CHAPTER 11

Steps Toward Community-Level Resilience

Community Adoption of Science-Based Prevention Programming

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Prevention science provides a framework for community prevention planning that uses epidemiological data on empirically established predictors of health and behavior outcomes to identify specific short-term objectives for a community's prevention efforts, and to select effective preventive interventions that have been shown to address these specific risk factors and enhance community-level resilience. This approach offers promise for increasing the effectiveness of community prevention systems, yet a gap exists between the prevention science knowledge base and the actual practice of community-based prevention. This chapter reports findings from a study of the diffusion of science-based prevention planning in 41 communities across 7 U.S. states. Using telephone interviews with community leaders, the study assessed the adoption of science-based prevention planning by communities. Reliable and meaningful variation was found in adoption of science-based prevention planning across communities, though few communities had achieved widespread adoption of the approach. Diffusion processes related to greater adoption were identified. Training of community leaders

in science-based prevention was found to predict greater adoption of science-based prevention programming.

The developing field of prevention science integrates epidemiological data on the prevalence of problem behaviors among adolescents with information on the predictors of these behaviors and information on effective prevention strategies derived from controlled intervention trials (Coie et al., 1993; Kellam, Koretz, & Moscicki, 1999; Kellam & Rebok, 1992). Longitudinal studies have identified risk factors that predict increased likelihood of adolescent problems behaviors, as well as protective factors that counteract the negative effects of risk exposure (Hawkins, Catalano, & Miller, 1992; Hawkins et al. 1998; Rutter, 1990; Werner & Smith, 1992). Interventions designed to reduce specific risk factors and bolster protective processes have been developed. Their efficacy has been demonstrated in experimental and quasi-experimental studies (Catalano, Arthur, Hawkins, Berglund, & Olson, 1998; Durlak, 1998; Hawkins, Arthur, & Catalano, 1995; Sloboda & David, 1997).

Armed with knowledge of the predictors of adolescent problem behaviors and efficacious prevention strategies, prevention planners can match tested prevention strategies to the specific needs of local populations (Arthur & Blitz, 2000; Hawkins, 1999; Hawkins, Catalano, & Arthur, 2002; Hawkins, Catalano, & Associates, 1992). Prevention planning systems like Communities That Care (CTC) (Hawkins & Catalano, 2002) assist communities to assess the epidemiology of risk and protective factors and adolescent problem behaviors to identify levels of need for specific prevention services. Communities using the CTC approach use these data to identify and prioritize elevated risk factors and depressed protective factors in a population in order to guide the selection of prevention actions. They select and implement empirically tested interventions that address the specific risk and protective factors they have prioritized. Following implementation of new preventive interventions, levels of risk and protective factors and behavioral outcomes can be monitored, and interventions can be adjusted or modified in a process of continuous quality improvement of the community's prevention system (Hawkins & Catalano, 2002; Hawkins, Catalano, & Associates, 1992).

In spite of progress in the development of strategies for using prevention science to guide prevention practice in communities, a gap remains between the prevention science knowledge base and prevention practice (Backer, 2000; Kaftarian & Wandersman, 2000). Despite efforts to disseminate information about science-based prevention principles and programs (e.g., Developmental Research and Programs, 1996, 2000; Drug Strategies, 1999; Elliott, 1997; Office of National Drug Control Policy, 2000; Sloboda & David, 1997; Substance Abuse and Mental

Health Services Administration, 1998; Western Regional Center for the Application of Prevention Technologies, 1999), many communities use prevention approaches with little or no evidence of effectiveness (Backer, 2000; Ennett, Tobler, Ringwalt, & Flewelling, 1994; Hallfors, Sporer, Pankratz, & Godette, 2000). An important challenge for the field of prevention is to translate advances in scientific knowledge into effective prevention programming on a broad scale (Biglan, 1995; Mitchell, Stevenson, & Florin, 1996).

One reason for the gap between prevention science and practice is that relatively little is known about the process of disseminating science-based prevention programming at the community level. Related research on community prevention coalitions (e.g., Arthur, Ayers, Graham, & Hawkins, 2003; Butterfoss, Goodman, & Wandersman, 1993; Florin, Mitchell, & Stevenson, 1993; Kumpfer, Turner, Hopkins, & Librett, 1993), diffusion of innovations (Rogers, 1995), and community readiness for prevention (e.g., Arthur et al., 1996; Edwards, Jumper-Thurman, Plested, Oetting, & Swanson, 2000; National Institute on Drug Abuse, 1997; Oetting et al., 1995) suggest several factors that may influence the rate of adoption of new prevention technologies. In particular, the relative advantages of the new technology (Lewin, 1951; Scrutchins & David, 1996), leadership supporting prevention (Beckhard & Harris, 1987; Fawcett, Paine, Francisco, & Vliet, 1993; Kumpfer et al., 1993), and interagency collaboration in implementing preventive interventions (Chavis, Florin, Rich, & Wandersman, 1987; Morrissey, Tausig, & Lindsey, 1985; Wickizer et al., 1993) are likely to influence community-wide adoption of science-based prevention programming. Studies of community prevention initiatives also indicate that implementation of science-based prevention activities can be promoted by providing community members with training and technical assistance in needs assessment and strategic prevention planning (Arthur et al., 2003; Feinberg, Greenberg, Osgood, Anderson, & Babinski, 2002; Greenberg, Osgood, Babinski, & Anderson, 1999).

The process of community adoption of a science-based prevention approach can be conceptualized as a process of diffusion of innovation. Diffusion theory posits that the process of innovation diffusion consists of a series of actions and choices individuals and organizations make to evaluate a new idea and decide whether or not to incorporate the new idea into ongoing practice (Rogers, 1995). Rogers suggests that organizations proceed through five stages when deciding to adopt and incorporate an innovation into organizational practice: (1) knowledge, (2) persuasion, (3) decision, (4) implementation, and (5) confirmation. The innovation diffusion process involves an organization's passage from initial awareness of the innovation to forming an attitude about

Table 11-1 Hypothesized Stages of Adoption of Science-Based Prevention Approach

Stage 0	Pre-awareness. Little or no awareness of science-based prevention. Lack of clear understanding of concepts of risk and protective factors or their relevance to strategic prevention planning.
Stage 1	Awareness of terminology and concepts of science-based prevention. Understands concepts of risk and protective factors and their basis in longitudinal research.
Stage 2	Adoption of the science-based prevention framework as the basis for strategic prevention planning.
Stage 3	Collection of epidemiological data on risk and protective factors as well as adolescent problem behaviors.
Stage 4	Use of epidemiological data for allocating prevention resources. Prioritization of specific populations and risk and protective factors for preventive action, and selection of evidence-based interventions that address prioritized risk and protective factors.
Stage 5	Repeated collection of epidemiological data over multiple years for program evaluation, monitoring, and administrative purposes. Feedback of monitoring data into the prevention planning cycle.

the innovation to a decision to adopt or reject the idea. If the idea is adopted, the fourth stage involves implementing the innovation and the fifth stage involves seeking confirmation or reinforcement for the decision to adopt the innovation. In this fifth stage, the decision to incorporate an idea or innovation into organizational practice can be reversed if the organization is exposed to information that disconfirms the value of the innovation.

Based on the prevention science framework for community prevention planning and Roger's (1995) stages of innovation diffusion, we hypothesize that communities can be characterized as falling into one of six distinct stages of adoption of the science-based prevention approach (see Table 11-1). The lowest stage, pre-awareness (Stage 0), is defined by a lack of awareness of prevention science among community leaders and prevention providers. Community leaders need to be aware of the concepts and postulates of science-based prevention before they can consider adopting the approach as their framework for prevention planning. Thus, awareness is Stage 1. If community leaders and prevention practitioners are aware of the approach and believe it provides an improvement over their current approach, they may decide to adopt science-based prevention as a planning framework; this defines Stage 2. At Stage 3, implementation of the new approach requires collecting epidemiological data on risk, protection, and behavioral outcomes among adolescents in order to guide prevention planning.

In the fourth stage, these data are used to allocate prevention resources. Populations experiencing high levels of risk and low levels

of protection are identified, and specific elevated risk and depressed protective factors in those populations are prioritized. Tested and efficacious interventions that address the prioritized risk and protective factors are chosen and implemented. Finally, in the fifth stage, epidemiological data are re-collected periodically to monitor the community's progress in achieving its goals of reducing risk, increasing protection, and reducing the prevalence of problem behaviors. These stages are hypothesized to be ordinal, though not necessarily sequential in the order in which they first occur. For example, communities might collect data on adolescent drug use and related factors prior to awareness of prevention science and the decision to adopt a prevention science framework. However, Stage 3 can be attained only if leaders are aware of prevention science and have decided to adopt the framework in addition to collecting epidemiological data.

This chapter reports findings from a study investigating the adoption of the science-based prevention planning approach in 41 communities in seven states. Using the hypothesized six-stage model of adoption, two research questions are addressed: Can communities be characterized according to their stage of adoption of the science-based prevention approach? What factors are associated with community adoption of the science-based prevention planning approach?

METHOD

Sample

The 41 sample communities are part of a 5-year study of the natural history of adoption, implementation, and community-level effects of the science-based approach to prevention planning. This study, known as the Diffusion Project, is a collaborative effort of the state agencies responsible for alcohol and drug abuse prevention in Colorado, Kansas, Illinois, Maine, Oregon, Utah, and Washington; researchers in each state; and researchers at the Social Development Research Group at the University of Washington. The project is collecting data on the prevention systems and activities, as well as risk and protective factors and problem behaviors among adolescents in 41 communities across these seven states. The communities are small and medium-sized incorporated towns ranging in 2000 Census population from 1,578 to 106,221. Only 2 of the 41 communities have populations over 50,000, and the mean population is 17,589. The communities in each state were selected purposively to include both communities that had adopted the

science-based approach to prevention planning as well as communities that were not using this approach.

Data for measuring community adoption of science-based prevention were obtained from telephone interviews conducted with community leaders. Approximately 15 key informants from each community were identified and interviewed. Of the 15 key informants, 10 were positional community leaders (e.g., mayors, chief law enforcement officers, school superintendents, senior public health officials), and 5 were identified by the positional leaders as experts in the community's drug abuse prevention activities using a snowball sampling technique (Kish, 1965). The five prevention leaders mentioned most frequently by the positional leaders in each community were interviewed. Due to variation across communities in response rates, the actual numbers of positional leaders interviewed in each community ranged from 8 to 12, while the actual numbers of referred prevention leaders ranged from 3 to 7.

Positional leaders were selected to represent a predetermined set of community leadership positions (e.g., mayor, superintendent of schools, police chief or sheriff, health agency or hospital director, business leader) to provide information about the knowledge and opinions of a comparable sample of those who control resources and shape opinion in each community. Prevention leaders were included to provide information from individuals thought to be the most knowledgeable about the community's prevention activities. The sample of referred prevention leaders was more varied across communities, but the majority were involved in some aspect of prevention service and included drug-free school coordinators, prevention coalition chairs, United Way directors, and school guidance counselors. Respondents identified in each community were contacted first by a letter informing them of the project, its goals and procedures, and requesting their participation in an interview focusing on current prevention activities in their community. Telephone interviews were conducted with both positional leaders and prevention leaders. Five hundred eighty-six interviews were conducted during the fall and winter of 1998–1999.

Measures

Trained interviewers conducted the key informant interviews using a semi-structured survey instrument programmed into a Computer-Assisted Interviewing (CATI) system. The interviews averaged about 1 hour in duration. The instrument was pretested with 10 community leaders and prevention providers from communities not participating in the study and revised prior to conducting the interviews for this study.

Closed-ended questions were developed specifically to assess the six stages of adoption of science-based prevention. For example, questions assessed the respondents' knowledge and attitudes toward the science-based approach to prevention planning, their perceptions of the community's adoption of the approach, and the use of data within the community to guide prevention strategy selection, resource allocation, and prevention program evaluation. Open-ended questions asked the respondent to describe the prevention planning approaches and activities undertaken by community organizations and agencies. The interview also included questions that assessed variables hypothesized to influence community adoption of science-based prevention.

Measures of Adoption Stage

A three-step process was used to code each respondent's rating of his or her community's stage of adoption. First, decision rules were created for scoring the closed-ended items. These rules were designed to categorize the community's stage of adoption by assessing whether or not the respondent's answers to specific questions met the criteria defining each stage. Based on the pattern of responses to the closed-ended items, each respondent was given an overall stage score representing the highest stage for which criteria were met.

Second, three open-ended questions asking about the community's prevention planning approach and activities were content coded for each respondent. Detailed coding rules were established, and a score of 1 (no evidence of attainment), 2 (some evidence of attainment), 3 (clear evidence of attainment), or 9 (missing because respondent did not talk about the criteria at a particular stage) was assigned to each respondent for each adoption stage based on the responses to the open-ended questions. Inter-rater reliability was assessed for the coding protocol by having two trained raters independently code the open-ended items for 50 respondents. Coefficient Kappa, which controls for chance agreement between raters (Fleiss, 1971) was computed for each stage score, resulting in satisfactory to excellent inter-rater reliability scores ranging from .46 to 1.0 across the six stages. A final open-ended stage score was assigned to each respondent reflecting the highest stage coded.

In the third step, the adoption scores derived from both the closed-ended and open-ended questions for each respondent were compared, and a final stage score reflecting the greater of the closed-ended and open-ended scores was assigned to the respondent. Thus, each respondent's rating of his or her community's adoption stage was the highest stage indicated by his or her responses to both the closed-ended and open-ended questions in the interview.

Using the final stage scores coded for each key informant, two aggregate measures of adoption of the science-based prevention approach were computed for each community. First, the scores of all the positional leader respondents in each community were averaged to create a Positional Leader Stage Score. As the average of all positional leader respondents within a community, this variable reflected the degree to which the science-based prevention model had spread throughout the community's leadership system to those individuals who controlled community resources that could support prevention. Second, the scores of all the referred prevention leader respondents in each community were averaged to create a Prevention Leader Stage Score. This measure reflected the degree to which a science-based approach had diffused among those individuals who were implementing the community's prevention efforts. These two measures were hypothesized to reflect two distinct levels of adoption of the science-based prevention planning framework within the communities.

Measures of Diffusion Processes

In addition, the interviews assessed several factors hypothesized to influence community adoption of a science-based prevention framework. The first factor was exposure to training in science-based prevention principles and/or practices. Respondents were asked whether or not they had been to a training to learn about science-based prevention and if they had seen a science-based prevention manual, training kit, or curriculum. For clarification, respondents who indicated that they had seen a prevention model manual, training kit, or curriculum were asked to name it. Depending on the respondent's answer, this variable was coded 3 for the Communities That Care training materials (a training kit specifically designed to help communities implement the science-based prevention model), 2 for any state or federally prepared training manuals, kits, or curricula in science-based prevention, 1 for any other training manuals, kits, or curricula, or 0 for none. This ordinal scale was created to reflect the degree to which the materials were likely to focus on the specific steps involved in implementing a science-based approach to prevention planning.

Respondents also were asked to rate on a 4-point scale how easy they thought the science-based prevention approach was to understand, and whether or not they supported this approach. These are factors identified by Rogers (1995) as influencing the likelihood an innovation will be adopted. Similarly, respondents were asked to rate on a 4-point scale the degree to which their adoption of the science-based prevention approach was influenced by the fact that it is supported by research, and

were also asked to rate on a 4-point scale the degree to which adoption was influenced by a state mandate to use the approach. The extent of collaboration in the community was assessed with two questions asking about the degree to which community institutions, organizations, agencies, and individuals worked together to address community problems (Pearson's $r = .46$ for the two questions).

RESULTS

Stages of Adoption

The first question addressed was whether or not the 41 communities participating in the Diffusion Project could be characterized according to the hypothesized stages of adoption of a science-based prevention approach. To answer this question, properties of the two adoption measures were examined. First, the distributions of adoption stage score ratings were examined for the two categories of respondents (i.e., prevention leaders and positional leaders). The data in Table 11-2 show that a third of the prevention leaders (34%) and the majority of positional leaders (57%) were not aware of the science-based prevention approach.

Fewer than half of both the prevention and positional leaders rated their communities' adoption stage higher than Stage 1 (Awareness). Moreover, while 21% of prevention leaders reported their communities had implemented research-based prevention programs and were monitoring the impact of these programs, only 10% of positional leaders reported that their communities were doing these things. It is interesting to note that the distributions of adoption scores are U-shaped for both respondent categories, with relatively few respondents rating their communities at Stage 2 or Stage 3. This suggests that, once community leaders have made the decision to adopt the model, most believe that their

Table 11-2 Percent of Respondents at Each Stage of Adoption

	Positional Leaders ($n = 407$)	Prevention Leaders ($n = 278$)
Stage 0: Not aware of the framework	57.2%	34.2%
Stage 1: Aware of the framework	20.6%	25.2%
Stage 2: Adopted the framework	2.9%	2.9%
Stage 3: Collecting data to assess needs	2.5%	2.5%
Stage 4: Using research-based programs	7.1%	14.4%
Stage 5: Monitoring impact	9.6%	20.9%

communities have moved beyond data collection to begin using the data to select programs and, in some cases, to monitor the impact of these programs. Despite this similarity between the distributions, however, the ratings were significantly different across the two distinct groups of respondents ($\chi^2 = 43.38,\ p < .001$), indicating that the positional leaders rated their communities differently than the prevention leaders. Thus, the adoption scores were analyzed separately in subsequent analyses.

Before examining the community-level distributions of the two aggregate adoption stage scores, properties of the two aggregate measures were examined. Using the approach described by Sampson, Raudenbush, and Earls (1997), a two-level multi-level model was run for each measure of adoption using HLM 5.0 (hierarchical linear models version 5.0) (Raudenbush, Bryk, Cheong, & Congdon, 2000). The intraclass correlation (ICC) among the community leader ratings of adoption and the reliability of the community mean adoption scores were computed for each of the two measures of adoption.

In a two-level hierarchical model, the ICC is the ratio of the variability in the measure between level-two units (e.g., communities) to the total amount of variability in the measure (both within and between groups). Thus, in this study the ICC provides a measure of the agreement among key informants' adoption ratings within each community by estimating the proportion of the variance in the ratings that occurs between the communities. If there is perfect agreement among the raters within each community, then the ICC equals 1.0 and all the variability in the measure exists between communities. The results in Table 11-3 show that, for prevention leaders, 28% of the variability in adoption scores occurred between the 41 communities, while for position leaders, 23% of the variation occurred between communities. Thus, while individual respondents' perceptions of their community's adoption of science-based prevention varied, a substantial proportion of the variation in respondents' ratings of community adoption occurred between communities rather than between individuals. This finding indicates that the measures of community adoption stage reported here reflect meaningful differences between communities.

Table 11-3 HLM Reliabilities and Intraclass Correlations

	Positional Leaders	Prevention Leaders
Final stage score reliabilities	.749	.710
Intraclass correlations (ICCs)	.232	.275
Average cluster size	9.9	6.8
Cluster size range	8–12	3–7

The community-level reliability estimates reported in Table 11-3 represent the reliability of the aggregated community-level adoption scores for use in distinguishing among the communities. In the two-level models run for this study, the reliability of the adoption score is a function of the number of respondents within each community and the variability among respondents within and between communities; essentially, the reliability estimates presented are the averages of the reliabilities obtained from each of the 41 communities. The higher the reliability, the less error variation there is around the estimated parameters, in this case the mean community adoption scores. The reliability of the aggregated adoption scores for prevention leaders was .71, and the reliability of the scores for positional leaders was .75, suggesting that the aggregate community adoption scores obtained by averaging the positional leaders' and the prevention leaders' individual ratings were reasonably reliable. Thus, the analyses support the hypothesis that these communities did vary in their stage of adoption of a science-based prevention planning approach, and that such variation across communities can be measured through interviews with positional leaders and prevention leaders in those communities.

At the community level of analysis, most study communities were aware of the risk and protection-focused approach, regardless of respondent type. However, only 2% of the communities had progressed beyond stage 3 (collecting needs assessment data) according to the positional leader ratings, while fewer than 18% of communities had progressed beyond Stage 3 according to the prevention leaders' ratings (see Table 11-4). According to positional leaders, 24% of the communities had adopted the framework (summing across stages 2 and higher), and 14% were collecting data to assess youth prevention needs (summing across stages 3 and higher), but only 2% were using the data to select research-based programs and none had reached Stage 5. Using prevention leaders' ratings, 41% of the communities had adopted the

Table 11-4 Percent of Communities at Each Stage of Adoption ($N = 41$)

	Positional Leaders	Prevention Leaders
Stage 0: Not aware of the framework	24%	5%
Stage 1: Aware of the framework	51%	39%
Stage 2: Adopted the framework	10%	15%
Stage 3: Collecting data to assess needs	12%	24%
Stage 4: Using research-based programs	2%	15%
Stage 5: Monitoring impact	0	2%

framework and were collecting data to assess prevention needs (summing across stages 3 and higher), 17% were using the data to select research-based programs, and 2% of communities were monitoring the impact of their prevention programs on participants' exposure to risk and protective factors. Thus, while ratings differed significantly by respondent type $\chi^2 = 12.65$ $p < .001$), both sets of ratings suggested that the majority of leaders in most communities in the study were aware of the framework, while the majority of leaders in relatively few communities reported they were using the framework to guide selection and monitoring of research-based prevention strategies. These findings also show that prevention leaders tended to report that their communities were further along in adopting the science-based prevention approach than positional leaders.

Correlates of Adoption

Given the observed variation across the 41 communities in their degree of adoption of the science-based prevention approach, analyses were conducted to investigate factors expected to influence the adoption of the science-based prevention approach. Table 11-5 presents the correlations between community-level measures of these factors and the two aggregated community adoption scores. Correlations between both types of adoption scores and several factors were consistently positive and significant at the $p < .01$ level. The factors significantly correlated with adoption were the number of leaders in the community who: a) had attended a training in the approach; b) had seen a training manual, kit, or curriculum; c) were able to name the type of training manual, kit, or curriculum; d) supported the science-based prevention approach; and e) believed that the approach was supported by research, In contrast, community leaders' mean ratings that the approach was easy to understand and their ratings of the degree of collaboration in the community were not correlated significantly with community adoption scores, nor was a mandate from the state to adopt the science-based prevention approach significantly correlated with community adoption scores.

DISCUSSION

Positional leader and prevention leader ratings revealed reliable differences across communities in community adoption of science-based prevention. These findings indicate that communities can be characterized according to their stage of adoption of a science-based approach to prevention and enhancing resilience. Estimates of community adoption

Table 11-5 Correlations between Community Adoption Stage and Factors Hypothesized to Influence Adoption

Diffusion Factors	Positional Leaders ($N = 41$)	Prevention Leaders ($N = 41$)
Number of leaders attending training in the approach	.86**	.73**
Number of leaders who have seen a risk and protection-focused prevention training manual, kit, or curriculum	.75**	.73**
Number of leaders who can name the training manual, kit, or curriculum	.67**	.74**
Number of leaders who support science-based prevention	.92** ($N = 39$)	.67**
Number of leaders stating the science-based prevention approach was adopted because it is supported by research	.91** ($N = 30$)	.76** ($N = 37$)
Number of leaders stating that the approach was adopted because mandated by state agency	.24 ($N = 31$)	.19 ($N = 37$)
Rating: Science-based prevention is easy to understand	−.07 ($N = 38$)	−.04
Rating: Community groups collaborate	.15	.20

* $p < / = .05$ ** $p < / = .01$

stages differed by type of respondent. Positional leaders who control resources and shape opinion generally rated their communities at a lower stage of adoption of science-based prevention than did leaders of prevention activities in the communities. These differences are not surprising. It is reasonable to expect that those people most involved in prevention work would be the first to learn of and adopt prevention science-based innovations available to guide prevention planning. These findings also indicate that, in 1998–1999, in most communities in this study, knowledge of prevention science had not yet diffused to the community leaders who control resources and whose leadership and support is likely to be needed for widespread community adoption of science-based prevention approaches and for reallocation of resources to support science-based prevention.

The findings document the "gap" between prevention research and practice at the community level (e.g., Kaftarian & Wandersman, 2000). Few respondents of any type reported that their communities had taken the science-based approach to prevention to full implementation, and less than 20% of communities were using needs assessment data to

guide selection of tested prevention strategies. While increasing numbers of states and communities have begun to collect epidemiological data on risk and protective factors (e.g., Kansas Department of Social and Rehabilitation Services/Alcohol and Drug Abuse Services, 2001; Washington State Department of Social and Health Services, 2000), the findings reported here suggest that these data have not yet been used widely to guide prevention planning at the community level.

This study produced important findings regarding factors that influence community adoption of a science-based prevention framework. Training of community leaders in science-based prevention clearly was related to greater adoption. Across both respondent types, indicators of community leaders' participation in training in the science-based prevention approach were strongly and positively related to higher ratings of community adoption of the approach. Larger numbers of leaders within the community who reported having attended a training workshop in the approach; having seen a manual, kit, or curriculum describing the approach; and being able to name the manual, kit, or curriculum were all clearly related to greater adoption of the approach.

In addition, communities reached higher stages of adoption when more leaders reported that they supported a science-based approach to prevention or that the community adopted such an approach because it was supported by research. However, respondents' ratings of ease of understanding of the approach were not related to community levels of adoption. Interestingly, while community leaders' reports of the level of collaboration in the community were positively correlated with stage of adoption, these correlations were weak and non-significant. Importantly, the present data indicate that mandates from state funding agencies to use science-based prevention approaches are insufficient, by themselves, to increase adoption of science-based prevention actions in communities.

Limitations of this study should be noted. The communities included in the sample were not randomly sampled. Rather, they were purposely sampled to maximize variability in the degree of adoption of a science-based approach to prevention. Thus, the findings cannot be interpreted as representing the true distribution of community adoption of science-based prevention planning. If anything, it is likely that communities at higher levels of adoption of this approach are over-represented in this sample due to the intentional inclusion of such communities.

This study is a step in bridging the gap between prevention science and effective community level prevention. The study has shown that communities can be characterized according to their level of adoption of an approach to prevention grounded in prevention science and has identified factors related to higher levels of adoption of science-based

prevention. Results emphasize the need for quality training to disseminate research-based prevention approaches, and the importance of the research foundation of the approach in influencing community leaders' decisions to adopt it.

ACKNOWLEDGMENTS

Work on this chapter was supported by research grants 1 R01 DA10768-01A1 from the National Institute on Drug Abuse, a grant from the US. Department of Education, and collaborative funding from the Center for Substance Abuse Prevention, DHHS, and the Office of Juvenile Justice and Delinquency Prevention, DOJ.

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