American Journal of Community Psychology, Vol. 29, No. 4, 2001

Innovation in HIV Prevention: Organizational and Intervention Characteristics Affecting Program Adoption[1]

Robin Lin Miller[2]

University of Illinois at Chicago

A multiple case study design was used to explore the organizational characteristics of community-based organizations that provide HIV prevention programs and the criteria these organizations employ when judging the merits of externally-developed HIV prevention programs. In-depth interviews were conducted with organizational representatives of 38 randomly-selected HIV prevention providers throughout Illinois. Results indicated that there were three main types of adopting organizations: adopters of entire programs, adopters of program components and practices, and adopters of common ideas. These three types of organizations were distinguished by their level of organizational commitment to HIV prevention, organizational resources, and level of organizational maturity. Narrative data from the interviews are used to describe the dimensions that underlie the organizations' program adoption criteria. The criteria of merit used by these organizations to evaluate prevention programs provide partial empirical support for existing theories of technology transfer. Implications for designing and disseminating HIV prevention programs are discussed.

KEY WORDS: HIV prevention; technology transfer; community-based organizations.

[1]This study was partially funded by a grant from the Campus Research Board of the University of Illinois at Chicago. I gratefully acknowledge the assistance of Heather Barton, Barbara Joyce Bedney, Dalia Garcia, Caroline Leopold, Dana Merrit, and Corina Rico in the collection and analysis of these data, and Rebecca M. Campbell, James G. Kelly, Christopher B. Keys, Miles A. McNall, Bianca Wilson, and two anonymous reviewers for their feedback on earlier drafts of this paper.

[2]To whom correspondence should be addressed at Department of Psychology (M/C 285), University of Illinois at Chicago, 1007 W. Harrison St., Chicago, Illinois 60607-7137; e-mail: rlmiller@uic.edu.

0091-0562/01/0800-0621$19.50/0

INTRODUCTION

The prevention of HIV infection represents an urgent concern worldwide. HIV has claimed substantial portions of the adult population in many developing and developed nations. At present, the estimated HIV seroprevalence rate worldwide is 30 million and in the United States current estimates suggest that nearly 1 million people are HIV infected (UNAIDS/World Health Organization, 1997). Unlike many other chronic diseases, HIV results in mortality in the most productive years of adult life. Most HIV-related mortality in the United States occurs among men and women aged 25–44 (Centers for Disease Control and Prevention, 1997). In one recent estimate, New York City's gay community had lost one-half million person years of life by 1993 to AIDS (Fordyce et al., 1995). With the likelihood of a cure or vaccine far in the future, prevention remains our best approach to stemming the tide of the epidemic.

Behavioral Science, Community Organizations, and the Prevention of HIV

Government and private agencies have invested substantial resources in basic behavioral research and experimentally-developed interventions to reduce HIV-related risk-taking behavior. Recent reviews of published HIV prevention interventions (Choi & Coates, 1994; Kalichman, Carey, & Johnson, 1996; National Institutes of Health, 1997; Office of Technology Assessment, 1995; Trickett, 1998) suggest that these programs have had desirable short- and long-term effects on risk-taking behavior for a variety of at-risk populations. Theoretically-based and delivered by well-trained staffs, these prevention programs represent the "gold-standard" of HIV prevention from the perspective of prevention science. However, there is little evidence that the majority of these successful interventions have been adopted for ongoing implementation (DiFranciesco et al., 1999; Goldstein, Wrubel, Faigeles, & DeCarlo, 1998; Haynes-Sanstad, Stall, Goldstein, Everett, & Brousseau, 1999; Office of Technology Assessment, 1995). As has been the case in many other mental health and health arenas, there is an apparent gap between science and practice in the field of HIV prevention.

In the United States, the majority of HIV prevention services are provided by community- based organizations (CBOs, Altman, 1994). Epidemiologic projections suggest that the prevention activities of these organizations have substantially contributed to the decline of new HIV infections among select populations in the United States (Becker & Joseph, 1988), populations that are often difficult for public health officials and university-based scientists to access. Given their central role in providing HIV prevention

services to communities, CBOs are a natural audience for the dissemination of well-tested HIV prevention programs and a unique resource for prevention scientists to learn about the intricacies of conducting preventive interventions in communities. Improved understanding of the programs provided by CBOs is also crucial for bridging gaps between prevention science and practice.

Although prevention scientists may concur on the importance of disseminating empirically-validated programs, it is not clear whether CBOs perceive that what prevention science might offer should replace or could enhance what they currently provide (Goldstein et al., 1998). Lack of rigorous evaluation of CBOs' programs in the published literature makes it unclear whether CBOs should be dissatisfied with their programs and how motivated these organizations might be to seek externally-developed technology (for recent exceptions, see Freudenberg & Zimmerman, 1995; Haynes-Sanstad, Stall, & Doll, 1999; Miller, 1995; Miller, Klotz, & Eckholdt, 1998). The wealth of knowledge that has been accumulated by CBOs about prevention programs over the course of the epidemic remains largely part of each organization's oral history and has been infrequently disseminated outside the CBO community. There is also little documentation within the realm of HIV about the needs and concerns of CBOs—the potential users of social science prevention technology. Thus, there is a need to understand CBOs' perceived need for and attitudes toward externally-developed HIV prevention programs. This information is critical if the development, dissemination, and transfer of empirically validated programs to community settings is to occur.

Factors Affecting Technology Transfer

There is a burgeoning literature on factors that affect the science-practitioner gap (e.g., Altman, 1995; Morrissey et al., 1997), technology transfer processes (e.g., Backer, David, & Soucy, 1995; Baldridge & Burnham, 1975; Rogers, 1995; Mayer & Davidson, 2000), and the probability that innovations will be sustained in community settings (e.g., Shediac-Rizkallah & Bone, 1998; Steckler & Goodman, 1989). Much of this literature points to four critical sets of factors that affect the technology transfer process: (1) characteristics of the innovations to be adopted and sustained, (2) characteristics of the relationships and communication patterns among key actors (e.g., inventor, adopter), (3) characteristics of the organizational entities into which technologies are to be disseminated, and (4) characteristics of the settings in which adopter institutions are located. In this paper, we consider two of these domains: the characteristics of innovations and organizations.

Characteristics of Innovations

Diffusion of Innovations Theory (Rogers, 1995) has been widely used to describe the factors that affect an individuals' decision to adopt or reject an innovation. For Rogers, an innovation is an idea, practice, or technological advance that is perceived to be new by a potential adopter (Rogers, 1995). For the purpose of this paper, an innovation is defined as an HIV prevention program that has been developed by sources external to the CBO. These externally-developed innovations may include programs developed by other CBOs, for-profit health education corporations, or university-based prevention scientists.

Rogers' work on the characteristics of innovations places its emphasis on how an individual perceives an innovation, as individual perceptions of the characteristics of innovations are likely to influence how an individual makes choices about the various options that are available to him or her. Rogers' work is largely concerned with technological innovations, such as computers, solar energy, and agricultural technologies, but has been widely applied to other types of innovations, such as health promotion programs (Mesters & Meertens, 1999; Orlandi, Landers, Weston, & Haley, 1990).

Rogers identifies five characteristics of an innovation that affect whether an individual adopts it. *Relative advantage* refers to the degree to which an innovation is perceived by its potential adopters to possess advantages over a program that is currently being implemented (or is better than doing nothing). In the case of an HIV prevention program, a program that is perceived to represent little or no improvement over how things are currently done by a CBO is unlikely to be adopted. Potential adopters' judgements regarding relative advantage may be based on any number of factors, such as cost-effectiveness of the program or increased status conferred upon an organization by its association with a particular program.

An intervention's *compatibility* with an individual's values, beliefs, experiences, and needs is a second critical factor related to its potential adoption. An HIV prevention program that is congruent with the culture, experience, and needs of a prospective adopter organization would have a higher likelihood of being adopted. Compatibility has also been identified as an essential factor in a program's long-term adoption and institutionalization (Shediac-Rizkallah & Bone, 1998; Steckler & Goodman, 1989).

A third factor affecting adoption concerns an innovation's level of *complexity*. Adoption of an HIV prevention program that is perceived as difficult to understand and use is less likely than one that is perceived as easy to understand and use. Complexity could be a function of many program features such as its technical requirements (e.g., requires clinically-trained facilitators), conceptual sophistication (e.g., employs advanced psychological

concepts and language) or the number of program sessions needed in order to create behavior change.

Trialability refers to the degree to which an innovation, in this case an HIV prevention program, can be implemented on a limited, trial basis. Innovations that can be gradually implemented or implemented on a small-scale, trial basis before one has to commit to full-scale program implementation may be most readily adopted.

Finally, *observability* refers to whether the results or benefits of an innovation (e.g., increased condom use) are easily observed and visible. Programs that have visible benefits are more likely to be adopted than programs that have benefits that are more difficult to detect.

Research on the adoption of social programs has not provided consistent support for each of the factors outlined in Diffusion of Innovations Theory (Mayer & Davidson, 2000; Mesters & Meertens, 1999). Research regarding the diffusion of social program innovations is also largely in its infancy. Therefore, it remains important to explore how characteristics of innovations affect program adoption decisions and whether additional characteristics of innovations influence adoption processes.

Characteristics of Organizations

Research has identified structural characteristics of organizations (e.g., formality, hierarchy, centralized decision-making, stability, maturity) that appear to facilitate adoption of externally-developed programs, practices, and innovations (Aiken & Hage, 1971; Baldridge & Burnham, 1975; Hage & Aiken, 1970; Rogers, 1995; Steckler & Goodman, 1989; Thompson, 1967). A limited body of research suggests that organizations that adopt externally-developed programs have complex and well-defined subsystems, are large, and are well financed (Baldridge & Burnham, 1975; Shediac-Rizkallah & Bone, 1998; Steckler & Goodman, 1989). These organizations also tend to be mature and stable (Shediac-Rizkallah & Bone, 1998; Steckler & Goodman, 1989). In general, it is believed that adopting externally-developed programs requires that an organization have the financial means to do so, as well as the personnel and management infrastructure to implement the program—characteristics of large, old, stable organizations. Organizations must also have sufficient complexity to be able to scan the broader environment for potential performance-enhancing programs, an ability that is typically more common among large organizations with highly differentiated internal functions.

The organizational characteristics of HIV-related CBOs appear to have little in common with those of organizations that adopt externally-developed programs and innovations. Unlike the organizations that have been most

often studied (e.g., school systems, health departments, corporations), the prototypical HIV-related CBO grew out of a socially marginalized, HIV-affected community that was perceived to have been neglected or served poorly by traditional providers (Altman, 1994; Freudenberg & Zimmerman, 1995). These organizations' missions are to provide community-based responses to the disease and its physical, emotional, and political sequelae. As such, these organizations often combine a social service agenda with a social change agenda. Furthermore, the people who work for CBOs often represent a collective social identity (e.g., gay men, prostitutes) or form one in response to being similarly affected by HIV (Altman, 1994). Because CBOs frequently represent marginalized groups in society, many are inherently political entities, seeking to empower their constituents and demanding change in basic social arrangements, in addition to providing services.

HIV-related CBOs are also typically resource poor organizations. A recent national survey of 142 full service AIDS and gay and lesbian organizations found that the median number of full- and part-time paid staff was between 11 and 25 people and that the median number of active volunteers in these agencies was between 51 and 100. The median budget for these organizations was between $500,000 and $1,000,000, with nearly half of the organizations receiving 51% or more of these funds from government grants (McCormack & Associates, 1997). Only 13% of the sampled organizations owned their facilities. In another recent study of 77 AIDS service organizations located in metropolitan areas with populations larger than 80,000, DiFranciesco et al. (1999) found that respondents' HIV prevention budgets ranged from $4,500 to $1,080,000, with a median prevention budget of $175,000. These organizations had a median number of 5 HIV prevention staff members and 26 HIV prevention volunteers. Also of note in these data was that the median tenure of prevention staff was 1 year and of prevention directors was 2 years. These data suggest that AIDS-related CBOs may not have the prerequisite organizational characteristics to adopt a wide range of prevention programs.

The Present Study

The goal of the Illinois HIV Technology Transfer Project was to understand HIV-related CBOs' perspective on the process of HIV prevention program development and experience of adopting or rejecting externally-developed HIV prevention programs. Specific areas of interest in the study included identifying the primary challenges to program implementation faced by CBOs, typical program resources and constraints, valued characteristics of programs, and sources of influence on programs and the effect those

sources have on prevention practice. These issues were examined qualitatively in a statewide, randomly selected sample of CBOs through open-ended interviews. In the present paper, we discuss the organizational characteristics of these CBOs and the factors that have affected these CBOs' decisions to adopt and reject externally-developed HIV prevention programs.

METHOD

Participants

Participant organizations were 38 not-for-profit HIV-related prevention service providers located throughout the state of Illinois. Respondents were randomly selected to participate in the study from an unduplicated list of 129 HIV-related prevention service providers throughout the state. The list of potential respondents was generated from national and local directories of AIDS-related service providers (HIV/AIDS Resources, 1995; Test Positive Aware Network, 1995) and lists of HIV-related prevention programs funded by the state and city health departments. The list was independently checked for errors and omissions by a staff member of the AIDS Foundation of Chicago who was knowledgeable of HIV prevention service provision statewide and by a member of the research team. Once a final list was obtained, organizations were stratified by location (urban, suburban, rural) prior to their random selection.

The goal of the study was to obtain rich, descriptive data, so we sought to limit the size of the study sample to no more than 45 organizations—25 urban, 15 suburban, and 5 rural organizations. Random selection proceeded iteratively within each strata. When an organization was randomly selected, we assessed its eligibility and attempted to enroll it in the study before proceeding to select another organization at random from that particular strata. Organizations were eligible to participate if they had existed for at least 1 fiscal year, had four or more staff, devoted a minimum 25% effort to HIV prevention, and had not-for-profit (501(c) 3) status.

In all, we had to randomly select a total of 102 organizations in order to achieve our desired sample size. Among the total of 102 organizations selected at random to participate, 41 (40%) were enrolled in the study and interviewed successfully. Among the remaining organizations, 38 (37%) did not meet study eligibility criteria, most often because the organization devoted little of its effort to HIV prevention ($n = 31$) or had fewer than four staff ($n = 5$). Seventeen organizations (17%) were unreachable. Of these, 11 organizations' phones had been disconnected and we were unable to locate a new telephone number or the organizations had closed; in the remaining

cases, we were unable to speak with the target representative after six or more attempts. Five organizations (6%) refused to participate. Each of these five organizations stated that they were too busy to participate and, in one case, stated that they were also participating in other studies that already took too much of their time. All of the organizations that declined to participate had a primary mission as a substance abuse service provider. Two of the refusals were from organizations located in suburban areas and the remainder were from Chicago. During the course of data collection, two organizations merged and were ultimately considered a single organization. Three organizations were ultimately excluded from the present analyses because of problems associated with the tape recording and transcribing of their interviews, leaving a total sample of 38 organizations (urban = 21, 55%; suburban = 13, 34%; rural = 4, 11%).

Procedure

A letter from the research group was mailed to all 129 potential respondents describing the study. A letter from the AIDS Foundation of Chicago endorsing the study was also separately mailed to all potential respondents. When each organization was randomly selected, we called to confirm their eligibility to participate and to enlist their participation. If an organization was eligible and willing to participate in the study, we arranged an in-person interview. A short questionnaire requesting information about the organization's financial and personnel resources and a written informed consent was sent in advance by mail or facsimile and collected at the interview. We conducted in-person interviews for those CBOs within about a 4-hr round trip drive from the Chicago area. CBOs that were located farther away were interviewed by telephone. Interviews were conducted in either English or Spanish. All interviews were tape-recorded and transcribed verbatim. Respondents within the organizations were the executive director or the person named by him or her as most knowledgeable about the organization's HIV prevention programs. Interviews lasted from 47 to 140 min in length (mean = 71 min). All interviews were conducted between May and November of 1997.

Measures

The open-ended interview protocol for this study was developed in part based on Diffusion of Innovations Theory (Rogers, 1995) and Altman's historical analysis of the emergence, development, structure, and functions of AIDS-related community organizations (Altman, 1994). The initial protocol

was reviewed by several CBO representatives and experts from NIMH's technology transfer panel. The protocol was revised, pilot-tested with several CBOs, and then revised again. The final protocol asked CBO representatives to provide an historical overview of their HIV prevention programs and discuss program resources and constraints, program values, program adoption and rejection experiences, important sources of influence on how they design and implement prevention programs, and valued sources of information about prevention. We also asked about how HIV prevention fit within the overall organizational context, organizational decision-making processes, and intraorganizational relationships.

Prior to the interview, representatives completed a brief closed-ended survey that was collected at the time of the interview. Representatives were asked to list the sources and amounts of their organizational and prevention funding; numbers of full-time and part-time, paid and unpaid HIV prevention personnel; percentage of the paid prevention staff that were members of the target population; and number of clients served by the organization. We also collected annual reports and other promotional materials developed by the organizations to describe their prevention programs.

Data Analyses

Given the exploratory nature of the present investigation and our desire to discover the criteria that were used by CBOs to understand the merits of prevention programs and whether those criteria overlapped with characteristics described by Rogers, we took a grounded theoretical approach to data analyses (Miles & Huberman, 1994; Strauss & Corbin, 1990). Grounded theory is a progressively theory driven process in which the researcher employs an emergent, deductive, structured process to seek regularities in the data. Five coders independently developed an initial set of coding domains by each reading two transcripts verbatim. The initial coding domains developed by coders concerned resources, values, program types, program implementation processes, valued characteristics of interventions, funding, program barriers, relationships, information sources, and program adoption and rejection experiences. The initial codes also deliberately included topics that reflected characteristics of innovations outlined in Diffusion of Innovations Theory.

After each coder had developed an initial set of codes, the coding team met to develop a common set of codes based on the initial code development work. Once the team had agreed on a single coding scheme, coders then independently applied the initial set of common codes to two more

interviews, revising and refining codes and creating additional codes that emerged from the texts. The initial codes were also further refined to include additional levels of subcodes. The team then met to review the common coding scheme and discuss additions, deletions, and revisions. Once a revised scheme was developed, team members independently applied the revised coding scheme to two more interviews. The research team repeated this process six times before settling on a final coding scheme. Throughout the coding process we sought to use our respondents' labels for the criteria that they described, so that our codes would reflect the meanings given to them by our respondents. Initial check-coding (Miles & Huberman, 1994) at this stage of the code development process produced interrater agreements ranging from 75% to 92%.

Once a final coding scheme was established, each interview was coded by two members of the research team, each working independently. Code stability was established by comparing agreement among independent coders. When coders disagreed in their assignment of a particular code to the text, the disagreement was discussed among the entire research team until a consensus was reached among all coders regarding the appropriate code assignment for the particular segment of text. Because a consensus-based dispute resolution procedure was used, final interrater reliabilities are 100% for all variables.

We created several variables from the text to assist us in describing the organizations. Organizational structure was coded based on the organizational chart. We counted the number of levels between the executive director and the first managerial position responsible for prevention programs as a measure of the significance of prevention within the organizational hierarchy (hierarchy). We also counted the number of managerial direct reports to the executive director as an indicator of organizational complexity (EDReports).

Organizational mission was coded based on the CBOs' organizational charts and on the respondents' answers to questions regarding where HIV prevention fit within the overall structure of the agency. Organizations that provided non-HIV-related services (e.g., drug treatment, maternal–child health services) or that expressly stated their organizations' missions were broader than HIV were coded as non-AIDS-service organizations (all others were coded as AIDS-service organizations).

The target populations of the organizations were coded based on the respondents' descriptions of who the organization sought to serve. We created separate variables to describe the primary target populations of the organization and of their prevention programs, because organizations might target multiple populations and because organizations might target different groups at the level of the organization than at the level of a specific

HIV prevention program. If the respondent stated that the organization or its prevention programs served Asian Pacific Islanders, Blacks, Hispanics, or Native Americans exclusively, it was coded as "ethnic minority." Organization and program descriptions were coded "Yes" or "No" for targeting services to gay, lesbian, bisexual, or transgendered individuals; substance users; youth; men; women; incarcerated populations; homeless populations; and, sex workers.

Respondents were asked to describe each of the HIV prevention programs offered by the agency. Programs were coded by type (social marketing, one-on-one outreach, small group workshops, social and performance events, educational forums, other). We also counted the total number of distinct HIV prevention programs provided by each organization. Outreach or marketing efforts that had the primary purpose of recruiting individuals into other programs or advertising agency services were not coded as prevention programs.

For the present analyses, organizations were divided into three groups: those that reported that the organization had never adopted an HIV prevention program or component of a program from an external source ($n = 13$; 34%), hereafter called low adopters; those that reported that they had adopted a component of an HIV prevention program (e.g., a single behavior-change module or exercise from a workshop) or a specific common behavior-change practice, but not an entire program, from an external specified source ($n = 13$; 34%), hereafter called moderate adopters; and those that reported that they had adopted one or more specific HIV prevention programs from an external specified source in its entirety ($n = 12$; 32%), hereafter called high adopters. It is important to note that these groups form three distinct adoption profiles; our labels should not be construed as suggesting that adoption status is a unidimensional, linear construct.

For comparative analyses among adopter groups and nominal variables such as having an exclusively AIDS-related organizational mission, we employed chi-square tests for *k*-independent samples (Pett, 1997). For those analyses in which we compared adopter groups and ordinal variables, such as location, Mantel-Haenszel chi-square tests for trends were applied (Mantel, 1963; Mantel & Haenszel, 1959). Finally, for those analyses in which we compared adopter groups and ratio variables, such as organizational budget, we employed the Kruskal–Wallis ANOVA by ranks test (Kruskal & Wallis, 1952) or median tests for independent samples (Pett, 1997).[3] Measures of association (Cramer's ν for chi square tests and Spearman's ρ for tests of ranks and medians) were also computed.

[3]Several variables, such as budget, had highly skewed distributions, making median tests more appropriate.

RESULTS

Organizational Characteristics

Table I summarizes organizational characteristics and resources across the entire sample and by adoption status. Univariate tests of significance (chi-square, median, or ranks, as appropriate) and measures of association (Cramer's ν and Spearman's ρ) were computed to contrast organizations by adoption status on these descriptive variables.

The CBOs in the sample were an average of 16.3 years old (median = 11 years; mode = 11 years). However, the majority of CBOs in the sample were young organizations; 65% of the CBOs were founded in 1985 or later ($n = 24$), with a peak during 1987 and 1988. About half of the providers in the sample ($n = 18$) were exclusively HIV-service organizations; about 95% of these were founded after 1985. The remaining 53% of CBOs had broader missions; all but one of these organizations were founded prior to 1988, with a majority (63%) founded in 1980 or earlier. Nearly one third ($n = 11$; 29%) of the organizations served an exclusively ethnic or racial minority target population. Most of these organizations (64%) were among those founded in or after 1987.

The typical organization in the sample had a median budget of $478,593 (range = $4,000–$12,000,000) and served a median number of 3,000 clients (range = 120–200,000) in fiscal year 1996. Organizations spent an average of 37% of their organizational budget on HIV prevention programs ($SD = 36$); the median prevention budget was $56,121 (range = $0–$700,000). The average organization in the sample offered 2.2 distinct HIV prevention projects in 1996.

The majority of low adopters had a primary mission other than HIV: these organizations included youth service centers, health clinics, church-based groups, and providers that focused on serving a comprehensive range of needs for a particular community, ethnic group, or social group. These organizations reported a relatively small client base (see Table I) and tended to provide their services to the "general" population. These organizations employed an average of five full- and part-time HIV prevention staff who implemented about two prevention projects. Almost half of these organizations' budgets were devoted to prevention.

Moderate adopters also tended to have a primary mission other than HIV. These organizations tended to target substance users and youth. The majority of providers in this group that were HIV-specific were primarily care-focused organizations. That is, these organizations focused on providing services such as buddies, support groups, housing, food, recreation, and treatment education to people living with HIV infection. The median client

Table I. Organizational Characteristics of HIV Prevention Service Providers

	Overall sample ($N = 38$)	Adoption status: Low ($n = 13$)	Moderate ($n = 13$)	High ($n = 12$)	Test of significance (measure of association)
AIDS-related mission (%)	47	39	39	67	ns (Cramer's $\nu = .263$)
Ethnic minority mission (%)	29	23	31	33	ns (Cramer's $\nu = .096$)
Percentage located in urban setting	55	54	54	58	ns (Cramer's $\nu = .042$)
Target population (%)					
General	45	69	23	42	$X^2 = 5.67,\ p = .06$ (Cramer's $\nu = .386$)
Gays, bisexuals, lesbians, transgenders	34	39	15	50	ns (Cramer's $\nu = .303$)
Substance users	42	31	62	33	ns (Cramer's $\nu = .285$)
Youth	61	46	69	67	ns (Cramer's $\nu = .213$)
Median annual number of clients	3,000	1,074	8,000	9,075	$X^2 = 4.99,\ p = .08$ (Spearman's $\rho = .249$)
ED reports (mean no.)	2.8	1.9	3.5	3.0	ns (Spearman's $\rho = .343$)
Hierarchy (mean no.)	1.6	1.8	1.5	1.5	ns (Spearman's $\rho = -.299$)
Agency age (median years)	11	11	20	11	$X^2 = 5.44,\ p = .07$ (Spearman's $\rho = -.074$)
Staffing (median no.)					
Fulltime staff	2.0	2.5	1.5	1.5	ns (Spearman's $\rho = -.085$)
Parttime staff	1.0	1.5	0	1.5	$X^2 = 4.78,\ p = .09$ (Spearman's $\rho = .089$)
Unpaid staff	5.0	4.5	2.0	12.5	ns (Spearman's $\rho = .054$)
Staff from target population (mean%)	67	59	54	87	ns (Spearman's $\rho = .113$)
Organization budget (median $)	478,593	413,593	821,158	306,676	ns (Spearman's $\rho = -.149$)
HIV prevention budget (median $)	56,121	94,654	36,113	54,241	K–W $X^2 = 5.96,\ p = .05$ (Spearman's $\rho = -.179$)
Mean % spent on HIV prevention	37	47	18	47	K–W $X^2 = 5.99,\ p < .05$ (Spearman's $\rho = .042$)
Prevention projects (mean no.)	2.2	1.8	1.5	3.3	K–W $X^2 = 6.75,\ p < .05$ (Spearman's $\rho = .317$)

base of these organizations was 8,000 clients per year. These organizations were the oldest among those in the sample, with an average age of 22 years. These organizations had larger budgets than high and low adopters, but devoted a significantly smaller percentage of that budget to prevention than organizations in the other adopter groups. Moderate adopters reported a small full-time prevention staff (median = 1.5 people), no part-time prevention staff, and few prevention volunteers. These organizations provided an average 1.5 prevention projects.

The majority of high adopters were HIV-specific organizations. This group included several HIV-specific organizations that were founded early in the epidemic and several organizations that were replications of organizations founded early in the epidemic. About half of the organizations in this category of adopters targeted gay, lesbian, bisexual, and transgendered populations and nearly two-thirds targeted youth. These organizations reported the largest number of clients of any of the adopter groups, perhaps because many of these organizations had street outreach efforts. These organizations also reported the greatest number of prevention volunteers of any of the groups and the largest percentage of employees drawn from the target population. These organizations spent nearly 50% of their budget on prevention and provided the greatest number of prevention projects of all groups, on average 3.3 ($SD = 2.1$).

Innovation Characteristics

Although quantitative data are useful to understand what distinguishes organizations that adopt externally developed programs from those that do not, qualitative data may provide an in-depth understanding of how organizations evaluate programs. We asked respondents to describe what they look for in externally-developed programs and how their organizations' make decisions about reviewing, adopting, and implementing such programs.

All respondents reported having considered incorporating an externally-developed program, component of a program, or prevention practice at some point in their history. Respondents typically reported considering programs and practices developed by other CBOs.

Respondents employed five criteria to evaluate an externally-developed program before making a decision to adopt it. Though no CBO would necessarily apply all of these criteria to their evaluation of a program, 32% ($n = 12$) of the sample mentioned applying four of the five criteria and an additional 29% of the sample ($n = 11$) mentioned applying three of the five criteria

to specific decisions. These criteria provide insight regarding what mattered most to CBO representatives in making program adoption decisions.[4]

Compatibility With Organizational Philosophy

CBOs ($n = 26$; 68%) reported that is was important for externally-developed HIV prevention programs to be congruent with their philosophy about how prevention should be conducted. Indeed, 85% of moderate and 67% of low adopters mentioned incompatibility with organizational philosophy as among the primary reasons that they had rejected externally-developed programs. Agency standards and practices about issues such as quality, appropriate language use, sexual explicitness, abstinence, and sexual minorities were among the aspects of compatibility that respondents mentioned:

> We'll put abstinence into all of our programs and we thoroughly believe that we'll support kids and hopefully give them the skills to be able to keep an abstinence-based decision, but we just can't buy into an abstinence-only program. (Interview #20, high adopter)

> Try not to put any weight on any option. Let the individual decide . . . some organizations differ from us in that they want a certain approach advocated. Well, we don't. We deal with reality. (Interview #25, low adopter)

In addition to standards and practices, CBO representatives reported a variety of organizational values that outside programs would need to espouse to be considered organizationally viable. These values included an emphasis on programs that were organic to their local communities and were perceived by staff as culturally compatible with and respectful of the organization and its target population. Low and moderate adopters commonly held the view that externally-developed programs fell short of their organizations' standards for enacting these values.

> Curriculums seem to be written for upper to middle class people. They don't seem to be written for all people . . . and they seem to be written in a simple level, you know, the questions are like so simple and it's like, okay, we'll see it but we'll change it so it'll work. Cause it seems like you're putting—if I use that with my youth, I'll be putting my youth down. (Interview #05, low adopter)

Organizations also expressed ambivalence about engaging in new efforts that did not directly coincide with their current mission, improve upon their present work, or fit with their present strengths or knowledge. Several organizations reported there was a time when they "followed the money"

[4]Quotes where selected to be representative of the trends and meaning in the interview data.

and would add programs to meet the prevention needs of any target population that was currently receiving attention from funding sources, but that presently they preferred to focus on their areas of greatest experience and strength in terms of types of programs and target populations. Moderate and high adopters in particular emphasized the fundamental importance of keeping their mission and history in mind when examining externally-developed efforts.

> . . . It would have to fit somehow within the focus of our organization already. What we would probably want to do is do what we're doing and do it better and make sure we're doing it well. And so we would only take on a prevention program that kind of already fits with one of the things that we're working towards. (Interview #10, moderate adopter)

> We have certain strengths and certain weaknesses, and we need to make sure that we're going with our strengths. (Interview #069, high adopter)

> Does it enhance what we do? Like, is there any synergy created? And, you're like, "no, there's none." (Interview #32, moderate adopter)

Relevance to the Local Context

Inextricably associated with the notion of compatibility was the idea that programs had to be well suited to the local cultural context. About 65% (n = 25) of the CBOs reported that programs must not only be compatible with their organizational values but also fit well with local cultural and community values. Relevance to local context was discussed by 77% of high adopters, 61% of moderate adopters, and 58% of low adopters.

> Does it speak to their needs? Does it speak on their language? Does it contain any components that are going to turn off the population that you have in mind? (Interview #09, low adopter)

> . . . not to clump everybody together like todos [all] Hispanics, you know . . . . I think you have to be very mulilateral, if that's a word at all, unlike . . . the public health model that the city has. (Interview #32, moderate adopter)

Organizations also expressed tremendous skepticism that a program developed for one target population (e.g., the same risk group, but one from a different geographic area or of a different ethnic background) was easily transferred to another context.

> What kind of groups have you been using? And give me the results. Why do you say that it is good for this population based on what you're talking about? (Interview #13, moderate adopter)

> We don't do those [exercises about dating from safer sex workshops] anymore. Why? One, because people weren't showing interest anymore. And two, once again,

> these were models from—these were part of the [East Coast Organization] curriculum. . . . We started doing less kind of like—let's come in and talk about being queer kind of stuff. People aren't into this big queer like they are in [East Coast City] as much here . . . you know, Chicago is almost rural when you look at the grand scheme of how you target prevention services. (Interview #16, high adopter)

Organizations emphasized that their local knowledge of their target population and their ongoing relationships with the community were among their most prized and well-protected resources. Programs that might negatively affect the quality of their relationship with the community were not favorably viewed.

Evidence Supporting Its Use

CBOs ($n = 20$; 51%) expressed preferences for programs that they had seen people enjoy and use. About 77% of moderate adopters, 42% low adopters, and 38% of high adopters mentioned evidence. Evidence, as it was discussed by respondents, was most often described in terms of witnessing how target populations respond to the program. That is, CBOs emphasized the projects and their implementation being observable. The vast majority of those organizations that discussed evidence had seen the program that they adopted (or rejected) in action and stated that how participants had reacted to it was key to their adoption decision.

> I could actually see what was going on, I could actually see the interaction and you know, it's one thing to have something down on paper to tell you do this, do that , you know, but it's another thing when you see staff implementing these things to see how it works or how it doesn't work. (Interview #12, low adopter)

Evaluation data and observable outcomes were also valued by some organizations, but it was the information gained from process data that received the more substantial weight in making evaluative judgements about programs. Part of what CBOs looked for was how adaptable the original program was, given with whom and how it was originally implemented.

> You'd just kind of have to look at what they report has been their outcome and whether you think that the way they implemented it in their community would actually be a potential—would be plausible in your community. . . . You know, it is not so much reinventing the wheel as it is taking concepts that you've heard of elsewhere and adapting it to your needs. (Interview #10, moderate adopter)

High adopters appeared to value behavioral science data more than other adopter groups, frequently citing the importance of outcome and impact studies of prevention programs.

> Some statistics that would show that it either had—was able to encourage behavior change in people and that's hard to prove but that would be something worth looking

at because that's I think the hardest thing to do is behavior change. (Interview #24, high adopter)

These organizations frequently mentioned that they seriously consider the guidelines and standards set by institutions such as the CDC and empirical findings from behavioral science. Organizations did not, however, accept guidelines and empirical findings uncritically.

When you see that light bulb go off over their head, when you see that smile on their face when they realize, 'hey, you know, I can talk to my partner about using a condom'. . . . When you get that kind of feedback, I think that tells you if you're being effective more than any survey could. (Interview #09, low adopter)

In many cases, evidence was a matter of whether the program or strategy reflected common sense.

Reputation was also a crucial source of evidence for many CBOs. CBOs looked for programs that had been endorsed and used by their peers.

. . .You know, it's not like we're going to adopt any type of model that you know, we hear about. . . . It has to have the right components. . . . It has to have a good foundation, it has to have a good reputation, a good acceptance. . . . (Interview #07, low adopter)

Feasible Given Available Personnel and Nonpersonnel Resources

CBOs ($n = 18$; 47%) preferred programs that could be implemented by small numbers of part-time and unpaid staff and that did not require significant money, time, space, or materials. About 61% of high adopters, 54% of moderate adopters, and 42% of low adopters discussed feasibility. Creating new programs that could not be easily incorporated into what a CBO was already doing was characterized as unfeasible by many CBO representatives. Perhaps as a result, CBOs discussed adopting outreach techniques and efforts more frequently than any other type of prevention effort. Outreach may be the most typical program that CBOs described having adopted in part because it does not require additional or specialized space and the time demands of outreach can often be met flexibly.

We feel we can incorporate that particular program [outreach] into what we're already doing and we've seen other organizations do the same thing. So, that's something that we can add very easily without having to worry about adding additional staff or creating a whole new program. . . . Because right now, with the five employees that we have here now, we're tapped out with what we're doing now. (Interview #30, moderate adopter)

If it's a manageable, cost-effective program, and if there's space, because we're currently 21 people working in a space that comfortably houses 10. (Interview #06, moderate adopter)

The complexity and burdensomeness of implementing a program was also part of judging its feasibility. Programs were often described as too large, too long, and requiring too much added administrative work.

> I mean every now and then we'll get some kind of handouts of something on a program that sounds real good except for, well, you're gonna have to produce all this paperwork in order to carry it out, or, gee, it's gonna require a lot of staff hours to do, you know, this component of it. (Interview #09, low adopter)

> We adapted it [federally-produced curriculum]. It's too much, and you don't have too much time. (Interview #13, moderate adopter)

Money dictated whether programs were deemed feasible more than any other aspect of feasibility. CBOs described their ability to get monetary resources for programs as the ultimate bottom line regarding what they could and could not do. CBOs reported wanting to do more than they were able to do, given current fiscal constraints. Many CBOs talked about programs that they hoped to adopt, if they could secure the financial support to do so.

> Our whole first year, I mean, we had like $3,300 to operate off of and that's like, how can you do a program with $3,300? (Interview #30, moderate adopter)

> We had known for some time that we needed to do a new [program] and it was really coming down to a question of how we were going to pay for it. (Interview #15, high adopter)

Instability of funding also had a tremendous impact on what CBOs perceived they could and could not do. CBOs described the need to plan their prevention efforts in such a way that they could withstand frequent changes in funders' interests.

> Because one year one population is hard hit by HIV infection or seroconversion and all of a sudden they are the priority population, let's say it's IV use. And then the next year its MSMs, so the funding tides change and your program, you know, it is built completely around working with IV users that first year and then they switch and say, 'Oh, it's MSMs now. We're defunding or slashing funding for everything that was given for the IV user so we can put it over here to work with MSMs so then you have to be diverse enough that you've got four or five legs to stand on. (Interview #06, moderate adopter)

Fills a Gap in Local Services

About 45% of CBOs ($n = 17$) expressed strong preferences to adopt programs that would fill an existing gap in local area service provision. A larger proportion of high adopters (46%) and moderate adopters (69%) mentioned this criteria than low adopters (16%).

CBOs believed that a primary part of their role was to identify local needs and develop programs that would fill those needs.

> When we first identified that there was a need for something like this in the community, it stemmed from the fact that we work at an agency that serves people that have HIV. And, the face of HIV had changed over the years from gay males to a very large injectable drug using population. Identifying that the population existed here in [town name] was one major step, as this is a very conservative community. (Interview #02, moderate adopter)

> Most of the prevention that . . . has been done in the City . . . was just targeted to African Americans, Latin Americans, Hispanics, you know, Caucasians, and then the Asians were just like set aside as others have been. (Interview #04, high adopter)

Maintaining uniqueness emerged as an important pressure on CBOs. A primary reason for not adopting particular programs was that they might duplicate what another nearby organization was already doing. Indeed, CBOs actively resisted engaging in efforts that might "step on the toes" of a peer organization or that mirrored too closely what was already provided.

> We're not going to set out to do something that duplicates what another organization's already doing. . . . I think that we are striving as a community and with the various community-based organizations to, you know, work together to make up different pieces of the pie and not the same piece of the pie. (Interview #10, moderate adopter)

> You know, we're not out to take someone else's business . . . if they have an AIDS education program like this, that's wonderful and we're supportive but we don't need to duplicate it. (Interview #29, moderate adopter)

This idea was often bound up with the role of the CBO in responding first and foremost to its community base.

> Like everyone drives a car but the car is unique to that person who drives it. You know, my car's not the same as yours. They both do the same function but they're a little bit different because they got that personal touch. (Interview #06, moderate adopter)

DISCUSSION

This study is among the first to address what criteria HIV-related CBOs employ when making decisions about adopting externally-developed prevention programs and to explore the relationships among organizational characteristics and preferences for adopting externally-developed HIV prevention programs. Our data provide preliminary evidence that organizational characteristics distinguish among HIV-related organizations with different innovation adoption profiles. Our data also provide partial support for Rogers' theoretical work (Rogers, 1995) regarding characteristics of innovations that influence adoption decisions.

Organizational Characteristics and Program Adoption

The organizations in our sample formed three distinct profiles: those that had little experience adopting externally-developed programs, those that had adopted components of programs, and those that had adopted entire programs. These three profiles were distinguished by the level of resources devoted to HIV prevention, centrality of HIV to the organizational mission, and organizational age and size.

Contrary to previous research (e.g., Steckler & Goodman, 1989), organizations that had adopted externally-developed programs in their entirety were small, relatively young, and had small actual prevention budgets (median = $54,241). Despite their low level of resources to provide prevention programs, these organizations' strong ideological commitment to HIV prevention appeared to encourage them to experiment with externally-developed programs and stay abreast of cutting-edge programs. In contrast, organizations that had only adopted parts of programs had characteristics typically associated with program adoption, such as a large financial resource base. Perhaps because these organizations' primary commitment was to health concerns other than HIV, their ability and willingness to incorporate substantial, intensive HIV prevention programs into their service repertoire was limited. Organizations such as these may be willing to accommodate small efforts to prevent HIV among their clients, but appear reluctant to make HIV prevention a major organizational foci. The lowest adopter group, which was largely comprised of small, young, multipurpose organizations, shared many organizational characteristics with the high adopters but provided fewer HIV prevention programs than high adopters and were more likely to target populations generically in their HIV prevention efforts. Perhaps because of the diverse array of unmet needs within their target populations and their focus on underserved areas and groups for whom few HIV-related prevention programs have been developed, adopting externally-developed HIV prevention programs was uncommon.

Characteristics of Innovations

The organizations in this sample identified five characteristics by which they would judge an external prevention program: (1) its degree of compatibility with organizational philosophy about HIV prevention, (2) its perceived relevance to local culture, (3) evidence to support its use, (4) its feasibility, and (5) its ability to fill a gap in what services are provided locally. The majority of these characteristics are reflected in Roger's notions of compatibility, observability, complexity, and relative advantage.

In these data, several dimensions of compatibility emerged, including compatibility with organizational philosophy and local culture. Organizations were willing to consider seriously programs that befitted their organizational and local community culture and context, preferring programs that delivered prevention messages in a manner consistent with their values and language. The extent to which the program filled a gap in local services but also did not overlap significantly with what was already locally provided also emerged as a crucial issue in assessing a program's compatibility with local context. Competition over limited financial resources from few sources may encourage CBOs to fill a niche in order to maintain funding (Garcia, 1999). CBOs may perceive that ongoing financial support for their program is most likely if potential funding sources see their programs as meeting a unique need within some specified geographic catchment area. In addition, CBOs may maintain positive working relationships with other CBOs by avoiding offering programs and services that might lead to "turf battles." It may also be the case that maintaining a community-based organizational identity requires CBOs to provide programing that is community-driven.

Feasibility of programs was another important criteria by which programs were judged. The CBOs in our sample preferred programs that were compatible with their available personnel and nonpersonnel resources. Affordability emerged as a key component of feasibility, an issue not clearly addressed by Roger's theory, though related to his notions of relative advantage and compatibility. For the CBOs in this sample, it was simply not possible to adopt programs that were beyond the organizations' means, suggesting that regardless of the cost-effectiveness of any particular HIV prevention program, its relative advantage and compatibility will decrease as its absolute costs begin to exceed available funds. This finding seems intuitively obvious, but has practical implications for HIV prevention science. Given the small size of the average CBO budget in this and other samples (e.g., DiFranciesco et al., 1999), scientists may need to anchor their definition of what is an optimally cost-effective prevention program to the average prevention budgets of potential users, in this sample about $55,000 in 1997! Successful programs that have costs in excess of what a CBO can afford are unlikely to be adopted and sustained in communities. At the same time, prevention scientists are well positioned to address empirically what is the minimum level of resources needed to provide a sufficient dose of prevention to a community and to communicate those findings to funding sources. It may be the case that funding sources lack adequate information about what a successful prevention effort is likely to cost. Prevention scientists have an important role to play in increasing understanding of what resources are minimally necessary to prevent HIV infection. Prevention scientists may

also need to play an active role in assisting organizations to secure adequate resources to implement programs that have empirical support.

Unlike in Diffusion of Innovations Theory, complexity was discussed by our respondents as an aspect of assessing a programs' feasibility. Organizations spoke about a program as too complex when its demands exceeded the level of personnel, money, time, and space available for additional efforts. Thus, although complexity was clearly an important characteristic of programs, its affect on adoption decision-making was largely through the implications of a specific program's requirements on the feasibility of its implementation within a given context.

Similar to what Rogers' proposed (Rogers, 1995), for the CBOs in this sample observability meant that CBO staff had watched a program's target audience respond positively to the program, had seen how to implement and adapt it to suit local needs, and heard from peers or other information sources viewed as credible that the program was good. The value placed on implementation experiences may reflect the fact that among the primary concerns of a service provider are how to carry out programs smoothly on a day-to-day basis and to keep program consumers satisfied. Process data and opportunities to site visit programs speak directly to observability in this sense. At the same time, evidence of program performance or accrued benefits in risk-reduction behaviors is also part of establishing that a specific new program may have relative advantage over what is currently provided. Certainly those CBOs that value outcome evaluation data depend upon the information such data provide to judge whether externally-developed programs ought to be considered for adoption. Nonetheless, for many of the CBOs in our sample, evidence that concerned program processes was more compelling than outcome-oriented evidence.

Two characteristics of innovations were seldom if ever mentioned by respondents directly, relative advantage and trialability. Our respondents appeared to judge an externally-developed programs' relative advantage by using other dimensions as criteria of merit. Relative advantage was determined by a program's compatibility, feasibility, complexity, observability, and affordability. Relative advantage was discussed by respondents indirectly. When respondents mentioned relative advantage directly, they typically did so in reference to common techniques and practices, but not to entire programs or program components. For example, respondents talked about specific outreach safety practices (e.g., working in teams) and client intercept methods (e.g., intercept clients in the bathroom rather than at the bar) as better than what they had previously done.

Respondents did not discuss the ability to try out a program on a short-term basis as an important factor affecting adoption decisions. It is possible

that Rogers' notion of trialability is most applicable to the types of technological and product innovations for which Rogers' theory was originally developed, such as cars, computers, and hybrid corn seed. Infrequent discussion of trialability may also reflect the particular economic circumstances of CBOs. Because CBOs are largely dependent on biennial and triennial government contracts that require them to maintain a minimum level of monthly service activity, CBOs may not have frequent opportunities to consider pilot-testing or replacing entire programs. Trying projects out in small scale form may not be practical, given the limited resources of CBOs and the need to meet service delivery contract obligations. In addition, because the Prevention Planning Group Process in many municipalities dictates what types of intervention activities will be funded, CBOs may not perceive that they have the latitude to explore new programs on a trial basis or that there is a need for them to do so.

The results of this study should be considered in light of its limitations, three of which merit specific mention. Although we labeled the adopter groups "high," "moderate," and "low," we believe that it is not appropriate to characterize adoption status as linear. As a result, linear tests of association may not be ideally suited to these data and should be interpreted cautiously. Our data would suggest that it is probably most appropriate to understand each of these adopter groups as categories or types with several subtypes within each group. Also, although our data suggest that adoption patterns may be strongly influenced by a variety of organizational factors, our data do not allow us to determine the relative importance of particular characteristics in determining what type of adopter an organization might be. Future research on the adoption of innovations should seek to clarify what are typical organizational profiles of adoption and to better understand the conditions that create such profiles.

A second key limitation of the study concerns the fact that our data reflect the views of a single representative of each organization. Although we did interview the person who was perceived by the executive director as most knowledgeable about the HIV prevention programs, those individuals were not always necessarily employed at the time when the organization adopted, rejected, developed, or modified all of the programs that were discussed in the interview. These individuals' retrospective accounts of adoption experiences were therefore not always firsthand. Further, the experience of only a single individual within the organization may not represent the experience of others in the organization. Obtaining multiple perspectives within a single organization could enhance understanding of how program adoption occurs within organizations.

Finally, our data rely exclusively on the CBO representatives' perspectives regarding what program adoption is and whether that is something that

their organization has or has not done. We did not assess whether CBOs had in fact adopted a particular prevention program or whether they had done so faithfully. These data therefore only reflect CBO representatives' perception that the organization had adopted a program or ideas from an external source. Future research in this area ought to examine whether there are differences between organizations that implement programs with fidelity and those that do not.

Despite these limitations, our data have important implications for the field of HIV prevention and for theory concerning technology transfer of programs. The results of this study would suggest that the CBOs that are most likely to adopt prevention programs are small, HIV-focused organizations with limited resources. These organizations may require substantial technical assistance and resources in order to be able to implement and sustain new prevention efforts. In addition to technical assistance and increased resources, our results suggest that CBOs are more likely to adopt HIV prevention programs if they have been designed with the typical CBO service delivery context in mind, a context in which there are few personnel and nonpersonnel resources and in which community responsiveness is highly prized. Designing prevention programs that are informed by and responsive to the context and values of potential users are important ways to begin to encourage technology transfer between prevention science and practitioners and develop programs that are likely to be used in ongoing service provision.

REFERENCES

Aiken, M., & Hage, J. (1971). The organic organization and innovation. *Sociology*, *5,* 563–582.

Altman, D. (1994). *Power and community: Organizational and cultural responses to AIDS.* Bristol, PA: Taylor & Francis.

Altman, D. G. (1995). Sustaining interventions in community systems: On the relationship between researchers and communities. *Health Psychology*, *14,* 526–536.

Backer, T. E., David, S. L., & Soucy, G. (Eds.). (1995). *Reviewing the behavioral and science knowledge base on technology transfer*. Rockville, MD: National Institute on Drug Abuse.

Baldridge, J. V., & Burnham, R. A. (1975). Organizational innovation: Individual, organizational, and environmental impacts. *Administrative Science Quarterly*, *20,* 165–176.

Becker, M., & Joseph, J. (1988). AIDS and behavior change to reduce risk: A review. *American Journal of Public Health*, *78,* 394–410.

Centers for Disease Control and Prevention. (1997). *HIV/AIDS surveillance report* (Rep. No. 9). Atlanta, GA: Department of Health and Human Services.

Choi, K., & Coates, T. J. (1994). Prevention of HIV infection. *AIDS*, *8,* 1371–1389.

DiFranciesco, W., Kelly, J. A., Otto-Salaj, L., McAuliffe, T. L., Somlai, A. M., & Hackl, K. (1999). Factors influencing attitudes within AIDS organizations toward the use of research-based HIV prevention interventions. *AIDS Education and Prevention*, *11,* 72–86.

Fordyce, E. J., Williams, R. D., Surick, I. W., Shun, R. T., Quintyne, R. A., & Thomas, P. A. (1995). Trends in the AIDS epidemic among men who reported sex with men in New York City: 1981–1993. *AIDS Education and Prevention*, *7*(Suppl. 5), 3–12.

Freudenberg, N., & Zimmerman, M. A. (1995). *AIDS prevention in the community: Lessons from the first decade*. Washington, DC: American Public Health Association.

Garcia, D. (1999). *Innovation, prevention, and HIV: The influence of resources and relationships on community organizations.* Unpublished master's thesis, University of Illinois at Chicago, Chicago, IL.

Goldstein, E., Wrubel, J., Faigeles, B., & DeCarlo, P. (1998). Sources of information for HIV prevention program managers: A national survey. *AIDS Education and Prevention, 10,* 63–74.

Hage, J., & Aiken, M. (1970). *Social change in complex organizations.* New York: Random House.

Haynes-Sanstad, K., Stall, R., & Doll, L. S. (Eds.). (1999). Collaborative community research: Partnerships between research and practice [Special issue]. *Health Education and Behavior*, *26*(2).

Haynes-Sanstad, K., Stall, R., Goldstein, E., Everett, W., & Brousseau, R. (1999). Collaborative community research consortium: A model for HIV prevention. *Health Education and Behavior*, *26,* 171–184.

HIV/AIDS Resources. (1995). *The national directory of resources on HIV infection/AIDS: The professional's reference* (2nd ed.). Longmont, CO: Author.

Kalichman, S. C., Carey, M. P., & Johnson, B. T. (1996). Prevention of sexually transmitted HIV infection: A meta-analytic review of the behavioral outcome literature. *Annals of Behavioral Medicine*, *18,* 6–15.

Kruskal, W. H., & Wallis, W. A. (1952). Use of ranks in one-criterion variance analysis. *Journal of the American Statistical Association*, *47,* 583–621.

Mantel, N. (1963). Chi square tests with one degree of freedom: Extensions of the Mantel-Haenszel procedure. *Journal of the American Statistical Association*, *58,* 690–700.

Mantel, N., & Haenszel, W. (1959). Statistical aspects of the analysis of data from retrospective studies of disease. *Journal of the National Cancer Institute*, *22,* 719–748.

Mayer, J. P., & Davidson, W. S. (2000). The dissemination of innovation. In J. Rappaport & E. Seidman (Eds.), *The handbook of community psychology* (pp. 421–438). New York: Plenum Press.

McCormack & Associates. (1997). *The McCormack survey: A national survey of executive directors of AIDS service organizations and gay and lesbian social service organizations*. Los Angeles, CA: Author.

Mesters, I., & Meertens, R. M. (1999). Monitoring the dissemination of an educational protocol on pediatric asthma in family practice: A test of associations between dissemination variables. *Health Education and Behavior*, *26,* 103–120.

Miles, M. B., & Huberman, A. M. (1994). *Qualitative data analysis: An expanded sourcebook* (2nd ed.). Newbury Park, CA: Sage.

Miller, R. L. (1995). Assisting gay men to maintain safer sex: An evaluation of an AIDS service organization's safer sex maintenance program. *AIDS Education and Prevention*, *7*(Suppl. 5), 48–63.

Miller, R. L., Klotz, D., & Eckholdt, H. M. (1998). HIV prevention with male prostitutes and patrons of hustler bars: Replication of an HIV prevention intervention. *American Journal of Community Psychology*, *26*(1), 97–131.

Morrissey, E., Wandersman, A., Seybolt, D., Nation, M., Crusto, C., & Davino, K. (1997). Toward a framework for bridging the gap between science and practice in prevention: A focus on evaluator and practitioner perspectives. *Evaluation and Program Planning*, *20,* 367–377.

National Institutes of Health. (1997). Interventions to prevent HIV risk behaviors. *NIH Consensus Statement, Feb. 11–13*, *15*(2), 1–41.

Office of Technology Assessment. (1995). *The effectiveness of AIDS prevention efforts*. Washington, DC: Author.

Orlandi, M. A., Landers, C., Weston, R., & Haley, N. (1990). Diffusion of health promotion innovations. In K. Glanz, F. M. Lewis, & B. K. Rimer (Eds.), *Health behavior and health education: Theory, research, and practice* (pp. 288–313). San Francisco, CA: Jossey-Bass.

Pett, M. A. (1997). *Nonparametric statistics for health care research: Statistics for small samples and unusual distributions.* Newbury Park, CA: Sage.
Rogers, E. M. (1995). *Diffusion of innovations* (4th ed.). New York: Free Press.
Shediac-Rizkallah, M. C., & Bone, L. R. (1998). Planning for sustainability of community-based health programs: Conceptual frameworks and future directions for research, practice, and policy. *Health Education Research*, *13,* 87–108.
Steckler, A., & Goodman, R. M. (1989). How to institutionalize health promotion programs. *American Journal of Health Promotion*, *3,* 34–44.
Strauss, A., & Corbin, J. (1990). *Basics of qualitative research: Grounded theory procedures and techniques.* Newbury Park, CA: Sage.
Test Positive Aware Network. (1995). *The 1995–1996 Chicago-area HIV/AIDS services directory.* Chicago, IL: Author.
Thompson, J. D. (1967). *Organizations in action.* New York: McGraw-Hill.
Trickett, E. J. (1998). *Context and culture in AIDS interventions: Ecological ideas for enhancing community impact.* Unpublished manuscript.
UNAIDS/World Health Organization. (1997). *Report on the global HIV/AIDS epidemic, December 1997.* UNAIDS/World Health Organization Working Group on Global HIV/AIDS and STD Surveillance.