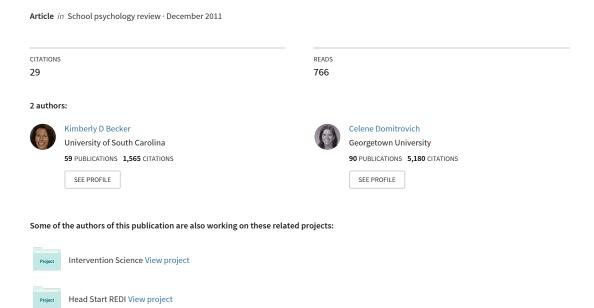
The Conceptualization, Integration, and Support of Evidence-Based Interventions in the Schools



Commentaries

The Conceptualization, Integration, and Support of Evidence-Based Interventions in the Schools

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The studies in this issue break the mold of the traditional stage model of the development and testing of evidence-based interventions (EBIs) within the confines of highly controlled studies (Onken, Blaine, & Battjes, 1997). Although this approach has merits, the need for EBIs in school settings has outpaced their deployment. The authors of these articles are to be commended for their efforts to engage the school workforce in the iterative process of development, refinement, implementation, and, ultimately, sustainment of schoolbased interventions. What makes this work particularly impressive is the attention to theoretical frameworks, rigorous and responsive methodologies, and the relevance of research to practice and policy. The remainder of this commentary will focus on three issues related to the practice and policy implications of our science; namely, the conceptualization of evidence-based services, the integration of services within schools, and infrastructure development to support high-quality implementation and sustainability of EBIs through progress monitoring and workforce development.

Conceptualization of EBIs: Finding Common Ground

The proliferation of EBIs is a testament to the successful labors of prevention and intervention pioneers. Yet, in the current (and welcome) era of accountability, the growing list of EBIs is a burden to those who must interpret the quality of the research, decide which EBI best fits the needs of their students, and determine how to allocate resources to workforce training in EBIs (Evans & Weist, 2004). How could a school system possibly allocate enough resources for workforce development in enough EBIs to meet the diverse

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needs of its students? The answer may lie in the field's conceptualization of EBIs.

One strategy that is gaining momentum in children's mental health is the common elements approach. Lyon, Charlesworth-Attie, Vander Stoep, and McCauley (2011) describe this approach with the use of modular psychotherapy by therapists treating youth with depression and anxiety in school-based health centers. Practice elements refer to the individual skills or practices (e.g., problem solving, positive reinforcement, and communication skills) within a manualized intervention; common elements are the overlapping treatment elements across effective interventions (Chorpita, Daleiden, & Weisz, 2005). This framework was developed as a way to enhance the quality of mental health services delivered within Hawaii's Department of Child and Adolescent Mental Health Division (Chorpita, Yim, Donkervoet, Arensdorf, Amundsen, & McGee, 2002). A systematic review of 322 randomized controlled trials testing 615 treatment protocols provided the first aggregate summary of the practice elements used in successful interventions for anxiety, autism, delinquency, depression, inattention/hyperactivity, opposition/aggression, school refusal/truancy, substance use, and trauma (Chorpita & Daleiden, 2009). In part, these elements inform clinical practice within the context of a larger evidence-based service delivery framework (i.e., Managing and Adapting Practice) that is being implemented in states such as Hawaii, California, and Minnesota (Daleiden & Chorpita, 2005; Chorpita & Daleiden, 2010; Nakamura et al., 2011).

A common elements approach promotes a shared language and skill set across an entire workforce that could be beneficial in the school setting in many ways. First, it reduces the need for staff training in a multitude of separately packaged EBIs that target one specific problem (Chorpita, Becker, & Daleiden, 2007). Instead, staff members receive training in practice elements and their application to youth with a variety of target problems. Second, in contrast to the current state of school-based interventions delivered either primarily by teachers or primarily by mental health cli-

nicians, consistency across staff sets the stage for successful student skill development as multiple staff members capitalize on naturally occurring learning opportunities for students to practice new skills. This is similar to the approach espoused by Positive Behavioral Intervention Supports (Bradshaw & Pas, 2011) that uses common principles to promote a positive school environment and reduce disruptive behavior. Third, for those students who demonstrate a need for targeted services, a common elements approach has the potential for tighter coordination between mental health services and teacher-delivered practices to support student skill development in the classroom environment. Finally, shared skill across the school workforce also has the potential to create an infrastructure for supporting staff development and enhancing sustainability of practices through the use of high-implementing teachers or mental health professionals as mentors or supports for other school staff. Cappella, Jackson, Bilal, Hamre, and Soulé (2011) demonstrated a similar accomplishment with the BRIDGE program by parlaying indigenous school mental health professionals to provide coaching and behavior management support to teachers. In these ways, our conceptualization of EBIs at the level of their core components rather than the packaged intervention facilitates the dissemination and training of EBIs and provides the foundation for service integration within the school setting.

Integration of Services: Striving for Seamless and Effective Care

Another trend in school-based services is a public health approach to developing comprehensive strategies to address potential barriers to learning for students at all levels of need (Strein, Hoagwood, & Cohn, 2003). Levels of need range from universal programs (i.e., designed to foster social, cognitive, emotional, and behavioral development across the entire school population) through selective and indicated interventions (i.e., targeting children at risk for mental health difficulties) to treatment services (i.e., for those individuals who meet diagnostic criteria, require

highly specialized care, and have failed to benefit from the universal, selective, and indicated interventions; National Research Council and Institute of Medicine, 2009).

An integrated service approach involves the seamless blending of independent programs into one coherent service delivery model (Domitrovich et al., 2010). Horizontal integration refers to the joining of programs/ services within risk levels whereas vertical integration involves the coordination of services across risk levels. The potential benefits of integrated models are multifold. First, because they retain the unique components of each individual program while merging those that overlap, they enable the school workforce to deliver a broader set of approaches simultaneously but in a more efficient manner than would be used with a set of uncoordinated programs. Second, integrated models strive to create a shared conceptual framework, language, and processes (e.g., community building, reflection) to facilitate the teaching of techniques. Although the specific content might differ depending on the target of the intervention (e.g., violence prevention vs. social skills training), the consistency in the process maximizes students' exposure to the intervention and has the potential to increase students' generalization of skills across contexts. This may be particularly beneficial for students who receive selected or indicated interventions with concepts and skills that are reinforced through an integrated universal intervention (Ialongo, Kellam, & Poduska, 2000; Kellam & Rebok, 1992). Third, there is a potential synergy created by integrating the complementary active components of different interventions. For example, one program might teach self-regulation strategies yet lack structured opportunities for repeated practice, which could be provided through a complementary intervention that also involves strong reinforcements for successful practice. In this way, integrated interventions could be more powerful than their individual programs. Fourth, vertically integrated models that nest selected and indicated services within universal programs have the potential to reduce the number of students who require higher level interventions if those students respond well to the universal program (Ialongo et al., 2000). Student responses to universal programs within vertically integrated models also may serve as an early screen for students who may require more intensive interventions.

The integration of school-based services is a focus of our work at the Center for Prevention and Early Intervention at the Johns Hopkins School of Public Health. As an example of a horizontal integration, a randomized controlled trial (Ialongo, PI) was recently completed involving Promoting Alternative Thinking Strategies (PATHS) to PAX, an integration of two universal programs (Domitrovich, Ialongo, Embry, & Greenberg, 2008). PATHS (Kusche & Greenberg, 1995) is a teacher-led curriculum that targets social emotional skills (i.e., friendship, emotion understanding and expression, emotion regulation, and problem solving). "PAX" refers to the PAX version (Embry, Straatemeier, Richardson, Lauger, & Mitich, 2003) of the Good Behavior Game (Barrish, Saunders, & Wolf, 1969), a game in which teams are reinforced for the collective success of their members in inhibiting off-task and disruptive behavior (Embry et al., 2003). The blending of PATHS with the PAX Good Behavior Game reinforces the goals of each program. This is accomplished via teacher-led instruction of the PATHS curriculum to facilitate initial exposure to social emotional skills, whereas the Good Behavior Game provides repeated opportunities for students to practice and teachers to reinforce these skills (Domitrovich et al., 2010).

An example of vertical integration being investigated at the Center for Prevention and Early Intervention is the blending of Positive Behavioral Intervention Supports (Sugai & Horner, 2006) and Coping Power (Lochman & Wells, 1996). As indicated in Bradshaw and Pas (2011), Positive Behavioral Intervention Supports is a noncurricular universal prevention strategy based on behavioral, social learning, and organizational behavioral principles (Sugai & Horner, 2006) that aims to alter the school environment by creating improved systems (e.g., discipline, reinforcement) and pro-

cedures (e.g., office referral, reinforcement, leadership) that promote positive change in staff and student behaviors. Coping Power is an indicated preventive intervention delivered to at-risk children and their parents that promotes social competence, self-regulation, and problem solving, as well as effective contingency management by parents and positive family communication. The integration of these programs has involved consistent language, student behavioral goals, and reinforcement of behaviors and skills across programs. Coping Power's focus on social emotional and behavior problems for children with increased behavioral risk makes it an ideal program to use with students who do not respond adequately to the universal Positive Behavioral Intervention Supports model. In turn, the school-wide structure and systematic reinforcement systems offered by Positive Behavioral Intervention Supports help extend and generalize the skills developed in the Coping Power child sessions to other nongroup settings, such as the classroom and cafeteria where adolescents are at increased risk engaging in disruptive behavior (Irvin et al., 2006). In these ways, the integration of existing interventions provides coordination of services within a school, thereby enhancing the potential for positive student outcomes and sustainability of the services. At the same time, for school-based interventions to be truly sustainable, a supportive infrastructure is necessary.

Infrastructure Development: Moving Beyond the Interventions

Infrastructure development to support EBI implementation and sustainability is integral to the success of school-based services. Two aspects of this infrastructure, progress monitoring and workforce development, are discussed in the following.

Progress Monitoring

Progress monitoring is an essential part of any infrastructure to enhance the quality of services (Daleiden & Chorpita, 2005). The term *progress monitoring* refers to the process of purposeful repeated measurement (wherein

subsequent services are informed by progress and shaped to promote progress) and is preferable to the widely used *outcome assessment/ evaluation*, which indicates a static measurement of an outcome at the end of services.

Progress monitoring within the context of school-based services can take at least two forms. The first reflects the traditional notion of monitoring and involves student outcomes such as functioning (e.g., attendance, academic achievement, office referrals, suspensions), symptomatology, and satisfaction (Proctor et al., 2011). Although school administrators, teachers, and mental health professionals may collect some forms of student data, progress measures are often collected in isolation of any services being provided; thus, only in rare circumstances are the data used to assess progress while the intervention is still going on. This represents a missed opportunity for the workforce to adapt their intervention to better promote progress. Rather than designing outcomes anew with each program in a school (Schoenwald, Hoagwood, Atkins, Evans, & Ringeisen, 2010), it is a worthy endeavor to engage the workforce as partners in scientific discovery by collaboratively deciding which progress indicators are informative to monitor, together interpreting the data, and jointly integrating this progress data to inform the practices within the school's infrastructure (Becker, Nakamura, Young, & Chorpita, 2009). There are a number of initiatives in children's mental health in which progress monitoring and performance feedback are central to improving the clinical practices of those who provide services to children (e.g., Bickman, 2008; Chorpita, Bernstein, Daleiden, & The Research Network on Youth Mental Health, 2008; Garland, Bickman, & Chorpita, 2010). The work of Lyon et al. (2011) illustrates this approach through the use of a datainformed clinical decision-making approach used in conjunction with a common element or modular approach to treatment.

The second form of progress monitoring has to do with implementation outcomes such as feasibility and perceived fit of the intervention as well as fidelity to the intervention model (Proctor et al., 2011). These types of

data are routinely collected by researchers, but unlikely to be collected by or shared with school systems that are using the EBIs. This is unfortunate because issues regarding implementation affect the sustainability of an intervention. An infrastructure that could support collection of implementation data on a regular basis could facilitate the iterative process of adapting the EBI to fit the school context and workforce needs in what is called a deployment-focused model of the development of EBI within the intended service delivery setting (Weisz, Jensen, & McLeod, 2005).

Workforce Development

Sustainability also depends on the skills and motivation of the workforce. Two landmark articles (i.e., Domitrovich, Bradshaw et al., 2008; Han & Weiss, 2005) outline the major contextual factors that influence teacher implementation of interventions and specifications of models for enhancing implementation. Their work suggests that the support system for the intervention is an important means by which to reduce variability in implementation quality across teachers by providing professional development and creating an infrastructure to coordinate deployment (Greenberg, Domitrovich, & Bumbarger, 2001). Research has demonstrated that professional development in the form of one-time training workshops do not result in proficient intervention delivery skills in the natural setting (e.g., Sholomskas et al., 2005). Rather, a growing body of literature suggests that opportunities for active learning through observation, practice, performance feedback, and reflection enhance skill development and implementation of a program, thereby providing evidence for the role of the coach in supporting teacher skill proficiency (e.g., Herschell, Kolko, Baumann, & Davis, 2010; Joyce & Showers, 2002; Lochmaneet al., 2009). Indeed, the articles in this issue provide a sampling of intriguing methods for supporting skill proficiency, including group consultation (Webster-Stratton, Reinke, Herman, & Newcomer, 2011), professional learning communities (Shernoff, Lora, Frazier, Jakobsons, & Atkins, 2011), learning collaborative (Nadeem, Jaycox, Kataoka, Langley, & Stein, 2011), and coaching (Cappella et al., 2011; Shernoff et al., 2011; Webster-Stratton et al., 2011). Despite these pioneering efforts, implementation supports are often absent from intervention research or discussed only as an afterthought. This is unfortunate because implementation supports following initial training are critical to the effective delivery of interventions and may factor into decisions about initial selection and adoption of EBIs in schools.

Coaching appears to be gaining substantial traction as a feasible and effective implementation support. However, although there are notable exceptions (Classroom Check-up; Reinke, Herman, & Sprick, 2011), our field's lack of clearly specified and manualized coaching models is a hindrance to scientific advancement. Standardization and manualization facilitate testing and refinement of coaching models, thereby contributing to the development of an evidence base within coaching but also serving a dual process of improving services and, ultimately, the lives of children.

Our work at the Center for Prevention and Early Intervention has been focused on developing a coaching model to support teacher proficiency in the delivery of PATHS to PAX. The PATHS to PAX coaching model parallels a multitiered public health approach to prevention. A universal coaching strategy including rapport building, modeling, observation, feedback, positive reinforcement, and problem solving-is used with all teachers regardless of their initial implementation quality. More intensive ("indicated") coaching strategies are used only with those teachers identified through a systematic process of data collection as needing additional support to address implementation challenges (e.g., poor student-teacher engagement, classroom disorganization that interferes with program implementation). Through repeated coaching contacts, progress towards teacher skill proficiency is monitored and informs the frequency and intensity of future coaching contacts, thereby promoting the development of a cohesive and skilled workforce.

Summary

Addressing the practice and policy issues raised in this commentary regarding the conceptualization of EBIs, integration of services within schools, and infrastructure development will require the continuation of novel research methodologies and efforts to involve stakeholders in the development, refinement, and sustainability of prevention and intervention programs. Efforts such as those described in this special issue hold promise for creating solid practice and science partnerships that can enhance the quality of school-based services and promote the sustainability of those interventions that improve the lives of the students we serve.

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