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Practitioner Review: Empirical evolution of youth psychotherapy toward transdiagnostic approaches

Lauren Krumholz Marchette[1] and John R. Weisz[2]

[1]Department of Psychiatry, Cambridge Health Alliance, Harvard Medical School, Cambridge, MA; [2]Department of Psychology, Harvard University, Cambridge, MA, USA

Background: Psychotherapy for children and adolescents (herein, 'youths') has grown more precise and focused over the decades, shifting toward empirically supported treatments standardized via therapist manuals. The manuals have increasingly emphasized precise targeting of single disorders or problems, or homogenous clusters. These focal treatments represent a valuable advance, with intervention benefit documented in hundreds of studies. However, relatively few of these treatments are widely used in everyday clinical practice, and their level of benefit may not be ideal, particularly in practice contexts and when compared to usual clinical care. **Thesis:** These limitations may be due, in part, to a mismatch between focal treatment design and the young people treated in real-world clinical care, who are diagnostically heterogeneous, and very frequently present with comorbidity. Improved fit may be achieved via transdiagnostic treatment approaches designed to address multiple disorders and problems, if these approaches can retain the benefits of manualization and the substantive clinical strength that has generated empirical support to date. **Scope:** Here we review the evolution of empirically-based youth psychotherapy from focal treatment manuals toward transdiagnostic approaches, and we describe and illustrate three transdiagnostic treatment strategies: (a) a core dysfunction approach, (b) a common elements and modular design approach, and (c) a principle-guided approach. **Clinical applications:** We complement research findings with a clinical perspective based on our use of manual-guided transdiagnostic intervention in clinical care settings, and we propose directions for research and practice. **Keywords:** Adolescence; comorbidity; mental health; psychotherapy.

Introduction

A long and rich history has led to psychotherapy as we know it today. With conceptual roots reaching back to antiquity, and emergence as a formal approach to helping in the early 20th century (Freedheim, Freudenberger, & Kessler, 1992), psychotherapy is now diverse in its forms and prominent in its place within many cultural traditions. The substantial growth of psychotherapy as a professional field sparked increased interest in systematically evaluating its benefits, including benefits of its application to children and adolescents (herein referred to as 'youths') (Kazdin, 2000; Weisz, 2004). Studies of child and adolescent psychotherapy have proliferated over the years (see Silverman & Hinshaw, 2008; Weisz & Kazdin, 2010) and have demonstrated increased sophistication as more researchers began to employ the gold standard approach of the randomized controlled trial (RCT) (Chambless et al., 1998).

This improved methodological rigor has been made possible by the shift in psychotherapy from what were sometimes rather unspecified treatments for vaguely defined youth problems to therapies more clearly delineated in treatment manuals and focused on alleviating specific problems and disorders (Weisz, Jensen Doss, & Hawley, 2005). The shift toward manualized treatment brought with it an emphasis on linear design – a series of sessions in a more or less fixed order – and precise targeting – a focus on single disorders and homogenous problem clusters. The rise of focal treatment manuals may have been supported partly by the successive iterations of the *Diagnostic and Statistical Manual of Mental Disorders (DSM)*, each describing specific disorders in detail, and thus paving the way for a tighter linkage between specific disorders and particular treatment manuals. Another factor may have been the policies of some funding agencies that prioritized diagnosis-specific therapies (Weisz, Krumholz, Santucci, Thomassin, & Ng, 2015). Focal treatment manuals created by many talented individuals and research teams over the past five decades offer distinct advantages, including (a) clarity regarding which specific disorder or problem a treatment should address, (b) precise mapping of treatment procedures onto the symptoms of a particular disorder, (c) close linkage between treatments and the standard diagnostic manual, and (d) manageable scope for therapist training and treatment implementation.

While many focal treatment manuals exist, and many of these have contributed valuably to the field, relatively few are being widely used in everyday clinical practice (Higa & Chorpita, 2008; Riemer, Rosof-Williams, & Bickman, 2005). In addition, the level of benefit produced by these focal youth treatments is relatively modest (Weisz, Kuppens et al., 2017), particularly when treatments are delivered in more clinically representative contexts and when compared to usual clinical care (Weisz, Jensen-Doss, & Hawley, 2006; Weisz et al., 2013). These

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concerns may reflect certain disadvantages of the focal manuals (e.g. Addis & Krasnow, 2000), a number of these related to their application in real-world clinical care contexts (Weisz et al., 2015). The limited uptake of focal treatment manuals in clinical practice, and their relatively modest effects when implemented in clinically representative contexts, may result in part from a mismatch between the manuals and the realities of mental health care in practice settings. Areas of possible mismatch include the breadth of practitioner caseloads, the tendency for youths in practice settings to present with comorbidity and co-occurring problems, and fluctuations during treatment in the particular problems that most need attention in therapy (Weisz et al., 2015). The first of these mismatch challenges is easy to describe: clinicians tend to work with children and adolescents across a broad range of disorders and problems, but few have the time or resources to learn a different treatment manual for each disorder or problem type.

Turning to the second area of mismatch, we note that focal treatment manuals may not be a good fit for the many youths who present with more than one disorder and more than one type of clinical problem. Youth comorbidity has been documented repeatedly over the years in clinical and general population epidemiological samples (e.g. Angold, Costello, & Erkanli, 1999; Garber & Weersing, 2010; Merikangas et al., 2010; Weisz et al., 2012). Comorbidity exists both within classes of disorders (e.g. multiple anxiety diagnoses) and across class of disorders (e.g. oppositional defiant disorder and major depressive disorder). In a review of the prevalence of comorbidity among the most common youth psychiatric conditions, Ollendick, Jarett, Grills-Taquechel, Hovey, and Wolff (2008) reported a range of findings across studies, but with substantial mean levels of disorder co-occurrence. For example: (a) studies of youths with anxiety disorders have reported that from 17% to 69% have comorbid depressive disorders and from 8% to 69% have comorbid externalizing disorders; and (b) studies of youths with externalizing disorders have reported that from 2% to 46% have comorbid depressive disorders and from 5% to 55% have comorbid anxiety disorders. Thus, while exact figures vary across studies, the general pattern across studies indicates substantial diagnostic comorbidity. In addition to diagnostic comorbidity, youths referred for treatment tend to present with a mix of problems differing in type and content – for example, debilitating fears combined with conduct problems, and sad mood and lethargy combined with angry outbursts (see Weisz et al., 2011). For the many clinically referred youths who present with multiple disorders and varied problems, using a single manual for a single disorder may not be sufficient. In principle, that challenge might be addressed through the use of multiple focal manuals, but a clinician who tries that approach would find little empirical guidance on how to navigate among the manuals during a treatment episode.

A third type of mismatch that poses a challenge for focal manuals is flux: the youth problems that require attention may often shift during an episode of care. This may occur for a range of reasons – for example, new information may be revealed by the youth or family over the course of treatment, new everyday stressors may surface at home or in school, or unexpected life events (e.g. catastrophic medical condition, parental separation or divorce) may radically alter what the youth needs to deal with in treatment. The linear design of many focal manuals may not readily accommodate the shifts in focus that such fluctuations may require.

Concerns about the possible limitations of focal treatment manuals have led those focused on improving the mental health of young people to consider treatment approaches that can address multiple disorders and problem areas – approaches designed to capitalize on the benefits of manualized treatments and their supporting evidence while affording greater flexibility to meet the complex, individual needs of youths and their families. These treatment manuals that can address co-morbidities and co-occurring problems are sometimes referred to as *transdiagnostic*. Potential strengths of transdiagnostic approaches include increased efficiency and cost-effectiveness relative to multiple focal treatments, greater practicality, increased ability to meet the complex and often changing needs of youths during treatment, and improved treatment satisfaction and acceptability to clinicians and families (for further details, see Table 1).

Transdiagnostic treatment, as the name implies, focuses on the goal of using a single protocol to address multiple diagnostic categories or problem types, but there are multiple pathways to that goal. Here we will focus on three main streams of treatment development oriented toward transdiagnostic intervention:

1. *Core dysfunction approaches*. Addressing multiple forms of psychopathology by targeting underlying forms of dysfunction that they appear to have in common.
2. *Common elements approaches*. Addressing multiple forms of psychopathology by bringing together therapeutic procedures commonly used for each.
3. *Principle-guided approaches*. Addressing multiple forms of psychopathology by combining core principles of therapeutic change that can be applied to each.

We will describe these three streams along with underlying theory and rationale, intervention examples, and examples of relevant research. We will also draw from our own experience applying transdiagnostic intervention in clinical care settings, including training and supervising practitioners in those

Table 1 Potential advantages of transdiagnostic treatment approaches

Advantage	Description
Increased efficiency of training in and dissemination of evidence-based practices	Clinicians learn streamlined arrays of treatment components housed within one manual to address a cluster of mental disorders or problems, some narrowly construed and others spanning both internalizing and externalizing disorders (Chu, 2012; Seager et al., 2014), thus facilitating training and dissemination efforts
Reduced training and supervision costs for practice organizations and practitioners	Training and supervision for multiple separate focal treatments can be time consuming and expensive; and fewer trainings reduce time and financial burden for funders, administrators, and clinicians (Weisz et al., 2015)
Improved fit to the way clinicians function in everyday practice	After a focal treatment trial or training initiative clinicians tend to use selected components of the manual, and flexibly so, rather than implement the full treatment manual in the prescribed sequence (Adelman & Taylor, 2003; Chu et al., 2015; Rye & Kimberly, 2007; Simpson & Flynn, 2007). Transdiagnostic approaches may thus mirror the way evidence-based practices are used by practitioners in service settings
Improved fit to the characteristics of referred youths and their treatment	Transdiagnostic approaches are designed to treat co-morbidities and shifting treatment needs during episodes of care, thus fitting the complexity of most clinically referred youths and their families (Chu, 2012; Rohde, 2012)
Increased clinician and client satisfaction	These approaches may reduce length of treatment and time needed for response to treatment, and thus treatment burden for clients (Weisz et al., 2012); and they may also appeal more to clinicians than unstructured treatment or treatment guided by standardized manuals (Borntrager, Chorpita, Higa-McMillan, & Weisz, 2009; Chorpita et al., 2015)

settings, to suggest factors to consider when applying transdiagnostic approaches outside of research trials. Finally, we will offer recommendations for advancing research and practice.

Transdiagnostic intervention: I. Core dysfunction approaches

The core dysfunction approach entails building interventions that can simultaneously address multiple disorders or problems by focusing on overlapping etiology, underlying pathological processes, or maintaining processes that are shared by those disorders or problems (Chu, 2012). Treatment strategies are selected based on evidence of their efficacy with those shared features that span the different disorders and problems (e.g. Fairburn, Cooper, & Shafran, 2003). A sound transdiagnostic intervention using this approach is ideally grounded in a unifying theoretical model that identifies one or more common mechanisms accounting for different problems or disorders, and empirically supported treatment strategies that can be used to treat the problems or disorders that share the common mechanism(s) (Ehrenreich-May & Chu, 2014). Treatment and research may transcend individual classification systems, such as the DSM, as the main emphasis is on underlying processes and mechanisms (Ehrenreich-May & Chu, 2014). The resulting interventions may thus be aligned with conceptualizations of mental illness that use a dimensional model, such as the Research Domain Criteria (RDoC) from the National Institutes of Health (Hershenberg & Goldfried, 2015).

Core dysfunction conceptualizations and interventions were initially developed for adult populations primarily, and this work remains fairly new (e.g. Barlow, Allen, & Choate, 2004). However, interest has surged in the past decade, with multiple applications to young people (Chu, Temkin, & Toffey, 2016). The core dysfunction approach to transdiagnostic intervention with youths has stimulated interest partly because of high rates of comorbidity among referred youths, significant overlap in symptoms across disorders, and changing symptom profiles over time and across stages of development (Chu et al., 2016).

The majority of core dysfunction interventions to date have been designed to simultaneously treat depression and anxiety, so we will focus on those. The first youth transdiagnostic intervention was a downward adaptation of the *Unified Protocol for the Transdiagnostic Treatment of Emotional Disorders* (UP; Barlow et al., 2010), and was developed for use with adolescents (UP-A; Ehrenreich-May et al., in press). The UP-A involves 8-21 individual sessions (for an overview, see Table 2) and comprises Barlow's et al. (2010) five core treatment components: (a) enhancing awareness of emotional experiences, (b) applying cognitive reappraisal to modify distorted thoughts and attributions, (c) recognizing and not engaging in emotion-driven avoidance and maladaptive behaviors, (d) strengthening emotional awareness and use of mindfulness and examining the role of physical sensations in emotional experiences, and (e) exposing clients to situational and interoceptive cues (Barlow et al., 2010; Seager, Rowley, & Ehrenreich-May, 2014). The UP-A has undergone numerous revisions with modifications to the format and treatment techniques to better fit with a variety of age groups, mental health delivery settings, and treatment targets. One such adaption is the *Unified Protocol for Children: Emotion Detectives* (UP-C: ED; Ehrenreich-May & Bilek, 2009),

Table 2 Overview of the Unified Protocol for Adolescents (UP-A)

UP-A module	Module title	# of sessions	Module goals
1	Building and Keeping Motivation	1–2	Orient family to treatment structure Establish key problems and goals Identify barriers Assess and build motivation for change
2	Getting to Know Your Emotions and Behaviors	2–3	Emotion identification skills Discuss function of emotions Introduce three parts of an emotion and functional assessment of emotional experiences Discuss reinforcement and learned behaviors
3	Introduction to Emotion-Focused Behavioral Experiments	1–2	Introduce opposite action and emotion-focused behavioral experiments Teach concept of tracking mood and activity Begin engaging adolescent in behavioral experiments
4	Awareness of Physical Sensations	1–2	Establish relationship between physiological sensations and intense emotions Build awareness of physiological sensations Conduct behavioral experiments using interoceptive exposure
5	Being Flexible in Your Thinking	2–3	Introduce concept of thinking flexibly about automatic appraisals Teach common 'thinking traps' Link thoughts to action via antecedent cognitive reappraisal and problem-solving
6	Awareness of Emotional Experiences	1–2	Introduce and practice present-moment awareness Introduce and practice non-judgmental awareness Conduct behavioral experiment using awareness strategies with emotionally evocative stimuli
7	Situational Emotion Exposure	2+	Introduce rationale for further behavioral experiments using exposure techniques Conduct exposures for situations that elicit problematic emotional behaviors
8	Reviewing Accomplishments and Looking Ahead	1	Review skills and progress toward goals Create a relapse prevention plan
P	Parenting the Emotional Adolescent	1–3	Build parent awareness of responding to adolescent distress Introduce four common emotional parenting behaviors and their opposite actions

designed for younger children (ages 7–12) with anxiety and/or depressive disorders. This protocol shares the same primary therapeutic components as the UP and UP-A, namely changing cognitive appraisals, altering emotion-driven behaviors, and preventing emotional avoidance, with these skills broadly applied to emotions. The UP-C: ED involves developmental adaptations to the content delivery and structure of treatment. For example, the UP-C: ED is offered in group sessions with learning bolstered by experiential and engaging activities, and incorporates more extensive caregiver involvement in treatment. In addition, treatment skills are taught in a concrete manner with the use of a mnemonic device – the CLUES skills – to facilitate learning. The CLUES skills stand for: **C**onsider how I feel, **L**ook at my thoughts, **U**se detective thinking, and **S**tay healthy and happy. The UP-C: ED was recently revised to the *Unified Protocol for the Treatment of Emotional Disorders in Children* (UP-C; Ehrenreich-May et al., in press). A combined therapist guide for the UP-A and UP-C and separate workbooks for each should be available from Oxford University Press in the summer of 2017.

Other examples of core dysfunction treatments include: Group Behavioral Activation Therapy (GBAT) which targets the behavioral avoidance common to youths with anxiety and depression (Chu, Colognori, Weissman, & Bannon, 2009); Integrated Brief Behavioral Therapy (IBBT) involving the cognitive-behavioral therapy (CBT) techniques of exposure and behavioral activation to target avoidance of fear-eliciting and challenging situations (Weersing, Gonzalez, Campo, & Lucas, 2008); IBBT was later expanded to the Transdiagnostic Internalizing Toolbox, comprising two brief protocols used to treat anxiety, depression, and somatic complaints in pediatric primary care settings (Weersing, Rozenman, Maher-Bridge, & Campo, 2012); and EMOTION: 'Coping Kids' Managing Anxiety and Depression (EMOTION), which is a group preventive program for children with symptoms of anxiety or depression, delivered by school psychologists, and targeting avoidance and maladaptive thinking through psychoeducation, problem solving, behavioral activation, graduated exposures, and cognitive restructuring (Kendall, Stark, Martinsen, O'Neil, & Arora, 2013).

Core dysfunction interventions for child and adolescent populations are currently in a nascent stage

(for a review, see Ehrenreich-May & Chu, 2014). They seem to be promising in terms of feasibility and acceptability, and evidence bearing on their clinical outcomes has begun to emerge, primarily from case studies and uncontrolled trials (Bilek & Ehrenreich-May, 2012; Chu et al., 2016; Ehrenreich-May, Goldstein, Wright, & Barlow, 2009; Rohde, 2012; Trosper, Buzzella, Bennett, & Ehrenreich, 2009). More rigorous research is in prospect for the future (Seager et al., 2014), and some randomized trials research is now underway with positive results described in a recently published randomized wait-list-controlled trial (Ehrenreich-May et al., 2017).

One limitation of the core dysfunction approach, as implemented to date, may be that its flexibility and client personalizability tend to be somewhat limited by the rather standardized administration of the same session content across clients, although more flexibility may be introduced later in treatment episodes. Another limitation of this approach is that common mechanisms and process across many classes of disorders have not yet been well-established by research (Sauer-Zavala et al., 2017). Therefore, another useful direction for clinical science will be scientific inquiry to identify common mechanisms and processes across different youth disorders – the kind of basic information needed for treatment design using the core dysfunction approach.

Transdiagnostic intervention: II. Common elements approaches

Treatment design using the common elements approach has involved identifying commonly used components of empirically supported treatments for particular disorders and problems that are to be targeted. Those components are organized into menus of treatment procedures from which a therapist selects a subset tailored to fit the individual being treated. The common elements approach may work especially well when the elements are structured as modules – that is, separable, independent components that can be organized into various combinations of varying length. Using a modular framework, in which the various treatment procedures (e.g. for problem solving, self-calming, or behavioral activation) are each conveyed via discrete written descriptions (i.e. 'modules') permits clinicians to individualize treatment by bringing together distinctive combinations of modules to fit the varied needs of diverse clients. The modules can also be linked progressively over the course of treatment to address multiple disorders and problems as they emerge within a treatment episode (Chorpita, Daleiden, & Weisz, 2005a; Weisz & Chorpita, 2011). Modular interventions can include algorithms (e.g. flowcharts) as clinical decision making tools that guide whether and when to use particular modules. These interventions maintain the benefits of manualized treatment while offering the therapist flexibility to design tailored, culturally sensitive treatment by incorporating specific modules within a sequence designed to fit the characteristics and needs of each individual youth and family.

Part of the rationale for modular psychotherapy approaches is the recognition that many evidence-based treatment manuals include overlapping strategies (Chorpita, Becker, & Daleiden, 2007). To inform the development of modular psychotherapy approaches, Chorpita, Daleiden, and Weisz (2005b) proposed a distillation and matching model (DMM), also called the 'common elements approach,' which explains how evidence-based treatment manuals can be broken down into discrete, meaningful parts, and therefore conceptualized at a lower level of analysis. Many manuals share 'practice elements' or therapeutic strategies, involving techniques and procedures (e.g. time out appears in Alan Kazdin's *Parent Management Training* and Russell Barkley's *Defiant Children*). For this reason, evidence-based treatment manuals can be 'distilled' into numerous common practice elements. After this distillation process, the practice elements can be 'matched' by choosing the practice elements that have empirical support for individuals with certain characteristics and particular problem areas. Since it can be challenging for clinicians to determine the appropriateness of one focal treatment manual over another (Kazdin, Bass, Ayers, & Rodgers, 1990), a modular approach derived from identifying common practice elements may be helpful in clinical care settings, as it represents a parsimonious packaging of multiple evidence-based practices, eliminating the need to decipher which manual to select out of the scores of those that might be relevant.

An example of a modular intervention targeting multiple disorders and problems is the *Modular Approach to Therapy for Children with Anxiety, Depression, Trauma, or Conduct Problems* (MATCH; Chorpita & Weisz, 2009). This intervention, designed for 6- to 15-year-olds, is basically a menu of practice elements from evidence-based treatments for especially common youth mental health problems. The menu includes brief modules (3–4 page descriptions) encompassing 33 practice elements (for a visual depiction of MATCH modules, see Figure 1), and flowcharts to guide clinical decision making and help therapists individualize treatment using a logical sequence. The MATCH manual includes treatment components that frequently appear in CBT for depression (e.g. behavioral activation); CBT for anxiety (e.g. graduated exposure); CBT for trauma (e.g. trauma narrative); and behavioral parent training for conduct problems (e.g. reward system). Each module may be covered in one therapy session or in several sessions, highlighting the flexibility of this approach. In addition, there is not a fixed number of sessions for therapy delivered using this manual, as length of treatment varies depending on a youth's specific

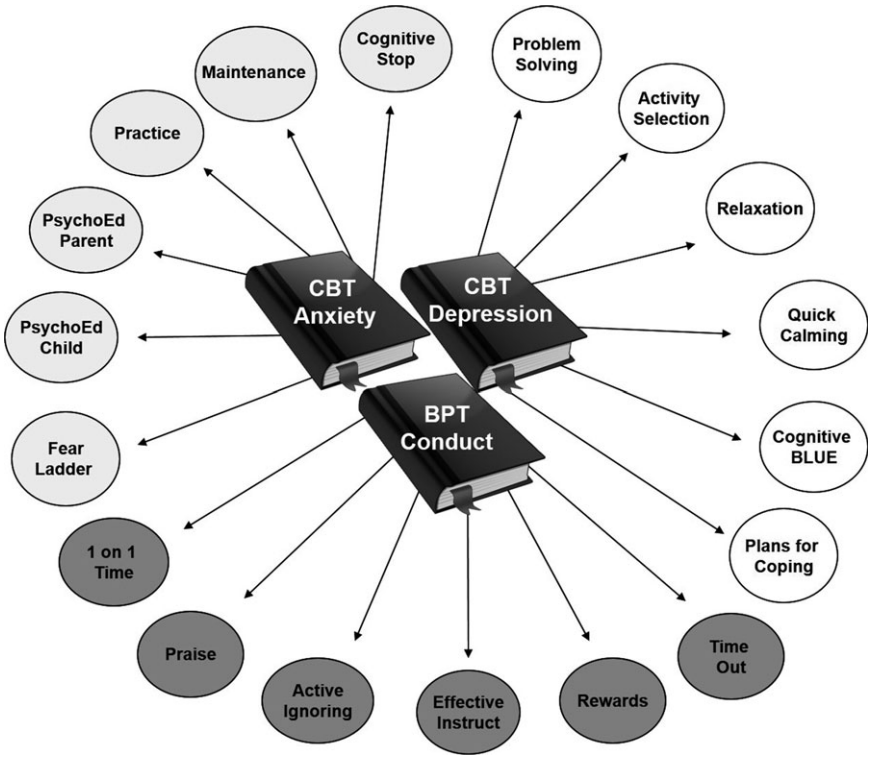

Figure 1 Selected modules illustrating the structure of *Modular Approach to Therapy for Children with Anxiety, Depression, Trauma, or Conduct Problems* (Chorpita & Weisz, 2009). Abbreviations: CBT, cognitive-behavioral therapy; BPT, behavioral parent training. BLUE is an acronym representing four different patterns of depressogenic thinking: B, blaming myself; L, looking for bad news; U, unhappy guessing; and E, expecting bad things to happen. Figure adapted with permission from John R. Weisz and reprinted with permission from the *Annual Review of Clinical Psychology, Volume 11* © 2015 by Annual Reviews, http://www.annualreviews.org

problem areas and response to treatment. To aid in clinical decision making (i.e. navigating among the modules), a flowchart is included for each of the target problem areas. The flowcharts provide a default sequence for each of the areas along with guidance on how to address interference (e.g. flux in problems that makes it difficult to proceed with therapy as planned) which may require a detour from the default sequence.

Another example of a modular approach to psychotherapy is Behavioral Interventions for Anxiety in Children with Autism (BIACA; Wood, Drahota, Sze, Har et al., 2009). BIACA is an individualized CBT manual for youths between the ages of 7 and 11 with autism and co-morbid anxiety; it includes significant caregiver involvement and training. Designed for the treatment of symptoms of generalized anxiety disorder, separation anxiety disorder, social anxiety disorder, and obsessive compulsive disorder for youths on the autism spectrum, BIACA uses a modular format and includes an algorithm to guide the selection of modules (Sze & Wood, 2007). The modules cover content including in vivo exposure, coping skills acquisition, suppression of restricted interests and repetitive behaviors, and social skills and daily living skills training (Sze & Wood, 2007; Wood, Drahota, Sze, Har et al., 2009).

Research on the effectiveness of modular psychotherapy for youths has begun to emerge. For instance, in an initial randomized effectiveness trial in community mental health and school settings, MATCH outperformed focal treatment manuals (i.e. for anxiety, depression, and disruptive conduct) and usual care on clinical and functional outcomes, when tested with diverse children and adolescents (Weisz et al., 2012), and the superiority of MATCH over usual care was found to be sustained in a two-year follow-up (Chorpita et al., 2013). In a more recent trial (Chorpita et al., 2017), MATCH again outperformed usual care on clinical outcomes as well as on functional outcomes, reduced treatment duration, reduced use of other mental health services, and reduced rates of starting or increasing psychotropic medication. Research on MATCH is being conducted in a variety of mental health settings (e.g. community mental health clinics, schools) and different locations in the United States and internationally (Lucassen et al., 2015). In addition, BIACA has outperformed waitlist and usual care conditions on measures of anxiety, social communication, and daily living skills, in numerous RCTs (Drahota, Wood, Sze, & Van Dyke, 2011; Fuji et al., 2013; Storch et al., 2013; Wood, Drahota, Sze, Har et al., 2009; Wood, Drahota, Sze, Van Dyke et al., 2009; Wood et al., 2015).

The common elements approach has a number of advantages, but as with all treatments there are limitations and trade-offs. In MATCH, for example, broad problem coverage has necessitated a rather lengthy and complex manual. The 33 different

modules and multiple flowcharts, meant to guide clinician decision-making, can also pose a learning challenge. Standard clinician training is six full days, and this is complemented by extended once-weekly case consultation from MATCH experts. To the extent that various common elements approaches reach across a broad problem spectrum, there is a risk that the resulting documentation will be complex, and that the time and cost requirements for clinicians may limit scalability.

Transdiagnostic intervention: III. Principle-guided approaches

The core dysfunction approach to transdiagnostic youth psychotherapy appears to have strong potential; a possible limitation is that this approach, to date, has not involved the most flexible forms of modularity, in which each of the treatment procedures is optional and the order of the procedures selected may be quite different from one youth to the next. The common elements approach also appears to have strong potential, enhanced by a modularity that offers relatively more flexibility regarding which treatment procedures will be included, and in which order; one possible limitation is that this approach, to date, has required clinicians to learn and navigate among rather large numbers of specific treatment procedures, exacting significant cost in clinician training and consultation time and potentially limiting scalability. This brings us to a third approach to transdiagnostic treatment design, one that focuses not so much on therapy procedures as on *principles of therapeutic change* that are thought to underlie those procedures. This third approach is structured to offer a high level of flexibility in treatment content and sequencing, paired with relatively modest time requirements for clinician learning and skill-building, and thus potentially enhanced scalability. Because this third approach emphasizes concepts more than techniques, we refer to it as the principle-guided approach.

Principle-guided intervention involves a shift away from detailed descriptions of treatment procedures, and toward a focus on a limited number of broad principles of therapeutic change that are thought to *underlie* effective treatment procedures for multiple disorders and problems. This approach emphasizes broadly applicable therapeutic concepts with fewer detailed instructions than other transdiagnostic approaches and protocols. This may give it the potential to improve training efficiency and implementability by therapists. The approach relies on research literature reviews to identify well-studied therapeutic principles that (a) are central to empirically supported treatments, (b) can be applied to multiple disorders and problems, and (c) have been associated with significant treatment benefit even when used alone.

The principle-guided approach was introduced recently with the development and initial testing of a youth treatment protocol called FIRST (Weisz & Bearman, 2016; Weisz, Bearman, Santucci, & Jensen-Doss, 2017). The FIRST protocol involves five therapeutic principles derived from decades of research on behavioral and cognitive-behavioral intervention. Each of the behavioral and cognitive-behavioral principles has the potential to be used in treating youth anxiety, depression, and conduct problems (see Figure 2). The initial draft protocol was reviewed by a team of youth clinicians from community clinics and by five prominent psychotherapy researchers, and then modified based on their feedback. The resulting protocol includes text and decision trees to guide clinicians in designing a personalized treatment for each youth they treat, with the treatment drawing from five core principles of therapeutic change (see Weisz, Bearman et al., 2017):

- **F**eeling Calm: Calming oneself by regulating tension and distressing emotions associated with anxiety, depression, or disruptive or aggressive conduct. This may be accomplished via a variety of self-calming and relaxation strategies ranging from quick-calming techniques to progressive muscle relaxation.
- **I**ncreasing Motivation: Strengthening the will to change. This may be accomplished via methods such as differential attention, praise, and tangible rewards from caregivers, and guided discussion (e.g. motivational interviewing) about the pros and cons of current versus altered behavior.
- **R**epairing Thoughts: Finding new and more adaptive perspectives on events and conditions that will make them less distressing, anxiety-provoking, or anger arousing. This may be accomplished via

Figure 2 Five principles comprising the transdiagnostic treatment, FIRST [Colour figure can be viewed at wileyonlinelibrary.com]

methods such as combining thought diaries with Socratic questioning to identify and restructure maladaptive cognitions.
- **S**olving Problems: Treating unwanted events and conditions as opportunities to change objective circumstances. This may be accomplished via methods such as the application of systematic problem-solving steps leading to solution options that are tested in vivo.
- **T**rying the opposite: Changing one's behavior by practicing its logical opposite. This can be accomplished via methods such as graduated exposure for anxiety, behavioral activation for depression, and role-playing adaptive responses to interpersonal situations that often trigger conflict and aggression.

FIRST was recently tested in an open benchmarking trial with children and adolescents who had been referred through normal pathways to receive community mental health clinic treatment (Weisz, Bearman et al., 2017). Treatment in the study was provided in the clinic setting by practicing clinicians employed there, who had been trained to use FIRST. The study examined (a) feasibility for use in everyday clinical practice (using measures of therapy process, client engagement, and therapist adherence and competence in using the protocol), (b) acceptability (using measures of therapeutic alliance and treatment satisfaction by youths, caregivers, and therapists), and (c) potential for clinical benefit (using multiple symptom and problem severity measures at multiple time points). Outcomes were favorable on all three of those dimensions (Weisz & Bearman, 2016). The results, on measures of trajectories of change during treatment and outcomes at posttreatment, were benchmarked against findings achieved with MATCH in prior trials. In most cases the FIRST findings matched or slightly exceeded the benchmark findings, even though the MATCH benchmark findings had been derived from a much more comprehensive protocol with detailed descriptions of many psychotherapy procedures. These results were encouraging, as were findings on feasibility of FIRST for use in clinic settings and acceptability of FIRST to youths, caregivers, and clinicians, all setting the stage for a full RCT, which will be an important next step.

As with the other two broad approaches to transdiagnostic treatment, the principle-guided approach may have limitations. For example, one trade-off reflected in the approach is that the advantages of a relatively brief conceptually oriented protocol are accompanied by the potential disadvantage that clinicians are given less detailed guidance on exactly what procedures to follow in their therapy sessions. This state of affairs did not appear to make clinicians using FIRST, in our benchmarking trial (Weisz, Bearman et al., 2017), markedly less effective than clinicians who had used MATCH in previous research; but it will be important to be alert to this potential downside of the principle-guided approach in future trials.

Implementing transdiagnostic treatments in clinical practice settings

In this section we will share impressions we have gleaned from training and supervising clinicians who deliver psychological services in the United States and abroad in the use of transdiagnostic treatment. The treatment approach we taught and supervised was MATCH, described previously, and the contexts have included community mental health and school-based mental health services.

Addressing training burden

Length of training for transdiagnostic approaches can vary, but typically represents a significant addition to clinicians' many competing demands. For example, MATCH training usually requires 5–6 days. To increase attendance at trainings, clinic administrators have found it helpful to provide (a) a compensatory reduction in clinician productivity requirements, (b) productivity credit equivalent to hours of the training, (c) continuing education credits for participation, or (d) financial reimbursement for clinicians' time. Leadership within an organization plays an integral role in creating an organizational social context that is conducive to the adoption and implementation of innovative practices (Aarons, Hurlburt, & Horwitz, 2011; Glisson et al., 2008), and this includes whether clinicians have adequate support within their organization to invest time and energy in training.

Breaking up training

Given the significant learning demands posed by a transdiagnostic treatment, we have found it helpful to organize trainings into separate units. Often, for example, we have organized MATCH trainings into three two-day blocks – depression-related modules, anxiety/trauma-related modules, and conduct-related modules – with gaps of a month or so in between, to ensure that clinicians can absorb and assimilate all the new material, and arrange their schedules to minimize loss of client contact. Intervention developers and their teams may vary in their understanding of the challenges of implementation across different service delivery systems, organizations, and clinicians (Aarons et al., 2011). Through close collaboration among intervention developers, organizational leadership, and key personnel, challenges of implementation, such as potential loss of client contact, may be proactively addressed.

Mix of learning methods

Training in transdiagnostic methods can profit from a variety of adult learning methods, such as didactic presentations, modeling of therapeutic strategies both live and through observation of recordings of therapists using the strategies with clients, and role playing of therapeutic strategies, with feedback from trainers to help clinicians refine their skills. In a review of therapist trainings in evidence-based practice, Beidas and Kendall (2010) highlighted the importance of the quality (i.e. content and method) of training and emphasized that including active learning (e.g. behavioral role plays to provide practice opportunities and promote interaction among attendees) can enhance therapist behavior change (e.g. adherence and skill). A multi-method approach to teaching appears to facilitate acquisition of clinical skills presented in the training. In addition, by combining more traditional pedagogic practices with learning activities that are intended to be interactive and engaging, this training approach may reflect the way a transdiagnostic treatment, such as MATCH, is intended to be implemented with youths. In other words, like MATCH training, MATCH treatment is intended to involve building therapeutic skills through both talk and action.

Accommodating different clinician backgrounds

Training in transdiagnostic approaches may be provided to professionals from a range of mental health disciplines and across a range of seniority levels, including psychologists, psychiatrists, social workers, school counselors, nurses, occupational therapists, and interns and trainees from all these disciplines. Strategies are needed to address the wide differences in training and experience across such diverse groups. Observing training attendee role plays is one example of such a strategy.

Addressing misconceptions

Clinicians' attitudes toward transdiagnostic approaches may be an important factor influencing willingness to learn and use these approaches, as has been emphasized in the context of implementation of evidence-based practices (Nelson, Steele, & Mize, 2006). A potential barrier to dissemination of manual-guided transdiagnostic approaches is the perception that treatment manuals are overly rigid and may not fit the needs and preferences of clients (e.g. Addis & Krasnow, 2000). To ward off possible misconceptions about transdiagnostic treatment, it is helpful to begin training with some key points; (a) transdiagnostic approaches are meant to expand the repertoire of clinicians' skills, not replace their pre-existing knowledge, skillset, or expertise; (b) clinicians are encouraged to make these approaches their own by employing their personal style, strengths, and creativity, which can bring these manuals to life; and (c) transdiagnostic approaches are dynamic and flexible, but are not a free-for-all. Case conceptualizations, ongoing assessment of a youth's needs, and the clinical decision making tools set forth in a transdiagnostic manual can guide development of culturally sensitive, individually tailored treatment plans.

Supervision/consultation

In our experience, training programs for clinicians need to be complemented by regular (e.g. weekly) supervision/consultation meetings (real or electronic) for feedback on cases in which the clinicians are implementing transdiagnostic treatment. Supervision/case consultation following training in evidence-based practice has been described as integral to clinicians' skillful delivery of treatment (Beidas & Kendall, 2010). Structuring supervision (e.g. through use of an agenda) helps to ensure adequate time to review the previous session for each case, prepare for the upcoming session, and practice selected components of each upcoming session. As with the training approach described earlier, such supervision can mirror how a clinician will structure a transdiagnostic treatment session with a client; we encourage clinicians to set an agenda, review it with the client, inquire about additions or revisions to the plan, and then track time during the session to ensure coverage of all or most session content.

Blending adherence and flexibility

Flexibility within fidelity has been proposed as the preferred approach to moving youth empirically supported treatments from research to practice settings (Kendall & Beidas, 2007). An important goal for supervision – particularly in transdiagnostic approaches that do not involve a fixed sequence of session content – is to help clinicians use manual content in a flexible, personalized, and adherent fashion. This requires building an understanding of the purpose and goals of each of the treatment components along with skill in organizing an individually tailored sequence of treatment components guided by an evolving case conceptualization and the decision-making guides set forth in a transdiagnostic manual. In MATCH, for example, decision support is provided by a series of flowcharts in the manual, used in conjunction with the clinician's conceptualization, which is informed through weekly feedback on youth treatment response.

Handling crises

The broad span of problems that may be encompassed within transdiagnostic treatment may increase the range of crises that can arise, and

complicate the challenge of responding appropriately. This can be difficult for clinicians who enter a session with a set plan, created in conjunction with a supervisor. We have witnessed clinicians whose plan is completely derailed by a family crisis, and the opposite, in which clinicians cling to their plan without acknowledging or discussing what the client may see as events of utmost importance. Our approach to supervision has been to help clinicians learn to use crises strategically by first empathically listening to what happened and providing support and validation, and then using crises as opportunities to help clients apply a relevant therapeutic skill in vivo. When using MATCH, for example, clinicians are coached in supervision to either review and help the client apply a previously learned skill, or teach a relevant new skill, that can be applied to the crisis, using the opportunity to illustrate the real-life value of the skill.

Modeling by supervisors

Modeling by supervisors and role playing by clinicians (e.g. about how to introduce skills to youths and caregivers and how to address barriers that clinicians anticipate may occur in session) can be useful in implementation of many evidence-based practices (Bearman et al., 2013). However, modeling may be especially valuable in transdiagnostic treatment, which often lacks a standardized road map for session contents and sequencing. Our experience has been that clinicians are sometimes reluctant to engage in role plays for a variety of reasons (e.g. hesitation about feeling vulnerable about practicing new techniques in front of an expert and one's colleagues and associated fear of embarrassment, not believing role playing contributes to acquisition and effective use of therapeutic skills). Therefore, when introducing role playing to supervisees it seems helpful to normalize the discomfort of practicing newly learned skills in front of others, create an open dialogue about this topic, and explain the rationale for incorporating role playing into supervision.

Using brief, psychometrically sound assessment to inform judgments during treatment

Some forms of transdiagnostic treatment – particularly those based on common elements and principle-guided approaches – require decision-making throughout treatment regarding which procedures to use, and in which order, and ultimately when to end treatment. Those decisions are best informed by data from frequently administered empirically supported youth and caregiver assessments (e.g. Achenbach, 2017; Weisz et al., 2012). Our experience has been that most youths and caregivers will only persevere if the assessments are quite brief. We have developed very brief measures of internalizing and externalizing problems (Chorpita et al., 2010) and of the 'top problems' for which youths and caregivers most want help in treatment (Weisz et al., 2011) – both intended for use weekly, to guide clinician decision-making throughout episodes of care. The measures combine the virtues of brevity and psychometric soundness. Other options can be found elsewhere, including a list of free assessment tools provided by the Center for School Mental Health (2015).

Considering culture

As we have worked with partners in other countries who hope to implement transdiagnostic approaches, we have faced questions about cultural adaptation. As one example, our training of therapists to teach caregivers to use enthusiastic praise for their children's behavioral gains conflicted, in one particular aboriginal culture, with a tradition that encouraged modesty and discouraged the use of praise. So, we shifted to an emphasis on asking caregivers to identify and use their own preferred ways of showing approval and appreciation of their children. Shifting to a transdiagnostic approach to treatment does not reduce the importance of cultural sensitivity in treatment design. It is important to continue refining treatment tailoring in ways that are sensitive to family and cultural factors (e.g. see Bernal, Jiménez-Chafey, & Rodríguez, 2009).

Future directions for research and practice

To continue developing, testing, and refining transdiagnostic approaches, research designs that blend clinical relevance and methodological rigor will be needed. We have followed a service-oriented translational research framework, known as the *deployment-focused model of intervention development and testing* (Weisz, 2004; Weisz & Gray, 2008). Within this model, to maximize the relevance of research to everyday clinical practice, interventions are developed and tested, from an early stage, with the types of therapists and clients and in the types of settings for which the interventions are eventually intended (Weisz, 2004; Weisz & Gray, 2008). This contrasts somewhat with more traditional models that emphasize high levels of internal validity but may have more limited external validity. The deployment-focused model has three primary objectives: (a) to produce treatments that are well-suited to clinical practice with actual clinic-referred individuals who receive treatment in typical clinical settings delivered by practitioners; (b) to produce evidence bearing on how well treatments work in everyday practice settings; and (c) to produce externally valid evidence on treatment components, moderators, and mediators associated with treatment effects (Weisz, 2004). All three objectives seem appropriate for future research on transdiagnostic intervention.

Among the specific research questions that need attention are several at the interface of research and practice. Some of the most pressing of these can be located at three stages of the treatment process when transdiagnostic approaches are being used.

Initial treatment stage – How to determine what the initial treatment target should be?

Given that transdiagnostic intervention may address more than one of a client's problems, a critical initial task is identifying which problem to focus treatment on initially – anxiety, misconduct, or other. As clinicians assemble assessment information prior to the initiation of treatment to determine the appropriate first treatment target, they must decide how to weigh youth and caregiver input in light of their own clinical judgment. This balancing act is complicated by the commonly found discrepancies between youth and caregiver reports (De Los Reyes et al., 2015). When there is no consensus, clinicians must judge whose information is likely to be more valid, using available information, including research on reliability and validity of youth and caregiver reports for particular problem areas and more objective measures of functional impairment in pertinent domains (e.g. home, school, and with peers). In our work, we typically identify the most elevated problem area on standardized assessment tools as the starting point. When two or more areas are equally elevated, we present this information to the youth and caregiver and solicit their input about their preferred initial treatment target. However, beginning with the most interfering problem a youth is facing is but one way to select a starting point. Another option might be to first address a smaller problem, have the youth experience success in resolving the problem, and then tackle larger problems. These approaches have intuitive appeal, but empirical evidence is lacking. An important challenge for research will be identifying optimum methods for integrating data from youth, caregiver, and clinician to identify the most appropriate treatment starting point.

Active treatment stage – How to select and navigate through treatment foci and treatment procedures and when to adjust treatment strategy?

At some point during transdiagnostic treatment, the initial problem focus may need to give way to one or more additional foci, but at what point should this transition occur? These decisions are often made clinically, but without the kind of empirical guidance that future research might provide. Transdiagnostic approaches may also present a need to determine which treatment procedures will be included for a particular client, and in what order. Some transdiagnostic approaches include a default sequence that can be followed if the client presents no unusual features or issues; we rarely find this to be the case, so we need to determine which aspects of a youth's problems should be addressed, with which treatment procedures, and in what order. These decisions are informed, in our work, by frequent (typically weekly) brief assessments with youth, caregiver, and clinician input included, but our integration and use of these data relies to a significant degree on clinical judgment. There is a real need for empirical guidance on how to use these data throughout treatment to select the content and sequence the steps in a way that enhances prospects for a good outcome. A question that arises frequently during treatment is how long to persevere in teaching a young client a particular skill and how to determine when to stop and simply move to the next skill. In theory, this decision is based on information about whether the client has understood and mastered a skill (e.g. identifying cognitive distortions). If yes, then it may be time to move to the next skill; but if no, we must decide whether more exposure will yield mastery and symptom reduction or merely frustration. We currently make these judgments using a combination of information on treatment to-date (e.g. how many sessions have already been focused on the skill, whether this has been associated with symptom reduction) and clinical intuition (e.g. whether we think the client is capable of mastering the skill), but this approach has clear limitations. There is a real need for research that can generate more systematic, empirically driven procedures for making such key judgments while treatment is underway.

Active treatment stage – How to measure adherence to transdiagnostic treatments?

Further study on how to measure the extent to which clinicians adhere to transdiagnostic treatment protocols is needed. Adherence in its most basic form involves implementing procedures described in each component of a manual. However, adherence for transdiagnostic approaches may also involve following decision-making principles involving the use of a case conceptualization and ongoing information on client response to proceed through treatment steps in an appropriate manner.

End of treatment stage – How to determine when to end treatment?

In many empirically supported focal treatment manuals, treatment is completed when the session content of a manual has been fully covered. The stopping point for transdiagnostic treatments is often less straightforward because clients are not expected to be presented with the entire content of a transdiagnostic manual, and the co-occurring problems and fluctuations in treatment make it challenging to identify a single marker that can serve as the indicator of success. We currently use

information on therapeutic progress from youth and caregiver reports and clinician feedback to determine whether the treatment gains are significant and sustained for a substantial period of time (i.e. at least several weeks as shown through assessments administered at regular intervals), and the gains that were most needed have been attained. However, we lack empirically informed procedures for determining when therapeutic gains will be lasting versus transitory, and thus when it is appropriate to end treatment.

Conclusion

Transdiagnostic approaches, encompassing core dysfunction approaches, common elements approaches, and principle-guided approaches, may be a useful extension of the emphasis on best practices for youths and their families (Chu & Ehrenreich-May, 2013). The rather limited uptake of empirically supported focal treatment manuals suggests that it may be beneficial to generate new strategies for treatment in clinical care settings. Transdiagnostic strategies may help overcome some of the barriers to dissemination of evidence-based focal treatments. Efforts are now underway to advance research and practice using transdiagnostic approaches, but, important research questions remain. One of these is whether transdiagnostic approaches lose something important in reducing the depth of instruction and level of detail so often provided in focal, disorder-specific protocols – and if so, what can be done to address that loss. To the extent that transdiagnostic treatment continues to be emphasized in our field, a great deal of research will be needed to inform the myriad clinical judgments that are required at the beginning, middle, and end of transdiagnostic treatment.

Clinical commentary

Over the past five decades some of our best minds have focused on finding ways to improve youth mental health care. The development of focal treatment manuals has represented a major advance in practice and research, providing the structure and documentation needed for rigorous research and a clarity that could undergird dissemination and implementation of evidence-based practices. Yet, these carefully constructed manuals with empirical support have generally not made their way into most everyday clinical settings, and they may suffer some loss of effectiveness when applied in those settings. This may be due in part to an imperfect fit between these manuals and some of the realities of clinical practice. As a step toward improving the fit, some have begun to develop treatment protocols that can address multiple youth problems and disorders. These transdiagnostic treatment approaches – including core dysfunction approaches, common elements approaches, and principle-guided approaches – may hold promise as a way to improve the fit to practice conditions, and empirical support has been encouraging, to date. Many steps of development remain, and numerous questions will require research attention, before the promise of transdiagnostic treatment can be fully evaluated. However, the approach represents a sea change in the structure and reach of youth psychotherapy, and clearly warrants clinical and research attention in the days ahead.

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Correspondence

Lauren Krumholz Marchette, Department of Psychiatry, Cambridge Health Alliance, Harvard Medical School, 1493 Cambridge Street, Cambridge, MA 02139, USA; Email: lmarchette@challiance.org

Key practitioner message

- The original, most prominent form of empirically supported manualized treatment – that is, focal treatments – tended to employ linear design (a series of sessions often in a relatively fixed order) and precise targeting (a focus on a single disorder or homogenous problem cluster).
- While these focal treatments have numerous advantages, and many have contributed valuably to our field, most have not been widely adopted and applied in everyday clinical care contexts; this may be due in part to a less-than-perfect match between the manuals and the realities of everyday mental health care.
- Transdiagnostic manualized treatment approaches, which house treatment strategies for co-morbid disorders and co-occurring problems, have been developed to address some of the barriers to implementation of empirically supported focal treatments in practice contexts.

- Three main streams of transdiagnostic treatment development include: (a) *core dysfunction approaches* (addressing multiple forms of psychopathology by targeting underlying forms of dysfunction, or psychopathic processes, that they appear to have in common), (b) *common elements approaches* (addressing multiple forms of psychopathology by bringing together therapeutic procedures commonly used for each), and (c) *principle-guided approaches* (addressing multiple forms of psychopathology by combining therapeutic principles that can be applied to each).

Areas for future research

- Additional methodologically sound, practice-oriented research is needed on currently existing transdiagnostic protocols to further evaluate and refine these protocols, with recognition that adaptations may be needed to fit with different clinical populations and sociocultural groups.
- To maximize the relevance of research for real-world clinical settings and to more quickly produce practice-ready transdiagnostic treatments, the deployment-focused model of treatment development and testing may be ideal. Within this model, interventions are developed and tested, from an early stage, with the types of therapists and clients and in the types of settings for which interventions are ultimately intended.
- It would be beneficial for future research to address questions relevant to the beginning, middle, and end of transdiagnostic treatment. Examples include research on how to select an initial problem focus, how to identify and order subsequent problem foci, how to select and sequence specific treatment techniques for each problem focus, when to shift from a current treatment strategy to another, and how to determine when treatment should end.

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