

Evidence-Based Interventions in Schools: Developers' Views of Implementation Barriers and Facilitators

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Abstract This study examined the factors that are important to successful implementation and sustainability of evidence-based interventions in school settings. Developers of interventions that have been designated as “evidence-based” in multiple vetted lists and registries available to schools participated in a structured interview. The interview focused on potential facilitators and barriers to implementation and sustainability of their intervention. The interviews were transcribed and coded to identify similarities and differences among the responses as well as themes that cut across participants. Results indicated that those concerned with effective implementation and sustainability need to address several areas: (a) development of principal and other administrator support; (b) development of teacher support; (c) development of financial resources to sustain practice; (d) provision of high-quality training and consultation to ensure fidelity; (e) alignment of the intervention with school philosophy, goals, policies, and programs; (f) ensuring that program outcomes and impact are visible to key stakeholders; and (g) development of methods for addressing turnover in school staff and administrators.

Keywords Evidence-based interventions · Schools · Mental health · Implementation · Sustainability

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The number of interventions available for use in schools concerned with child and adolescent mental health has grown substantially over the past two decades (Kratochwill et al., [in press](#)). Along with this growth in interventions focused on improving child and adolescent emotional, behavioral, and social functioning have come a variety of efforts by federal agencies, university-based researchers and centers, and national and international organizations and foundations to define standards of evidence and highlight practices and programs that meet those standards (Olin, Saka, Crowe, Forman, & Hoagwood, [in press](#)). These vetting and dissemination efforts seek to bring research to practice and promote use of evidence-based interventions to support the healthy development of students in the school context.

Use of evidence-based interventions has become a hallmark of high-quality professional practice in school mental health. Evidence-based interventions are those that are empirically supported and substantiated with research findings that demonstrate beneficial and predictable outcomes. Use of evidence-based interventions in schools has been mandated through recent national laws and policy such as the 2004 reauthorization of the Individuals with Disabilities Education Act and the No Child Left Behind Act, as well as state-specific policies. In addition, professional organizations such as the National Association of School Psychologists endorse use of evidence-based interventions in their practice guidelines (Ysseldyke et al., [2006](#)).

Unfortunately, despite the availability of and policy support for evidence-based interventions, a growing body of literature indicates that implementation of these interventions in schools is low. For example, a recent evaluation of drug-use prevention practices in 1795 schools indicated that more than 80% of school districts implemented some

type of drug use prevention program, but only 17% of schools used efficacious methods to deliver the program, and only 14% used efficacious program content (Ennett et al., 2003). Intervention selection decisions of schools tend toward heavily marketed programs that are compatible with past practices, despite lack of scientific support, and when schools do use evidence-based interventions, they are frequently implemented with low fidelity (Hallfors & Godette, 2002). A study of implementation fidelity found that only 25–50% of programs implemented in a nationally representative sample of schools were at dosage levels (defined as number of sessions) comparable to those in research-based programs (Gottfredson & Gottfredson, 2002). If implementation of evidence-based interventions is of poor quality, positive outcomes are likely to be mitigated, no matter how strong the demonstrated effects of efficacy studies.

A growing body of cross-disciplinary literature provides direction for investigation of this problematic situation. For many years it was thought that if a practice or program was efficacious and if information were made available about it, it would automatically be implemented. We now know that implementation is a complex process consisting of distinct stages and affected by personal, organizational, and systems factors.

Implementation has been defined as a “specified set of activities designed to put into practice an activity or program of known dimensions” (Fixsen, Naoom, Blasé, Friedman, & Wallace, 2005, p. 5). There is agreement in the literature that there are stages to the implementation process that include: (a) adoption—the decision to use the intervention; (b) implementation—carrying out the intervention; and (c) sustainability—continuing to carry out the intervention after initial implementation (Fixsen et al., 2005; Rogers, 2003). The notion of stages is important because implementers and stakeholders engage in different types of decision making and activities in different stages. It is generally believed that the factors that influence decision making and action differ across stages, although the specifics of how this occurs have not been determined.

Literature from a variety of disciplines supports the idea that the implementation and sustainability of an intervention can be affected by: (a) personal factors including the characteristics, attitudes, beliefs, and behaviors of implementers; (b) factors related to the organizational context for the intervention, including the attitudes, beliefs, and behaviors of administrators/managers and other stakeholders, as well as organizational policies, structures, and procedures; and (c) the external environment of the implementing organization (Domitrovich et al., 2008; Fixsen et al., 2005; Greenhalgh, Robert, Macfarlane, Bate, & Kyriadiou, 2004; Klein & Sorra, 1996; Rogers, 2003). However, the manner in which these factors affect the

implementation of evidence-based mental health interventions in school settings has not been specified.

The purpose of this study was to determine the factors that are important to successful implementation and sustainability of evidence-based interventions in school settings and to identify directions for strengthening the connection between research and practice in the delivery of interventions in schools. Developers of interventions that have been designated as “evidence-based” constitute a unique group of individuals who have substantial scope and depth of experience in intervention implementation attempts, and first-hand knowledge of the barriers and facilitators for implementation of evidence-based interventions in school settings. We examined their perceptions of the effects of a range of factors at the personal, organizational, and systems level on the implementation and sustainability of their interventions.

Method

Intervention Review

Evidence-based mental health interventions were identified using lists and registries of evidence-based interventions that are readily available to school consumers. These lists and registries were located through web searches, literature review, and snowball sampling. All federal agencies involved in education, mental health, or health of children and youth were included in this search. Eleven vetted lists were identified. The vetting groups and list sources can be seen in Table 1.

On these 11 lists, 455 interventions were endorsed and designated as evidence-based. These 455 interventions were then examined by the investigators relative to the following three criteria: (a) school-based or had school-based components; (b) were tested in studies utilizing either a randomized control or a quasi-experimental research design (quasi-experimental was defined as matched control or comparison group without random assignment; usually with equivalence of groups or statistical adjustment); and (c) outcome data showed clear evidence of the program’s effectiveness (significant effects on targeted variables). Ninety-eight interventions were found that met these three criteria. The number of endorsements, defined as the number of times the intervention appeared on a list of evidence-based interventions, was then examined. The number of endorsements an intervention received served as an indicator of the degree of advocacy for an intervention by the researchers, agencies, organizations, and foundations that are attempting to bring research to practice. Of these 98 interventions, 58 were endorsed on more than one list. When the frequency

Table 1 Evidence-based intervention lists

Vetting group	List source
American Youth Policy Forum	www.aypf.org
Center for the Study and Prevention of Violence, University of Colorado	Blueprints for Violence Prevention, www.colorado.edu/cspv/blueprints
U.S. Department of Health and Human Services, Center for Mental Health Services	Greenberg, Domitrovich, and Bumbarger (1999), Preventing Mental Disorders in School-Aged Children: A Review of the Effectiveness of Prevention Programs
Substance Abuse and Mental Health Services Administration, Center for Substance Abuse Prevention	National Registry of Effective Prevention Programs, www.modelprograms.samhsa.gov
U.S. Department of Education, Office of Safe and Drug Free Schools	www.ed.gov
Communities That Care, Developmental Research and Programs	Posey, Wong, Catalano, Hawkins, Dusenbury, Chappell, (2000), Communities That Care Prevention Research Strategies: A Research Guide to What Works. www.preventionscience.com/ctc/CTC.html
University-based researchers	Mihalic & Aultman-Bettridge (2004). A guide to effective school-based prevention programs. In Willima L. Tulk (Ed.) Policing and School Crime. Englewood Cliffs, NJ: Prentice Hall Publishers
National Institute on Drug Abuse, National Clearinghouse for Alcohol and Drug Information	Preventing Drug Use Among Children and Adolescents: A Research-Based Guide
Strengthening America's Families	www.strengtheningfamilies.org
U.S. Department of Health and Human Services, Surgeon General's Report	Youth Violence: A Report of the Surgeon General (2001). www.surgeongeneral.gov/library/youthviolence
U.S. Department of Justice, Office of Juvenile Justice and Delinquency Prevention	Title V Training and Technical Assistance Programs for State and Local Governments: Effective and Promising Programs Guide. www.dsgonline.com
Promising Practices Network	www.promisingpractices.net
Hamilton Fish Institute	www.hamfish.org/program
Centers for Disease Control	www.cdc.gov/hiv/pubs
Collaborative for Academic, Social, and Emotional Learning	www.casel.org/programs/selecting.php

of the distribution of the number of endorsements was examined, a natural cutpoint of four endorsements was found to distinguish a substantial subset of the programs. The 29 interventions that were endorsed on four or more lists (see Table 2) were the source of potential participants in this study. Through this process, creation of an additional definition of “evidence-based intervention” was avoided. Rather, school interventions were included that were designated as evidence-based by multiple established vetting groups because they had a high degree of advocacy for adoption and implementation in dissemination-focused literature and websites, and were therefore more likely to be considered for adoption by schools.

Intervention Characteristics

Information on the content and processes of each of the 29 interventions was abstracted from published literature and/or online sources. As part of a separate study, a coding system was developed to summarize their common features. Interventions were coded across several dimensions including intervention target, intervention context, therapeutic approach, and dosage. Table 3 shows a summary of

the characteristics of these interventions in terms of the target problem or skill addressed, the approach used, the school level, the domain or intervention context, the prevention level addressed, and the dosage. The full study is reported elsewhere (Olin et al., *in press*). The large majority of the interventions used a behavioral or cognitive-behavioral approach.

Participants

Each of the intervention developers of these 29 programs was approached through an initial e-mail letter describing the general purposes of the study and requesting time for a phone call in which the study could be fully explained. Potential participants who agreed to the phone call were sent a more comprehensive written explanation of the study (the research protocol) and an informed consent form. During the phone call the researchers gave an overview of the study and determined the potential participant's interest in the project. If the potential participant was interested, the researcher reviewed the consent form, asked the participant to sign it, retain a copy for their records, and mail it back to the researcher. A time to conduct a phone interview was

Table 2 Evidence-based interventions

Intervention	Developer
Adolescent Transitions Program	Thomas Dishion, Karen Kavanaugh
All Stars	William Hansen
Athletes Training and Learning to Avoid Steroids (ATLAS)	Linn Goldberg
Bullying Prevention Program	Dan Olweus, Marlene Snyder, Susan Limber
CASASTART	Lawrence Murray
Child Development Project	Eric Schaps
Creating Lasting Family Connections (COPEs)	Ted Strader
FAST Track	Mark Greenberg
Good Behavior Game	Sheppard Kellam
I Can Problem Solve	Myrna Shure
Life Skills Training (LST)	Gilbert Botvin
Linking the Interests of Families and Teachers (LIFT)	John Reid
Behavior Monitoring and Reinforcement Program (BMRP)	Brenna Bry
Preventive Treatment Program (Montreal Longitudinal Experimental Study)	Richard Tremblay
Project ALERT	Phyllis Ellickson
Project Northland	Cheryl Perry
Project PATHE (Positive Action Through Holistic Education)	Denise Gottfredson
Project STAR (Midwestern Prevention Project)	Mary Ann Pentz
Project Toward No Drug Use	Steven Sussman
Project Toward No Tobacco Use	Steven Sussman
Promoting Alternative Thinking Strategies (PATHS)	Mark Greenberg
Quantum Opportunities Program (QOP)	C. Benjamin Lattimore
Reconnecting Youth	Leona Eggert
Responding in Positive and Peaceful Ways (RIPP)	Wendy Northup, Aleta Meyer
School Transitional Environmental Program (STEP)	Robert Felner
Second Step	Claudia Glaze
Seattle Social Development Project	J. David Hawkins
The Incredible Years	Carolyn Webster-Stratton
Cognitive Behavioral Intervention for Trauma in Schools	Lisa Jaycox

scheduled, and a copy of the interview questions was sent to the participant. Twenty-four intervention developers, representing 25 programs, agreed to be interviewed, yielding a response rate of 86%. Programs of the four developers who were not interviewed did not appear to differ in any systematic way from those who agreed to participate. Those programs represented elementary, middle, and high school levels, targeted a variety of problem areas, and varied in dosage. As with the majority of the sample, all four programs were prevention programs. Two of the four programs were at the universal or primary level, and one of these was also at the selective or secondary level; two of the programs were at the indicated or tertiary level.

Interview

Structured phone interviews were conducted by the investigators, and were tape recorded and transcribed verbatim.

The interview generally lasted 60–90 min. Each interview consisted of 51 questions. Eleven of the questions focused on program characteristics such as the purpose, target, content, and format of the intervention. Seven questions focused on implementation technology such as the type of training and technical assistance available, resource requirements of the intervention, and attributes of effective implementers. Sixteen of the questions focused on barriers and facilitators to implementation of the intervention and the role of implementers and stakeholders, school organizational factors, and the external environment of the school in successfully implementing the intervention. Seventeen questions focused on barriers and facilitators to sustainability and the role of implementers and stakeholders, school organizational factors, and the external environment of the school in sustaining the intervention. Sample interview questions can be seen in Table 4. (The complete interview protocol can be obtained from the first author.)

Table 3 Characteristics of the 29 most widely advocated programs

Characteristic	% of programs
Problem/skill target	
Externalizing behaviors	59
Substance use	55
School failure	14
Sexual activity	7
Trauma	3
Academics	7
Prosocial behavior	27
School climate	21
Multiple targets	52
Approach	
Behavioral/cognitive-behavioral	83
Psychoeducational	76
Organizational change	21
Social/health/education services	17
School level	
Elementary	48
Middle	59
High school	41
Domain components	
Classroom	79
Whole school	21
Parent/family	69
Community	21
Prevention level	
Universal	76
Selective	34
Indicated	38
Dosage	
Less than 1 year	21
1 year	7
2 years	14
3+ years	31
10+ sessions per year	41
20+ sessions per year	41

Interview Coding and Analysis

The investigators (the five authors) read the initial four transcripts and then generated a series of codes for each interview question response (i.e., labels to reflect the meaning of the interview narrative). These codes were used to identify salient issues and similarities and differences among the responses. The number of codes differed for each interview question, ranging from two codes for questions that could be answered “yes” or “no” to 14 codes for complex open-ended questions such as “What have been the major obstacles or hindrances that you have encountered when introducing your program in schools?”

Two doctoral school psychology graduate students were then trained to use the list of codes by one of the investigators (SF) until they demonstrated 100% inter-rater reliability in their coding of two transcripts. The coders then applied the coding scheme to all transcripts. In the few instances when the coders disagreed on how to code an interview question response, the lead author met with them and discussed the response until the coders were able to agree on a code. If the coders were unable to agree, the investigators determined which code to use. This occurred infrequently—between zero and two times per transcript. After the coding of transcripts was completed, the investigators re-read the 24 transcripts to formulate discussion points and conclusions.

Results

Results are organized according to the major themes addressed through the interview questions. Percentages of developers who indicated a particular category of response are reported, as well as quotations from the developers to provide a context for understanding of categorized responses.

Efficacy to Effectiveness

Sixteen of the 24 developers (67%) indicated that since the initial development of their intervention they had changed the format or content because of problems they encountered when trying to implement and/or sustain the intervention in schools. These changes were most often precipitated by problems expressed by the primary implementer of the intervention (46%), although changes were also made in many cases because of reactions of students (33%). Changes most often involved adapting the intervention to make it easier to implement or augmenting the intervention to make it more compatible with client needs.

The Adoption Process

Developers were questioned about the process through which their intervention was typically adopted by schools. They indicated that the adoption process was most often initiated by school staff (71%) after they had learned about the intervention at a meeting, on a website, or through written materials. However, for about 30% of interventions, intervention program staff made an initial contact with the school and encouraged adoption. Interestingly, in addition to having established the efficacy of their interventions (by definition to participate in this study), this latter group of developers seems to have developed the capacity to disseminate and market their interventions.

Table 4 Sample interview questions*Questions on the school context for implementation*

1. What have been the major factors that have made implementation efforts related to your program successful? Did schools in which implementation was most successful take special steps to prepare and/or did certain school climate characteristics contribute to success?
2. What have been the major obstacles or hindrances that you have encountered when introducing your program in schools?
3. In instances of successful implementation, what role, if any, did the school principal, or other school or school district administrators play? Have any specific types of administrative actions acted as barriers to successful implementation of your program (describe)?
4. In instances of successful implementation what role, if any, did teachers play? Have any particular types of behavior of teachers acted as barriers to successful implementation of your program (describe)?
5. If you were beginning the process of introducing your program into a school now, what steps would you take to best prepare for successful implementation?

Questions related to implementation technology

1. What type of training (content, format, length) is needed for these school staff to successfully implement your program? Is written information available for school staff wishing to implement your program? If yes, in what format is this information available (manual, book, journal article, website)?
2. Is direct technical assistance by you or your staff necessary to successfully implement your program? If yes, of what kind (content, format, duration)?
3. What would you describe as the attributes of an effective school-based implementer of your intervention?

Questions related to program sustainability

1. What were the major factors that contributed to long-term sustainability?
2. In instances where your program was not sustained long-term, what have been the major obstacles?
3. In instances where your program was sustained long-term, what role, if any, did the principal or other school administrators play?
4. In instances where your program was sustained long-term, what role, if any did teachers play?
5. If you were beginning to work to sustain your program in a school now, what steps would you take to best prepare for this?

Note: The full interview protocol is available from the first author

For some of the developers, dissemination and implementation was a daunting task. For example, one developer stated that she had no training in graduate school about “business and sales and marketing and public relations. We know how to develop products, but we don’t know what to do with them once we have got them. All of the questions you are asking are things that I’ve just been flying by the seat of my pants and responding to requests. I don’t have any skills...I am trying to read, you know, self-help books on...Small Businesses for Dummies...” Another stated, “I’d have to have a lot bigger staff and a lot more communication. You’d really have to have a company to do this. I think that this is very difficult to do as a researcher/professor. It is extremely difficult. You’d have to get a staff. You’d have to really develop a business.”

Implementation Facilitators and Barriers

When asked to identify the major factors that have made implementation of their intervention successful, the developers consistently cited a number of facilitators. Most often, their responses indicated that teacher support (58%), principal support (54%), support from other administrators (58%), and good training (50%) were essential. Although not cited as often, integrating the intervention with other school programs or the curriculum (29%), good technical assistance (25%), and engaging the school in planning for

implementation (25%) were also thought to be important facilitators.

When asked about the major obstacles or hindrances that they have encountered in their implementation efforts, the developers most often cited money as the primary barrier (54%). In addition, other frequently cited barriers were time for the intervention in the school day (33%), school personnel beliefs about the intervention (33%), competing priorities in the school (29%), and the No Child Left Behind Act (NCLB) (29%). A substantial number of these developers thought NCLB hindered their implementation efforts because school personnel were focused on the results of academic testing to the exclusion of efforts to support or improve students’ social, emotional, or behavioral functioning.

Impact of School Personnel Roles and Responsibilities

Developers were questioned about the role school administrators played in instances of successful implementation. They were also asked about whether any specific types of administrative actions acted as barriers to implementation. The large majority (79%) of developers identified the leadership style and behaviors of the principal as an important facilitator of implementation. Developers thought it was important for the principal to be a good manager, to be the instructional leader in their school, and

to show they care about the success of the intervention by being present for training and by discussing implementation issues during faculty meetings. The developers also thought it was important for the principal to have positive attitudes and beliefs about the intervention (37%). Principal knowledge about the intervention program was cited less frequently as a facilitator (29%). Thirty-seven percent (37%) of the developers indicated that they had experienced passive resistance from administrators that served as a barrier to implementation. As an example of passive resistance, one developer reported the following statement from an administrator: “I don’t really want to know anything about what you are doing, but you have my blessing. Go ahead. See you later.”

When asked about the role of teachers in facilitating or hindering implementation, many developers indicated that in their experience teachers acted as facilitators through leadership behaviors (42%) such as volunteering to be a primary implementer and training other teachers, and by being open to learn about the intervention (29%). However, a variety of teacher characteristics and behaviors were also experienced by these developers as barriers. They included lack of flexibility in their approach to teaching (33%) and lack of interest in the intervention (33%). Several of the developers (25%) also indicated that lack of teaching skill was a barrier to implementation of their intervention.

When asked about the role of school special services staff in relation to intervention implementation, 37% of the developers reported special services staff served as facilitators by serving as intervention implementers. Twenty-one percent (21%) reported that special services staff coordinated intervention activities. Surprisingly, although special services staff, such as school psychologists and counselors, tend to see themselves as advocates for mental health services in schools, approximately 25% of the developers reported that these staff had *no* role in the implementation of their interventions.

The majority of program developers indicated that parents or students also played a role in facilitating implementation. This was typically done through active involvement in or collaboration with the program (67%) and/or through general support for the program (54%).

School Goals and Policies

The developers were also asked about whether and how the goals and policies of the school or district affected implementation. Fifty percent (50%) of the developers indicated that in instances of successful implementation school goals included an emphasis on mental health and prevention. Forty-two percent (42%) reported that in instances of successful implementation school philosophy was compatible with their intervention.

However, several of the developers experienced school goals and policies as barriers to implementation. Twenty-nine percent (29%) indicated that academic or testing priorities of schools were barriers to implementation. Twenty-five percent (25%) specifically cited NCLB as a barrier to implementation of their intervention. In recalling an implementation experience in a large urban school district, one developer reported that teachers told her “I can’t take the time out to teach these lessons, because if they don’t do well on their reading and math, we’ll lose our jobs.” Another developer indicated that teachers “worry that if they focus on a social and emotional curriculum that they won’t get through academics. They are judged on academic outcomes, not social/emotional.” Twenty-five percent (25%) cited school disciplinary practices such as “zero tolerance” as a barrier to implementation. In reflecting about how an emphasis on academics has become a barrier, one developer stated, “I don’t know how else to put it ... what we have to do is help them understand that if they take the time to sharpen the knife, you can cut the steak easier.” In addition, school policies that placed restrictions on the manner in which funds could be used were also seen as a barrier by some of the developers (25%).

The External Environment

Outside agencies were seen as facilitating implementation of these interventions through provision of funding (42%). For example, one developer stated, “The federal government stimulated this by telling them they weren’t going to get their Safe and Drug-Free Schools monies unless they were using evidence-based programs...” In a few cases these developers reported that agencies in the school’s external environment provided training and/or technical assistance for the intervention (12%).

Champions for Implementation

The developers were also asked about the champions for their interventions in implementation efforts. The most frequently identified champion among these developers was the principal (67%). Other individuals who emerged as champions for these interventions were teachers (33%), superintendents (25%), and outside organizations (21%).

Effective Implementer Characteristics

In most cases (75%), the primary implementer for these interventions was the teacher. However, for a number of the interventions (46%), special services staff in the schools have been primary implementers. When asked about the characteristics of effective school-based implementers, the developers indicated that the personal

characteristics of the implementer, such as enthusiasm, warmth, self-efficacy, ability to handle ambiguity, and respect for students, were by far the most important (87%) followed by good interpersonal skills (67%) and good teaching and/or implementation skills (62%). When asked about the characteristics of ineffective implementers, the developers most often reported poor teaching skills (46%) and rigidity in implementation (33%), such as not being flexible in working with a manual.

How to Prepare for Implementation

When asked to reflect on how to best prepare for successful implementation of interventions in schools, the developers strongly favored a multilevel approach (75%) to implementation in which the interventionist met with and trained administrators, teachers, and special services staff. However, there was also support for a top-down approach (42%) in which the interventionist began by meeting with the superintendent, then principals, and then teachers and special services staff. In addition, provision of support throughout the implementation process through ongoing coordination and consultation, either in person or through phone contact, was thought to be important (46%).

Sustainability

When asked about the longest period of time their intervention had been sustained in a school, 54% of the developers reported that their intervention had been sustained for over 10 years, 12% reported that their intervention had been sustained for 5–9 years, 12% of the developers said their intervention had been sustained for 2–5 years, and a number of the developers were not sure or did not know. In describing the difficulty of addressing sustainability, one developer stated, “Sustainability is the twilight zone; it’s a big unknown right now...also for us as researchers ... we don’t get funded long enough ... on one program to be able to study sustainability...” When asked about how their intervention had been sustained in terms of funding, 62% indicated that funding had been through the school budget and 75% said funding had been through a grant.

When asked about the major factors that contributed to long-term sustainability of their intervention, the response given most often was the visible impact of the program (37%). The difficulty of sustaining preventive interventions in the face of the need for visible impact was described by one of the developers, “It would be very hard to sustain this ... it would be very hard ... to keep this up just on their own, based on the belief that the data say that if you spend two years and do this and this, in the third year you’re going to have a positive impact.” As one developer told us,

the positive results of an intervention can even turn opponents into champions, “...the teachers hung in there through their basic theoretical disagreements long enough to have success with the program. And several of them really became champions later.” Other factors that were thought to be important to sustainability were the support of administrators (other than principals) (29%), teacher support (29%), principal support (21%), quality training (21%), adequate funding identified by the school (17%), and lack of school personnel turnover (17%).

When asked about the major obstacles to sustainability of their interventions the most frequently endorsed barrier was turnover of school personnel (50%). Other barriers cited by these developers were lack of money (46%), lack of administrative support (33%), principal turnover (17%), school priorities perceived to conflict with the intervention such as academics and testing (17%), and the No Child Left Behind Act (17%). In summing up barriers to sustainability, another developer stated, “The problem is that most districts don’t have any long term planning. And so in most places it is very difficult to discuss sustainability at the beginning.”

Discussion and Conclusions

The findings from this study are compatible with other studies in the emerging area of implementation science (Mihalic & Irwin, 2003). The results indicate that prior to installation of evidence-based programs in schools, a number of important issues related to the school organization and implementer characteristics should be addressed. These include: (a) development of principal support and support from other administrators; (b) development of teacher support; (c) development of financial resources to sustain practice; (d) provision of high-quality training and consultation strategies to ensure fidelity to the model; (e) alignment of the intervention with school philosophy, goals, policies, and programs; (f) ensuring that program outcomes and impact are visible to key stakeholders; and (g) development of methods to deal with turnover in school staff and administrators.

The importance of developing support from school administrators, especially from principals, is consistent with findings of other studies that have found the principal to be instrumental in implementation efforts related to individual interventions (Payne, Gottfredson, & Gottfredson, 2006) and large-scale educational reform (Bodilly, Glennan, Kerr, & Galegher, 2004). Good general management skills on the part of the principal, as well as direct support for the intervention, were seen as crucial to implementation success. Also consistent with other literature (Nunnery, 1998), the development of teacher support

was seen as critical for effective implementation. When visible results from use of new programs are seen by teachers, teacher support can be garnered more readily. Unfortunately, many of these interventions require multiple sessions over more than one year and this delay can make it difficult to provide tangible results that will engage teachers. When implementing interventions that require a longer timeframe, it will be especially important to develop methods of measuring short-term progress and of feeding back these results to implementers and other school staff. In addition, an understanding of the social nature of the implementation process (Rogers, 2003) and the importance of teachers as key opinion leaders (Atkins et al., 2008) should be an important consideration in garnering support from school personnel.

Fiscal stability—i.e., having the funds necessary to procure the staff, equipment, and materials necessary for implementation—was consistently cited as a critical issue in both implementation and sustainability. Developers or purveyor organizations supporting program implementation in schools might consider providing guidance about funding issues to schools considering adoption, along with their manuals, training materials, and technical assistance protocols.

High-quality training and ongoing consultation was also frequently cited as a necessary prerequisite for effective implementation and sustainability, and most of the developers indicated that their interventions required training over multiple days, as well as ongoing technical assistance or consultation after training. This is consistent with the findings of others about effective professional development (Joyce & Showers, 2002). However, the time necessary for teachers or other school staff to participate in training was seen as a barrier by many of the developers. Virtually all school staff participate in professional development programs. This is typically required to maintain professional certification. However, many of these professional development programs are not related to school goals or school initiatives (Elmore, 2002). Aligning staff professional development with school goals and initiatives, such as implementation of an evidence-based intervention, may be a means of increasing school staff participation in training on evidence-based interventions and thus can be important in ensuring success of implementation efforts. As noted above, the majority of the interventions in this study used a behavioral or cognitive-behavioral approach, and as this is the case, perhaps behavioral and cognitive-behavioral approaches to student problems and student development should be addressed in teacher and school administrator preservice training. If school personnel were exposed to these approaches in undergraduate and/or graduate programs, then the reliance on inservice programs to provide education about evidence-based interventions

may be reduced, the problems associated with scheduling and funding comprehensive professional development programs may be lessened, and greater support for these interventions may be realized.

The importance of aligning school philosophy, goals, policies, and other programs with a newly adopted intervention is consonant with other studies suggesting that the “fit” of a program to its context is important (Hoagwood, Kelleher, Murry, & Jensen, 2006). A high-quality program with clear evidence of positive impact may nevertheless be a poor match for an individual school. It will be important for those interested in integrating an intervention into a school to have a practical understanding of the historical, policy, and programmatic context of the school and to create a readiness checklist related to these factors prior to implementation. There may be settings in which implementation of a specific evidence-based intervention should not even be attempted because of differences between the philosophy and values of the school and that of the intervention approach.

The substantial amount of turnover in teachers and school administrators was seen as a significant problem for implementation and especially for sustainability. Recognition of this issue led some of the developers to emphasize the importance of training and developing intervention support in large numbers of school personnel, in expectation that some of these individuals would leave their schools or districts after short periods of time. These developers understood that it was unwise to rely on a small group of teachers, or on an individual principal or superintendent, because of the high probability that these individuals would not be present to support sustainability of the intervention.

As reported above, many of the developers found sustainability to be an especially difficult issue to deal with. The visible impact of the program was viewed as the most important facilitator to sustainability. This is consistent with the findings of Nunnery (1998) indicating that in large-scale reform efforts, teacher buy-in was critical, and that the effectiveness of the intervention had the most influence over whether teachers bought in. In addition to developing intervention manuals that specify the content and process of their intervention, it will be important for developers to specify methods through which intervention short- and long-term outcomes can be assessed and disseminated in feedback to stakeholders.

Provision of a framework by intervention developers to guide implementation and sustainability could significantly assist schools in successfully putting new interventions into place. As indicated in the results of this study, an implementation and sustainability framework should address: (a) how to assess “intervention/school context fit” including the potential impact of school philosophy, school goals, the

policy environment, and other school programs on the intervention; (b) how to develop stakeholder support for the intervention; (c) how to provide high-quality training and consultation to improve fidelity to the intervention; (d) how to identify internal and external funding sources necessary for the intervention; and (e) how to develop intervention evaluation and feedback mechanisms. In efforts to bring research to practice in school settings, a framework of this type, provided to stakeholders along with the intervention manual, may well be as significant as establishment of the efficacy of the intervention itself.

The role of special services personnel (i.e., school psychologists, counselors) as viewed by the intervention developers presents another important issue raised by this study. Unfortunately, many of the developers perceived special services personnel as uninvolved with their program implementation. As school psychologists and counselors received considerable training in mental health, they may be able to provide substantially more leadership in program implementation by taking on the role of “champion” for the intervention, implementing, or assisting with implementation, coordinating intervention procedures and services, or providing technical assistance to primary implementers.

The results from this study also indicated that implementation challenges are significant and often unanticipated by program developers. As one of the intervention developers stated in describing a self-perceived lack of knowledge and skill to deal with implementation and sustainability issues, “I’m just a college professor who created a program.” The unexpected and complex processes that are set in motion when a new program is introduced into a school require preparation, a long-term commitment to overcoming numerous challenges, and many partners. Additional efforts on the part of training programs in universities are needed to ensure that future intervention developers and practitioners will be equipped to meaningfully support attempts to implement evidence-based interventions in their practice settings. Such training should focus on knowledge about theory and research on innovation implementation, as well as skills in developing comprehensive plans for innovation implementation and sustainability with attention to such issues as the role of innovation characteristics in implementation, the role of implementer characteristics, the impact of peers in the implementer’s social context, and the impact of organizational and systems factors on implementation success. In addition, for developers interested in having their interventions used widely, knowledge and skills related to marketing and business management are needed.

This study represents an initial step toward identifying factors that may impede or facilitate the implementation and sustainability of new interventions in schools. Conclusions are limited by the small size of the sample and the

qualitative nature of the study. The programs of this group of developers were diverse and due to the small number of interventions addressed in this study, it was not possible to examine potential differences based on program level, target, scope, or complexity. These variables may present different challenges for different intervention types and this can be an area for future research. The next generation of studies would benefit from systematic examination of the comparable effectiveness of different models for improving implementation quality. This will necessitate the inclusion of many different stakeholders such as principals, teachers, special services professionals, parents or caregivers, students, and community leaders. Developing an evidence base on the implementation and sustainability of evidence-based interventions in schools will require broad input, sustained commitment, and stamina. The yield, however, is likely to be great, and the beneficiaries will be children, youth, and families.

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