



The Feasibility and Effectiveness of School-Based Modular Therapy: A Systematic Literature Review

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Abstract

Modular therapies are systematic approaches to mental health treatment based on therapeutic elements common to multiple evidence-based practices. Given the flexibility and efficacy demonstrated in outpatient settings, modular therapies may be a feasible and effective approach to mental health treatment in schools. We conducted a systematic literature review to summarize the current evidence regarding modular school mental health programs, which consisted of seven studies investigating four distinct school-based modular treatment packages for internalizing concerns. In our review, no studies specifically examined modular therapy for disruptive behavior disorders—a common referral question for school mental health practitioners. Overall, the modular approach appears to be acceptable to stakeholders, but it is unclear whether school-based clinicians can implement proposed modules with adequate integrity, which limits the conclusions that can be drawn regarding real-world effectiveness. We believe implementation studies are needed to draw firm conclusions regarding the feasibility and effectiveness of modular school mental health, but the research to date appears promising.

Keywords Modular therapy · Schools · Literature review

Introduction

Mental health services for children and adolescents are complicated by two primary implementation challenges. First, empirically supported treatments (ESTs) are often systematized in treatment manuals that have been subjected to rigorous empirical examination, but typically target one specific psychiatric disorder, prescribe a specific sequence of sessions, and are most often designed to be delivered in 1-h sessions in outpatient clinics (Weisz et al., 2012). As a result, treatment manuals can restrict a clinician's ability to individualize treatment to meet each child's needs (e.g., Addis & Krasnow, 2000). The perceived rigidity of manuals is often overstated (Kendall, Gosch, Furr, & Sood, 2008), but this concern still dissuades evidence-based treatment adoption among many practitioners. Second, limited availability of services, transportation difficulties, and the

stigma associated with mental health care create barriers for families seeking needed mental health treatments for their children (U.S. Department of Health & Human Services, 1999). As a result, most mental health services provided to youth occur in schools (Farmer, Burns, Phillips, Angold, & Costello, 2003), even though the quality of those services is often questionable (Weist et al., 2009).

It is critical to acknowledge the challenges in clinic-based care in order to explore how school-based practices might offer a viable alternative. School-based mental health programs have been suggested as a way to provide treatments to youth because schools tend to be a less stigmatizing and more easily accessible setting than clinics (e.g., Stiffman et al., 2010). Schools, however, are not ideal for implementing manualized ESTs. School mental health practitioners often have high caseloads that prevent individual treatment with all identified students, and the resources needed to train practitioners on multiple treatment manuals are infeasible (George, Taylor, Schmidt, & Weist, 2013). School mental health clinicians also report a lack of administrative support, logistical issues, and competing responsibilities as major barriers hindering their ability to implement manualized interventions in schools (Langley, Nadeem, Kataoka, Stein, & Jaycox, 2010). Although schools offer some

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advantages over clinics, effective school-based mental health care requires attention to the roles and responsibilities of the clinicians, and even if school-based clinicians are able to devote more time to direct care, manualized ESTs are not well matched to the demands of that setting.

Modular therapies are one approach to brief, flexible service delivery that might overcome barriers to implementation and empower clinicians to systematically and flexibly deliver evidence-based techniques in nontraditional settings. The modular approach originated from a *distillation and matching model* in which researchers identified the most commonly used therapeutic elements for treating anxiety, depression, disruptive behavior, and trauma among children and adolescents (Chorpita & Daleiden, 2009). These elements were then packaged as stand-alone, single-session *modules* (Weist et al., 2009, 2012). For example, among evidence-based treatments for childhood mood disorders, researchers discovered that cognitive restructuring, psychoeducation, relapse prevention, behavioral activation, and problem solving were commonly used. Based on the logic of the distillation and matching model, the recurrent use of these components across multiple ESTs implies that each is an active and critical ingredient (Chorpita & Daleiden, 2009). In modular therapies, emphasis is placed on these shared elements rather than prepackaged treatments because the latter may contain therapeutically inert content (see Rosen & Davison, 2003). With a modular approach, clinicians have the flexibility to individualize treatment for each child by selecting modules that are most appropriate for the given case and sequencing therapeutic activities as needed. The term *modular* has been used interchangeably with the terms *transdiagnostic* and *flexible*, but these terms are conceptually distinct. To be modular, treatments must be divided into independent units (i.e., modules), and each module must have its own independent goals, be self-contained, and be compatible with other modules to allow coherent combinations (see Boustani, Gellatly, Westman, & Chorpita, 2017 for further discussion). In the present paper, we use these characteristics to distinguish modular therapies from other brief, individually tailored treatments that can address multiple clinical concerns.

Results from a large randomized controlled trial suggest that modular therapy is effective for children when delivered in outpatient practices. Of note, children who received the *Modular Approach to Therapy for Children* (MATCH; Chorpita & Weisz, 2005) experienced significantly faster improvement relative to children who received traditional, manualized treatments (Weisz et al., 2012). Children who received MATCH also had significantly fewer diagnoses at posttest relative to children who received usual care. Interestingly, these group differences persisted at 3-, 6-, and 12-month follow-ups (Chorpita et al., 2013), and children who received modular therapy accessed significantly fewer

mental health services relative to children who received manualized treatments or usual care (Park et al., 2016). These findings suggest that the benefits of modular therapy endure well after treatment ends. Additionally, clinicians viewed modular therapy favorably and were more satisfied with the modular treatment relative to manualized interventions and usual care (Chorpita et al., 2015). Similar findings were reported in a recent randomized controlled trial—children who received modular therapy experienced significantly faster improvement in symptoms and functional impairment over a significantly shorter time compared to children who received community-implemented ESTs (Chorpita et al., 2017).

Modular therapies have the potential to circumvent barriers to school mental health service delivery because the frequency, length, and content of modular sessions seem to match the demands of school settings (e.g., Becker, Becker, & Ginsburg, 2012; Lyon, Charlesworth-Attie, Vander Stoep, & McCauley, 2011). It may also be more financially feasible to train school-based clinicians in modular therapy rather than on an array of manualized treatments to address all potential student needs in school settings (George et al., 2013). Thus, a compelling rationale can be made for the implementation of modular therapy in schools; however, the literature on school-based modular therapy is less developed than the literature on modular therapy delivered in clinical settings. To our knowledge, there are only seven rigorous studies examining modular therapy in schools (see literature review procedures below). Despite this relatively small literature, the emerging themes have implications for transforming school-based practices, particularly because small group and individual interventions in school-based tiered prevention models are often underdeveloped (Barrett, Eber, & Weist, 2013). We believe a systematic review with a specific focus on feasibility and effectiveness is warranted to help inform those tiered models.

Method

A literature search using the database *PsycINFO* with the keywords “modular therapy and school,” “modular psychotherapy and school,” and “school-based mental health and modular” was conducted. The references of identified articles were also reviewed and used to locate other relevant articles. In order to be included in this review, the articles had to be (a) an empirical investigation of the feasibility or efficacy/effectiveness of a modular therapy program; (b) conducted exclusively in a school setting; (c) published in a peer-reviewed journal; and (d) written in English. Modular therapy, feasibility, and effectiveness were operationally defined for this literature review. Modular therapies were defined as established programs clearly delineated as

“modular,” or therapeutic approaches in which the researchers described a treatment package consistent with the definition provided above (cf. Boustani et al., 2017). Feasibility studies are designed to examine the overall appropriateness of interventions and answer questions related to intervention practicality, acceptability, and treatment integrity (Power & Bradley-Klug, 2012). *Practicality* refers to the extent to which interventions can be delivered given certain constraints, such as time or resources. *Acceptability* refers to recipient reactions to the intervention, including satisfaction and client engagement. *Treatment integrity* refers to the extent to which interventions are delivered as intended, and is related to quality assurance (Bowen et al., 2009; Power & Bradley-Klug, 2012). In the present literature review, we defined feasibility in these terms, limiting our focus to quantitative or qualitative studies. In terms of effectiveness, we included studies that used within- or between-groups designs with pre-post measures on at least one outcome, and excluded less stringent research designs. Figure 1 depicts the number of studies included/excluded at each screening phase.

Results

Table 1 provides a brief overview of the articles that met our inclusion criteria. Of the seven studies included, four different modular treatments, including the *PracticeWise Managing and Adapting Practice* system [MAP], *Student*

Emotional and Educational Development project [SEED], modular CBT, and *Building Confidence*, were examined in separate studies (Chiu et al., 2013; Ginsburg, Becker, Drazdowski, & Tein, 2012; Lyon et al., 2011; Michael et al., 2016). These programs focus exclusively on internalizing disorders, and in particular childhood anxiety. No studies eligible for inclusion in this review implemented modules targeting externalizing behaviors (e.g., conduct problems), presumably because the relevant research literature strongly supports parent training (Michelson, Davenport, Dretzke, Barlow, & Day, 2013), which can be challenging to implement in schools. Summaries of each study included in this review are provided next.

PracticeWise Managing and Adapting Practice System

Lyon et al. (2011) examined the feasibility of the *PracticeWise Managing and Adapting Practice* system (MAP), a modular approach to treat childhood anxiety and depression. Seven school-based therapists volunteered for this study and participated in a yearlong training and consultation program in which the researchers gradually trained therapists on module implementation and provided biweekly case consultation. The MAP system was designed for students ages 11–18 and included the following stand-alone components: psychoeducation, self-monitoring, cognitive restructuring, skill building, problem solving, activity scheduling, relaxation, exposure, and maintenance, as well as a computerized

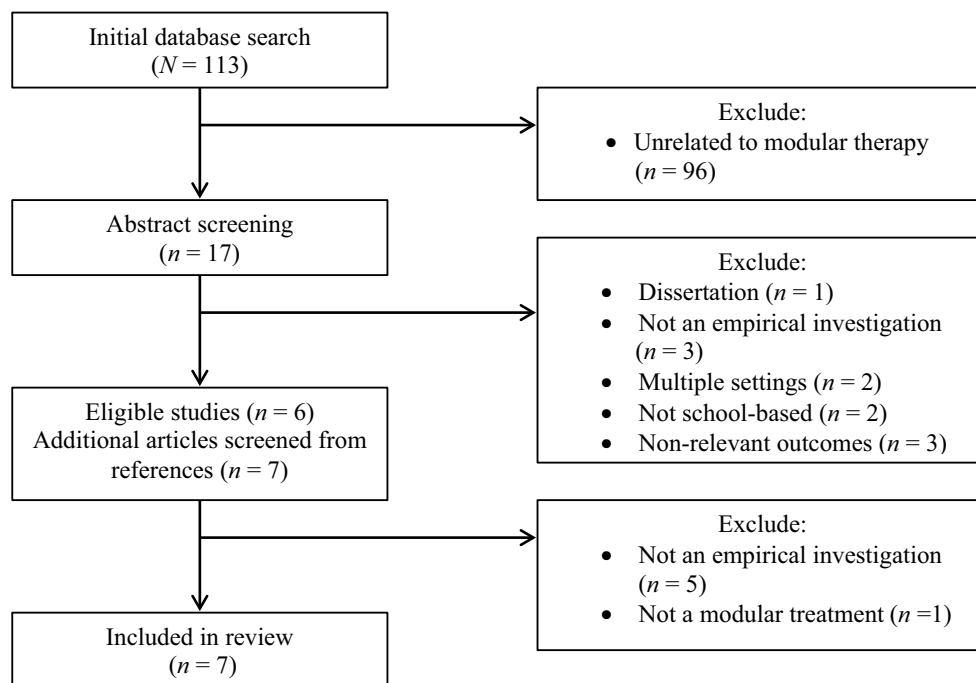


Fig. 1 Study inclusion flow chart

Table 1 Study summaries

Program and target	Research design	Authors	Population	Implementers and training	Outcomes assessed	Summary
MAP: Mood and anxiety disorders	Pilot feasibility study, school-based therapists volunteered for training	^a Lyon et al. (2011)	Adolescents ages 11–18 ($N=66$); 39% Caucasian, 26% Asian/Pacific Islander, 17% African-American, 7% Latino, 9% multiethnic; 41% students enrolled in participating districts eligible for free/reduced lunch	School-based therapists ($N=7$); yearlong training and consultation	<i>Feasibility</i> number of sessions, therapist engagement, module use, treatment integrity	Therapists attended 79% of training/consultation sessions. They were able to track module use and implemented a variety of modules. Therapists also administered standardized progress-monitoring measures in 94% of sessions
	Qualitative analysis	Lyon et al. (2014)		School-based therapists ($N=17$)	<i>Feasibility</i> qualitative analysis of interviews with school-based therapists	The majority of therapists (75%) identified practical value of modular therapy; the benefit of flexibility inherent in modular therapy was highlighted. However, therapists also reported that ethnic minority students were less engaged in modular therapy sessions
SEED: Mood disorders	Pilot within-group analysis	^a Michael et al. (2016)	Adolescents ages 12–16 ($N=20$); 50% Caucasian, 40% African-American, 10% Latino/a; SES data not reported	Graduate student trainees in social work, clinical/school psychology, and psychiatry ($n=9$) and contracted LPA ($n=1$); Training involved monthly seminars and received weekly supervision	<i>Feasibility</i> number of sessions, student reported acceptability <i>Effectiveness</i> self-reported depression, psychological distress, and anxiety and parent-reported depression	Within-group analysis of pre/post changes after receiving modular therapy. There was significant improvement in all outcomes assessed. Acceptability data were gathered through qualitative analyses of student interviews, and overall students found the intervention acceptable

Table 1 (continued)

Program and target	Research design	Authors	Population	Implementers and training	Outcomes assessed	Summary
Modular CBT: Anxiety disorders	Pilot randomized controlled trial, modular therapy versus usual care	^a Ginsburg et al. (2012)	Children ages 7–17 (N = 32); 84% African-American; 27% treatment and 46% control families made \$12,000–20,999/year	School-based therapists: social workers, counselors, psychologists, art therapists (N = 11); Received ongoing supervision	<i>Feasibility</i> number of sessions, treatment integrity <i>Effectiveness</i> diagnostic status, anxiety symptoms, global functioning, maladaptive cognitions, comorbidities	Comparison of modular therapy versus usual care. There were no significant differences between groups in diagnostic status or child/parent reports of anxiety, global impairment, or maladaptive cognitions at posttest or at one-month follow-up. CBT content was delivered in 100% of modular sessions. Clinicians were rated as more competent when in modular sessions
	Descriptive and within-group analyses of the modular treatment condition from Ginsburg et al. (2012)	Becker et al. (2012)	Children ages 6–16 (N = 16); 87% African-American; SES data not reported	School-based therapists: social workers, counselors, psychologists, art therapists (N = 11); Received ongoing supervision	<i>Feasibility</i> frequency of module use, treatment integrity <i>Effectiveness</i> clinical global impression	Descriptive and within-group analyses using the treatment condition from Ginsburg et al. (2012) to examine relationships between specific modules and outcomes/treatment integrity and outcomes. No significant relationships were found. A low level of integrity was reported overall

Table 1 (continued)

Program and target	Research design	Authors	Population	Implementers and training	Outcomes assessed	Summary
Modular adaptation of <i>Building Confidence: Anxiety disorders</i>	Randomized waitlist control trial	^a Chiu et al. (2013)	Children ages 5–12 (N=40); 40% Caucasian, 23% multiracial, 18% Latino/a, 15% African-American, 5% Asian/Pacific Islander; 62.5% families made \$90,000+/year	Doctoral students (N=13); Training involved two 5-h workshops and received weekly group supervision	<i>Feasibility</i> number of sessions, treatment integrity, parent engagement <i>Effectiveness</i> diagnostic status, clinical global impression, parent and child ratings of anxiety, parent ratings of internalizing symptoms	Comparison of modular therapy and waitlist control group. 95.5% of the children who received modular therapy versus 16.7% of control group no longer met criteria for any anxiety disorder at posttest. There was also significant improvement in parent report of anxiety at posttest for children who received modular therapy. Treatment adherence was 90% for child and 89% for parent modules. Parents participated in 82% of sessions on average
	One-year follow-up on Chiu et al. (2013)	Galla et al. (2012)	Children ages 5–12 (N=24); 50% Caucasian, 20.8% Latino/a, 13% African-American, 13% multiracial; 4% Asian. SES data not reported	Doctoral students (N=13); Training involved two 5-h workshops and received weekly group supervision	<i>Effectiveness</i> diagnostic status, clinical global impression, child and parent reports of anxiety	One-year follow-up on study conducted by Chiu et al. (2013). Overall, treatment gains in diagnostic status were maintained, 83% of students did not have an anxiety diagnosis at follow-up. There were also significant improvements from pretest to follow-up in child and parent-reported anxiety

^aDenotes primary study. Program: MAP= *PracticeWise Managing and Adapting Practice system*; SEED= *Student Emotional and Educational Development project*; CBT= *cognitive behavioral therapy*

database to guide module selection and a tracking system to monitor module use and students' response to treatment. A total of 66 clinical cases were tracked among a sample of White (39%), Asian/Pacific Islander (26%), African-American (17%), Latinx (7%), and multiethnic (9%) students. Overall, 41% of students in the participating school districts were eligible for free/reduced lunch.

Feasibility

Clinicians were engaged in the training and consultation sessions with an average attendance rate of 79% (Lyon et al., 2011). Depression was the primary presenting problem (75%), followed by anxiety (14%) and mixed depression and anxiety (11%). Students received 7.4 sessions on average (*range* 1–23; *mode* = 3). The self-monitoring (46.5%), cognitive restructuring for depression (45.5%), psychoeducation for depression (43.4%), problem-solving (32.6%), and skill-building (27.9%) modules were used most frequently; the authors calculated the frequency of module use by dividing the number of times a specific module was used by the number of sessions the therapist delivered after she was trained on that module. Therapists administered a standardized progress-monitoring measure in 94% of sessions. Based on the results, the authors concluded that school-based therapists were able to consistently implement modules and adequately adhere to the progress-monitoring protocol, suggesting that the MAP system appears feasible for delivery in school settings. It is important to note that the internal validity of this study was weak, however, because the absence of a comparison condition makes it difficult to conclude whether the feasibility of modular therapy differs from the feasibility of other school-based therapy approaches. Additionally, school-based therapists volunteered to participate in this study and may have been more motivated to attend training and adhere to progress monitoring relative to other school-based providers. Nevertheless, the use of school-based therapists strengthened the external validity of this study.

Therapist perspectives regarding the MAP system were further examined in a follow-up qualitative study (Lyon et al., 2014). The seven school-based therapists, who fully participated in the yearlong MAP training and consultation program along with 10 school-based therapists who either dropped out or who did not participate at all, were interviewed. Twelve of the therapists reported a familiarity with modular therapy, and the majority of these therapists (75%) valued modular therapy. Specifically, therapists believed that the flexibility of the modular approach helped overcome implementation barriers such as student absences. They also reported that the modular approach increased their confidence in addressing internalizing problems and fit well within their current therapeutic style. Common criticisms regarding the MAP

system were therapist inability to address contextual factors seeming to underlie internalizing symptomatology (e.g., negative family relationships) and limited engagement of ethnic minority clients. In fact, only 33% of the therapists believed that modular therapy matched client values. Therapists reported that a general disengagement in counseling among ethnic minority clients made implementation difficult, but therapists also noted that specific content in modular therapy, such as psychoeducation, did not seem beneficial for ethnic minority youth. Overall, the school-based therapists appeared to consider the MAP system appropriate for implementation in schools, but seemed to conclude that it was best suited for children with mild/moderate mental health needs.

Student Emotional and Educational Development Project

Michael et al. (2016) conducted a within-group pilot study examining the feasibility and effectiveness of the *Student Emotional and Educational Development* (SEED) project, a school-based modular intervention developed for treating mood disorders among adolescents. A total of 20 students ages 12–16 with elevated mood disorder symptomatology participated in the study. Demographically, the students were primarily White (50%) and African-American (40%). All students received SEED project modular sessions, and changes in pre-post outcome measures were examined. The majority of the therapists who implemented the SEED project were graduate student trainees who received monthly training seminars and ongoing support through weekly individual and group supervision. The SEED project was designed to be delivered in 4–12 sessions, included decision-making protocols to assist clinicians in treatment planning, and was comprised of the following components: psychoeducation, behavioral activation, cognitive restructuring, problem solving, crisis management, communication training, self-monitoring, and relapse prevention.

Feasibility

Eleven students participated in interviews at posttest regarding the perceived helpfulness of the intervention (Michael et al., 2016). All of the students indicated that SEED was helpful, several students discussed specific skills learned (e.g., problem solving, self-expression), and the majority of students stated they would not make changes to SEED. Clinicians delivered 8.9 sessions on average (*range* 6–11) over 2–3 months, and sessions typically were 45 min. Treatment integrity data were not reported.

Effectiveness

There were significant decreases in self-reported depression ($d = .64-.99$), psychological distress ($d = .85$), and anxiety ($d = .91$) from pre to posttest (Michael et al., 2016). Significant decreases in parent-reported depression ($d = .50$), the only parent outcome measure included in this study, were found as well. The researchers also examined reliable change in symptoms and found that of the 19 adolescents who reported clinically significant depression on a narrowband depression measure at baseline, 37% reported normative depression levels at posttest. Similarly, of the 15 adolescents who reported at-risk or clinically significant depression on a broadband behavior rating measure, 60% reported normative depression levels at posttest. On the anxiety subscale of the self-report broadband measure, 7 of the 14 adolescents who reported at-risk or clinically significant anxiety reported normative levels of anxiety at posttest. Finally, 50% of the adolescents reporting clinically significant distress on a brief measure of emotional/behavioral functioning at baseline ($n = 18$) reported normative levels of distress at posttest. Based on these results, the researchers concluded that modular therapy holds promise as a viable treatment option for delivery in schools for adolescents with mood disorders.

Methodologically, the internal validity of this study is limited given the use of a within-group design and the lack of treatment integrity measures. The external validity is also limited because graduate student trainees were primarily responsible for intervention delivery. Although the sample size was underpowered, examination of effect sizes and reliable change indices strengthens the statistical validity of the findings, and modular therapy did appear to reduce depression and anxiety.

Modular CBT

Ginsburg et al. (2012) conducted a pilot randomized controlled trial examining the feasibility and effectiveness of a 12-week modular cognitive behavioral therapy (CBT) program for anxiety delivered by school-based therapists. A total of 32 children aged 7–17 attending an inner city school district, who were primarily African-American (84%), and who met criteria for separation anxiety, social or specific phobia, generalized anxiety disorder, or anxiety not otherwise specified participated in the study. Participants were randomly assigned to the modular CBT intervention ($n = 17$) or a usual care condition (UC; $n = 15$). Students in UC received therapeutic interventions that did not involve CBT components (e.g., art or play therapy), and the same school-based clinicians provided treatment to children in both conditions. The authors did not report any information regarding therapist training procedures, but noted that therapists received ongoing supervision. Several intent-to-treat

analyses were conducted analyzing between-group differences in pre-, post-, and 1-month follow-up measures. The *Coping Cat* treatment manual (Kendall, 1990) and work by Silverman et al. (1999) informed the development of the modular CBT package, resulting in the following modules: psychoeducation, cognitive restructuring, problem solving, rewards, relaxation, exposure, and relapse prevention. School-based therapists were required to deliver the psychoeducation and exposure modules, but otherwise treatment was individualized. For example, parent modules were offered in indicated cases, focusing on psychoeducation, rewards, and exposure.

Feasibility

Students received a similar number of sessions across conditions (modular CBT $M = 7.29$; UC $M = 8.53$), suggesting that modular CBT introduced no additional barriers relative to UC (Ginsburg et al., 2012). To assess treatment integrity, independent evaluators reviewed audiotaped sessions and indicated whether therapists included CBT content in sessions, adhered to modules (if delivering the modular CBT package), and completed general CBT session objectives (e.g., setting agenda, assigning homework). The evaluators also rated the clinician's use of active listening techniques. Results indicated that CBT content was delivered in 100% of the reviewed sessions in the modular CBT condition and in 55.6% of sessions in the UC condition. Additionally, general CBT session objectives, such as assigning homework, were present to a similar degree in both conditions, but clinicians were rated as significantly more competent in these activities within the modular CBT sessions as compared to the UC sessions.

Effectiveness

The proportion of children who were diagnosis-free at posttest and 1-month follow-up, as determined by a structured clinical interview, did not differ significantly between conditions (posttest: modular CBT = 50%; UC = 46.2%; 1-month follow-up: modular CBT = 42.9%; UC = 57.1%) (Ginsburg et al., 2012). Additionally, the proportion of participants who were classified as treatment responders by blind evaluators (i.e., ratings of *very much improved* or *much improved* provided on the *Clinical Global Impression—Improvement Scale*, Guy, 1976), at posttest and 1-month follow-up was roughly equivalent across conditions (posttest: modular CBT = 41.2%; UC = 46.7%; 1-month follow-up: modular CBT = 64.7%; UC = 53.3%). In regard to self-report and parent report of anxiety symptoms, when controlling for pretest scores, there were no significant differences between conditions in child or parent report of anxiety severity, child global impairment, or maladaptive cognitions, and there were also

no significant differences between groups in parent-reported symptoms of child comorbidities at posttest or follow-up. Given that the same school-based clinicians delivered both the modular CBT and UC conditions, there was a potential for treatment diffusion (i.e., bleed-over effects), which complicates interpretation. Methodologically, the use of a randomized controlled trial strengthens the internal validity of this pilot study and the use of school-based therapists strengthens the external validity. The potential treatment diffusion, however, is a notable limitation and weakens the internal validity. Additionally, the sample size was underpowered which decreased the likelihood of detecting statistically significant differences between groups. Last, the sample consisted of primarily African-American students, which limits the generalizability of the findings.

In a follow-up article, Becker et al. (2012) conducted descriptive and within-group analyses using data from the modular CBT condition of Ginsburg et al. (2012) randomized controlled trial to further examine the feasibility and effectiveness of the modular CBT intervention. Out of a total of 124 modular CBT sessions, the exposure module was used in 46.8% of sessions. Psychoeducation (20.2%), cognitive restructuring (17.7%), and contingency management (8.9%) were other frequently used modules (Becker et al., 2012). The problem-solving (1.6%), relapse prevention (.03%), and relaxation (.01%) modules were rarely implemented. Both the exposure and psychoeducation modules were delivered to all children who received the modular CBT intervention ($n = 16$). The researchers stated that exposure is considered an important component of anxiety treatment, and the results suggest that school-based therapists are able to implement exposure sessions. The authors speculated that modules such as cognitive restructuring and relapse prevention may have been too unfamiliar or complex for clinicians, leading to less frequent use and potentially reflecting a need for more clinician support. The clinicians also rated child involvement after each session on a seven-point scale, and overall the clinicians rated children as significantly less engaged in treatment when contingency management modules were delivered ($M = 5.64$) compared to psychoeducation ($M = 6.09$), exposure ($M = 6.51$), and cognitive restructuring ($M = 6.50$) modules. Nevertheless, a high level of involvement is reflected overall as higher scores are indicative of greater engagement.

Becker et al. (2012) also investigated whether specific modules predicted treatment response at posttest and 1-month follow-up when controlling for pretest anxiety severity and treatment duration. None of the modules were significantly predictive of treatment response, and treatment integrity scores for the specific modules did not predict children's response to treatment. Interestingly, less than 50% of the sessions reviewed had "good" fidelity (i.e., 90% or more of the content delivered), and the majority of sessions were

rated as having "poor" (<50% content delivered) or "fair" (criterion not reported) fidelity. Becker et al. (2012) suspect that poor treatment integrity may explain the lack of a relationship between specific module use and treatment outcomes, as well as the equivocal results reported by Ginsburg et al. (2012). Poor treatment integrity further limits the internal validity of the randomized controlled trial conducted by Ginsburg et al. (2012). As mentioned previously, there was also potential treatment diffusion in the randomized controlled trial. Poor treatment integrity coupled with potential treatment diffusion significantly weakens the internal validity of an otherwise strong methodological design and may contribute to the equivocal findings.

Building Confidence

Chiu et al. (2013) conducted a randomized waitlist control trial to examine the effectiveness and feasibility of a modularized adaptation of *Building Confidence*, which is a manualized intervention designed to treat children with anxiety. A total of 40 students ages 5–12 who met criteria for separation anxiety, social phobia, and/or generalized anxiety disorder participated in this study and were randomly assigned to receive either the modular treatment immediately ($n = 22$) or a 3-month waitlist control group ($n = 18$), stratified by the child's age and gender. The sample was ethnically diverse and comprised of White (40%), multiethnic (22.5%), Latinx (17.5%), African-American (15%), and Asian/Pacific Islander (5%) students. The majority of families (62.5%) reported an annual income over \$90,000. Doctoral student trainees in clinical or educational psychology programs delivered the intervention. The therapists were trained in the intervention through two 5-h workshops, were required to complete a practice case prior to providing treatment, and received ongoing support through weekly group supervision. The *Building Confidence* treatment manual initially focuses on helping children develop coping skills, including affect recognition, positive self-talk, and thought awareness, and then shifts to gradual exposure activities. With the modularized adaptation, therapists are able to select which of these sessions to implement based on an algorithm, and the intervention can include up to sixteen 60-min sessions. Parent modules were also available and included psychoeducation, assisting with exposure, rewards, family roles, building friendships, and hosting play dates. There was one module for school nurses regarding behavioral strategies for students who frequently visited the nurse to avoid activities.

Feasibility

Children received 14 sessions on average (range 10–16), all parents participated in at least one session, and 82% of sessions included both the parent and the child (Chiu et al.,

2013). The school nurse participated in all sessions where nurse participation was indicated ($n = 8$). Taken together, these data indicate a high level of engagement in the intervention among key stakeholders. Treatment integrity was assessed by independent ratings of session audiotapes. Research assistants who were blind to the study hypotheses used a checklist to indicate whether prescribed topics were covered during two randomly selected sessions for each participant. An adherence rate of 90.2% was calculated for child modules and was 89.2% for parent modules; inter-rater agreement was strong ($ICC = .90$).

Effectiveness

Based on a clinical interview administered by blind evaluators, 95.5% of the children who received modular therapy no longer met criteria for any anxiety disorder at posttest, whereas as only 16.7% of the children in the waitlist control condition no longer met diagnostic criteria or an anxiety disorder ($d = 1.62$) (Chiu et al., 2013). It is important to note that 50% of the children in the treatment condition who were considered diagnosis-free were one point below the cutoff for receiving a diagnosis. Parent report of child anxiety at posttest while accounting for pretest scores was significantly lower among the treatment condition compared to the control condition. A similar trend was noted between conditions for child self-report of anxiety, but it did not rise to the level of statistical significance. Based on these results, the authors concluded that the modular *Building Confidence* intervention might be an effective school-based treatment for youth with anxiety. Additionally, the remission rate achieved in this study was reportedly higher than the rates found in studies examining traditional CBT interventions, and the authors speculated that the modular design might have enhanced treatment effectiveness due to the clinicians' ability to individualize treatment. Methodologically, the use of a randomized controlled trial and the high treatment fidelity ratings strengthens the internal validity of this study. Additionally, the sample was ethnically diverse which strengthens the external validity of the findings. The use of graduate student trainees as the interventionists is a significant limitation in terms of the external validity.

The long-term effectiveness of the modular *Building Confidence* intervention was assessed in a 1-year follow-up study (Galla et al., 2012). Twenty-four children participated in the 1-year follow-up assessment that included students from the treatment condition ($n = 14$) and students from the waitlist control condition ($n = 10$). All children had received the modular treatment by the time of the follow-up assessment. At follow-up, 83.3% of the children did not meet criteria for separation anxiety disorder, generalized anxiety disorder, or social phobia, which was determined through clinical interview. Additionally, 62.5% of the children were rated

as treatment responders by blind evaluators (i.e., ratings of *completely recovered*, *very much better*, or *much better* on the *Clinical Global Impressions—Improvement Scale*; RUPP, 2001). Finally, statistically significant improvements in child and parent report of anxiety from pretest to 1-year follow-up were also reported. Based on these results, the authors concluded that there is support for the long-term effectiveness of the modularized *Building Confidence* intervention in school settings. An important next step would be to determine whether school-based therapists could achieve similar results.

Discussion

The purpose of this systematic literature review was to investigate the feasibility and effectiveness of school-based modular therapy. A total of seven studies examining four different modular interventions were included, and all of the eligible studies focused on the treatment of anxiety and/or depression. We found a mixture of efficacy studies, relying on external supervisors and resources for intervention implementation, as well as effectiveness studies using indigenous practitioners and resources.

In regard to feasibility, the results of our review suggest that school-based therapists tend to view modular therapy favorably, but it is difficult to draw conclusions regarding feasibility because most of the studies employed graduate students and research staff as clinicians. School-based practitioners acting alone may not be able to deliver sufficient doses for all students. Across the studies included in this review, school-based clinicians delivered seven modular therapy sessions on average (Ginsburg et al., 2012; Lyon et al., 2011), whereas consulting clinicians (e.g., researchers) were able to deliver 11.5 sessions on average (Chiu et al., 2013; Michael et al., 2016). It may be more feasible, therefore, for consulting clinicians to implement modular therapy than school-based clinicians. Given that high caseloads and competing demands are typical for school-based clinicians (Kininger, Schultz, & Harrison, 2017), these results are not necessarily surprising.

In regard to outcomes, the efficacy studies included in this review yielded significant improvement in students' internalizing symptoms when researchers provided treatment. When school-based clinicians provided the treatment, however, the results were equivocal, which highlights the importance of attending to the training of natural stakeholders. Of note, less intensive training procedures, such as a limited number of workshops or seminars, were used to train consulting clinicians (Chiu et al., 2013; Michael et al., 2016), whereas more intensive, long-term training procedures were used to train school-based clinicians (Lyon et al., 2011). High levels of treatment integrity and positive treatment effects

were achieved when consulting clinicians participated in training workshops and received weekly group supervision (Chiu et al., 2013). Additionally, high levels of adherence to progress monitoring were achieved when school-based clinicians received ongoing, yearlong training and biweekly case consultation (Lyon et al., 2011). School-based clinicians may be trained to provide mental health services for research purposes, but rarely receive quality in-service training as part of their job. As such, additional training may be required in order for natural stakeholders to be able to deliver modular therapy, which may not be cost-effective for school systems. Overall, it is difficult to draw firm conclusions regarding the effectiveness of school-based modular therapy based on the literature to date, given the mixed findings and limited use of school-based clinicians.

None of the studies included in our review examined the feasibility or effectiveness of school-based modular approaches for youth with externalizing disorders, even though disruptive behavior is a common referral concern in schools (Briesch, Ferguson, Volpe, & Briesch, 2012). Current modular therapies for children with externalizing disorders tend to focus on parent training (e.g., Chorpita & Weisz, 2009), but it is often difficult to involve parents in school-based therapy. Thus, modifications are likely needed to existing models. One possibility is to modularize child-focused ESTs for externalizing disorders. Common school-based manualized treatments for externalizing behaviors, such as the Coping Power Program (Lochman, Wells, & Lenhart, 2008), are intensive (18–34 sessions). The shared child-focused elements across manualized externalizing treatment programs include contingency management, emotional awareness, problem solving, social skills training, perspective taking, anger management, goal setting, and role playing (Lochman, Powell, Boxmeyer, & Jimenez-Camargo, 2011; Powell et al., 2011). Packing these common elements into a modular format may make intervention delivery more feasible. Materials such as assignment tracking, organization training, and daily report cards from direct services models (e.g., Challenging Horizons Program; Schultz & Evans, 2015) may also work as stand-alone, repeatable modules for youth with disruptive behaviors.

Another possibility is to problem solve ways to implement parent training modules in schools. Using family-centered approaches, such as the Family Check-Up (FCU; Dishion & Stormshak, 2007), to direct families to appropriate modular content is one strategy that may improve family engagement in and the effectiveness and efficiency of school-based modular therapy. It may also be beneficial to build upon existing parent training modules that were developed for clinical settings (e.g., MATCH) by modularizing the parent-focused content included in multicomponent treatments for externalizing problems that were developed for use in schools (e.g., Coping Power, Tier 3 FCU content). Regardless of the type

of intervention used to treat youth with externalizing behaviors, we believe it will be important for change agents to use an implementation science approach (described below) to develop and implement these interventions. It is likely that this approach would be particularly helpful in designing and implementing effective and engaging school-based interventions.

Directions for Future Research

Based on our review, it seems clear that without a high volume of rigorous effectiveness research specifically matched to the unique challenges of translational research, the potential impact and scalability of school-based modular therapy will go unrealized. In our view, emulating the design and scope of studies examining the impact of modular therapy in community settings (e.g., Chorpita et al., 2017) provides a preliminary framework for improving school mental health research in this area. These studies show that in community settings, training practitioners to select and implement a module-based approach has distinct advantages compared with manualized treatments and typical mental health services available in the community.

There are several issues, however, that must be addressed to determine whether such an approach is a good fit for improving school mental health. First, the role of most school mental health practitioners is different from community mental health practitioners, whose primary role is direct service. It is possible that these typical differences in roles are responsible for the limited use of natural stakeholders to implement treatment, instead opting for graduate students or researchers (e.g., Michael et al., 2016). This may indicate that without systemic change to the role of school mental health providers, modular designs will not be readily disseminated without research funding, thus limiting sustainability. Second, financial priorities of school and community organizations often differ, as funding for community mental health comes from revenue generated through billing managed care in a fee-for-service arrangement, whereas schools often receive an annual budget from state and federal governments to cover costs of these services. This raises questions related to who will absorb the cost of increasing school mental health availability. Third, based on studies reviewed, parental involvement in treatment may function differently for school-based modular therapy compared with community mental health in which parent involvement is often mandatory for billing purposes. Only Chiu et al. (2013) measured parent involvement in treatment, suggesting that more explicit evaluation of parent engagement is a pervasive need within this research domain to understand how this factor affects treatment process and outcomes across age ranges and presenting concerns.

In part due to these differences in the structure and function of systems in which evidence-based treatments are developed compared with the real-world settings in which they are intended to be implemented, Forman et al. (2013) recommend an implementation science approach to studying evidence-based interventions in schools. This approach emphasizes an iterative process of evaluation designed to arrive at an intervention that is altered to fit unique contextual features of the local environment, as well as testing mediators and moderators of effectiveness to enhance intervention efficiency and effectiveness. None of the studies reviewed here used an implementation science approach, and thus, even if more rigorous trials of the modular treatment packages included in this review were conducted, it would not address the main barriers inherent in translating efficacious treatments to real-world settings.

Overall, we recommend a major shift in the emphasis and approach of modular therapy research in schools. Based on the extant literature, there is no sign that studies are being designed and implemented with promise of addressing the contextual differences inherent to school mental health service delivery that may impact sustainability and scalability. Rather, there is every indication that studies are attempting to follow a traditional efficacy research paradigm of building up treatment packages to be tested using randomized controlled trials with research personnel implementing the treatment. Of course, rigorous studies are a necessary part of an implementation science approach, but are completed within an iterative system of program development and evaluation that specifically measures and responds to local barriers and facilitators at the level of client, practitioner, and organization. If another 5, 10, or 20 years of school-based modular therapy research were to be conducted without addressing these fundamental limitations, the cost may be that modular therapy packages would be developed but would still not be able to be disseminated, and the availability of high quality mental health services would continue to lag. For these reasons, we recommend that this feedback is timely and important to communicate to school mental health practitioners and researchers planning future work in this area at this relatively early stage.

Conclusion

In sum, there is preliminary evidence suggesting that school-based practitioners find modular approaches acceptable, but most often these perceptions are reported after outside researchers assist with service delivery. In terms of effectiveness, modular therapy appears to improve symptoms of anxiety and depression among youth in clinical settings, but results are equivocal in schools. To date, no studies meeting inclusion criteria for this review examined school-based

modular therapy for externalizing disorders, suggesting a critical area for future research. It will also be important for school systems to develop the necessary infrastructure to sustain modular therapy delivery, and we believe an implementation science approach will be crucial when developing and evaluating school-based modular treatments.

Compliance with Ethical Standards

Conflict of interest All the authors declare that they have no conflict of interest.

Ethical Approval This article does not contain any studies with human participants or animals performed by any of the authors.

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