structured open-ended interviews were conducted with executive and program management staff of the health department. Respondents were asked about the application of social and behavioral sciences within their programs, and about the benefits and barriers to increasing the use of such approaches. Themes related to the aims of the study were identified, a detailed coding manual developed, narrative data were coded independently by two investigators (κ .85), and data analyzed. Interviews were conducted with 61 eligible individuals (response rate 88%). The most common applications of social and behavioral science were individual-level behavior change to prevent HIV transmission and community-level interventions utilizing community organizing models and/or media interventions for health promotion and disease prevention. There are generally positive attitudes about the benefits of utilizing these sciences; however, there are also reservations about expanded use because of resource constraints. While NYCDOH has successfully applied social and behavioral sciences in some areas of practice, many areas use them minimally or not at all. Increasing use will require additional resources. Partnerships with academic institutions can bring additional social and behavioral science resources to health departments and benefit researchers understanding of the health department environment.*

INTRODUCTION

The major contributors to mortality today are linked to behavioral and social factors such as tobacco use, poor diet, lack of physical exercise, use of drugs and alcohol, sexual behavior, and lack of access to medical care.¹ Studies over the last decade have demonstrated the effectiveness of interventions based on social and behavioral science theory for the prevention of HIV,²⁻⁴ cardiovascular disease,⁵⁻⁶ alcohol-related problems,⁷ cancer,⁸ homelessness,⁹ and mental health.¹⁰ These stud-

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ies underscore the relevance of behavioral and social science to public health practice.¹¹⁻¹⁴ There is emerging evidence that multiple levels of interventions that consider the interaction of social, environmental, biological, and behavioral factors are more likely to be effective in promoting the health of communities.¹⁵⁻¹⁶

The priority activities of state and local departments of public health have traditionally been disease surveillance, ensuring the safety of the public from health threats such as contaminated food and water, implementing policies to prevent and control epidemics, and providing limited clinical services (e.g., maternal and child health and sexually transmitted disease services). In recent decades, the mandate of health departments has expanded to include health promotion and disease prevention activities. The National Institutes of Health, the Centers for Disease Control and Prevention, and other federal agencies have encouraged the use of social and behavioral sciences in the field of public health, particularly in the area of health promotion and disease prevention.¹⁷⁻¹⁸ In 2000, the Institute of Medicine convened the Committee on Capitalizing on Social Science and Behavioral Research to Improve the Public's Health. The committee's final report concluded: "While social and behavioral sciences offer tools applicable to many areas of public health, the increased emphasis on health promotion and disease prevention has heightened appreciation of the potential contributions of these tools in health departments around the country."^{16(p29)}

Despite these trends, little is known about the extent to which health departments are currently utilizing social and behavioral science in public health practice. The present study is part of an initiative undertaken by the New York City Department of Health (NYCDOH) (see Cohen and Perl, this issue) to assess the status of behavioral social science integration in public health practice within NYCDOH and nationally. In the spring of 2000, the planning council of NYCDOH created a task force on Behavioral and Social Science Integration (BSSI). The task force was composed of 25 senior- and middle-management staff representing all departments within NYCDOH. Individuals representing departments were chosen on the basis of their potential interest in the project and their willingness to commit time to the project. The task force was subdivided into the Internal Assessment Committee (IAC) and the External Assessment Committee (EAC). Each subcommittee was co-chaired by one of the academic collaborators and a NYCDOH staff member. This report focuses on the results of the NYCDOH internal assessment.

METHODS

Study Sample

The sample consisted of all executive (deputy and associate commissioners) (N = 13) and all senior management (assistant commissioners and office/program directors) (N = 50) employees with programmatic responsibility in the Department of Health. At the time of the study, the departments of health and mental health were administratively separate. However, the decision was made by the IAC to interview a small number (N = 7) of Department of Mental Health employees in order to assess potential resources and unmet needs in that department. Institutional review board approval was obtained from NYCDOH, Columbia University, and New York University.

Recruitment

All potential respondents were initially contacted by an e-mail explaining the purpose of the study and the study procedures. The e-mail was followed within 1 to 2

weeks by a telephone call from the interviewer to arrange an appointment. At the meeting, the interviewer obtained written informed consent for study participation.

Interviewer Training

Given the limited resources of NYCDOH to conduct this study, IAC members agreed to conduct the interviews with the assistance of the academic collaborators. While committee members had some familiarity with social and behavioral science application to public health, few had any formal training in the field or skills in conducting qualitative interviews. A two-part training program was designed for IAC members. Part 1 consisted of a 3-hour overview of the behavioral and social sciences theories most frequently utilized in the design of public health programs. Part 2 was a 3-hour session that included an overview of interview strategies and an orientation to the BSSI interview guide, with opportunities for skill building through role-play.

Data Collection

All interviews were conducted by 10 members of the IAC committee, including academic collaborators. Interviews for the executive staff were carried out by the academic collaborators, as all IAC members report either directly or indirectly to these managers. The remaining members of the IAC interviewed only assistant commissioners and directors with whom they had no formal direct reporting relationship. All interviews were audiotaped with the respondent's consent. Respondents could participate without being tape recorded if they chose; however, only one participant declined tape recording of the interview.

Qualitative Interview Guide

Given the little information available on the use of social and behavioral science in public health, a qualitative investigation was chosen for the study. Qualitative research is more suited for providing information in a field in which empirical knowledge is limited.¹⁹ It is particularly useful for the collection of contextual data to inform interventions. Because of their knowledge of the organizational structure of NYCDOH and the policies and norms of the department, committee members were asked to participate in the development of the semistructured qualitative interview guide. The guide was field tested and revised by the IAC and the academic collaborators prior to initiation of the study.

The interviewer began the session by stating, "We define social and behavioral science as the study of individual, social, organizational, and policy factors that influence individual and community health. For purposes of this study, we are seeking information about the application in the health department of social and behavioral science theories and methods to better understand these factors and/or to apply them to health promotion and disease prevention." The IAC interview guide asked respondents about their current position, length of time in the position, responsibilities, training, and education. Respondents were asked to describe their program activities. They were asked, "Does your program use behavioral/social science theories or models, or collect social or behavioral data?" If they responded affirmatively, they were asked to describe this component of their program. They were also asked about the anticipated value and what resources would be required to increase use of behavioral or social science in their programs. Finally, they were asked how management and staff might respond to increasing the use of behavioral or social science within the department and what barriers there would be to such an initiative.

DATA ANALYSIS

Interview Transcription

Utilizing the audiotape recording of the interview, interviewers entered data into an electronic data entry form that followed the format of the interview guide. Interviewers summarized key points from the audiotape in each domain, providing direct quotes to illustrate responses. The electronic data entry forms were coded by identification number without personal identifiers. Data analysis was carried out using the electronic data entry forms.

Coding of Data

Narrative data from the focused interviews were used to identify and analyze themes related to the aims of the study. Initial review of the data revealed variations in respondents' understanding of what constituted use of behavioral or social science theory in their programs due to differences in their background and training. To account for these differences in definition, codes for the use of behavioral or social sciences were assigned on the basis of the program description by the respondent. Core codes for the data were initially developed by the investigators after review of the data. A detailed coding manual was then developed from a review of 20% of the interviews. Two investigators independently coded the remaining interviews. Interrater reliability was estimated by κ statistic for each of the items included in the analysis ($n = 48$). The κ was higher than .6 in 85% of the items; 73% of the time there was perfect agreement.²⁰ Rank ordering of programmatic areas that used behavioral or social sciences was done on the basis of the number of respondents who described a program that utilized these approaches and the number of ways in which they were used. These data were coded independently by two investigators. The median κ statistic was .85.

RESULTS

Interviews were conducted with 61 of the 69 eligible individuals (response rate 88%). The respondents included deputy commissioners (6%), associate commissioners (11%), assistant commissioners (26%), program directors (52%), and other (5%). Of the nine nonresponders, one left employment before the interview could be conducted, one left on sick leave, two were in administrative positions, and the remaining five did not differ from the responders on any demographic or organizational variables. Only two respondents indicated they had any formal training in behavioral or social sciences. Respondents indicated that where behavioral or social sciences approaches or interventions were being used, 60% were focused at the level of individual behavior (e.g., counseling for HIV prevention, collection of behavioral risk factor data), 43% were community-level interventions (e.g., media interventions for smoking cessation) and 32% were organizational-level interventions (e.g., training of community-based organizations or health care providers on counseling for risk reduction). Response categories were not mutually exclusive (i.e., respondents indicated more than one level of use within their programs) (Figure 1).

Programmatic Applications of Behavioral or Social Sciences

The programmatic areas most frequently reported to use behavioral or social sciences approaches were, in rank order, (1) HIV/AIDS, (2) environmental health, (3)

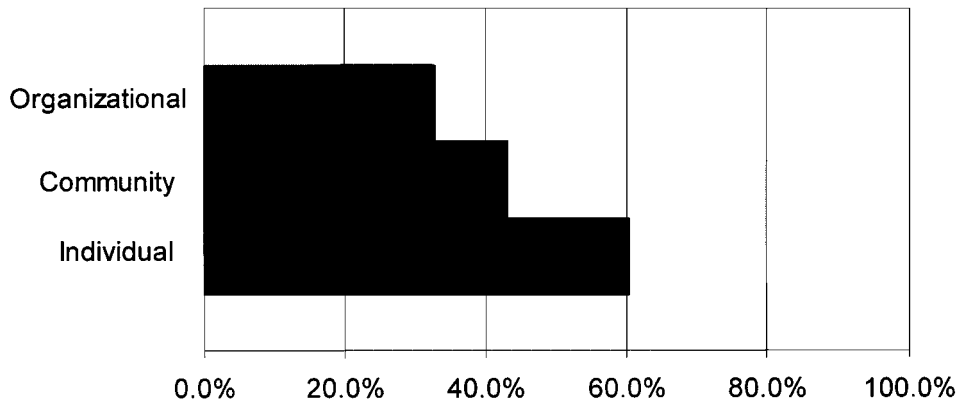


FIGURE 1. Level of intervention using behavioral and social sciences theory.

community health (e.g., injury prevention, violence prevention), (4) maternal and child health (e.g., immunization, school health), (5) chronic disease prevention (e.g., asthma, tobacco control), (5) sexually transmitted disease (STD) control, and (6) communicable disease (other than HIV and STDs) (see Table 1).

Description of the application of behavioral or social sciences to programs varied widely, as did respondents’ understanding of terms and the degree of application. One respondent articulated a broad view of what it means to apply behavioral and social science: “People are much clearer about the relation of social science to changing the behavior of individuals than they are about sociological and anthropological approaches to changing community behavior. . . . I think the real question is: How does the health department become a wider presence in the life of the city? How do we leverage our resources? How do we motivate more people to become involved with public health concerns?”

Another respondent reflected a similar view: “It’s very important to think about behavioral science application not only at the individual level but also at the policy level. I think it would be great for the department to be more proactive about recommending public health policy changes based on the understanding of how they would influence behavior. That could have a very broad impact on peoples’ health.”

Consistent with their mandate, community health programs described an ecological approach: “We have an ecological approach to families with elevated blood

TABLE 1. Program areas utilizing behavioral and social science

1.	HIV/AIDS
2.	Environmental health
3.	Community health (injury prevention, immunization)
4.	Maternal and child health (lead poison prevention, immunization)
5.	Chronic disease (asthma, tobacco control)
6.	Sexually transmitted disease
7.	Communicable disease

Note: Ranked by order of number of activities described and degree of integration reported.

lead levels: the social and environmental investigations are intertwined.” “We develop partnerships with communities and provide training to empower the larger community and attempt to build community capacity beyond training, through advocacy.”

Not surprisingly, due to the mandates of the National Institutes of Health and the Centers for Disease Control, HIV/AIDS prevention programs applied behavioral science fairly extensively and largely focused on individual-level behavior change programs conducted with high-risk populations, often through community-based organizations.

Some respondents felt they were implicitly applying behavioral or social sciences: “It’s not labeled like that. Many issues are as much a social problem as a health problem. Any studies we do ask social questions. We’ve done focus groups and deal with cultural competency issues of [health] providers.”

A few programmatic areas used minimal or no behavioral or social sciences. However, 37% of respondents spontaneously mentioned one or more behavioral or social science theories that guided their work. Most frequently mentioned theories were the stages of change/transtheoretical model (13%),²¹ cognitive/behavioral theories (7%),²² and nonspecific organizational theories (15%). When asked how widely behavioral or social sciences were used in their programs, 22% responded that they were not used at all, 41% indicated that one or more areas of the program used these approaches, and 10% indicated that they were broadly used or “a way of doing business” (data not presented).

Community Collaboration

The Institute of Medicine and others have recommended that health departments develop formal community collaborative mechanisms to ensure that the community “has a voice in problem definition, data collection and the interpretation of results, and application of the results to address community concerns.”^{16(p29)} The NYCDOH HIV/AIDS and Community HealthWorks programs have developed effective formal collaborative mechanisms with the community; other areas of the department have informal, passive, or no communication with the community.

Perceived Value of Increasing Behavioral and Social Sciences in Programs

More than half (53%) of respondents thought their programs would be enhanced by the broader use of social and behavioral sciences, and just one respondent thought there would be no value (Table 2).

TABLE 2. Attitudes and beliefs about integration of behavioral and social science in public health practice

Percent Responding	Positive	Mixed	Negative	DK/NA
What do you think would be the value of integrating social and behavioral science into your program?	53.4	19.0	1.7	25.9
What would others like you think?	24.3	41.1	6.9	22.4
What would staff think?	43.1	36.2	3.4	17.2

DK, don’t know; NA, not available.

Respondents summarized the benefits this way: “This is desirable for lots of reasons—we design better programs. But one of the reasons I think it’s most desirable is to begin with an empirical base of knowledge. Not only do you design better programs, but you can make more progress in a world that makes decisions based on some nonrational processes sometimes.”

“The more work is theory driven, then the more you are able to figure out why specific elements work. The more conscious people are of what the theory is, the more focused people can be on what they do.”

“It’s becoming very apparent to us that we cannot solve the public health problems we are confronted with [using] clinical and medical management models only.”

Respondents thought their staff’s responses to such an effort would be less positive than their own. They thought 43.1% would view it positively, however, 36.2% would have a mixed response tempered by the potential loss of programmatic resources such an effort might produce and the need to tailor such an effort to the individual needs of programs: “They would be positive if this approach is truly integrated into the program top to bottom so it is not viewed as an additional burden. “They would be positive about it if it is a true program enhancement, not a central office enhancement.”

Interestingly, respondents were more skeptical about their colleagues’ response than their own: only 29.3% thought others like themselves would view increasing behavioral and social sciences in the department positively. They cited “potential fighting over resources if new resources are not allocated” and “fear of loss of productivity” as concerns of their colleagues. Several respondents suggested the importance of clearly defining the costs and benefits of such a program: “the devil is in the details.”

Barriers to Increasing use of Behavioral and Social Sciences

Figure 2 reveals the potential barriers respondents identified to increasing use of behavioral and social sciences in their programs. The most commonly cited barrier was lack of resources (time, money, space, qualified staff) within the department

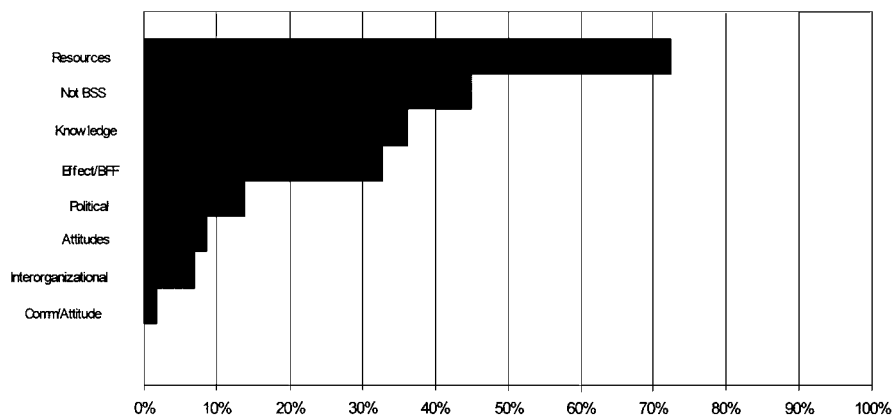


FIGURE 2. Barriers to integration of behavioral and social science into public health. Not BSS, attitudes not related to behavioral/social sciences. BFF, structural/bureaucratic. Attitudes, negative attitudes toward behavioral/social sciences. Comm/Attitude, negative community attitudes toward DOH.

(72.4%). Further, 44.8% cited general attitudes and beliefs within the department not specific to behavioral and social sciences as barriers: “fear/resistance to change,” “general skepticism,” “competing mandates,” “the need to see a practical value to this effort,” and “It’s never because they don’t care. It’s because they have competing demands.”

Structural and bureaucratic barriers were also frequently (32.8%) cited: “Change is always difficult. It will be harder to do if the idea is a fundamental change in the way the DOH does work . . . it’s harder to assess what motivates people in the public sector. [It’s] hard to do long-range planning in government.”

Knowledge was another significant barrier identified by over a third of respondents, reflecting the limited expertise available in the department: “Most recognize [the problem]. We don’t want to be bean counters, watching diseases go up and down, but we are missing the necessary skills.”

Currently, only 3% of executive and management-level staff have training in behavioral or social sciences at the doctoral level.

DISCUSSION

To our knowledge, this is the first study undertaken by a department of public health to assess the use of behavioral and social sciences in public health practice. We believe the findings of this assessment, coupled with the assessment of other municipal and state departments of health across the country carried out by the NYCDOH (see Shinn et al., this issue) can help establish a baseline and inform the planning process needed to successfully meet the challenge of integrating behavioral and social science into public health practice set out by the Institute of Medicine.²

NYCDOH has a variety of programs that already utilize behavioral or social sciences at one or more levels. Individual-level behavior change to prevent HIV transmission is one of the most common activities. Community-level interventions utilizing community organizing models and/or media interventions for health promotion are employed by community health and chronic disease prevention programs. While the department has successfully applied behavioral and social sciences in some areas of practice, there is a critical need to integrate these approach more broadly across the department and to initiate multiple-level interventions that address the interaction of social, environmental, biological, and behavioral factors. Programs not currently using social or behavioral science could benefit from the experience of these early adopters.²³ Models for community collaboration that exist in the NYCDOH HIV/AIDS and Community HealthWorks programs should be expanded to other program areas.

Across NYCDOH, there is generally a positive attitude toward integration of behavioral and social sciences into programs; however, there are also significant attitudinal and resource barriers. Staff involvement in the planning and implementation of a crosscutting approach will be essential to the success of such a program. In an environment of limited resources, it may be most strategic to develop one or more pilot projects to address problems identified by programs that could benefit from new approaches. It is clear from the low level of formal education in behavioral and social sciences within the department that substantial training will be required to increase capacity.

In the final report to the planning council, the BSSI Task Force recommended the department move forward to increase capacity in behavioral and social sciences within the department by creating a highly flexible centralized office that provides

services and consultation to programs throughout the department, with an emphasis on building capacity within programs. They recommended recruitment of staff with master's- and doctoral-level training in these sciences to provide training and consultation to programs.

The study has several limitations. First, qualitative interviews administered by departmental employees have the potential to introduce bias on the part of the interviewer due to preconceived attitudes about the subject or due to interpersonal relationships with the respondents. To decrease this potential bias, we instituted interviewer training, audiotaped and transcribed the interviews, centralized coding of the data by the academic partners, conducted all executive-level interviews by academic collaborators, and limited IAC interviews to individuals outside of their own departments. Second, conducting research about institutional programs and direction within the work setting could introduce respondent bias. To protect the confidentiality of the respondents, we identified them only by number without reference to job responsibilities within the department. Third, the sample size is modest; however, it does represent 88% of NYCDOH leadership.

Despite these limitations, there are significant advantages to involving the health department community in assessing itself. Just as federal funding agencies are now recognizing the importance of community participation in the research process,² involving health departments in researching their community has the potential to enhance the validity and quality of the research by incorporating the knowledge of the people involved. Academic practice collaborations like this may help to bridge the cultural gaps between researchers and practitioners, engage the health department community in actively identifying and addressing practice, and enhance the long-term sustainability of change. This study demonstrates the benefits of collaboration between health departments and academic institutions. Through such strategic partnerships, health departments and academic institutions can jointly contribute to the development of evidence-based approaches to public health practice. Health departments benefit through access to scientific expertise, while faculty and students are provided with real-world opportunities to conduct research and contribute to excellence in practice.

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