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Finding the Balance: Program Fidelity and Adaptation in Substance Abuse Prevention

Executive Summary of a State-of-the-Art Review

DEPARTMENT OF HEALTH AND HUMAN SERVICES • USA

CSAP Center for Substance Abuse Prevention

Substance Abuse and Mental Health Services Administration

Acknowledgments

This document marks CSAP's progress towards fulfilling its commitment to bringing effective, science-based prevention to every community across the country.

One of several in a new series developed by CSAP, this conference-edition document articulates CSAP's policy direction and guidance to the field on prevention practices that we know can be effective in creating positive change. These documents are products of the collaboration among CSAP, States, the National Prevention Network (NPN), Community Anti-Drug Coalitions of America (CADCA), and representatives from both the research and practice communities. As such, they represent our collective best thought and guidance on effective prevention.

As CSAP continues to build its National Dissemination System to identify and encourage effective prevention and provide capacity building opportunities for states and communities, these documents will evolve in nature and content. Throughout this evolutionary process, CSAP will collaborate with States, intermediary organizations, and community practitioners, and will listen and learn about the challenges encountered in moving the field of prevention forward. CSAP will integrate this feedback, developing new guidance to support the field as it continues to grow and advance.

CSAP is proud of our collaboration with the field and the documents that have resulted. We especially would like to acknowledge the significant contributions of Thomas Backer, Ph.D., senior social scientist affiliated with CSAP's *National Center for the Advancement of Prevention.*

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DEPARTMENT OF HEALTH & HUMAN SERVICES

Substance Abuse and Mental Health Services Administration

Center for Mental Health Services
Center for Substance Abuse Prevention
Center for Substance Abuse Treatment
Rockville MD 20857

MAY 21 2001

Dear Colleague:

We are pleased to present a new series of products, developed by the Center for Substance Abuse Prevention (CSAP) with our National Center for the Advancement of Prevention (NCAP). These products are designed to assist States in their efforts to strengthen substance abuse prevention systems.

The products listed below come to the National Association of State Alcohol and Drug Abuse Directors/National Prevention Network (NASADAD/NPN) annual meeting as conference editions.

A Framework for Strengthening State Substance Abuse Prevention Systems
Sharing Practical Experiences

Finding the Balance: Program Fidelity and Adaptation in Substance Abuse Prevention - Executive Summary of a State-of-the-Art Review

2001 Annual Report of Science-Based Prevention Programs
From the Center for Substance Abuse Prevention

Comparison Matrix of Science-Based Prevention Programs
A Consumer's Guide for Prevention Professionals

They await your critical review and suggestions for improvement. To encourage your feedback, we have included a "feedback/faxback" form so that your views can be easily shared. Also available electronically, these tools may be downloaded from CSAP's website at www.samhsa.gov/csap.

Please know that you are a valued partner in the national effort to advance the field of prevention. We ask that you let us know how our work can contribute to your continuing efforts on behalf of substance abuse prevention in your State.

Sincerely yours,

Ruth Sanchez-Way

Ruth Sanchez-Way, Ph.D.
Director
Center for Substance Abuse Prevention

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Finding the Balance: Program Fidelity and Adaptation in Substance Abuse Prevention

> *"Implementing a program is like constructing a building. An architect draws upon general engineering principles (theory) to design a building that will serve the purposes for which it is designed. However, the specific building that results is strongly influenced by parameters of the building site, such as the lot size, the nature of the site's geological features, the composition of the soil, the incline of the surface, the stability and extremes of climate, zoning regulations, and cost of labor and materials. The architect must combine architectural principles with site parameters to design a specific building for a specific purpose on a specific site. …This dynamic is mirrored in the rough-and-tumble world of the human services. Despite excellent plans and experience, ongoing redesign and adjustment may be necessary."*
>
> (Bauman, Stein & Ireys, 1991, p. 34)

For the architects and builders of substance abuse prevention programs—whether program developers, the practitioners and community leaders who implement the programs, researchers, funders, or policymakers—balancing program fidelity and adaptation is a great challenge.

How do we find the right balance between maintaining the fidelity of a science-based program and adapting that program to reflect the circumstances of the community where it will be implemented? What can we learn from research on issues of fidelity/ adapta-

tion balance that can help us in real life? How can we test the boundaries: How much fidelity is essential? How much adaptation is possible?

The Center for Substance Abuse Prevention (CSAP), through its National Center for the Advancement of Prevention (NCAP), is leading the way in finding answers to these questions. CSAP sponsors a variety of studies on fidelity and adaptation issues and is helping to apply the lessons that emerge from these studies. The better we understand the complexities of fidelity and adaptation balance, the more strategically we can approach these issues in our work—and the better the prevention field as a whole can deal with the challenges of balancing program fidelity and adaptation.

As a key building block in this process, Dr. Thomas E. Backer, one of NCAP's principal senior social scientists, conducted a thorough review of research studies on fidelity and adaptation balance. In a paper prepared for CSAP titled "Balancing Program Fidelity and Adaptation in Substance Abuse Prevention: A State-of-the-Art Review," Backer surveys 117 published and unpublished studies spanning more than 25 years. He structures the literature review using a conceptual model shown as Program Implementation Stages (see Exhibit 1). In addition, Backer provides an extensive list of references to guide researchers to the full body of literature surveyed for his report.

From his synthesis of the body of research, Backer draws this fundamental conclusion: **Attention to BOTH program fidelity and adaptation during the complex process of program implementation is critical to successful, sustained implementation of science-based substance abuse prevention programs.**

In addition to presenting this and several other conclusions from the literature, Backer proposes an initial set of guidelines for program implementers. He also outlines unresolved issues that require attention from each of the primary audiences for this work: program developers and researchers, implementers, funders, and policymakers.

Backer's (2001) main conclusions and recommendations are described in this Executive Summary of his comprehensive paper prepared for CSAP.

EXHIBIT 1:

STAGES IN SUBSTANCE ABUSE PREVENTION PROGRAM IMPLEMENTATION

(Program Development/Validation/Dissemination)

Program Adoption

Needs and Assets Assessment

Readiness Assessment

Program Assessment
Theory and/or Logic Model
Core Components Analysis
Developer Consultation

Program Implementation
Fidelity/Adaptation Balance
Implementation Process
Implementation Setting
Client Characteristics
Larger Context

Evaluation
Fidelity Instrument
Process Evaluation
Outcome Evaluation

Sustainability
Revisiting Fidelity/Adaptation
Routinization

(Feedback to Developer/Program Modification)

What Do We Mean by Fidelity and Adaptation?

Terminology varies within the body of research on fidelity and adaptation and related issues. Here are definitions for key terms used in the CSAP studies:

Program Fidelity: the degree of fit between the developer-defined components of a substance abuse prevention program, and its actual implementation in a given organizational or community setting.

How well does the implementation of a promising, effective or model program match the specifications of the original? The program's elements are specified in a program manual, curriculum, or core components analysis. In essence, the developer provides a "recipe" for replicating the program, and also describes the fidelity instrument(s) for measuring the "fit" of its implementation.

What we call "fidelity" is also called program "adherence" or "integrity" in some of the literature on this subject. Terms from medicine, such as "dosage," "strength of treatment" "intensity," "exposure," are sometimes used to discuss the overall degree of fidelity (Boruch & Gomez, 1977), (Pentz, 2001). Also drawing from the medical field, "compliance" is sometimes a metaphor for fidelity/adaptation balance, meaning the extent to which a particular protocol or regimen is followed.

Program Adaptation: deliberate or accidental modification of the program, including (a) deletions or additions (enhancements) of program components, (b) modifications in the nature of the components that are included, (c) changes in the manner or intensity of administration of program components called for in the program manual, curriculum, or core components analysis, or (d) cultural and other modifications required by local circumstances.

Adaptation is sometimes called "reinvention." (Rogers, 1995) Other notable variations include "mutual" adaptation, which involves adaptation both of the innovation and of the organization or community in which it is implemented; "cosmetic"

adaptation, when only the name or some superficial element of a program is changed to promote local ownership; and "accidental" adaptation, involving changes that implementers do not realize they have made.

Fidelity/Adaptation Balance: a dynamic process, often evolving over time, by which those involved with implementing a science-based substance abuse prevention program address both the need for fidelity to the original program and the need for local adaptation.

There are typically two places in the implementation process when seeking balance occurs: (1) at the front end, with the decision to adopt an effective program that needs some modification to fit local circumstances; and (2) during implementation, if the expected outcomes are not being achieved. In addition, strategically revisiting fidelity/adaptation balance may be an important element in program sustainability.

Core Components: Those elements of a program that analyis shows are most likely to account for its positive outcomes.

Some programs comprise essentially only their core components. Others have discretionary or optional components which can be deleted without major impact on the program's effectiveness, or which are not essential for the program's main target audience.

Core components are the essential, or main, ingredients in the recipe. CSAP is currently conducting a core components analysis of effective and model programs, which is expected to be completed in early 2002, as part of developing and maintaining the National Registry of Effective Prevention Programs (NREPP).

This work started with analysis of fidelity instruments for the seven CSAP High Risk Youth model programs. From this, a method was developed for identifying core components and rating their degree of implementation. Data for eight programs were compiled and sent to independent reviewers for appraisal and subsequent modification. The revised method is being used to appraise all of the NREPP programs (Schinke, 2000).

Implementation: the complex process by which a substance abuse prevention program is put into place in a community or organization, for use with a particular target audience.

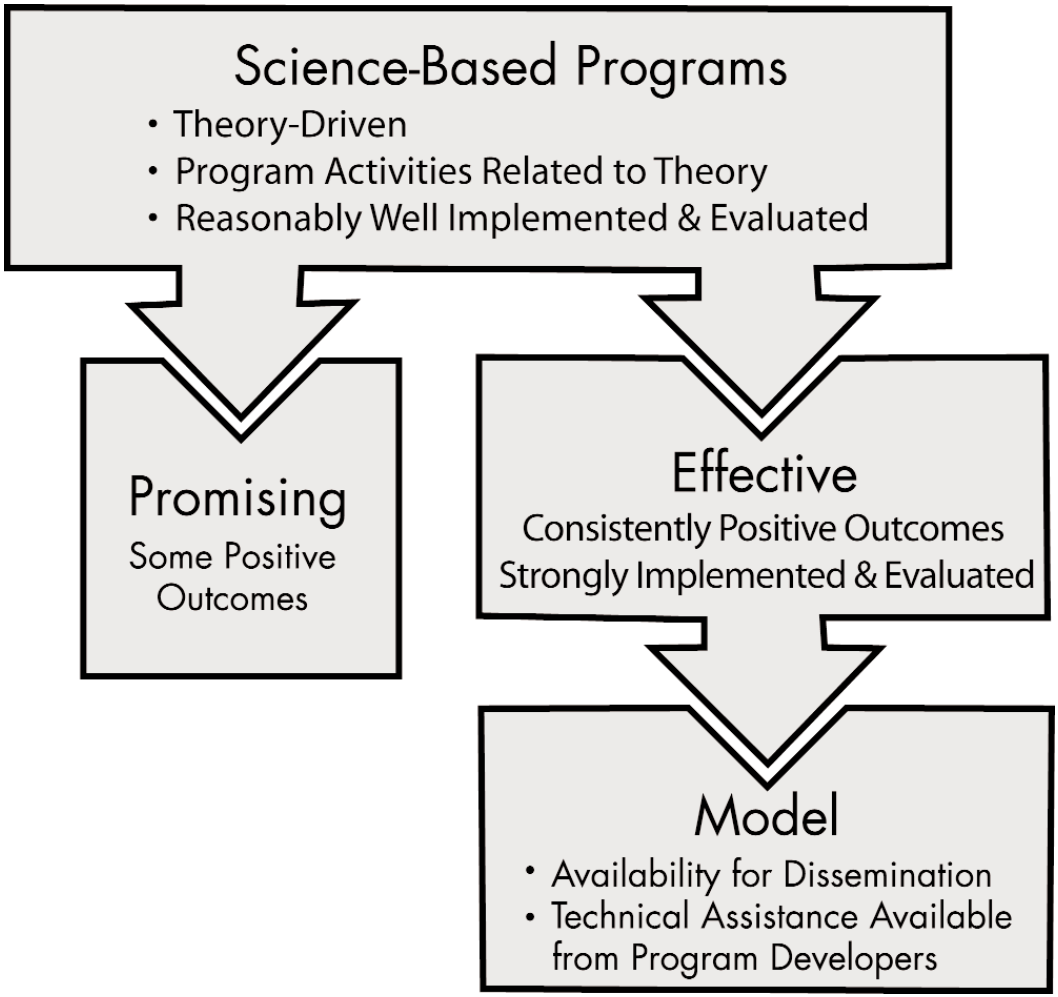
As indicated in the Program Implementation Stages (Exhibit 1), this is a multi-stage process. The model shown is an ideal. However, not all prevention programs are implemented following a systematic assessment; not all are evaluated. And though the list of stages suggests a linear order, the occurrence of activities may vary from one implementation to another.

Furthermore, definitions for what implementation includes vary within the literature. Here, the definition used addresses program fidelity and adaptation conceptually. In this context, program fidelity/adaptation is considered one element of a larger sequence of implementation stages.

Science-Based Programs: CSAP defines science-based substance abuse prevention programs as those programs that are theory-driven, reasonably well-evaluated, and include program activities related to the theory.

Effective programs consistently achieve positive outcomes while *promising programs* show at least some positive outcomes. Finally, there are *model programs*, which are science-based and effective and are readily available for dissemination. Technical assistance for model programs is available from the program developers. (See Exhibit 2 on the next page and the Typology included in the Appendix.)

EXHIBIT 2:



Note: A more detailed version of the above schemata can be found in the Appendix.

Why Are Program Fidelity and Adaptation Important?

Each of the primary audiences for fidelity and adaptation studies has a stake in the findings. Program developers and prevention researchers are legitimately concerned that changes in a science-based program will dilute or even dissipate its effectiveness. Community leaders and prevention practitioners are equally concerned that "not one size fits all." The inability to modify programs may produce local resistance; or worse, rigid fidelity can lead to programs that are irrelevant or even inappropriate for meeting community needs. Policymakers and funders struggle with defining what requirements for fidelity or permissions for adaptation are appropriate in guidance related to funding or public policy.

Equally important, each of these groups can contribute to the improved ability of the prevention field as a whole to deal with the challenges of balancing program fidelity and adaptation. For instance, program developers and prevention researchers can use scientific analysis to identify "core components" of effective and model prevention programs—those elements that must be maintained rigorously in order for the program to work. Community leaders and prevention practitioners can develop program implementation approaches that address fidelity/adaptation balance strategically.

Policymakers and funders can build improved standards for fidelity/adaptation balance into grant making and public policy about prevention programming. And all these groups can work together in creating partnerships to change the culture of prevention, so that fidelity/adaptation balance issues can be addressed intentionally when implementing science-based programs in the field.

In a sense, all these groups want to know "what the boundaries are." (Emshoff, Blakely, Gray, Jakes, Brounstein & Coulter, under review) There is considerable scientific evidence that many science-based prevention programs still produce positive results despite significant adaptation. Some adaptations are, in fact, necessary for program success, given widely varying circumstances in different organizations or communities.

However, there is also significant evidence that the greatest impact from these programs results when there is program fidelity with respect to certain key elements. Program enhancements added to a rigorously implemented "core" program may yield particularly good outcomes. But some adaptations are undesirable, whether deliberate or accidental.

Efforts both to promote fidelity and to engage in adaptation already happen all the time, of course, but often not as strategically or effectively as would be possible with better guidance. The conclusions and guidelines that emerge from the literature review can help provide a better balance between these concerns.

A Resurgence in Interest

Issues of fidelity/adaptation balance related to program implementation have been studied and discussed since at least the 1960's, when applied research in the education and human services fields became more widespread, and the field of program evaluation was born. The impetus came from efforts to explain why so many evaluation results with previously validated programs were null or inconsistent—raising the possibility of an effect from the implementation of the program, rather than the program itself.

In recent years, there has been renewed interest in this subject. Why? For one reason: there simply are more effective substance abuse prevention programs available, resulting in quantitatively greater need to look at fidelity/adaptation concerns.

Research over the last 40 years also has helped us to understand better the complexities of implementation for educational and substance abuse programs. This leads to greater chances for effective intervention. Technologies for managing the implementation process are now available, some of them guided by sophisticated behavioral and management science concepts.

Furthermore, substance abuse prevention programs are subjected to more change, more complexity, and more demands for producing concrete results, while at the same time, substance use persists for certain populations This leads to greater urgency for communities to learn from studies in this field.

Funders are demanding more program accountability, which is easier with promising, effective and/or model programs. Funding programs, such as CSAP's State Incentive Grants, the Department of Education's "Principles of Prevention" grants, and those through the Drug Free Schools and Communities, now call for the use of such science-based prevention programs.

Also, there is increasing recognition that informally or poorly run programs can do more harm than good in organizational or community settings. Loss of program fidelity can sometimes lead to chaos, because once the program has been modified, no one quite knows how it will operate or what unexpected consequences it will produce.

On the other hand, prevention agencies and communities also face pressures for adaptation. To many observers, program fidelity represents a "top-down" approach to implementing a substance abuse prevention program, while adaptation represents a "bottom-up" approach that may have broader political appeal. Some communities may simply have an aversion to "copying;" they want to be "different, " to "be creative."

Even in the best-developed programs, there are often differences in community environments and target populations that really do necessitate certain kinds of modifications. Many of these ultimately are about resource limits, as in the example about Life Skills Training (Exhibit 3). If a teacher has only so many classroom hours to devote to a prevention program, either a longer program is modified, or it is not used at all.

EXHIBIT 3:

Fidelity/Adaptation Balance in the "Real World" of Program Implementation

In Life Skills Training (LST), a well-validated program developed by Gilbert Botvin at Cornell University (Botvin et al., 1995, 1989), one component involves middle school students talking in their LST sessions about tobacco advertisements. LST's curriculum suggests that students cut out tobacco ads at home and bring them to class for discussion. Sometimes teachers will also ask students to draw their own humorous ads and share them during the LST sessions. This is an example of program adaptation (specifically, an enhancement, since it adds something to LST that does not substitute for any existing component).

Some teachers drop the LST curriculum session on relaxation, because they fear losing control of their students during this enforced "quiet time." Others drop sessions because of time constraints. LST is an eight-session program; but in some schools, only six sessions are available for completing the program.

These adaptations can have a significant bearing on whether the LST experience of some students is really the same as that of others. For LST, as for all science-based substance abuse prevention programs, having a more unified set of guidance for fidelity/adaptation balance (and indeed, for the entire process of program implementation) would likely improve overall program impact.

As with other substance abuse prevention programs, many LST implementers are trying to determine what they believe are its core components, selecting ones that work for them, deleting those that do not, and adding elements they think will improve the program. This program adaptation will go on, says the weight of evidence, regardless of what program developers or researchers think about it.

What Does Research on Fidelity and Adaptation Tell Us?

The stages of program implementation depicted in Exhibit 1 provide a conceptual framework for organizing the review of wide-ranging literature on the question: "How can the balance between program fidelity and adaptation best be set in order to promote successful implementation of science-based substance abuse prevention programs?"

Even though the seven stages noted above are not always followed precisely in the real world of prevention programming—sometimes stages are skipped, or minimized, or conducted simultaneously, or re-arranged—this paradigm presents a useful way of conceptualizing and evaluating whatever process does get followed.

A review of the literature on the concept of fidelity/adaptation balance in particular, which is one sub-part in those stages, shows that research, practice, and theoretical discussions about fidelity/adaptation balance are colored by the complex human dynamics of cultural differences. These include, for example, differences between academically based program developers, who are often researchers as well; and community-based program implementers, who are sometimes grassroots advocates as well.

Differences may also arise from competitiveness, (e.g., in academic publications; also, some science-based prevention programs are now sold commercially). Differences may also arise from communication difficulties among people who come from these varied backgrounds. These differences are sometimes further complicated by the number of subject fields in which fidelity/adaptation issues have been discussed, each of which has its own nomenclature.

Some of the distinctions are somewhat artificial. Certainly there is a vested interest in the "purity" of a program model by its creator, and a vested interest in local control by organizations and communities that are implementing the model programs. But increasingly, both "sides" recognize that the key to program success (as defined by both parties) is to strike a balance between fidelity and adaptation. The remaining problems of human dynamics are likely a matter of communication and coordination.

Main Conclusions from the Literature Review

The most important conclusion drawn from the literature review is that **attention to BOTH fidelity and adaptation is essential for successful implementation of evidence-based substance abuse prevention programs.** That is, fidelity/adaptation is not a continuum upon which each specific implementation of a substance abuse prevention program falls. Rather, fidelity/adaptation balance is concerned with the complex, dynamic interaction between a program and its environment. Science and experience say that maximum success requires attention to both fidelity and adaptation.

To date, only limited attention has been paid to fidelity, adaptation, and other components of program implementation in both the science and practice of substance abuse prevention programming. Yet science shows that dealing with implementation issues is critical to program success. Evaluators have even coined a term—"Type III error"—to label the significant number of cases where researchers conclude that a program is not effective, but, in fact, what they observed was the result of the program not being implemented properly.

Even with science-based programs and good implementation strategies (including attention to fidelity/adaptation balance), there is no guarantee that a program will lead to significantly improved outcomes, such as development of resistance skills, less use of drugs or alcohol than comparison groups, etc. Evaluating implementation efforts and measuring the balance set between fidelity and adaptation have meaning only in the context of outcomes, and these too must be measured by research.

Many science-based prevention programs now widely used in the field have not been replicated. They have been shown to work in an initial setting, but they have not been verified as working in a wide range of environments, or as implemented by people other than their developers. In some cases, even when implemented well, results may not be verified due to lack of systematic data gathering.

The research evidence about effective program implementation and fidelity/adaptation balance is far from complete. It is filled with contradictions and uncertainties. There are also some basic issues of terminology as well as methodology to be resolved. Different investigators use different terms to discuss this topic. Further, the measures used by program developers to determine program fidelity vary in scope and precision.

Despite these shortcomings and inconsistencies, however, the weight of evidence suggests that conflicts that once divided program developers concerned with fidelity and program implementers concerned with adaptation are now outdated. These discussions still appear at times both in the literature and in the field, but the view that fidelity/adaptation is a dynamic concept in which both elements are needed for program success makes the early arguments on this subject irrelevant.

Hall & Hord (2001) assert that asking the question "Is adaptation desirable?" is the wrong question. Adaptation *will* happen, so the questions to be asked instead are: "How much?" and "When is a program's content damaged?"

Bauman, Stein, & Ireys (1991) refer to the "principle of program uniqueness"—that in its actual implementation, any program will have some unique elements because of the unique characteristics of the environment. They point out that many programs are created under unusual conditions (special funding, charismatic leaders, etc.) that are not widely available in the field. This principle of program uniqueness removes the debate from the level of the ideal—"Should we permit reinvention?"—to the actual issue: "How and what is going to change while still preserving core components faithfully?"

Reinvention of some operational components of programs is inevitable. In that context, fidelity by the innovative program to the prototype's theory base is what is most critical. It is appropriate to modify, or even replace, procedural aspects of programs, but the theory-based intermediate outcomes must be maintained.

Larger concerns also weigh in the direction of promoting a certain amount of adaptation. Adaptation is essential in order for the community to have a role in change (Arthur & Blitz, 2000), and to meet needs for community ownership and involvement (Backer, 2000). Also,

unusual circumstances of implementation can change the nature of the implementation environment, and these are often difficult to measure.

Overall, the position that seems best justified by the weight of evidence reviewed in the literature is one that comes from a nearly 20-year-old paper:

> "*The ultimate goal is to maintain the basic integrity of a program model while matching the innovation to the unique features of the setting and the preferences/reactions of the relevant population.*"
>
> (Jason, Durkal & Holton-Walker, 1984)

What Does This Mean to Us?

A literature review is not intended to provide detailed practice guidelines. However, program developers and implementers are asking for help in dealing with the ultimate practical question: "how to actually make a balance between fidelity and adaptation for a particular program in a particular setting." As a preliminary response, Backer offers a set of six guidelines for balancing fidelity and adaptation.

He also notes several issues for researchers, program developers, implementers, funders, and policymakers that should receive additional attention. These represent, in effect, additional conclusions from the literature review.

Little empirical research has been done to date on many of the issues about fidelity/adaptation balance, despite all the studies cited in the full literature review. We do not yet know if these are precisely the steps for "setting the boundaries." However, the weight of evidence suggests that these lead in the right direction, so they become a "what-to-do-until-the-doctor-comes" set of practices. Each of the steps is based upon literature reviewed for the field study.

Guidelines for Balancing Program Fidelity/Adaptation

1 - Identify and understand the theory base behind the program. Published literature on the program should provide a description of its theoretical underpinnings; if not, an inquiry to the program developer may yield this information.

This may or may not include a logic model that describes in linear fashion how the program works. The theory and logic model are not in themselves core components of a program, but they can help identify what the core components are, and how to measure them. This step also identifies core values or assumptions about the program that can be used to help persuade community stakeholders of the program's fit and importance for their environment.

2 – Locate or conduct a core components analysis of the program. This will provide implementers with a roster of the main "program ingredients," and at least some sense of which components are essential to likely success and which are more amenable to modification, given local conditions. In essence, core components analysis represents a bridge between developer and implementer, and between fidelity and adaptation. Ideally, the program developer or a third party will already have conducted the core components analysis. If not, with good information about the program, an implementer can at least approximate this informally.

CSAP, through its National Center for the Advancement of Prevention, is undertaking a large-scale core components analysis of effective and model programs. Checking to see if a selected program is in the database of CSAP's National Registry of Effective Prevention Programs (NREPP) is a first step in determining the status of a core components analysis. For online access to this database, go to www.samhsa.gov/csap/modelprograms/.

3 – Assess fidelity/adaptation concerns for the particular implementation site. This step means determining what adaptations may be necessary, given the target population, community environment, political and funding circumstances, etc.

4 – Consult as needed with the program developer to review the above steps and how they have shaped a plan for implementing the program in a particular setting. This may also include actual technical assistance from the developer or referral to peers who have implemented the program in somewhat similar settings.

5 – Consult with the organization and/or community in which the implementation will take place. This is a process to allow fears and resistance to surface, build support for the program, and obtain input on how to do the implementation successfully.

6 – Develop an overall implementation plan based on these inputs. Include a strategy for achieving and measuring fidelity/adaptation balance for the program to be implemented, both at the initial implementation and over time. By addressing all of the complex stages of implementation, such a plan can increase the opportunities for making choices that shape a program, while maintaining good fidelity.

Additional Research Issues

Many research issues remain for each of the primary audiences for fidelity and adaptation balance studies, as noted below:

Issues for Researchers and Program Developers

1 – How to gather evidence on the stages of implementation, including fidelity/adaptation balance, and how to make this a routine part of both research and implementation practice.

More evidence about the implementation process itself is a fundamental research need. Such research could help to establish more precisely the appropriate balance points between fidelity and adaptation for different programs, target populations, or implementation settings. Even though adaptation may be inevitable, and efforts to promote fidelity difficult, only experimental research can help sort out how this balancing act should be treated in practice. This has not really been done to date.

Gathering more extensive evidence about fidelity/adaptation balance would help to provide a more rigorous definition of what constitutes "fidelity." There is also a need to look at the frequency of different types of adaptations: deletions, additions, modifications in content, changes in intensity.

It may be important, too, to look at the specific role of program developers and their support organizations in the overall process of program implementation (Pentz, 2001). Program developers may simply not have the resources, or perhaps even the motivation, to systematically disseminate information that can be used to promote successful implementation. They may have even less incentive to offer consultation to implementers.

For instance, developers in academic settings are rewarded for research publications, not for providing technical assistance, which their research grants usually do not fund. Developers who do provide technical assistance usually have government or foundation funding to do so. Others have created private organizations that market their program materials and provide a revenue source that can support consultation activities. Most large-scale purchases of program materials are made by third parties (states, school districts, foundations, or corporations), which may or may not support technical assistance for implementation. Seldom are sources of funding for creating and initially validating a prevention program also sources for funding technical assistance to program implementers.

On the other hand, the quality of contracted technical assistance funded as part of a local, regional, or national implementation effort seems variable. Often contractors are not as knowledgeable about the program as the original developers. Yet another complication comes from inherent differences between the "research standard" and the "practitioner standard" for fidelity.

2 - How to determine the sources of variance in fidelity.

Many writers in this field say that this variance comes from the appropriate and vital expression of local needs, including the need for local control of programming. However, based on the broad literature review, there are other important factors as

well, such as the skill and effort of the people involved in the implementation, the difficulty of some implementation tasks, and even luck. Only further research can help to determine the relative importance of these factors more precisely.

3 - How to understand better the differential characteristics of program implementers.

Who adapts, what do they adapt and why, why do they preserve fidelity? For instance, the Emshoff et al. study shows that attention to fidelity came about because grantees were under pressure from the funder to maintain fidelity.

4 - How to address the largely unexplored question of time horizon for fidelity/adaptation balance.

For some innovative programs, there may be high fidelity at the beginning of the implementation period, followed by successive stages of adaptation. These adaptations occur because environmental conditions change, or because there are changes in the scientific database about the program itself. This has been little explored in the research to date, which tends to look at fidelity/adaptation issues by "snapshot" rather than "motion picture."

5 - How to make the instrumentation developed for research more immediately useful for program implementers.

Core components analysis, fidelity instruments, and other types of data-gathering devices described in this review have considerable potential for field practice. This will more likely happen if they are presented in user-friendly formats, with adequate tie-ins to program manuals, training and technical assistance programs, and other delivery systems.

6 - How to get program implementers more vigorously involved with all stages of program development.

For instance, implementers should provide input on how best to format and distribute instruments intended to benefit them.

7 - How to increase the support infrastructure for implementation and fidelity/adaptation research.

One way is to provide rewards and to allot space for more data and interpretations on these subjects in professional journals and at conferences. Another is to encourage the development of more research funding programs.

Issues for Program Implementers

The most important recommendations for program implementers were presented above, in terms of guidelines for how to address the implementation process in a practical way, including fidelity/adaptation balance. Unresolved issues tend to revolve around the mechanical aspects of fulfilling this set of recommendations: The following items need further attention:

1 - How to deal with implementation costs, including the practical realities of limited resources in determining needed steps for implementation and for fidelity/ adaptation balancing, even to the extent of deciding not to implement certain programs if the financial supports are not there.

2 - How to learn about the complex knowledge base on this subject and how it can be practically used.,

CSAP will have a key role in responding to this issue, but individual implementers and their professional or trade associations can also have a part in providing the local resources needed.

3 - How to get access to capacity building resources that go beyond mere knowledge, to providing actual technical assistance in addressing fidelity/adaptation balance and other issues posed here.

4 - How to generalize fidelity/adaptation and program implementation experiences, so that what is learned from an implementer's experience with one program can be transferred to others for implementation in the future.

5 - How to promote leadership supportive of effective program implementation, including fidelity/adaptation balance.

Hall (2001) reports that individual teacher implementers of innovations were much more likely to implement a program successfully if their school principal was appropriately supportive of their efforts.

Issues for Funders and Policymakers

1 - How to create needed learning products.

Both developers and implementers need additional learning products in order to increase competence in fidelity/adaptation balance. Learning products and related items should be created and shared widely with individual practitioners, program administrators, policymakers, and researchers as they wrestle with the complex issues presented here.

Products need to cover both basic principles and practical checklists for how to conduct a fidelity/adaptation review. Training programs need to be designed to provide hands-on, peer-connected training for using the new information. Finally, these learning resources need to be implemented in the field through larger "culture change" efforts to encourage the field as a whole to behave differently. These efforts will require partnerships with national and regional substance abuse prevention and other public health organizations.

2 - How to provide needed training and technical assistance.

A training program should be created to support prevention practitioners, program administrators, and community leaders in addressing the issues of fidelity/adaptation.

Technical assistance also needs to be available on a customized basis, preferably involving program developers and experienced implementers. Existing systems of Federal agencies, such as the CAPT program in CSAP, can help to offer this technical assistance. Encouragement, and possibly funding support, can also be offered to

other groups that interface with the community of program implementers to provide technical assistance.

In addition, there should be a program for "culture change" through such strategies as:

- Leadership statements by key organizations at their conferences, in publications, and on Web sites, identifying fidelity/adaptation as an issue the field needs to deal with more fully;

- Assembling "think tanks" to look at motivational, institutional, and political factors that might be shaped to support this culture change; and

- Setting up a larger range of partnerships with other Federal agencies, foundations, and the private sector.

3 - How to shape funding priorities.

To make a lasting difference in improving the quality of program implementation in substance abuse prevention, including the balancing of program fidelity and adaptation, funding priorities will need to change. Funding will need to be earmarked for these activities, both in the grants for implementation programs and by creating new sources of funding for technical assistance support and field development work in this important area.

4 - How to promote overall capacity building for the prevention field.

For both communities and prevention agencies, the resources recommended above can only be used fully if they are set in the larger context of efforts to strengthen the overall organization. Long-term planning for sustainability, dealing with initial needs/assets and readiness assessments, and sensitive balancing of program fidelity and adaptation are typical of the complex interventions that cannot be undertaken by weak, under-resourced entities.

Next Steps

The Center for Substance Abuse Prevention is already addressing many of the issues noted above. For instance, through its National Center for the Advancement of Prevention four small-scale efforts to explore unresolved issues in fidelity/adaptation balance are in progress:

1 - The perspectives of program developers on fidelity/adaptation are being obtained through discussions with several prominent developers about these issues for their own programs, e.g., how these developers deal with enhancements and modifications of their programs over time.

2 - Perspectives of implementers for these same programs are being obtained through discussions with selected field implementers, to learn more about exactly how fidelity or adaptation challenges are dealt with.

3 - A review of fidelity/adaptation instruments is being conducted, to lead to information on (a) format and content for fidelity instruments, and how these could be better standardized in the substance abuse prevention field; (b) what steps could be taken in the field to increase the use of fidelity instruments as measures of implementation quality; and (c) how prevention practitioners/agencies and communities can use these instruments in practical ways.

4 - A thought paper is being written on how future progress in dealing with fidelity/adaptation balance may require obtaining information on these matters prospectively.

In the end, these and other activities proposed to increase attention to the important issue of fidelity and adaptation balance will assist program developers and implementers to achieve desired outcomes. For example, CSAP is planning to provide clear guidance, including core components analysis, fidelity instruments, and other products to help the field ensure adaptation/fidelity balance and maintain the effectiveness of prevention programs, maintain accountability, and re-shape the field.

As a final recommendation, there should be ongoing exploration of other content areas that could provide additional insights about fidelity/adaptation balance and related issues. Medication compliance is one area that might be especially fruitful, because that field deals with the problem of people not following the medication regimen specified for them. Adult education is another study area for concepts in designing implementation strategies and fidelity/adaptation balances (McDonald, 2000), since in the end, implementation almost always involves changing the behavior of adults—teachers, prevention personnel, etc.—through an educational process so that they will then implement a program properly.

Conclusion

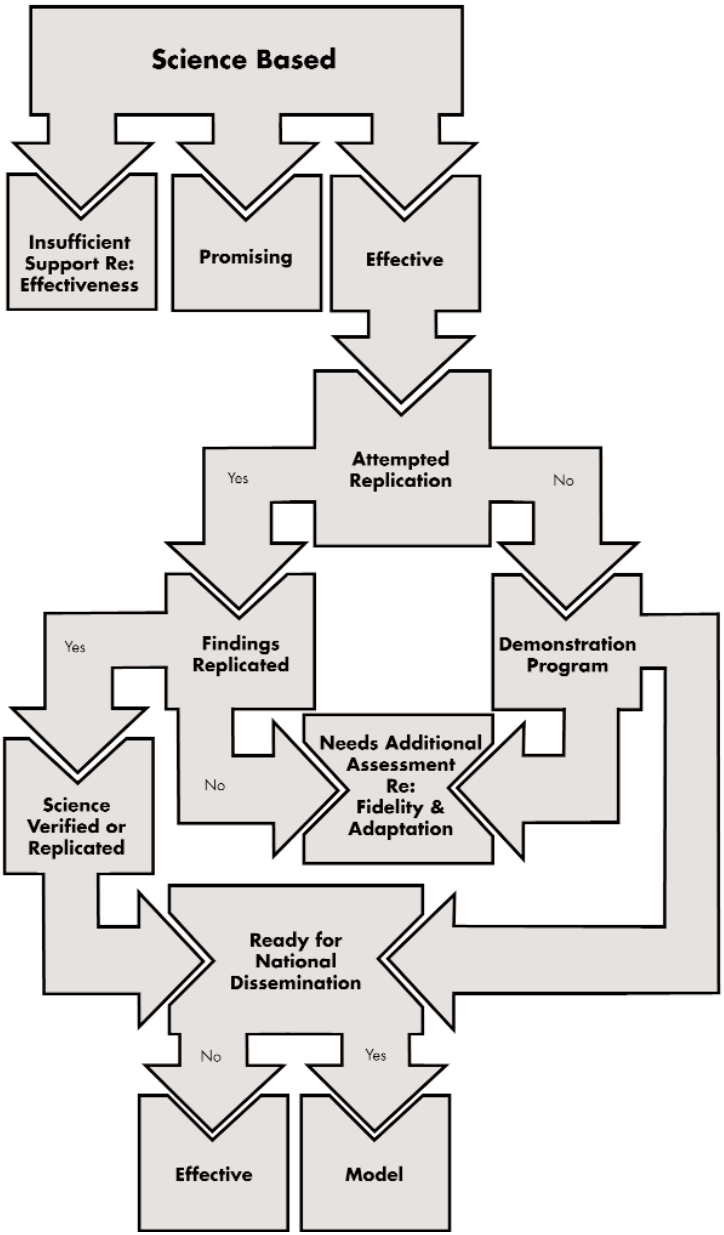
Returning to the initial comparison that implementing a program is like constructing a building quoted earlier, the architectural plans represent a degree of purpose in building that is similar to substance abuse prevention programming. Program implementation— including the balancing of fidelity and adaptation— is most likely to succeed when the changes made are highly intentional and rarely when they are accidental or careless.

The review of literature and conclusions drawn from this effort address the desire of those working "in the trenches" of prevention to have usable strategies for balancing program fidelity and adaptation, and for dealing with the other stages of the program implementation process.

There is a growing knowledge base on how to do this well. The recommendations made here can help both to increase the knowledge and to shape it into learning products and interventions that will improve the future quality of implementation practice in substance abuse prevention.

Appendix

CSAP's Typology of Science-Based Programs



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The following studies are cited in this synopsis of "Balancing Program Fidelity and Adaptation in Substance Abuse Prevention: A State-of-the-Art Review," by Thomas E. Backer, Ph.D. For the full document with its reference list, contact the National Center for the Advancement of Prevention, 11400 Rockville Pike #209, Rockville, MD 20852; (301) 984-8470.

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