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A Framework for Testing and Promoting Expanded Dissemination of Promising Preventive Interventions that are Being Implemented in Community Settings

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Abstract

Many evidence-based preventive interventions have been developed in recent years but few are widely used. With the current focus on efficacy trials, widespread dissemination and implementation of evidence-based interventions are often afterthoughts. One potential strategy for reversing this trend is to find a promising program with a strong delivery vehicle in place and improve and test the program's efficacy through rigorous evaluation. If the program is supported by evidence, the dissemination vehicle is already in place and potentially can be expanded. This strategy has been used infrequently and has met with limited success to date, in part, because the field lacks a framework for guiding such research. To address this gap, we outline a framework for moving promising preventive interventions that are currently being implemented in community settings through a process of rigorous testing and, if needed, program modification in order to promote expanded dissemination. The framework is guided by RE-AIM (Reach, Efficacy/Effectiveness, Adoption, Implementation, and Maintenance; Glasgow, Vogt, & Boles, 1999), which focuses attention on external as well as internal validity in program tests, and is illustrated with examples. Challenges, such as responding to negative and null results, and opportunities inherent in the framework are discussed.

Keywords

prevention; dissemination; evidence-based; parent-training; randomized trial

Widespread dissemination and implementation of prevention programs often have been afterthoughts of efficacy trials. As a consequence, the nation's investment in prevention science has not been translated into routine practice on a large scale for public health impact. To address this problem, Glasgow and colleagues (Glasgow, Vogt, & Boles, 1999; Glasgow, Klesges, Dzewaltowski, Bull, & Estabrooks, 2004) have proposed RE-AIM as a tool for considering the potential Reach, Efficacy/Effectiveness, Adoption, Implementation, and Maintenance of programs in real world conditions to maximize not only internal validity but also external validity in the design of intervention evaluations. In this article, a framework is proposed for addressing these and additional considerations when testing a promising program with established institutional support and a record of implementation in community settings. The framework is supported with relevant prevention literature and is illustrated with examples.

The current gap between science and practice in prevention has many contributing factors, such as challenges related to maintaining program fidelity in applied settings (Cross & West, 2011; Forgatch & DeGarmo, 2011). Another factor is the research process itself in which the evidence base for prevention programs traditionally is built through a series of efficacy and effectiveness trials (Flay, 1986). Whereas efficacy concerns the degree to which a program works under tightly controlled conditions, effectiveness refers to how well a program functions in real world settings (Flay et al., 2005). A common assumption is that programs must first prove efficacious; efficacious programs, then, are candidates for further testing in effectiveness trials and, if proven effective, for widespread dissemination, where dissemination is defined "broadly as incorporating scaling up, adoption, implementation, and sustainability" (Flay et al., 2005, p. 166). Glasgow, Lichtenstein, and Marcus (2003) challenged this assumption by noting that the characteristics of an intervention that promote efficacy (e.g., narrow program eligibility) often are different from and run counter to those that promote dissemination.

Some have called for a new approach, with studies that consider dissemination at the outset of research (e.g., Klesges, Estabrooks, Dzewaltowski, Bull, & Glasgow, 2005). Rotherham-Borus and Duan (2003) offered an alternative to progressing from efficacy to effectiveness to dissemination by suggesting, "Instead of taking an efficacious program and attempting to find a delivery route for the program, an alternative design is to find a program with a [delivery] vehicle and enhance the program's efficacy" (p. 250). Efforts to identify widely implemented promising programs and then to improve and test their efficacy have been infrequent and have met with mixed success (e.g., Perry et al., 2003; Sloboda et al., 2009; Tierney, Grossman, & Resch, 1995), potentially because the field lacks a guiding framework. The current article presents such a framework, the goal of which is to maximize the public health impact of promising programs by ensuring that researchers address critical considerations, including the five elements of RE-AIM (Glasgow et al., 1999; Glasgow et al., 2004), for ensuring internal validity while maximizing external validity in program evaluations. There are a number of untested prevention programs in use throughout the United States (Spoth, 2008). Identifying and building on the most promising of these programs may provide one strategy for addressing the tendency to neglect factors that promote widespread dissemination. The following section describes each part of the framework, highlighting links to RE-AIM principles and citing extant prevention literature

throughout. Next, key concepts are illustrated with examples. The article concludes by addressing challenges, such as responding to negative and null results, and opportunities inherent in the framework.

Description of the Framework

The framework depicted in Figure 1 begins by identifying promising prevention programs that are being implemented in community settings. Then, targeted programs, either in their original or modified form, are tested for efficacy and effectiveness. If positive evidence accrues, opportunities for expanded and sustained dissemination become available.

Current Implementation

The framework requires identification within community settings of promising prevention programs that are likely to be beneficial for their intended purpose (see left-hand panel of Figure 1). These programs will have some existing networks and resources that support service provision efforts. According to RE-AIM (Glasgow et al., 1999; Glasgow et al., 2004), implementation refers to the time and costs of offering a program, and the extent to which the program is consistently delivered. Existing implementation capacities provide a vehicle for expanded dissemination, contingent on positive support from efficacy and effectiveness research.

Promising prevention program—There are at least three important considerations in identifying promising programs. First, a program should have components that correspond with those of proven successful preventive interventions (Embry & Biglan, 2008; Nation et al., 2003; Small, Cooney, & O'Connor, 2009). Promising programs should be based on theory and have a logic model. The program components and processes, and proximal and distal targets for change, should be compatible with existing empirically supported interventions. The underlying theories and corresponding logic models of promising programs that are being implemented in applied community settings may not be as well articulated as those of programs created in academic research contexts. Yet, the fundamental rationale should be consistent with current understanding of “what works” in prevention (Nation et al., 2003). Promising programs should be based on established principles and have active ingredients that are found in existing evidence-based preventive interventions (e.g., Embry & Biglan, 2008). For example, in a meta-analysis of school-based universal interventions, Durlak and colleagues (2011) found that programs with the most robust effects conformed to the SAFE acronym by being Sequenced, Active, Focused on skill development, and Explicit in targeting specific skills.

Second, a promising program must be evaluable (Smith, 1989). The program should be manualized and well documented (Small et al., 2009; West, 2008) to facilitate standardized implementation or consistent delivery, which are key considerations in RE-AIM (Glasgow et al., 1999; Glasgow et al., 2004). If the program is needs-based and tailored to individual clients, then the process for matching needs with services should be well delineated. Ideally, training protocols will have been developed, including guidance on the selection, certification, and supervision of individuals who implement the program. A promising prevention program either has or can develop tools for monitoring implementation fidelity

(Cross & West, 2011; Forgatch & DeGarmo, 2011), including adherence to the manual, quality delivery, adequate dosage, and positive participant responsiveness (Dane & Schneider, 1998; Durlak & DuPre, 2008).

Third, some promising programs may have preliminary evidence for their success. Many service providers collect short-term process and outcome data on clients and may even conduct their own small-scale evaluations. Although limited, positive changes are consistent with the possibility of intended program effects and suggest that formal evaluations are needed.

Existing service provision networks—By definition, prevention programs that are already being used will have service provision networks or access points for reaching targeted clients. In RE-AIM terms (Glasgow et al., 1999; Glasgow et al., 2004), these programs have been adopted by service providers and are being implemented. Fixsen and his colleagues (2005) identified six stages of program implementation: exploration, installation, initial implementation, full implementation, innovation, and sustainability. Service providers offering an existing program will already have a delivery system in place, operating minimally at the initial implementation stage, if not more advanced stages.

Service provision networks may include infrastructure to support implementation through community organizations and centers, schools, churches, mental health clinics, primary care facilities, the extension system, or other venues. The degree to which these networks saturate the target audience and provide services to those who will benefit most is referred to as reach in RE-AIM (Glasgow et al., 1999; Glasgow et al., 2004). Many programs implemented in community settings will have indicators that document the current reach of intervention efforts, providing a baseline from which to develop strategic goals for expanded dissemination. The service provision networks of existing programs often are established by targeting participants and marketing to that niche (Rotherham-Borus & Duan, 2003). Active network building for service provision can contribute to “buy-in” and can facilitate engagement in the interventions.

Existing service provision resources—Since promising prevention programs are already in use, there necessarily will be some resources to support program delivery. Funding for program delivery can come from numerous sources, including federal, state, and local government grants and contracts; foundation and other private grants and contracts; Medicaid or insurance plans; donations; endowments; or service fees. Many service providers rely on external grants and contracts, which increasingly require the use of evidence-based programs for funding.

Efficacy and Effectiveness Research

This section outlines considerations in taking a promising preventive intervention that is in use and conducting research to test the efficacy and effectiveness of the original or a modified version of the program (see middle panel of Figure 1). Such research begins with a program test, typically but not exclusively in the form of a randomized controlled trial (RCT). This requires study design decisions to balance internal and external validity, as well as a determination of how to recruit research participants (i.e., site development).

Conducting RCTs and similar studies requires substantial resources; therefore, considerations of research funding are paramount. Finally, the scientific literature or preliminary studies may suggest curriculum modifications before testing a promising preventive intervention, and/or the results from rigorous tests may suggest modifications that can be made to enhance the efficacy of the program.

Rigorous program tests—Standards for research in support of evidence-based programming have been published (e.g., Flay et al., 2005) and are available on the websites of evidence-based registries. These standards require, among other considerations, program tests using such methods as RCTs, regression discontinuity designs, or quasi-experimental studies with careful selection of covariates (Steiner, Cook, Shadish, & Clark, 2010) and propensity score matching or similar techniques to adjust for selection biases (Cook, Shadish, & Wong, 2008). As indicated by the RE-AIM component of efficacy/effectiveness (Glasgow et al., 2004), the primary consideration in such tests involves determining the degree to which the intervention plausibly engenders targeted outcomes and does not result in adverse effects.

The main challenge in testing prevention programs, particularly those already in use, involves design decisions that strike a balance between internal and external validity. As noted by Klesges and colleagues (2005), researchers typically emphasize internal validity within the context of controlled efficacy trials. This approach hampers the translation of programs into routine practice, because researchers tend to limit whereas service providers tend to embrace heterogeneity in factors such as participant characteristics. For the case of evaluating existing programs, it is important to design studies that achieve a high degree of control to increase confidence in inferences about the causal impact of a program, without sacrificing generalizability to preserve features of the program that facilitate its use in the community. A danger is to strip an existing program of the characteristics that already promote successful implementation simply to make it easier to test in a controlled study. Acquiring the proper balance is difficult in a single trial. A series of studies often is required. RE-AIM was designed to help structure such studies and may be especially applicable to the current framework, because it focuses attention on key factors that promote program uptake in real world settings.

There are unique considerations in the design of studies to test prevention programs that are already in use. For example, researchers first must obtain the support of service provision stakeholders for committing to a program test and accepting the results. Program developers and service providers may use anecdotal evidence to support the claim that a program is beneficial, and may be averse to subjecting their interventions to more systematic study. Stakeholders may perceive much to lose if a program is not supported in a rigorous test. Researchers can appeal to the desire of service providers to achieve maximum positive impact with their programming. Rigorous tests provide a way to know with confidence that a program works as designed. If it does not, then it is important to be aware that the program is not achieving its full potential. Rigorous demonstrations of efficacy and effectiveness may also be useful in leveraging continued and additional funding for the program, as noted below.

Study site development—Site development concerns determining where and how to best access study participants. This includes but is not limited to general considerations about the sampling design of a study (e.g., Kalton, 1983; Kish, 1965). For the case of testing a promising program that is already being implemented, study site development carries at least one unique consideration. Because the program is in use, one option is to design a study that draws from clients who are targeted by the intervention as part of routine service delivery using existing service networks. Alternatively, a new sample can be targeted for study recruitment.

Sampling from existing service provision networks is convenient and carries the benefit of providing established points of access to study participants through trained staff members experienced in implementing the program. This strategy maximizes external validity. However, the existing pool of targeted program participants may be too small to provide a sufficient sample size for a prevention trial. It also might not be feasible to have service providers add research-related tasks to their current responsibilities. Established service delivery practices may place constraints on the design of a study and its research protocols. In particular, the manner in which clients are targeted for and engaged in prevention programming may preclude random assignment to conditions in a RCT. Even if randomization is possible, service providers who are confident in the benefit of their program may be reluctant to permit random assignment to conditions in which clients do not receive their program. Innovative research methods, such as the dynamic wait-listed design (Brown, Wyman, Guo, & Pena, 2006), may help address these types of concerns without sacrificing scientific rigor. Developing a new study site provides more flexibility in terms of study design and research protocols, but takes considerable effort and requires greater care to maintain external validity, as it falls outside of routine service delivery.

Research funding—Service providers rarely have sufficient funds for conducting prevention trials (Small et al., 2009). Even large organizations typically are not equipped to cover the expenses associated with a carefully designed test. Further, many service organizations lack research capacity or, even if they have it, rarely receive external funding to study their programs. One strategy for addressing this challenge entails the formation of partnerships between service providers and academic researchers who have a track record of obtaining research grants. For example, Duppong Hurley (2010) and colleagues describe a Boys Town-University of Nebraska, Lincoln partnership that has led to applied services research studies funded by the National Institutes of Health and the Institute of Education Sciences. Research funds might also be sought from non-traditional sources, such as foundations or corporations; many service provision grants now allow or even require a research evaluation component.

Program Modification

The framework in Figure 1 is concerned with how a promising prevention program that is already being implemented can be enhanced to maximize impact and, ultimately, to expand dissemination (Rotherham-Borus & Duan, 2003). Such enhancements imply program modifications. Modifications may be indicated prior to initiating a prevention trial. As recommended by Small and colleagues (2009) as part of their Evidence-Informed Program

Improvement (EIP) model, it can be valuable to begin the process of testing a program by comparing the curriculum with established evidence-based programs and practices (Embry & Biglan, 2008; Nation et al., 2003). This type of comparison might reveal gaps in either program design and content, including active intervention components and processes; program relevance (e.g., developmental timing); program implementation (e.g., interventionist training protocols); or program assessment and quality assurance (e.g., documentation). Findings that emerge from preliminary evaluations or early-stage prevention trials may also point to such gaps. Modifications also might be considered to facilitate program dissemination by, for example, adapting curricula to enhance cultural relevance and responsiveness for new populations (Castro, Barrera, & Martinez, 2004) or adopting new technologies for reaching participants (e.g., internet; Kazdin & Blase, 2011).

Service providers might be reluctant to change something that has already been incorporated into routine practice. If significant modifications are indicated, then researchers may need to make a case that the current program likely does not have the anticipated impact. Alternatively, smaller modifications might suggest a study that compares the standard program and an enhanced program with one another to determine the added value of the modifications. In either scenario, the success of the current framework rests on an assumption that service providers will make a commitment to integrate into routine service delivery a modified version of their program, if supported by research.

Expanded Dissemination

If efficacy and effectiveness trial results are positive, expanded dissemination opportunities will become available (see right-hand panel of Figure 1). Demonstrating positive support for an intervention can not only facilitate access to new clients through expanded service provision networks but also can open the doors to new resources for supporting program delivery. These emerging opportunities can help extend a program's reach into the targeted population beyond initial implementation levels, and can help maintain new program efforts (Glasgow et al., 1999; Glasgow et al., 2004).

Evidence-based program—If positive support for a program's efficacy and effectiveness is garnered, then it will become eligible for one or more evidence-based program registries. Such registries play a critical role in promoting the use of tested, effective programs (e.g., through email updates of newly listed programs). Most registries have a hierarchy of designations defined by the quality and extent of evidence that exists in support of listed programs, reserving the highest levels for rigorously tested, effective interventions with replication (Valentine et al., 2011). Although research to assess the efficacy and effectiveness of a preventive intervention unfolds over time, it often is possible to structure program tests to progressively yield information that can be useful for designating a program as evidence-based at an initial "promising" level, with higher designations occurring as additional evidence is amassed. This is an important consideration in working with service providers, who typically desire short-term, practical results. Such results can represent incremental steps in a longer-term research agenda that lead to more conclusive and higher levels of evidence.

Expanded service provision networks—Positive support for the efficacy and effectiveness of a promising program can aid in the expansion of existing service provision networks that provide new access points to reach additional segments of the targeted population. In large part, this derives from being formally listed in evidence-based program registries. Such registries provide exposure and marketing opportunities for a program. Consumers are becoming better educated about the value of evidence-based prevention with the development of dissemination systems, such as Communities that Care (Hawkins et al., 2009) and the PROSPER partnership model (Spoth et al., 2007), designed to provide community members with knowledge and tools needed to select and implement evidence-based interventions. Increasingly, community-based service recipients, such as school districts, seek programs that have positive support from efficacy and effectiveness studies and are listed on an evidence-based program registry. Programs that meet these criteria can expand their reach by gaining access to a consumer market that is unavailable to programs without positive empirical support.

Because existing programs already have a delivery vehicle (Rotherham-Borus & Duan, 2003), evidence can be translated into routine practice more efficiently than for programs that build an evidence base without considering in advance how to reach targeted participants on a meaningful scale (Klesges et al., 2005). Of course, expanded dissemination will require increased capacity. The Interactive Systems Framework identifies both organizational and program-specific capacity requirements for dissemination and implementation of prevention programming, including such considerations as general infrastructure, workforce development, technical assistance, and quality assurance (Wandersman et al., 2008). Adaptations of existing programs present additional considerations. For example, research staff members involved in the program modification effort may need to develop and implement the initial training and coaching protocols. Introduction of modified programming into routine practice also requires careful consideration of the cultural climate of the organization, ensuring a match between the innovations and providers' expectations and needs (Gregory et al., 2012).

Expanded service provision resources—New dissemination opportunities will go unrealized if service providers lack funding to expand their efforts. Additional service provision resources, such as funds to hire and train intervention specialists, will be needed. Positive evidence to support the efficacy and effectiveness of a promising program can help service providers become competitive for the growing number of funding opportunities that require use of an evidence-based program. This, in turn, can help ensure a stable base of financial support, which has been shown to promote program delivery sustainability (Tibbits, Bumbarger, Kyler, & Perkins, 2010), a key factor in the RE-AIM concept of maintenance (Glasgow et al., 2004) and the most advanced stage of implementation (Fixsen et al., 2005).

Practitioner-Researcher Partnerships

Practitioner-researcher partnerships underlie the process leading from current implementation of a promising program to rigorous efficacy and effectiveness research to potentially expanded dissemination (see lower panel of Figure 1). Teams of researchers

working with service providers are needed to identify promising prevention programs. Such teams also are critical in the design and implementation of studies that test the efficacy and effectiveness of interventions, while preserving program features that facilitate implementation successes. If positive evidence for a promising program emerges, practitioner-researcher partnerships are a critical element in studies of the diffusion and sustainability of effective intervention efforts, as illustrated by the PROSPER partnership model (Spoth & Greenberg, 2005), which draws on the infrastructure of the Land Grant University-based Extension system.

Duppong Hurley and colleagues (2010) outline challenges associated with researcher-practitioner partnerships (e.g., maintaining positive relationships, working toward common interests), and identify specific strategies, such as developing communication and decision making plans, that contribute to success. Policies and infrastructure to support partnerships also are needed, such as changes to the reward system within service organizations and universities to promote cross-setting collaborations (Spoth & Greenberg, 2005).

Examples of Applying the Framework

A well known example of an attempt to improve and further test an existing intervention is the Drug Abuse Resistance Education (D.A.R.E.) program, one of the most widely used prevention programs (Ringwalt et al., 2002). Although D.A.R.E. has been shown to be largely ineffective in preventing substance use (Ennett, Tobler, Ringwalt, & Flewelling, 1994; Lynam et al., 1999; West & O'Neal, 2004), its popularity and dissemination infrastructure make it an ideal vehicle for reconfiguration (Sloboda et al., 2009). Tests have been conducted on a modified program, known as D.A.R.E. Plus, which adds components to promote parental involvement and increase youth extracurricular activities. Results have revealed some improvements (e.g., reduced drug use; Eischens, Komro, Perry, & Bosma, 2004), but positive effects of D.A.R.E. Plus (Perry et al., 2003) are still limited. Other adaptations based on the D.A.R.E. delivery vehicle also have had limited positive support (e.g., Sloboda et al., 2009).

Big Brothers Big Sisters of America (BBBSA) is another example that has met with more success than D.A.R.E.; thus, the sections below provide a detailed review of the development and evaluation work that has gone into BBBSA, interpreting key elements of that work in light of the framework's principles. Next, a description is provided of the recently initiated evaluation of Common Sense Parenting® (CSP), a parent-training intervention developed at and implemented by Boys Town. Unlike the previous examples, the CSP study is guided explicitly by the framework depicted in Figure 1 and provides an illustration of principles related to identifying, modifying, and evaluating a promising program already in use.

Big Brothers Big Sisters of America (BBBSA)

BBBSA: Implementation—BBBSA is a community mentoring program based in a movement that began at the turn of the 20th century and founded on the belief that disadvantaged youth benefit from positive, long-term relationships with non-familial caring adults (McGill et al., 1998). Originally comprised of loosely organized local and national

entities, BBBSA was established officially in 1977. At this time, the one-to-one relationship service was in widespread use, disseminated through 357 agencies. By the mid-1980s, over 500 BBBSA agencies were located throughout all 50 states. Early in the Big Brothers Big Sisters movement, standards emerged that defined the basic requirements of program implementation. These standards evolved into the structured and manualized one-to-one service program that exists today. The underlying logic model of BBBSA is consistent with social control theory (Hirschi, 1969), and the service components emphasize relationship characteristics, such as trust, that are associated with positive outcomes for youth (Werner & Smith, 1992). In the early 1990s, BBBSA was a widely used and promising but understudied community-based mentoring intervention.

BBBSA: Efficacy-Effectiveness research—In the late 1990s, BBBSA partnered with Public/Private Ventures (P/PV) to study program outcomes. A randomized waitlist-control study of nearly 1,000 youth (ages 10–16 years) drawn from eight existing BBBSA agencies was conducted, thereby balancing both internal and external validity. Results showed that program participants compared to control youth were less likely to initiate substance use, report hitting someone, and skip school over the 18-month follow-up period, and also had higher grades and better relationships with parents and peers (Tierney et al., 1995). In 1998, the community program was identified by Blueprints for Violence Prevention as a Model Program (www.colorado.edu/cspv/blueprints/), based on positive evidence from research (McGill, Mihalic, & Grotmeter, 1998).

BBBSA: Program modification—Recognizing the increased reach that could be obtained via working in school settings, BBBSA modified the original community-based programming and developed a school-enhanced version. This adaptation of BBBSA actively partners with schools, and provides a mechanism for obtaining referrals to the program from school personnel, such as teachers and counselors. In partnership with P/PV, BBBSA initiated a randomized study of the adapted program in the early 2000s, recruiting over 1,000 youth from ten existing BBBSA agencies across the country. This study demonstrated the importance of the length of the mentoring match as a key ingredient to strong outcomes and provided evidence for some positive improvements, such as higher grades and less skipping school (Hansen et al., 2011).

BBBSA: Practitioner-Research partnerships—As noted, a key component of the current framework is the establishment and maintenance of effective practitioner-research partnerships. For the case of BBBSA, this is illustrated by the service organization's collaboration with P/PV, a non-profit social research and policy organization, which played a critical role in the large-scale studies of both the community-based and school-based mentoring programs.

BBBSA: Expanded dissemination—On a foundation of support from rigorous studies, BBBSA has continued to expand its reach. To illustrate with reference to the school-enhanced program, Hansen et al. (2011) indicate that of children served by BBBSA in 1999 less than a quarter participated in school-based mentoring. School-based mentoring comprised 45% of BBBSA's services by 2010, helping approximately 90,000 youth.

The Common Sense Parenting (CSP) Study

CSP: Implementation—The CSP parent-training program was identified as having several features that suggest rigorous evaluations are warranted. First, it is theory driven, based on an adaptation of the Teaching Family Model (Wolf et al., 1976) and drawing from social interaction theory (Patterson, Reid, & Dishion, 1992), and incorporates evidence-based principles and practices. The group workshop program has components (e.g., communication and decision making skills) found in effective parenting interventions (Barth et al., 2005; Kaminski, Valle, Filene, & Boyle, 2008). Second, the program is manualized (Burke, Herron, & Barnes, 2006), including implementation fidelity forms, and has established training protocols, thereby facilitating its evaluability. Third, positive evidence from small-scale or non-experimental studies conducted by Boys Town supports CSP (Thompson, Ruma, Brewster, Besetsney, & Burke, 1997; Thompson, Ruma, Schuchmann, & Burke, 1996). CSP is in widespread use. The program annually serves more than 1,500 children from 1,000 families across 12 Boys Town sites; it is also disseminated to other agencies across 47 states and 14 countries.

CSP: Efficacy-Effectiveness research—The ongoing CSP prevention trial is an efficacy-effectiveness hybrid (Marchand, Stice, & Becker, 2011) that incorporates design features to promote both internal and external validity in the evaluation of CSP. For instance, a new sample is being recruited into the trial, independent of the routine program delivery provided by Boys Town. This decision enhances control, particularly for the random assignment of families to conditions, but also requires consideration of ways to preserve program characteristics that promote Boys Town's current implementation of CSP. Accordingly, experienced Boys Town CSP trainers provide standard training of workshop leaders, including formal certification, for the study. All workshop leaders reside near the study site and, per Boys Town practice, have backgrounds in social science and parent training, and many are parents themselves. These decisions ensure verisimilitude of CSP implementation in the trial with that of standard practice.

CSP: Program modification—The study is testing CSP in its standard 6-session parent-training format and in a new modified 8-session parent-youth format known as CSP Plus. This decision was made based on a review of the literature prior to initiating the RCT (Small et al., 2009) showing that combining youth- and parent-training can provide added value (DeMarsh & Kumpfer, 1985; Kazdin, Siegel, & Bass, 1992; Beauchaine, Webster-Stratton, & Reid, 2005), particularly for parents of older children. Families are randomly assigned to either the standard CSP program condition, the modified CSP Plus program condition, or a control condition.

CSP: Practitioner-researcher partnerships—The CSP trial is founded on a partnership between both practice and research arms of Boys Town and the University of Washington's Social Development Research Group (SDRG), providing joint expertise in grant writing, research design, program delivery, and data collection.

CSP: Expanded dissemination—The CSP trial is just underway; therefore, outcome findings are forthcoming. If positive results emerge, they will support expanded

dissemination in ways outlined within the current framework. For example, positive outcomes from the CSP trial would enable the program to move from a designation of “promising” to “supported by evidence” on selected evidence-based program registries, and higher designations are possible based on additional tests that replicate positive outcomes. Positive evidence from the current and subsequent trials can provide access to new service delivery funding opportunities that require a supported designation. Also, because the modified program is being tested with parents of older children, results from the current and subsequent trials indicating an added value for this enhancement can be put into practice by practitioners relatively quickly based on the existing delivery system. Of course, expectations of positive impact may not be met. Considerations to be made in this event are discussed below.

Challenges and Opportunities

Summary

Prevention science has had difficulty scaling up empirically validated programs. Too many evidence-based preventive interventions have been implemented only within the context of the randomized trials in which they were tested or on a limited scale. Because a number of programs were not developed with a delivery vehicle in mind, they may have characteristics that hinder rather than promote their use in community settings. With RE-AIM, Glasgow and his colleagues (Glasgow et al., 2004; Klesges et al., 2005) have encouraged prevention scientists to begin with the end in mind, by considering a program’s implementation capacity and dissemination potential at the outset of the research process. Here, one strategy for achieving this objective is presented, which involves identifying promising preventive interventions already being implemented in community settings and conducting a series of studies that balance internal and external validity to determine the efficacy and effectiveness of those programs, including enhanced versions, to facilitate expanded dissemination contingent on the demonstration of positive outcomes with replication.

Responding to negative or null results

Studies may not provide evidence for program efficacy/effectiveness, or might indicate that a program causes harm. Where identified risks outweigh potential benefits, use of the intervention should be discontinued. This can be a difficult decision for service providers who have a significant investment in their program. Where harm is not indicated, lack of evidence does not necessarily suggest that a program should no longer be used. In such cases, it is important to evaluate the quality of research evidence (Flay et al., 2005), which may suggest further tests, and to consider program modifications that could enhance intervention impact and increase effect size (Small et al., 2009). This can require time, resources, and effort that service providers may not be willing to invest. The practitioner-researcher partnership provides the context in which to address these considerations. Researchers may need to offer some education about the value of a science-based approach to prevention (Coie et al., 1993). Communicating the potential long-term investment involved in building evidence for a program, while being clear about the opportunity for incremental knowledge as the research unfolds, also is important. It is good practice to obtain a commitment from service providers to accept and act on study results. It may be

inadvisable to move forward with plans for evaluation of efficacy and effectiveness until such a commitment can be obtained.

Opportunities

Carefully working through considerations outlined in the framework offered in this article can help limit the potential for obtaining disappointing trial results. For example, focusing attention on promising programs that have key components found in tested-effective preventive interventions decreases the likelihood that rigorous tests will produce null findings or reveal harmful effects. The framework also can help structure conversations between practitioners and researchers, making explicit the key considerations and expectations involved in the process of testing currently implemented programs. Given the large number of existing but relatively untested preventive interventions in use throughout communities in the United States (Spoth, 2008), the current strategy can help identify, improve, and test the most promising programs to build research knowledge that can be translated readily into routine practice on a large scale for maximum public health benefit.

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Figure 1.