

---

# Research Into Practice

---

## Modular Psychotherapy for Youth With Internalizing Problems: Implementation With Therapists in School-Based Health Centers

Aaron R. Lyon, Sarah Charlesworth-Attie, Ann Vander Stoep, and  
Elizabeth McCauley  
*University of Washington*

*Abstract.* This article describes the training and consultation procedures implemented to adapt and pilot modular psychotherapy for use by therapists treating youth with depression and anxiety in school-based health centers (SBHCs). Module selection and adaptation decisions were data driven and intended to increase compatibility with the school context. Seven SBHC therapists in the district participated in the yearlong training and consultation program. Findings indicated that participating therapists were able to successfully select appropriate students for treatment, systematically track their use of treatment modules, and administer standardized measures to monitor symptom change in 94% of their sessions. In the context of these findings, we discuss practitioner engagement barriers and solutions, school-based therapist use of standardized assessment tools, and the utility of a brief SBHC intervention model.

An estimated 70%–80% of all mental health care for children and adolescents is delivered in school settings, making school the most common point of entry and receipt of mental health services (Burns et al., 1995; Farmer, Burns, Phillips, Angold, & Costello, 2003). Despite the general accessibility of school mental health care and its documented ability to reduce service access disparities (Kataoka, Stein, Nadeem, & Wong, 2007),

experts have suggested that the effectiveness of mental health interventions offered in schools could be improved through increased use of evidence-based practices (EBP) (Evans & Weist, 2004; Rones & Hoagwood, 2000).

Many barriers stand in the way of successful implementation of EBP by school-based practitioners. For instance, the training and support resources required for implementation typically exceed those available in

---

The authors thank the school-based mental health counselors, Seattle Children's Hospital (McCauley, principal investigator), and the King County Public Health Department for their support of this project. This publication was also made possible in part by funding from Grant F32 MH086978 from the National Institute of Mental Health.

Correspondence regarding this article should be addressed to Aaron R. Lyon, University of Washington, Child Health Institute, 6200 NE 74th St., Suite 100, Seattle, WA 98115; e-mail: lyona@uw.edu

Copyright 2011 by the National Association of School Psychologists, ISSN 0279-6015

schools (Evans & Weist, 2004). Translation of evidence-based mental health treatments to the school context is challenging, as most have been developed for delivery in a predictable sequence of multiple (e.g., 12–14) 50-min sessions in outpatient clinical settings. As in other delivery settings, schools, districts, and school-based providers vary in their openness to change as well as resources available to allocate to change initiatives. These factors make it difficult for direct service providers and school administrators to develop effective mental health programs. Empirically informed adaptations of intervention and training practices to fit the school context are needed, and frameworks driving adaptation decisions must be feasible for use by clinicians, administrators, and researchers alike. This article reports on an initial effort to adapt and pilot an evidence-based modular treatment approach for use by therapists working within school-based health centers.

The school-based health center (SBHC) is a specific education-sector service delivery model operating in nearly 2,000 schools across the United States (Strozer, Juszczak & Ammerman, 2010). Eighty-nine percent of SBHCs provide primary health care, and 72% have mental health professionals on staff (Strozer et al., 2010). SBHCs typically provide services to students regardless of their insurance status and represent a proven structure in which service-access disparities based on ethnicity or socioeconomic status are reduced (Kaplan et al., 1999; Wade, Mansour, Line, Huentelman, & Keller, 2008). Although relatively little is known about the quality of mental health services delivered by SBHC therapists, care provided to youth across mental health sectors is known to fall short of adequately integrating EBP (Garland et al., 2010; Herschell, McNeil, & McNeil, 2004).

Emerging implementation models attend closely to characteristics of the settings in which new practices are delivered, with the intent of facilitating the adaptation, adoption, and ongoing application of evidence-based care (e.g., Damschroder et al., 2009; Mendel, Meredith, Schoenbaum, Sherbourne, & Wells, 2008). Although the field of implementation

science is in its infancy, implementation research specifically focused on school mental health is particularly underdeveloped (Lyon, McCauley, & Vander Stoep, 2011). The education sector is ripe for the development of new service models. Implementation of new practices in schools necessitates careful, up-front evaluation of unique aspects of the educational context (Ringeisen, Henderson, & Hoagwood, 2003). This may include pre-implementation data collection surrounding the most prevalent client characteristics and presenting problems, as well as characteristics of the service providers and the organizational features of the school setting.

The Consolidated Framework for Implementation Research (CFIR; Damschroder et al., 2009) provides one model for conceptualizing program implementation that identifies essential factors for successful adoption of new practices. Simultaneous consideration of CFIR components and evaluation feasibility should drive decisions about the most important targets for preimplementation assessment by clinicians, program leaders, and researchers. CFIR articulates five major domains: (1) *Intervention characteristics*, including core components and adaptable, peripheral elements; (2) *outer setting*, the broader economic, political, social context in which an organization exists; (3) *inner setting*, the immediate organizational context in which implementation occurs, including shared receptivity to change; (4) *individual characteristics of practitioners and implementation team members*, such as personal and professional values, interests, and affiliations; and (5) the *implementation process*, the steps and modes by which active change is undertaken.

In the current project, the CFIR helped to guide our understanding of the unique challenges encountered when effecting practice changes in a school-based setting. At the level of the inner setting, school-based therapists commonly report competing responsibilities, lack of parent engagement, and logistical barriers as factors that interfere with consistent service provision (Langley, Nadeem, Kataoka, Stein, & Jaycox, 2010). A recent qualitative study of a group of SBHC therapists found the

perceived benefits of the SBHC service context to include accessibility to students, access to information about student functioning and performance, and collaborative relationships with other school professionals. Perceived limitations included service demand overload, unpredictable student session attendance, frequent need to divert attention to address crises, administrative pressure to provide case management rather than treatment, and isolation from other mental health providers (Lyon et al., 2011).

The characteristics of interventions that can be successfully implemented in schools also differ from those that are successful in other settings, especially with regard to their adaptable periphery (i.e., those components that can be changed without affecting intervention effectiveness). Relative to traditionally structured models of evidence-based practice (such as cognitive behavioral therapy, delivered in 12 weekly 50-min sessions), emerging approaches to *modular psychotherapy* may prove to be a better match to identified practice constraints of the school or SBHC environments, which often require greater flexibility in the length and frequency of sessions. Fundamentally, the modular approach subdivides treatments into meaningful units that are implemented independently or in complement with one another to bring about a specific treatment outcome (Chorpita, Daleiden, & Weisz, 2005). One modular approach, the PracticeWise Managing and Adapting Practice system (MAP; Chorpita, Becker, Phillips, & Daleiden, 2009; Chorpita & Daleiden, 2009; PracticeWise, 2011), involves systematic matching of youth mental health problems and demographic characteristics to associated treatment modules that have been identified in the scientific literature as components of empirically supported interventions for particular demographic and diagnostic groups. MAP was developed to simplify the process by which mental health therapists determine and implement treatment efficiently within a community-based setting. This approach enables a therapist to deliver in each session the specific elements of treatments that are most likely to promote change, increasing

the chances that even a small treatment dose is effective.

MAP has three components to support clinical decision making: (1) A computerized database that contains information therapists use to select treatment modules that have the strongest evidence for being helpful for a particular presenting problem; (2) A set of easy-to-use practice guides for each treatment module that give step-by-step instructions for implementing the key elements of the evidence-based treatment approaches so that therapists can avoid searching through multiple treatment manuals; and (3) A “dashboard” tracking system to monitor use of treatment elements and track a student’s clinical course using standardized measures (e.g., Chorpita, Bernstein, Daleiden, & Research Network on Youth Mental Health, 2008). The tracking system is used to explore whether use of a treatment approach is associated with symptom reduction.

Research on the MAP system and other modular approaches is just beginning to emerge (see Weisz et al., in press). Results point to potential feasibility for implementing the modular approach in a variety of community contexts, including schools. For example, modular approaches similar to MAP have been found to be more acceptable to therapists than use of traditional treatment manuals (Borntrager, Chorpita, Higa-McMillan, & Weisz, 2009) and have been identified as more flexible with regard to the timing of treatment delivery (McHugh, Murray, & Barlow, 2009). For these reasons, much of the original development and implementation of the MAP approach and its precursors included school-based clinicians as participating providers (Daleiden, Chorpita, Donkervoet, Arensdorf, & Brogan, 2006). Recently, Weisz et al. (2009) included modularized EBP as a core component of quality improvement efforts within school mental health programs; and Stephan, Wissow, & Pichler (2010) evaluated the use of a modular approach to increase the use of EBP by school-based primary care providers. Results from these projects suggest that the approach may be an effective method of increasing EBP delivery in the education setting.

The current article presents findings from a pilot feasibility study in which a simplified version of the MAP system, tailored to the SBHC context, was implemented with SBHC mental health therapists in a large school district. The goals of this article are to describe: (a) the rationale for adaptations made to the MAP system to fit the SBHC context; (b) the therapist training and consultation/support procedures used for implementation of the MAP system; and (c) the feasibility and acceptability of the adapted model as reflected by therapist participation, use of treatment modules, and monitoring of their practice and outcomes.

## Method

### Setting

The feasibility study was conducted in a large, urban public school district in the Pacific Northwest where SBHCs operate in ten high schools and four middle schools. Enrolled students in this district are demographically diverse (41% Caucasian, 23% Asian/Pacific Islander, 22% African American, 11% Latino; 41% eligible for free or reduced-price lunch). All SBHC sites are managed by the local public health department and are staffed by four community health service organizations. Two of the four organizations (referred to as "Organization A" and "Organization B") staff the majority of the SBHCs; the two additional organizations each staff one SBHC (Organizations "C" and "D"). Organization A and B differed with respect to their overall organizational missions and structures. Organization A emphasizes community-based safety-net services and supports few child-specific intervention programs. In contrast, Organization B is a larger, more comprehensive health care provider with a research division focused on cost containment through the use of effective, short-term mental health interventions.

Through a longstanding partnership between the local university, public health department, public school district, and community health service organizations, the university investigators had been providing training and consultation to SBHC therapists for seven

years at the time of initiation of the current feasibility study. The adapted modular therapy system was introduced to SBHC therapists within this established consultation structure.

### Participants

We recruited 17 out of 18 therapists practicing in the district's SBHC clinics. Participating therapists were stationed in 13 of the 14 SBHC schools. Recruitment occurred during an annual retreat for the therapists, where the research team presented an overview of the project. Therapists not present received invitations at a later point. See Table 1 for therapist characteristics.

### Measures

Study measures were selected to assess constructs that have been theoretically or empirically linked to successful implementation, including therapist attitudes, knowledge about evidence-based intervention methods, and adoption of new practices during the training and consultation period.

**Therapist attitudes.** The Evidence-Based Practice Attitudes Scale (EBPAS; Aarons, 2004) is a 15-item tool administered at baseline to measure therapists' pretraining attitudes toward EBPs. Items are rated on a 5-point scale (0 = *Not at All* to 4 = *To a Very Great Extent*). Internal reliabilities in the present sample were adequate for the total score ( $\alpha = .81$ ) and the subscale scores: (1) appeal of EBPs ( $\alpha = .77$ ), (2) openness to new/manualized practices ( $\alpha = .84$ ), (3) likelihood of adopting an EBP ( $\alpha = .60$ ), and (4) perceived divergence between current practices and EBPs ( $\alpha = .67$ ).

**Therapist knowledge.** The Knowledge of Evidence-Based Services Questionnaire (KEBSQ; Stumpf, Higa-McMillan, & Chorpita, 2009), a 40-item measure of clinician knowledge of the empirical foundation for specific youth psychotherapy practice elements, was administered at baseline. Respondents indicate whether a specific practice (e.g., "Teaching the child to measure his/her thoughts, emotions, and/or behavior repeat-

**Table 1**  
**Description of the Study Sample of School-Based Mental Health Therapists**

Characteristic	Participants ( <i>n</i> = 7)	Nonparticipants ( <i>n</i> = 10)	Total ( <i>n</i> = 17)
Female <sup>a</sup>	6 (85.7%)	10 (100.0%)	16 (94.1%)
Age	41.4 (13.0)	39.3 (7.7)	40.2 (9.9)
Race/ethnicity <sup>a</sup>			
Asian/Pacific Islander	0 (0%)	1 (10.0%)	1 (5.9%)
Caucasian	7 (100.0%)	7 (70.0%)	14 (82.4%)
Multiple	0 (0%)	1 (10.0%)	1 (5.9%)
Declined to respond	0 (0%)	1 (10.0%)	1 (5.9%)
Years in practice	9.0 (9.9)	12.5 (8.8)	11.0 (9.1)
Years in current position	5.9 (5.4)	4.2 (3.5)	4.9 (4.3)
Primary theoretical orientation <sup>a</sup>			
Behavioral	0 (0%)	1 (10.0%)	1 (5.9%)
Cognitive behavioral	2 (28.6%)	1 (10.0%)	3 (17.6%)
Integrative/eclectic	5 (71.4%)	6 (60.0%)	11 (64.7%)
Interpersonal	0 (0%)	1 (10.0%)	1 (5.9%)
Systems	0 (0%)	1 (10.0%)	1 (5.9%)
Employer <sup>a</sup>			
Organization A	4 (57.1%)	4 (40%)	8 (47.1%)
Organization B	0 (0%)	6 (60.0%)	6 (35.3%)
Organization C	2 (28.6%)	0 (0%)	2 (11.8%)
Organization D	1 (14.3%)	0 (0%)	1 (5.9%)
KEBSQ <sup>b</sup> total score (baseline)	101.4 (10.4)	99.6 (8.3)	100.5 (9.1)
EBPAS <sup>c</sup> subscales			
Total score	3.0 (0.3)	3.1 (0.5)	3.1 (0.4)
Requirements	2.5 (0.4)	2.8 (0.8)	2.7 (0.7)
Appeal	3.4 (0.6)	3.5 (0.4)	3.5 (0.5)
Openness	2.9 (0.7)	3.1 (0.8)	3.0 (0.8)
Divergence	0.8 (0.5)	1.0 (0.6)	0.9 (0.6)

KEBSQ = Knowledge of Evidence-Based Services Questionnaire; EBPAS = Evidence-Based Practice Attitude Scale. Note. Values are Mean (*SD*) unless otherwise indicated.

<sup>a</sup>Values are number (%). <sup>b</sup>Data missing on 2 nonparticipants. <sup>c</sup>Data missing on 1 nonparticipant.

edly”) is empirically supported for the treatment of anxiety, depression, disruptive behavior, attention/hyperactivity, or none of those options. Test–retest reliability of the KEBSQ is acceptable ( $r = .56$ ).

**Implementation.** Therapists tracked their session-by-session use of treatment modules and scores on standardized and individualized (e.g., school attendance) measures of clinical progress using password-protected, Microsoft Excel-based MAP dashboards. Dashboards were configured to automatically display graphs of client score histories along

with the modules used in each session and were the foundation for all clinical consultation. The implementation team also created separate databases to track training and consultation attendance and to combine dashboard data across cases.

**Progress monitoring.** Participating therapists were asked to select standardized and individualized measures for use in tracking client progress across sessions. The 13-item Short Mood and Feelings Questionnaire (Angold et al., 1995) was the most commonly administered measure.

**Table 2**  
**Adaptations to the MAP Framework and Rationale**

Original Component	Adaptation	Rationale
Elements of the MAP system address a broad range of internalizing (e.g., depression, anxiety) and externalizing (e.g., attention/hyperactivity, conduct) mental health problems	Specific focus on <i>depression and anxiety</i> ; training focused on elements of effective interventions for internalizing problems	<i>Relevance:</i> Prioritization of elements related to the most common mental health problems treated in the SBHC setting (Walker et al., 2010) <i>Preimplementation data</i> indicated depression and anxiety accounted for 40% of all cases
Searchable EBS database is accessed by individual clinicians who use it to select practice elements for use with specific cases	Consultants accessed the online database and identified practice elements for training	<i>Efficiency and Acceptability:</i> Reduction of practitioner time demands—a key barrier to EBP implementation in schools (Langley et al., 2010) <i>Simplicity:</i> Reduction of intervention complexity to facilitate implementation success
Traditional training model in which training in all elements occurs at the outset of implementation, followed by consultation	Gradual introduction of elements within existing consultation framework familiar to clinicians/consultants	<i>Economy:</i> Implementation is facilitated by the appropriate use of existing resources and structures (Fixsen et al., 2005)

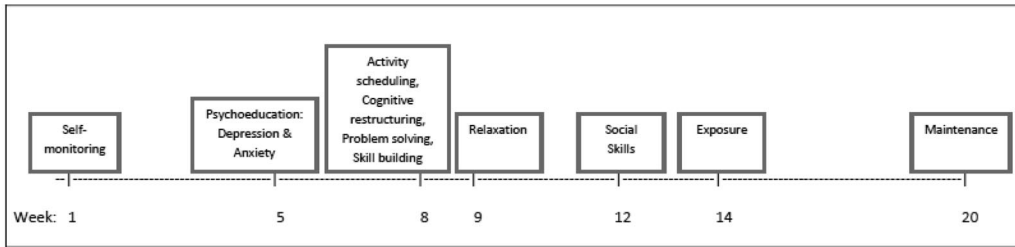
*Note.* MAP = Managing and Adapting Practice; SBHC = school-based health center; EBS = evidence-based service; EBP = evidence-based practice.

## Procedures

**Intervention.** School-based practitioners often have very limited time to devote to in-service training and a brief window with students within which to deliver their interventions (Langley et al., 2010; Lyon, McCauley, & Vander Stoep, 2011). Therefore, efforts were made to provide a targeted training with maximum relevance and effect and minimal burden. Table 2 summarizes the primary adaptations made to the MAP system as well as the rationales for pursuing those changes. For instance, based on previous research and our own data collection, we identified depression and anxiety as the most common mental health problem areas seen in SBHCs. We therefore instructed therapists to target their implementation of the MAP system to a selected subset

of depressed or anxious students in their case-loads for intervention and tracking. The narrower diagnostic focus also limited the number of relevant practice modules. For this reason, as well as to maximize acceptability to clinicians, consultants selected practice modules for training and implementation.

The selected modules were components of effective interventions for clients presenting primarily with depression or anxiety, ages 11–18, of any ethnicity or gender, and included self-monitoring, psychoeducation for depression or anxiety, cognitive restructuring for depression or anxiety, activity scheduling, skill building, problem solving, social skills, exposure, relaxation, and client maintenance. Practitioner guides from the MAP system were distributed to therapists during training ses-



**Figure 1. Order and timing of treatment module training.**

sions. These two-page handout-style documents summarize each module's objectives and guide delivery by describing the main intervention steps. Therapists were then encouraged to implement the modules with the selected clients they were tracking for the study.

**Training and consultation.** Clinical consultation and support were provided by two licensed clinical psychologists. Initial training occurred over three half-day sessions at sites accessible to SBHC providers. At the first meeting, project staff provided an overview of the MAP system, including the evidenced-based services (EBS) database, dashboard, and a detailed introduction of the self-monitoring practice module. Clinicians then were asked to track the primary presenting problems of the students on their caseloads, which provided guidance for the identification of subsequent modules by the research team. At the second session, the psychoeducation for depression and anxiety modules were introduced, and therapists were provided an opportunity to practice interacting with the electronic dashboard.

Following the second session, therapists were instructed to begin tracking their use of the modules on which they had been trained. Therapists were asked to select five clients to track and to replace tracked clients who terminated or dropped out of treatment in order to maintain a caseload of five. Therapists were asked to select clients that had primary presenting problems of depression and/or anxiety and, by their best estimation, were likely to attend at least three psychotherapy sessions. Therapists were instructed to e-mail dashboards to a project research assistant each

Friday for all clients seen during the preceding week and to include reasons for clients who were not seen that week.

Biweekly, in-person, group consultation meetings continued for the remainder of the academic year and included (a) case review and (b) training in implementation of additional selected practice modules (e.g., didactic presentations, distribution of written materials, modeling, and role-plays). These 90-min meetings were scheduled to accommodate participating therapists. Sixteen training and consultation sessions were held. Figure 1 displays the timeline along which modules were introduced to practitioners. Table 3 details the procedures for case selection and review during each consultation meeting regardless of whether a new module was being introduced.

**Analytic approach.** Descriptive statistics were used to characterize therapists who did and did not participate in the consultation program. Feasibility of implementing the MAP system was assessed by evaluating therapist attendance at the consultations, submission of dashboard data, use of treatment modules, and administration of standardized assessment measures.

## Results

### Training Participation

Training in the MAP consultation project was strictly voluntary. Seven of the 17 therapists elected to participate fully in training and consultation. The remaining 10 completed baseline measures, but did not participate in the full intervention implementation program. Differences were more apparent at

**Table 3**  
**Procedures for Biweekly Case Consultation Meetings**

<i>Cases Selected Based on One or More of the Following Criteria</i>	<i>Consultation Process</i> →	
	<i>Preconsultation</i>	<i>Consultation Meetings</i>
(a) Exhibiting a deteriorating trend in outcome measures	(1) Review of active case dashboards by therapists and consultants, based on the established criteria (left)	(1) Identification of cases based on therapist and consultant data review <sup>a</sup>
(b) Consistently elevated scores without improvement	(2) Therapists email case IDs of case selections and any specific questions to consultants 24–48 hr prior to meeting	(2) In the event of therapist–consultant disagreement, either
(c) New cases		(a) both cases are discussed
(d) Cases with recent or looming crises expected to impact progress		<i>OR</i>
(e) Therapist difficulties with module implementation (e.g., technical problems, lack of client engagement)		(b) priority is given to therapist-selected cases
(f) Additional clinically relevant issues		(3) Distribution of paper copies of dashboard printouts for selected cases
		(4) Brief therapist case presentation and identification of specific problems/questions for group
		(5) Group review of weekly dashboard data (client outcomes and therapist treatment module administration), discussion, and problem solving

<sup>a</sup>Although therapist–consultant agreement on identification of high-priority cases was not systematically tracked, therapists and consultants frequently selected the same cases.

the level of therapist employer organization. Most strikingly, none of the training participants, but 60% of the nonparticipants, were employed by Organization B. In an effort to engage nonparticipants, the research team scheduled an additional make-up training session for individuals from Organization B during a weekend. As a result, 4 of the 10 eventual nonparticipants began the training, but declined to participate thereafter. Anecdotally, in our interactions with nonparticipants and their supervisors, demands of time to complete electronic tracking of practice module use and progress monitoring rating scales was a commonly cited reason for dropout. Although tests

of significance were not conducted because of the small sample size, participating therapists did not vary markedly from nonparticipants with regard to age, sex, race/ethnicity, years in practice, current position, or primary theoretical orientation (see Table 1).

Baseline evaluation of the EBPAS also revealed high similarity between participants and nonparticipants in both total score and each subscale score (Table 1). Furthermore, each group’s mean total score was comparable to that reported in previous research with the EBPAS using a multistate sample of clinicians (mean = 2.7; Aarons, McDonald, Sheenan, & Walrath-Greene, 2007), indicating moderately



favorable attitudes toward EBP. No difference was apparent between groups in knowledge of evidence-based services, and baseline KEBSQ scores were within a few points of those reported for community-based mental health practitioners (Stumpf et al., 2009).

### Implementation Outcomes

The seven participating therapists attended an average of 79% of the 16 training and consultation sessions between September and May. All seven participants tracked their use of modules and client assessment scores and transmitted these results to the consultation team.

A total of 66 students (approximately 9–10 per participating therapist) were selected by therapists for tracking over the course of the consultation period. Selected youth had a mean age of 16.1 years, were 63% female, and were ethnically diverse (39% Caucasian, 26% Asian or Pacific Islander, 17% African American, 7% Latino, and 9% Multiethnic). Consistent with the goals of the study, selection parameters given to therapists, and the characteristics of youth presenting in SBHCs, 75% of youth had a primary presenting problem of depression, 14% presented with anxiety, and 11% presented with mixed depression and anxiety. Presenting problems were determined by clinicians using their routine intake procedures. In total, selected students received 487 sessions, with each student receiving an average of 7.4 sessions (range: 1–24; median: 6; mode: 3). Participating therapists administered at least one standardized assessment measure in 94% of sessions.

Because of the sequential introduction of treatment modules during ongoing consultation sessions (Figure 1), the number of post-training therapy sessions available for implementation of each session varied by client. Therefore, clinician module implementation was prearranged for each client to account for differences across cases in implementation opportunity, such that the number of sessions held following the introduction of a particular module became the denominator for that module and that client. Using this method, therapist self-report of module use indicated that

self-monitoring, cognitive restructuring for depression, psychoeducation for depression, problem solving, and skill building were the most commonly administered modules (used in 46.5%, 45.5%, 43.4%, 32.6%, and 27.9% of possible sessions, respectively). Modules used less frequently included activity scheduling (11.4%), relaxation (18.4%), social skills (14.5%), psychoeducation for anxiety (12.6%), cognitive restructuring for anxiety (11.4%), maintenance (4.8%), and exposure (4.6%).

### Discussion

In this feasibility study, a scaled-down version of the MAP system was implemented in the context of ongoing EBP consultation. All adaptations of intervention characteristics were driven by previous research and our own data collection. Adaptations were made to maximize appropriateness and acceptability of the system within SBHCs and the fit of intervention characteristics to aspects of the inner setting and local practitioners. Results suggest that, although the SBHC context presents a number of practice limitations (e.g., unpredictable and abbreviated treatment) and barriers to participation in training (e.g., multiple demands on therapist time), SBHC therapists who participated fully in the training series were able to consistently use standardized assessment tools and modular psychotherapy elements with selected youth. Growing evidence for the feasibility of these approaches is encouraging as it suggests that clinical innovations can have an effect on mental health care delivered in schools.

### Influences on Training Participation

Participants and nonparticipants in the consultation program had comparable attitudes toward and knowledge about EBP, attributes similar to those of youth mental health providers across different settings (Aarons et al., 2007; Stumpf et al., 2009). Findings have been inconsistent surrounding the utility of individual-level variables—such as attitudes and demographics—for predicting training outcomes (Beidas & Kendall, 2010). In light

of this, school-based program leaders might consider bypassing individual-level evaluations of this sort in favor of measuring more relevant preimplementation constructs.

Interestingly, differences were observed in organizational affiliation. No therapists employed by Organization B continued for a long enough period to begin tracking clients and implementing the treatment modules, although a number of them showed interest initially. This finding suggests that they might not have engaged with the same level of interest or enthusiasm as their colleagues from other organizations. Implementation research has repeatedly underscored the importance of a variety of organizational variables—such as structural characteristics and organizational climate, culture, and policies—to successful implementation (e.g., Damschroder et al., 2009; Glisson, 2002). Although none of these factors were measured directly in the current project, and the number of participating organizations was very small, the observed differential agency-level participation in this feasibility study underscores the importance of attending to organizational climate in future work. Multilevel (including supervisor and administrative) support for intervention programs has been found to influence their adoption (Jensen-Doss, Hawley, Lopez, & Osterberg, 2009). Structural demands or competing priorities at this level may have contributed to the attrition observed.

Based on these findings—as well as others in the training literature—additional organizational, and possibly individual-level, pre-training supports may be indicated to boost provider engagement (Lyon, Stirman, Kerns, & Bruns, 2011). Motivational influences can occur at multiple levels, and organization-level intervention to enhance implementation “readiness” (e.g., Glisson & Schoenwald, 2005) may be useful in the SBHC context to promote initial participation in training, continued engagement, and EBP adoption. Mobilizing stakeholder support at different levels (e.g., organizational, individual) to facilitate implementation success has demonstrated effectiveness. For instance, the team-building and participatory decision-making elements of

the Availability, Responsiveness, and Continuity model (Glisson & Schoenwald, 2005) may be effective for building consensus in situations where practitioners and consultants from independent agencies have differing opinions about adoption of quality improvement approaches.

### **Practitioner Behavior**

Study findings indicate that participants were able to administer standardized assessment measures, track results, and report on their use of treatment elements. Not surprisingly, two of the four treatment modules used most often—psychoeducation for depression and cognitive restructuring—were specific to depression, which was the most commonly reported presenting problem. The other two treatment modules (self-monitoring, problem solving) are components of efficacious interventions for both depression and anxiety.

Considering recent findings that many youth mental health providers are more likely to use a broad array of treatment elements at a superficial level, rather than a small number in greater depth (Garland et al., 2010), focus on a more selective repertoire of effective, easy-to-implement modules for the most prevalent presenting problems in a given setting could further increase feasibility and efficiency for use by school-based practitioners who may not have the time or interest to receive training in more comprehensive intervention packages. Given that the modal number of treatment sessions was low (mode = 3), it may also be advisable to adopt a brief intervention mindset for use in SBHCs, bringing to bear a small number of selected elements (e.g., 2–4) with greatest ease of implementation and promise of positive effect for prevalent presenting problems. Our research team is currently pursuing such a model in an attempt to optimize the intervention-setting fit of services delivered in SBHCs.

Standardized assessment administration, which was, reportedly, an uncommon practice at the beginning of the consultation, was carried out routinely across nearly all of the sessions tracked (94%). This result is particularly

encouraging given that routine administration of standardized assessment tools during mental health interventions is independently associated with client improvement (Lambert et al., 2003). Based on our high levels of therapist assessment adherence, it may be the case that outcome monitoring is a particularly feasible aspect of EBP to introduce in schools. Indeed, the school context represents an environment in which outcomes-based methods are already acceptable for the evaluation of students' academic success, such as in response to intervention protocols, increasing the likelihood that advocacy for this particular kind of practice change could be successful. Within mental health, there is a growing movement to include outcome monitoring in routine clinical practice. This includes emerging computerized measurement feedback systems, in which feedback about client progress is systematically delivered to clinicians (Bickman, 2008). Although research evaluating school-based mental health services has typically neglected to assess academic outcomes (Atkins, Hoagwood, Kutash, & Seidman, 2010), schools provide opportunities for tracking academic and mental health indicators of youth functioning in tandem. Systematic integration of mental health and academic indicators in a measurement feedback system could provide a more comprehensive view of youth functioning and allow program leaders to justify the resources devoted to mental health care in schools.

Limitations of this study stem in part from the small and preliminary nature of the implementation effort. Treatment modules were not tracked until they were introduced, making it difficult to determine the actual effect of training. Furthermore, the study relied on therapist self-report of module use. Growing consensus has indicated that clinician report does not always match actual behavior (McLeod & Weisz, 2010). The most current literature on fidelity also recommends tools that balance effectiveness (i.e., reliable, valid measures) with efficiency (i.e., feasible in routine care) so that tools incorporated into the research design also have clinical utility (Schoenwald et al., 2010). School-based stud-

ies are necessary to simultaneously evaluate (1) the feasibility and acceptability of fidelity measures at different levels of rigor to practitioners and (2) the predictive value added by more rigorous approaches. An additional limitation relates to our decision to have consultants rather than clinicians access the EBS database. The database allows a user to see clear, direct connections between the research base and their individual practice. Although our adaptation was intended to increase the feasibility and acceptability of MAP, it prevented first-hand experiences using the database and may have affected engagement.

In conclusion, schools are the most common service delivery venue for youth, yet mental health services research in this setting suffers from an inadequate emphasis on implementation processes. With a few notable exceptions, studies designed to adapt and facilitate school-based practitioners' use of contextually appropriate EBP have been surprisingly lacking. Implementation efforts driven by data-based examinations of specific school health care delivery systems, such as SBHCs, are virtually nonexistent. Although research and practice in this setting are often challenging, the documented accessibility of school-based services to diverse youth populations justifies continued efforts to develop and implement intervention and training models that best fit the unique constraints and opportunities of the educational context.

## References

- Aarons, G. A. (2004). Mental health provider attitudes toward adoption of evidence-based practice: The Evidence-Based Practice Attitude Scale (EBPAS). *Mental Health Services Research, 6*, 61–74.
- Aarons, G. A., McDonald, E. J., Sheehan, A. K., & Walrath-Greene, C. M. (2007). Confirmatory factor analysis of the Evidence-Based Practice Attitudes Scale (EBAPS) in a geographically diverse sample of community mental health providers. *Administration and Policy in Mental Health and Mental Health Services Research, 34*, 465–469.
- Angold, A., Costello, E. J., Messer, S. C., Pickles, A., Winder, F., & Silver, D. (1995). Development of a short questionnaire for use in epidemiological studies of depression in children and adolescents. *International Journal of Methods in Psychiatric Research, 5*, 1–13.
- Atkins, M. S., Hoagwood, K. E., Kutash, K., & Seidman, E. (2010). Toward the integration of education and

- mental health in schools. *Administration and Policy in Mental Health and Mental Health Services Research*, 47, 40–47.
- Bickman, L. (2008). A measurement feedback system (MFS) is necessary to improve mental health outcomes. *Journal of the American Academy of Child and Adolescent Psychiatry*, 47, 1114–1119.
- Beidas, R. S., & Kendall, P. C. (2010). Training therapists in evidence-based practice: A critical review of studies from a systems-contextual perspective. *Clinical Psychology: Science & Practice*, 17, 1–30.
- Borntrager, C. F., Chorpita, B. F., Higa-McMillan, C., & Weisz, J. R. (2009). Provider attitudes toward evidence-based practices: Are the concerns with the evidence or with the manuals. *Psychiatric Services*, 60, 677–681.
- Burns, B. J., Costello, E. J., Angold, A., Tweed, D., Stangl, D., Farmer, E. M. Z., et al. (1995). Children's mental health service use across service sectors. *Health Affairs*, 14, 147–159.
- Chorpita, B., Becker, K., Phillips, L., & Daleiden, E. (2009). *Practitioner Guides*. Satellite Beach, FL: PracticeWise.
- Chorpita, B., Bernstein, A., Daleiden, E., and the Research Network on Youth Mental Health. (2008). Driving with roadmaps and dashboards: Using information resources to structure the decision models in service organizations. *Administration and Policy in Mental Health and Mental Health Services Research*, 35, 114–123.
- Chorpita, B. F., Daleiden, E. L., & Weisz, J. R. (2005). Modularity in the design and application of therapeutic interventions. *Applied and Preventive Psychology*, 11, 141–156.
- Chorpita, B., & Daleiden, E. (2009). Mapping evidence-based treatments for children and adolescents: Application of the distillation and matching model to 615 treatments from 322 randomized trials. *Journal of Consulting and Clinical Psychology*, 77, 566–579.
- Daleiden, E. L., Chorpita, B. F., Donkervoet, C., Arensdorf, A. M., & Brogan, M. (2006). Health outcomes and evidence-based practice within a system of care. *Journal of the American Academy of Child and Adolescent Psychiatry*, 45, 749–756.
- Damschroder, L. J., Aron, D. C., Keith, R. E., Kirsh, S. R., Alexander, J. A., & Lowery, J. C. (2009). Fostering implementation of health services research findings into practice: A consolidated framework for advancing implementation science. *Implementation Science*, 4, 50.
- Evans, S. W., & Weist, M. D. (2004). Implementing empirically supported treatments in the schools: What are we asking? *Clinical Child and Family Psychology Review*, 7, 263–267.
- Farmer, E. M., Burns, B. J., Phillips, S. D., Angold, A., & Costello, E. J. (2003). Pathways into and through mental health services for children and adolescents. *Psychiatric Services*, 54, 60–66.
- Fixsen, D. L., Naoom, S. F., Blase, K. A., Friedman, R. M., & Wallace, F. (2005). *Implementation research: A synthesis of the literature*. Tampa, FL: University of South Florida, Louis de la Parte Florida Mental Health Institute, The National Implementation Research Network.
- Garland, A. F., Brookman-Frazee, L., Hurlburt, M. S., Accurso, E. C., Zoffnes, R. J., Haine-Schlagel, R., et al. (2010). Mental health care for children with disruptive behavior problems: A view inside therapists' offices. *Psychiatric Services*, 61, 788–795.
- Glisson, C. (2002). The organizational context of children's mental health services. *Clinical Child and Family Psychology Review*, 5, 233–253.
- Glisson, C., & Schoenwald, S. K. (2005). The ARC organizational and community intervention strategy for implementing evidence-based children's mental health treatments. *Mental Health Services Research*, 7, 243–259.
- Herschell, A. D., McNeil, C. B., & McNeil, D. W. (2004). Clinical child psychology's progress in disseminating empirically supported treatments. *Clinical Psychology: Science and Practice*, 11, 267–288.
- Jensen-Doss, A., Hawley, K. H., Lopez, M., & Osterberg, L. D. (2009). Using evidence-based treatments: The experiences of youth providers working under a mandate. *Professional Psychology: Research and Practice*, 40, 417–424.
- Kaplan, D. W., Brindis, C. D., Phibbs, S. L., Melinkovich, P., Naylor, K., & Ahlstrand, K. (1999). A comparison study of an elementary school-based health center. *Archives of Pediatric and Adolescent Medicine*, 153, 235–243.
- Kataoka, S. H., Stein, B. D., Nadeem, E., & Wong, M. (2007). Who gets care? Mental health service use following a school-based suicide prevention program. *Journal of the American Academy of Child and Adolescent Psychiatry*, 46, 1341–1348.
- Lambert, M. J., Whipple, J. L., Hawkins, E. J., Vermeersch, D. A., Nielsen, S. L., & Smart, D. W. (2003). Is it time for clinicians to routinely track patient outcome? A meta-analysis. *Clinical Psychology: Science and Practice*, 10, 288–301.
- Langley, A. K., Nadeem, E., Kataoka, S. H., Stein, B. D., & Jaycox, L. H. (2010). Evidence-based mental health programs in schools: Barriers and facilitators of successful implementation. *School Mental Health*, 2, 105–113.
- Lyon, A. R., McCauley, E., & Vander Stoep, A. (2011). Toward successful implementation of evidence-based practices: Characterizing the intervention context of counselors in school-based health centers. *Emotional & Behavioral Disorders in Youth*, 11, 19–25.
- Lyon, A. R., Stirman, S. W., Kerns, S. E. U., & Bruns, E. J. (2011). Developing the mental health workforce: Review and application of training strategies from multiple disciplines. *Administration & Policy in Mental Health & Mental Health Services Research*, 38, 238–253.
- McHugh, R. K., Murray, H. W., & Barlow, D. H. (2009). Balancing fidelity and adaptation in the dissemination of empirically supported treatments: The promise of transdiagnostic interventions. *Behaviour Research and Therapy*, 47, 946–953.
- McLeod, B. D., & Weisz, J. R. (2010). The Therapy Process Observational Coding System for child psychotherapy—Strategies subscale. *Journal of Clinical Child and Adolescent Psychology*, 39, 436–443.
- Mendel, P., Meredith, L. S., Schoenbaum, N., Sherbourne, C. D., & Wells, K. B. (2008). Interventions in organizational and community context: A framework for building evidence on dissemination and implementation in health services research. *Administration and*

- Policy in Mental Health and Mental Health Services Research*, 35, 21–37.
- PracticeWise. (2011, Spring). *PracticeWise Evidence-Based Services (PWEBS) Database*. Satellite Beach, FL: Author.
- Ringeisen, H., Henderson, K., & Hoagwood, K. (2003). Context matters: Schools and the “research to practice gap” in children’s mental health. *School Psychology Review*, 32, 153–168.
- Rones, M., & Hoagwood, K. (2000). School-based mental health services: A research review. *Clinical Child and Family Psychology Review*, 3, 223–241.
- Schoenwald, S. K., Garland, A. F., Chapman, J. E., Frazier, S. L., Sheidow, A. J., & Sotham-Gerow, M. A. (2010). Toward the effective and efficient measurement of implementation fidelity. *Administration and Policy in Mental Health and Mental Health Services Research*, 38, 32–43.
- Stephan, S. H., Wissow, L., & Pichler, E. (2010). Utilizing common factors and practice elements to improve mental health care by school-based primary care providers. *Report on Emotional and Behavioral Disorders in Youth*, 10, 81–86.
- Stozer, J., Juszcak, L., & Ammerman, A. (2010). *2007–2008 National School-Based Health Care Census*. Washington, DC: National Assembly of School-Based Healthcare. Accessed December 1, 2010, at <http://www.nasbh.org>
- Stumpf, R. E., Higa-McMillan, C. K., & Chorpita, B. F. (2009). Implementation of evidence-based services for youth: Assessing provider knowledge. *Behavior Modification*, 33, 48–65.
- Wade, T. J., Mansour, M. E., Line, K., Huentelman, T., & Keller, K. N. (2008). Improvements in health-related quality of life among school-based health center users in elementary and middle school. *Academic Pediatrics*, 8, 241–249.
- Walker, S. C., Kearns, S., Lyon, A. R., Bruns, E. J., & Cosgrove, T. (2010). Impact of school-based health center use on academic outcomes. *Journal of Adolescent Health*, 46, 251–257.
- Weist, M., Lever, N., Stephan, S., Youngstrom, E., Moore, E., Harrison, B., et al. (2009). Formative evaluation of a framework for high quality evidence-based services in school mental health. *School Mental Health*, 1, 196–211.
- Weisz, J. R., Chorpita, B. F., Palinkas, L. A., Schoenwald, S. K., Miranda, J., Bearman, S. K., and the Research Network on Youth Mental Health (in press). Testing standard and modular designs for psychotherapy with youth depression, anxiety, and conduct problems: A randomized effectiveness trial. *Archives of General Psychiatry*.

Date received: February 1, 2011

Date accepted: September 15, 2011

Action Editor: Elise Cappella, Wendy M.

Reinke, and Kimberly E. Hoagwood ■

Aaron R. Lyon, PhD, is a child clinical psychologist and senior fellow in the University of Washington Department of Psychiatry and Behavioral Sciences. He is engaged in a program of research dedicated to the reduction of mental healthcare access disparities among underserved youth and families as well as methods of implementing evidence-based assessment and intervention practices among practitioners in community settings.

Sarah Charlesworth-Attie, MPH, is an epidemiology doctoral student in the School of Public Health at the University of Washington. Her research interests include determinants of adolescent mental health, the impact of chronic illness on the transition to adulthood, public health surveillance and needs assessment, and research ethics. Prior to graduate school she managed clinical research projects in a variety of areas including cognitive behavioral therapy and women’s reproductive health.

Ann Vander Stoep, PhD, is a child psychiatric epidemiologist who is an Associate Professor at the University of Washington in the Departments of Psychiatry and Behavioral Sciences and of Epidemiology. She conducts research on the transition to adulthood for adolescents with psychiatric disorders, the development of depression and conduct problems, and school and community-based mental health interventions for children and adolescents.

Elizabeth McCauley, PhD, a developmental and child clinical psychologist, is actively engaged in a research program designed to characterize the development, course, and management of clinical depression in young people. She has been actively involved with national and local efforts to disseminate training in evidence based treatment strategies to child mental health care providers and is currently actively engaged in working with King County Public Health, Seattle Public Schools and the Nesholm Foundation to provide training and consultation to school based mental health providers.

Copyright of School Psychology Review is the property of National Association of School Psychologists and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.