

TIER 2 TRANSDIAGNOSTIC INTERVENTIONS

Both/And: Tier 2 Interventions with Transdiagnostic Utility in Addressing Emotional and Behavioral Disorders in Youth

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Abstract

The extant literature suggests that a shared set of deficits (e.g., emotion dysregulation) underlies both internalizing and externalizing emotional and behavioral disorders (EBDs) among youth. As such, many Tier 2 interventions contain a similar set of core components, which in turn are associated with global symptom reductions. This conceptual and narrative review of the literature focuses on the potential to optimize transdiagnostic utility and expand the range of targeted domains within a Tier 2 intervention framework; such an approach may maximize the positive effects of interventions across EBD symptoms while simultaneously reducing the burden on schools to implement multiple programs with different targets. Drawing upon this evidence base, we conclude by making recommendations for adapting the content of Tier 2 interventions to achieve transdiagnostic utility in an efficient and sustainable manner.

Key words: transdiagnostic, school-based interventions, Tier 2, adaptation, emotional and behavioral disorder

Both/And: Tier 2 Interventions with Transdiagnostic Utility in Addressing Emotional and Behavioral Disorders in Youth

Within a three-tiered approach to prevention, Tier 2 interventions are intended to meet the needs of students at risk of developing emotional and behavioral disorders (EBDs). Whereas Tier 3 interventions are designed to provide intensive, remedial, and individualized services long-term for students with EBD-related impairments, Tier 2 interventions typically focus on students at risk of developing an EBD-related impairment with the goal of providing them with additional opportunities to develop and practice social-emotional skills; these supports are often delivered in the context of a finite group (Hoagwood & Johnson, 2003). In the context of school mental health, research on childhood psychopathology has historically followed a symptom-specific approach, which has translated into the development of Tier 2 interventions that are largely treatment (versus prevention) oriented and problem-specific (Ehrenreich-May & Chu, 2014). Specifically, using this approach, schools implement one Tier 2 intervention for trauma, another for social anxiety, and a third for behavioral problems. While many Tier 2 interventions have been empirically validated for their respective, specific presenting problems, this approach is unfeasible and inefficient for implementation in many schools that struggle to address the complex mental health needs of a diverse group of students with limited time and resources (Eiraldi, Wolk, Locke, & Beidas, 2015). This highlights a need to adapt Tier 2 interventions to better meet the practical challenges that exist within the school context.

Although research on childhood psychopathology has historically followed a problem-specific approach, recent literature has indicated that, across disorders, childhood EBDs are associated with a common set of risk factors, outcomes, and core underlying deficits (McMahon, Grant, Compas, Thurm, & Ey, 2003). Further, many of the essential components of current

problem-specific Tier 2 interventions, which will be identified and discussed, are markedly similar. By adapting current Tier 2 interventions to meet the needs of students at risk of developing EBDs, schools can potentially increase the impact of current interventions without additional resource demands. Adaptations should aim to have utility within a transdiagnostic approach, which posits that there are key shared cognitive and behavioral processes responsible for symptoms across EBDs (Harvey & Watkins, 2004). More specifically, interventions with transdiagnostic utility “apply the same underlying treatment principles across mental disorders, without tailoring the protocol to specific diagnoses” (McEvoy, Nathan, & Norton, 2009, p. 21).

Toward that end, the goal of this conceptual and narrative review is to provide a theoretical framework to inform the process for adapting current Tier 2 interventions to optimize transdiagnostic utility, while maximizing efficiency. We begin by reviewing the literature on shared developmental trajectories, underlying core deficits, and core components of current Tier 2 interventions across presenting problems. We then identify specific components of Tier 2 interventions that hold promise for transdiagnostic utility and make recommendations for adopting a transdiagnostic approach within a Tier 2 intervention framework to address current problems with efficiency and sustainability in schools (Eiraldi et al., 2015). Finally, we present a case example to demonstrate the application of this framework to an evidence-based Tier 2 intervention called Coping Power (Lochman & Wells, 2002a; 2004; Lochman, Wells, Qu, & Chen, 2013).

Shared Etiology

EBD symptoms in childhood are typically categorized by symptom expression as either internalizing or externalizing. Symptoms that are defined as internalizing include depression, anxiety, withdrawal, and feelings of low self-worth, inhibition, hypersensitivity, and somatic

complaints. Symptoms that are defined as externalizing include inattention, dysregulation, and noncompliance, as well as behaviors that are antisocial or aggressive (Achenbach, Howell, Quay, & Conners, 1991; Bornstein, Hahn, & Haynes, 2010). Despite the apparent contrast in symptom manifestation between the two, they share similar risk pathways in that environmental stressors (e.g., harsh parenting) increase the likelihood that a child will develop either or both set(s) of symptoms (Angold et al., 1999; Capaldi & Stoolmiller, 1999; Oland & Shaw, 2006; Pesenti-Gritti et al., 2007; Reinke, Eddy, Dishion, & Reid, 2012; Sourander et al., 2007; Wiggins, Mitchell, Hyde, & Monk, 2015; Wolff, & Ollendick, 2006). Moreover, there are a number of shared symptoms across childhood disorders; for example, children with depression commonly present as angry or irritable, while children with behavior problems also may be sad and withdrawn (American Psychiatric Association, 2013; Ehrenreich-May & Chu, 2014). In fact, recent developmental and clinical psychology research has largely supported the principles of both multifinality and equifinality, with no known specificity in the association between type of environmental stressor and subsequent symptom and little specificity across early symptoms and later outcomes (Fanti & Henrich, 2010; McMahon et al., 2003).

The manifestation of different presenting symptoms associated with the same risk factors can be partially explained by socialization and developmental processes. For example, gender norms contribute to greater acceptability of problem behaviors among boys and internalizing symptoms such as fear and sadness among girls (Daughters et al., 2009; Lee & Bukowski, 2012), yet evidence suggests that these gender-based differences in manifestation are representative of the same core deficits (Compton, Snyder, Schrepferman, Bank, & Shortt, 2003; Lee & Bukowski, 2012). Across development, conduct problems tend to decline with age whereas internalizing symptoms increase as children grow older (Leadbeater & Thompson, 2012).

Consistent with this trajectory, early conduct problems consistently predict later internalizing symptoms as children age (Lahey, Loeber, Burke, Rathouz, & McBurnett, 2002; Rowe, Maughan, & Eley, 2006). Together, these findings suggest that the same poor psychological functioning may manifest differently at various stages of development.

Core Underlying Deficits

There are a number of central, process-level deficits believed to underlie global psychological dysfunction, with differences hypothesized to exist only at the level of symptom manifestation. Identification of these core deficits supports the transdiagnostic utility of the same core components found across problem-specific interventions. A thorough understanding of these deficits thus provides a framework with which to base recommendations for implementing interventions with transdiagnostic utility in the school context. Specifically, emotion dysregulation, negative emotionality/distress intolerance, maladaptive schemas, and social-skill deficits, in particular, likely play an underlying role in childhood psychopathology.

Emotion dysregulation. Difficulty modulating the intensity and/or duration of unpleasant emotions is consistent across many emotional and behavioral disorders (Aldao, Nolen-Hoeksema, & Schweizer, 2010). For example, difficulties regulating sadness, fear, and anger are associated with depression, anxiety, and conduct disorders respectively (American Psychiatric Association, 2013). Difficulty with emotion regulation early in development has been found to predict subsequent levels of both internalizing and externalizing symptoms; findings also suggest that it mediates the association between difficult early temperament and later receiving one or more mental health diagnoses (Abdi & Pak, 2019; Masi, Pisano, Milone, & Muratori, 2015). Based on the contribution to a wide range of EBDs, a core component of

transdiagnostic interventions should be to improve children's abilities to regulate and manage unpleasant emotional experiences across a variety of different emotions.

Negative emotionality/distress intolerance. In addition to difficulty regulating negative emotions, the experience of negative emotionality itself is common across many disorders (Rothbart & Bates, 2006). Mikolajewski and colleagues (2012) found that the tendency to experience negative affect shares environmental and genetic influences with both internalizing and externalizing disorders in childhood. This suggests that the common factors contributing to elevated risk across EBDs may operate through facilitating negative emotionality, or the propensity to experience negative affect. In addition to being more likely to experience negative emotionality, children diagnosed with internalizing and/or externalizing disorders also may have a decreased tolerance for emotional distress. Specifically, the inability to persist in goal-directed activity while experiencing emotional distress has been identified as a mechanism underlying both internalizing and externalizing symptoms (Daughters et al., 2009). Together, negative emotionality coupled with an increased level of impairment associated with emotional distress can help to explain the development of childhood psychopathology from a transdiagnostic approach.

Maladaptive cognitions. Several cognitive processing factors are believed to underlie both internalizing and externalizing symptoms. Early maladaptive schemas regarding experiences of disconnection and rejection were found to be significantly associated with both sets of EBDs (van Wijk-Herbrink et al., 2018). Specific distortions in selective attention, memory and reasoning biases, and recurrent negative thinking all have been identified as underlying transdiagnostic cognitive processing deficits (Owen, 2011). Additionally, positive outcomes of Tier 2 interventions targeting both sets of EBDs have been found to be significantly

associated with cognitive processing improvements, including greater perceived personal control and more accurate patterns of attribution and expectation formation in social contexts (Lochman & Wells, 2002a; Thompson, Eggert, & Herting, 2000). Findings on cognitive processing difficulties indicate that, across EBD symptoms, interventions should address maladaptive cognitions in order to reduce symptoms across both domains.

Social skills deficits. Across development, social skill deficits are linked to both internalizing and externalizing symptoms (Burt, Obradović, Long, & Masten; 2008; Korhonen et al., 2014). Longitudinally, findings support the existence of a pathway in which social skill deficits are associated with subsequent increases in both internalizing and externalizing symptoms over time (Bornstein et al., 2010). Although social skill deficits manifest in markedly different ways for children with predominantly internalizing symptoms compared to predominantly externalizing behaviors, underlying difficulties with social self-efficacy and effective communication skills are common across both sets of symptoms (American Psychiatric Association, 2013). Access to social support has been found to predict both internalizing and externalizing outcomes over time, and evidence suggests that social gains made during Tier 2 interventions are associated with more positive outcomes (Obradović & Hipwell, 2010; Thompson et al., 2000). This suggests that, similar to cognitive processing targets, transdiagnostic interventions should aim to build social skills in order to optimize outcomes across symptoms.

In summary, the extant empirical research suggests there is considerable overlap across internalizing and externalizing problems in childhood, with developmental trajectories characterized by common risk factors and similar life outcomes. This overlap can be better understood by examining several core deficits that underlie both sets of EBDs but manifest

differently. In other words, research suggests that many of the EBD symptoms children express are reflective of the same functions, even though one child's behavior manifests differently than another's (Compton et al., Daughters et al., 2009; Leadbeater et al., 2012; Lee & Bukowski, 2012). For example, one child may appear withdrawn and unengaged in the classroom in response to underlying performance anxiety, while another may appear oppositional and work avoidant for the same performance anxiety. In this way, transdiagnostic interventions hold great promise for addressing the underlying *cause* of a symptom or a behavior. Targeting the underlying cause, as opposed to the presenting symptom, will likely prove to be a more sustainable model of change given the shared trajectories across EBDs among children. Children will be better equipped to generalize the social-emotional skills they gain during one intervention to different symptoms that may arise for them in the future. Next, we consider some current Tier 2 interventions developed for problem-specific concerns that have also yielded a variety of positive outcomes in other domains.

Select Tier 2 Interventions and Their Core Components

A review of the common outcomes and core components of several problem-specific Tier 2 interventions is depicted in Table 1. Many of these preventive interventions were developed to address internalizing or externalizing symptoms broadly. Nevertheless, virtually all of these Tier 2 interventions have demonstrated some degree of transdiagnostic effects in relation to EBD. Below we summarize these broad categories of Tier 2 preventive interventions. Many of the interventions discussed are considered evidence-based according to the recommendations of What Works Clearinghouse (WWC; 2017), although variations of existing evidence-based practices also were included as were interventions that met partial but not full criteria for being

classified as evidence-based (e.g., one RCT, multiple non RCT designs; Cook & Odom, 2013; Lloyd, Bruhn, Sutherland, & Bradshaw, 2019).

Cognitive-Behavioral Interventions

Within a Tier 2 framework, cognitive-behavioral interventions have largely been developed as group-based adaptations of cognitive-behavioral therapy (CBT) to address symptoms of either depression or trauma. CBT is the form of individual psychotherapy with the strongest evidence base across various mental health diagnoses (Butler, Chapman, Forman, & Beck, 2006). Cognitive-behavioral interventions emphasize the interconnectedness between emotional distress and maladaptive cognitions and behaviors. Symptoms are alleviated through cognitive restructuring and behavioral problem solving strategies, with the idea emotional distress can be reduced through adjusting cognitive distortions and problematic behavior patterns. These interventions tend to be structured and involve significant psychoeducation, goal-tracking, and skill rehearsal.

Targeting depression. Cognitive-behavioral interventions found to reduce depression within a Tier 2 framework include Teaching Kids to Cope (TKC; Puskar, Sereika, & Tusaie-Mumford, 2003); Positive Thoughts and Actions (PTA; McCarty, Violette, Duong, Cruz, & McCauley, 2013); Cognitive Behavioral Skill Building (CBCS; Melnyk, Kelly, & Lusk, 2014); and the Penn Resiliency Program (Cutuli et al., 2013). Beyond their effects on depressive symptoms, these interventions are associated with reductions in anxiety and conduct problems as well as positive cognitive changes such as greater self-efficacy (Cutuli et al., 2013; McCarty et al., 2013; Melnyk et al., 2014).

Targeting trauma. Trauma-informed interventions have gained recent popularity in schools due to research on harms associated with adverse experiences in childhood (Felitti et al.,

1998). Cognitive Behavioral Interventions for Trauma in Schools (CBITS) is a Tier 2 intervention found to effectively reduce students' levels of trauma-related symptoms, depression, and anxiety (Allison & Ferreira, 2017; Goodkind et al., 2010; Kataoka et al., 2003; Stein et al., 2003). Like those targeting depression, these interventions also focus on symptom reduction through cognitive restructuring and behavioral problem solving, but with an additional trauma narrative component. This component is intended to facilitate a habituated response to the traumatic experience through graduated exposure (Stein et al., 2003). Langley and colleagues (2015) also found that integrating CBITS with trauma-focused CBT into a single group-based intervention, Bounce Back, lead to significant reductions in anxiety, depression, and trauma-related symptoms. Interestingly, Salloum and Overstreet (2012) found that beneficial outcomes were still achieved using a different cognitive-behavioral intervention, Grief and Trauma Intervention, even when the trauma narrative component was eliminated for one of the intervention groups. Thus, this component may not be necessary in a Tier 2 intervention when targeting students considered "at risk" who are not already in need of intensive PTSD treatment.

Interpersonal Psychotherapy-Adolescent Skills Training (IPT-AST)

IPT-AST is an effective psychotherapeutic treatment for adolescent depression. It has been successfully implemented within a Tier 2 framework as two interventions, the Depression Prevention Initiative and UTALK, which target depression and social anxiety respectively (DPI; Benas et al., 2019, La Greca et al., 2016). There are numerous similarities between other Tier 2 interventions and IPT-AST, such as the inclusion of psychoeducation, personal goal-setting, problem-solving, and skill rehearsal. Compared to cognitive-behavioral interventions, IPT-AST places an increased focus on the links between mood and interpersonal interactions as well as more practice using interpersonal strategies specifically (Benas et al., 2019). DPI was successful

in reducing externalizing symptoms in addition to depression, suggesting significant transdiagnostic utility of IPT-AST and its core components (Benas et al., 2019). UTALK was modified from standard IPT-AST for depression to address social anxiety by placing a more intensive focus on coping with peer victimization; it was associated with significant reductions in peer victimization, social anxiety, and depression (La Greca et al., 2016).

Social Effectiveness Therapy

Skills for Social and Academic success is a form of social effectiveness therapy implemented within a Tier 2 intervention framework and found to effectively reduce levels of social anxiety (SASS; Masia Warner, Fisher, Shrout, Rathor, & Klein, 2007). Social effectiveness therapy, like cognitive-behavioral interventions and IPT-AST, involves behavioral problem solving and skill rehearsal. It varies from the others in that it is exclusively focused on behavioral changes through social skills training and graduated exposure and does not contain a cognitive restructuring element. In a tier 2 framework, this is achieved by pairing participants with prosocial peers to build social skills and help scaffold the development of social competence.

Mentoring Models

Mentoring models have been used in a Tier 2 framework to reduce problem behaviors in the classroom context (Crone, 2004). A central idea of these interventions is to provide students with additional, individualized support and structure from adults to address deficits in behavior regulation (Crone, 2004). Like the interventions previously discussed, the mentoring model focuses on behavior modification but involves more direct reinforcement practices (Wolfe et al., 2016). Similar to social effectiveness therapy, mentoring models also involve skill-building through scaffolding but the skill-building centers around behavior regulation as opposed to social

skills. Check-In/Check-Out (CI/CO), originally referred to as the Behavior Education Program (BEP), is a Tier 2 mentoring intervention found to successfully reduce problem behaviors and discipline referrals among youth (Crone, 2004; Drevon, Hixson, Wyse, & Rigney, 2019; Filter et al., 2007; Hawken et al., 2007; Wolfe et al., 2016). It has also been associated with academic gains, highlighting its ability to improve functioning across multiple domains. In particular, adapted versions of CI/CO have resulted in reduced internalizing problems in several non-RCT studies (Cook et al., 2015; Hunter, Chenier, & Gresham, 2014). It also has been successfully integrated with other behavior-based interventions, such as the Check & Connect Program and cognitive-behavior interventions like Coping Power, to reduce problem behaviors in the classroom context (Cheney et al., 2009; McDaniel & Bruhn, 2019).

Social-Cognitive Models

Social-cognitive skill building groups have been developed to reduce externalizing behaviors, including aggression, delinquency, and substance use among youth. The Coping Power Program is a Tier 2 intervention that has demonstrated positive effects on students' levels of delinquency, aggression, substance use, and academic behavior problems (Lochman & Wells, 2004; Lochman et al., 2013). Like CI/CO, Coping Power is also associated with academic gains, indicating that it has a positive impact across multiple domains of functioning. Social-cognitive models integrate many aspects of other interventions: the cognitive restructuring and behavioral coping practices of cognitive-behavioral interventions are specifically applied to social contexts (Lochman & Wells, 2002a; 2004). This theoretical model was supported by the finding that benefits of Coping Power were mediated through social-cognitive processing improvements, or the way children were conceptualizing social situations (Lochman & Wells, 2002a). Interestingly, Coping Power was associated with larger reductions in externalizing problems for

students who had higher baseline levels of depression, suggesting there may be some degree of existing transdiagnostic utility within social-cognitive intervention models (Muratori, Bertacchi, Giuli, Nocentini, & Lochman, 2017).

Modular Approach

Adopting a modular approach to psychotherapy with youth has gained substantial empirical support in recent years as a more useful and flexible treatment model than problem-specific therapies (Weisz et al., 2012). By treating symptoms and their underlying deficits as opposed to a particular diagnosis, the modular approach was developed to achieve, and has successfully demonstrated, transdiagnostic utility. Although it was designed for implementation as a form of individual psychotherapy, the modular approach provides a model with which to adapt Tier 2 interventions. RECAP is a Tier 2 intervention that was developed using a modular approach and was found to be effective in reducing both internalizing and externalizing symptoms. Its core components include many of those previously discussed: communication skill building, cognitive restructuring, social problem solving, self-regulation development, social-emotional instruction, and behavior coping (Weiss et al., 2003). When comparing problem-specific Tier 2 interventions to RECAP, there is substantial overlap across core intervention components. Achieving transdiagnostic utility, then, does not require a complete overhaul of the model of existing interventions; rather, it can be achieved by more minor content adaptations that synthesize components of other Tier 2 interventions targeting different symptoms.

Tying it Together: Core Components

In general, there are a number of different types of Tier 2 preventive interventions, many of which have demonstrated effectiveness at addressing a range of behavioral, mental health, and

social-emotional outcomes through rigorously designed studies. There is extensive overlap across the core components of each type of Tier 2 intervention category; we contend that leveraging these components will be integral in adapting Tier 2 interventions to have improved transdiagnostic utility for addressing a range of outcomes. The inclusion of intervention components that target one or more of the core underlying deficits is hypothesized to lead to global symptoms reductions and overall improvement in psychological functioning. Below is a brief description of several core intervention components and their hypothesized mechanisms of impact.

Structural support and reinforcement. It is important to provide students with ample structural support throughout the intervention. Establishing a reinforcement system for specific, observable behaviors that are consistent with the goals of the intervention (e.g., completed behavior logs) can help promote student engagement and increase the use of adaptive skills and strategies. Furthermore, establishing a clear structure of each session (e.g., first setting an agenda) sets clear expectations for students, which can assist with behavior management. Regular progress monitoring is also amenable with structural supports to address the needs of students who may have initial difficulty responding to the intervention. Overall, clearly defined expectations are especially important in a school-based group context in order to implement intervention content with fidelity. Structural support and reinforcement are integral components of various Tier 2 interventions, including: cognitive-behavioral, mentoring, and social-cognitive models.

Cognitive restructuring. Cognitive restructuring, by identifying and altering erroneous and/or unhelpful thinking patterns, allows for the correction of *maladaptive schemas* and thought patterns that perpetuate both internalizing and externalizing symptoms. Encouraging

students to challenge unrealistic or harmful thinking can interrupt cycles of sustained anxiety, depression, and anger-related symptoms. It is also critical in improving *social skill deficits* by helping students more accurately understand others and solve social problems. Cognitive restructuring is a core component of many Tier 2 interventions, including: cognitive-behavioral, IPT-AST, social-cognitive, and RECAP's modular approach. It can be especially helpful for building self-efficacy among children with poor self-schemas and high levels of *negative affect/distress intolerance* by highlighting the extent to which they can exert control over their emotions by changing their interpretations of situations.

Behavior coping. Behavior coping is a term that can incorporate a variety of strategies shown to reduce psychological distress. These can include distraction strategies, help-seeking strategies, relaxation strategies, and self-talk strategies. Behavior coping is highly effective in improving *emotion regulation* and reducing levels of *negative emotionality/distress intolerance* by providing a set of tools that children can use to reduce emotional distress when it is experienced. It is closely tied to skill rehearsal, as it is critical to facilitate practice outside of sessions when distressing emotions arise organically. Additionally, the integration of problem-solving strategies is important because it assists children in overcoming barriers or challenges they may face when trying to engage in behavior coping. Behavior coping is associated with reductions across both internalizing and externalizing symptoms through the central role it plays in various Tier 2 interventions, including: cognitive-behavioral, social effectiveness, social-cognitive, and modular approaches.

Social/communication skill building. The development of effective communication skills is an integral part of social skill building that underlies many internalizing and externalizing symptoms. Tier 2 interventions may provide extensive opportunity to gain and

practice using these skills by using group-based formats, role-play activities, and improving peer relations in the classroom. Communication strategies such as active listening, “I-statements,” and assertiveness training are closely tied to social skill building. Using these skills in various peer-contexts allows communication skills to generalize and improve competence within relevant social domains. Social skill instruction also can effectively target *maladaptive schemas* by correcting distorted interpretations of social interactions. Interrupting the problematic ways in which students are making sense of everyday problems and encouraging them to consider multiple aspects of a problem reduces maladaptive schemas. Social/communication skill building is associated with reductions in both internalizing and externalizing symptoms through its inclusion in Tier 2 interventions such as IPT-AST, social effectiveness, mentoring, social-cognitive, and modular approaches.

Application of skills. Applied learning and problem solving are featured in many Tier 2 intervention categories, including: cognitive-behavioral, AST, social effectiveness, mentoring, and modular approaches. Applying skills learned during the intervention to everyday situations outside of the intervention context involves students using multiple core components (e.g., cognitive restructuring, behavior coping, social/communication skills). This allows for skills to generalize across other domains. Further, this process helps to build *emotion regulation abilities* by requiring students to employ learned skills during times of emotional distress to prevent impulsive responding, which can ultimately promote *social skills* if children are able to respond to others more adaptively in the school context. Interventions containing exposure-based practices also incorporate this component by requiring children to respond to everyday situations that are associated with distressing symptoms. Exposure-based practices are central in social effectiveness therapy and cognitive-behavioral interventions targeting trauma .

Recommended Adaptations to Optimize Transdiagnostic Utility

Content Adaptations

Although many of the reviewed Tier 2 interventions are currently problem-specific in that they apply common intervention elements to a particular problem, much of the adaptation needed to broaden their scope can be achieved through generalizing intervention content as long as these process-level mechanisms and components are sustained. Based on the research reviewed, we have provided a series of recommended adaptations to current Tier 2 interventions in Table 2. We use Coping Power as a case illustration of an intervention developed to address externalizing behavior problems that can be adapted to have transdiagnostic utility. In this example, many recommended adaptations consist of generalizing intervention content to include coping with feelings of sadness and anxiety as well as anger, which was the original target emotion. For example, features like the feelings thermometer, identifying emotion cues, and applying coping strategies were designed for students to better regulate their feelings of anger and resulting aggressive behavior. The same features can be used with other emotions like fear and sadness so that students can also regulate symptoms of depression and anxiety. These adaptations can provide several key benefits. For one, they increase the utility of Coping Power for children with co-occurring anxious or depressive symptoms, which are likely to go unaddressed in the context of co-occurring aggression (Bradshaw, Buckley, & Ialongo, 2008). Similarly, Coping Power could target underlying feelings of fear and sadness for students whose depression and anxiety manifests as irritability, which is common among children (American Psychiatric Association, 2013). Providing explicit instruction and skills for regulating fear and sadness could help reduce risk for anxiety and depression later in development, as internalizing diagnoses are associated

with childhood-onset behavior problems (Lahey et al., 2002; Leadbeater et al., 2012; Rowe et al., 2006).

While there are numerous potential benefits, it should be noted that generalizing intervention content for transdiagnostic utility may require changing aggression-specific features of some sessions, such as adhering to social norms and responding to deviant peers. There is a risk that the positive effects of Coping Power has demonstrated on reducing externalizing behaviors may be dependent upon these aggression-specific components. Given that risk, eliminating features of evidence-based interventions should be limited and made with caution to preserve fidelity. In general, however, there is very little process-level change required to gain transdiagnostic utility, as Coping Power already incorporates the large majority of core intervention components for internalizing symptoms even though it has been developed as an intervention for externalizing behaviors. For example, cognitive/affective awareness and relationship building are key components of cognitive-behavioral interventions and IPT-AST, respectively, which are both effective Tier 2 interventions for internalizing symptoms (Benas et al., 2019; Melnyk et al., 2014). Overall, the Coping Power modules including goal-setting/monitoring, cognitive restructuring, social-skill building, and problem-solving have already been proven to effectively reduce internalizing symptoms, and thus only need very minor, if any, adaptations (La Greca et al., 2016; McCarty et al., 2013).

Target Population

In addition to an expanded scope of intervention content, efforts should be directed towards expanding the process of identifying eligible students. In general, this process can be flexible depending on individual school needs. If schools are particularly interested in reducing externalizing problems, for example, the screening process for inclusion can remain the same as

it currently is for problem-specific Tier 2 interventions like Coping Power. Modifications to intervention content are expected to continue addressing high baseline levels of externalizing problems, while also addressing the frequently co-occurring or secondary internalizing problems that often go unrecognized and contribute to worse outcomes (Bradshaw et al., 2008; Korhonen et al., 2014; Sourander et al., 2007; Reinke et al., 2012). This hypothesis is supported by the finding that Coping Power produced more beneficial outcomes for students presenting with higher initial levels of internalizing symptoms, despite being an intervention designed to address externalizing problems (Muratori et al., 2015).

There is also evidence indicating that current school screening processes for EBDs are insufficient. Despite the integral role of screening in effectively identifying students at risk for EBDs in schools, schools typically forgo a standardized screening process (Bruhn, Woods Groves, & Huddle, 2014; Weist, Rubin, Moore, Adelsheim, & Wrobel, 2007). While there are empirically-validated measures that assess a range of mental health symptoms in children, many measures are too costly or time-consuming to use in school contexts as screening tools (e.g., Behavior Assessment System for Children; Reynolds & Kamphaus, 2015). Findings from recent work on screening procedures in schools recommend a screening process that involves data from multiple sources for accurate identification of students in need of Tier 2 intervention supports (Bruhn, Lane, & Hirsch, 2013). If schools are interested in implementing a single Tier 2 intervention for children based on global risk for EBDs, the screening process can incorporate one of several measures suitable for school contexts. For example, the Systematic Screening for Behavior Disorders is a global screening measure that assesses risk for both internalizing and externalizing EBDs and has been successfully used in schools, although it does not account for co-occurrence (SSBD; Walker & Severson, 1992; Lane, Kalberg, Lambert, Crnabori, & Bruhn,

2010). Further research is required to standardize school screening processes by validating measures of global EBD risk that are appropriate for use as screening tools in school contexts. Modifying the screening process to address a broader range of EBDs could present both clinicians and researchers with new challenges, as the clinical presentation of students receiving a single Tier 2 would be significantly more heterogeneous than the target populations of current Tier 2 interventions. Thus, any changes made to the original screening processes for problem-specific Tier 2 interventions should be made carefully and with the ability to incorporate school and clinician feedback.

Conclusions and Future Directions

The traditional approach to addressing EBD in schools through Tier 2 interventions has been to leverage problem-specific Tier 2 interventions. Whereas particular interventions like CI/CO and Coping Power have shown positive effects on other domains like academics, few studies have investigated the effects of Tier 2 interventions specifically developed to address heterogeneous psychological symptoms using a single problem-focused program. Leveraging the extant research, which suggests potentially promising transdiagnostic effects of several Tier 2 programs, we contend that further adaptation of these models may optimize their transdiagnostic utility. Clearly, empirical research is needed to determine the impacts of a transdiagnostic approach to Tier 2 interventions; however, this approach also has other potential benefits, such as increasing efficiency of delivery by school staff, as they may be able to fully leverage a single Tier 2 program to address a broader range of EBDs.

Yet, there are some potential limitations of this approach that should be considered. For instance, children may struggle to translate skills without an explicit focus on the way these skills can be applied to specific situations associated with their presenting problem. With a

“transdiagnostic” adaptation of Coping Power, for example, children will likely still gain the same emotion regulation and problem-solving skills but may struggle to apply these skills in their own lives if the situational examples in the intervention are broadened and not perceived as applicable. Additionally, increasing the heterogeneity of the target population places increased demands on the school clinician to be responsive to a diverse group of students. These limitations should be addressed during the piloting phase of future research endeavors by incorporating feedback from clinicians and teachers.

Despite these caveats, there is burgeoning evidence which suggests great promise for the potential transdiagnostic impact of Tier 2 interventions. Implementing adapted versions of transdiagnostic Tier 2 interventions would likely place a minimal demand for additional resources, as many educators are currently attempting to implement multiple problem-specific Tier 2 interventions; moreover, these clinicians likely have prior training in the prevention of other EBDs in children, such as internalizing problems. Thus, it would likely prove cost-efficient to direct effort towards implementing transdiagnostic interventions based on the recommended minor adaptations to improve the psychological functioning of students identified as at-risk. Further, generalizing intervention content would increase the redundancy across different interventions, while also reducing the number of different interventions that students receiving Tier 2 interventions need to receive, as they are likely to be at-risk for multiple psychological problems.

It is important to note that the goal of this paper was not to conduct an exhaustive review of all possible Tier 2 interventions; rather, we summarized a representative range of commonly used interventions with the goal of illustrating commonalities across them and providing suggestions optimizing transdiagnostic utility. Based on the evidence summarized here

suggesting clear overlap in the developmental trajectories and core underlying deficits across diagnoses in childhood psychopathology, the development of problem-specific interventions is not only empirically illogical but also unnecessarily resource-intensive to implement. The proposed adoption of a transdiagnostic approach to school-based intervention is thus clearly supported by the literature and is warranted to optimize resource use in schools. Moreover, adapting every existing problem-specific Tier 2 intervention is unwarranted; rather, we recommend systemic-level change that recognizes: a) the degree of problem-specificity in which many Tier 2 interventions were developed and validated is typically inconsistent with the ways in which many schools are able to implement them; and b) achieving transdiagnostic utility would require little conceptual change because many existing interventions already contain the same core components, which target a common set of underlying psychological deficits consistent across symptom presentation. Rather than developing and validating a series of problem-specific Tier-2 interventions that are ill-equipped for the flexible implementation that is desired by many schools, prioritizing the transdiagnostic utility of Tier 2 interventions allows schools to maximize the use of evidence-based mental health practices to meet the needs of students with EBDs.

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TIER 2 TRANSDIAGNOSTIC INTERVENTIONS

Table 1
Select Tier 2 Interventions for Emotional and Behavioral Disorders

<i>Intervention</i>	<i>Target (s)</i>	<i>Core Intervention Components:</i>	<i>Underlying Deficits Addressed:</i>	<i>Also Improved</i>
<i>Cognitive-Behavioral</i>				
TKC (Puskar et al., 2003)	Depression	<i>Structural supports & reinforcement Cognitive restructuring Behavior coping Application of skills</i>	<i>Negative emotionality/ intolerance Emotion dysregulation Maladaptive cognitions</i>	
PTA (McCarty et al., 2013) CBCS (Melnyk et al., 2014)	Depression Depression Anxiety			
PRP (Cutuli et al., 2013)	Depression			Conduct Problems
CBITS (Allison & Ferreira, 2017; Goodkind et al., 2010; etc.)	Trauma			Depression Anxiety
GTI (Salloum & Overstreet, 2012)	Trauma			Depression Externalizing
Bounce Back (Langley et al., 2015)	Trauma			Depression Anxiety
<i>Interpersonal Skills Training</i>				
DPI (Benas et al., 2019)	Depression	<i>Structural supports & reinforcement Cognitive restructuring Social/communication skills Application of skills</i>	<i>Negative emotionality/ intolerance Maladaptive cognitions Social skill deficits</i>	Anxiety Externalizing
UTALK (La Greca et al., 2016)	Social Anxiety			Depression
<i>Social Effectiveness Training</i>				
SASS (Masia Warner et al., 2007)	Social Anxiety	<i>Structural supports & reinforcement Social/communication skills Application of skills</i>	<i>Negative emotionality/ intolerance Social skill deficits</i>	

<u>Mentoring Interventions</u>				
CI/CO (Crone, 2004; Filter et al., 2007; (Hawken et al., 2007; Wolfe et al., 2016)	Disruptive Behavior	Structural supports & reinforcement Behavior coping Application of skills	Emotion dysregulation Social skill deficits	Internalizing*
C, C, & E (Cheney et al., 2009)	Disruptive Behavior			
<u>Social-Cognitive</u>				
CP (Lochman & Wells, 2004; 2013)	Aggression	Structural supports & reinforcement Cognitive restructuring Behavior coping Social/communication skills	Emotion dysregulation Maladaptive cognitions Social skill deficits	Disruptive Behavior Substance Use Delinquency Depression*
<u>Modular Approach</u>				
RECAP (Weiss et al., 2003)	Internalizing & Externalizing	Structural supports & reinforcement Cognitive restructuring Behavior coping Social/communication skills Application of skills	Negative emotionality/intolerance Emotion dysregulation Maladaptive cognitions Social skill deficits	

*Note. BEP = Behavior Education Program; CBITS = Cognitive Behavioral Intervention for Trauma in Schools; CBSB = Cognitive Behavioral Skills Building; C,C,& E = Check, Connect, and Expect. CI/CO = Check-In/Check-Out; CP = Coping Power; DPI = Depression Prevention Initiative; GTI = Grief and Trauma Intervention; PTA = Positive Thoughts and Actions; PRP = Penn Resiliency Program; SASS = Skills for Social and Academic Success; TKC = Teaching Kids to Cope

Table 2

Case Example: Adapting Coping Power for Transdiagnostic Utility

<i>Core Intervention Component:</i>	<i>Original CP Content:</i>	<i>Adapted Content w/ Transdiagnostic Utility:</i>
Psychoeducation	<ol style="list-style-type: none"> 1. Normalizes experience of anger 2. Highlights the consequences of behavior stemming from anger 3. Identifies goal of controlling anger and making smart choices when angry. 	<ol style="list-style-type: none"> 1. Normalizes experience of strong, unpleasant feelings: feeling scared, feeling sad, feeling angry 2. Highlights the unwanted effects of strong, unpleasant feelings [e.g., you might not go on a roller coaster you really want to go on if you're feeling scared] 3. Identifies goal of copng with strong, unpleasant feelings and solve problems
Goal-setting/monitoring	<ol style="list-style-type: none"> 1. Discuss the purpose of goals 2. Differentiate between short and long term goals 3. Practice developing SMART [specific, measurable, attainable, realistic, timely] goals 4. Identify barriers to goals and how to address them 5. Reinforcement for goal achievement 	No recommended adaptations

Cognitive and affective awareness	<ol style="list-style-type: none"> 1. Identify different feeling states 2. Identify various levels of anger 3. Identify salient triggers for anger 4. Discuss links between thoughts/behaviors/feelings 	<ol style="list-style-type: none"> 1. [No recommended changes] 2. Identify varying levels of several different unpleasant emotions [angry, scared, sad] 3. Identify salient triggers for unpleasant emotions [angry, scared, sad] 4. [No recommended changes]
Cognitive restructuring	<ol style="list-style-type: none"> 1. Introduce coping self-statements 2. Practice using coping self-statements 3. Identifying how to overcome barriers to self-control 	<ol style="list-style-type: none"> 1. [No recommended changes] 2. [No recommended changes] 3. Identifying how to overcome barriers to coping
Coping skills	<ol style="list-style-type: none"> 1. Introduce concept of anger coping for self-control 2. Practice anger coping for self-control using tools: <ol style="list-style-type: none"> a. Relaxation b. Distraction 	<ol style="list-style-type: none"> 1. Introduce concept of coping to reduce unpleasant feelings [angry, sad, scared] and limit their effects 2. Practice copng with unpleasant feelings using tools: <ol style="list-style-type: none"> a. Relaxation b. Distraction c. <i>Communication</i>
Social/communication skills	<ol style="list-style-type: none"> 1. Interpersonal problem- solving etiquette 2. Active listening 3. “I-Messages” 4. Assertive communication 5. Practice refusal skills 	Eliminate [1]

Problem solving	<ol style="list-style-type: none"> 1. Introduce the “PICC model”: <ol style="list-style-type: none"> a. Perspective taking b. Problem identification c. Choices? d. Consequences? e. Then decide 2. Differentiate between automatic responding and using the “PICC model” 3. Apply the PICC model to various social contexts 	No recommended adaptations
Relationship building/conflict management	<ol style="list-style-type: none"> 1. Joining in activities and making new friends 2. Discussing values within friendship 3. Managing social aggression & cyber bullying 4. Apologizing & dealing with damaged relationships 5. Assessment of cliques/clubs/groups at school 6. Deviant peer groups 7. Positive quality development 	<ol style="list-style-type: none"> 6. Can be generalized to “Managing peer influence” so goal of managing the influence of peer group is maintained but content is more applicable if students have co-occurring social anxiety and/or withdrawal