CHAPTER 33

The Present and Future of Evidence-Based Psychotherapies for Children and Adolescents

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This book is about leveraging science to make life better for children and adolescents, and the adults who care for them. Efforts to help young people overcome emotional and behavioral difficulties are almost certainly as old as parenthood, but *professional* help is a much more recent development. Early in the 20th century, a collection of formal professional strategies took shape that has come to be called *psychotherapy*. We traced some of the historical evolution—ancient to recent—in Chapter 1, and we noted the many decades required for psychotherapy with young people to become a subject of scientific study. Today, however, it is increasingly common to use scientific methods to evaluate and improve therapies. Indeed, the term "evidence-based" is considered by many to be a badge of honor for therapies. The chapters in this volume give substance to that term, as it applies to interventions for young people.

THE PRESENT STATUS OF EVIDENCE-BASED PSYCHOTHERAPIES FOR CHILDREN AND ADOLESCENTS

The study of evidence-based psychotherapies for children and adolescents is now a fast-moving target, and the pace of research is ballistic—indexed by development of new treatment approaches and acceleration of published evidence. This is reflected in diverse ways in this volume, including the expanded scope and breadth of chapter coverage relative to our first and second editions (Kazdin & Weisz, 2003; Weisz & Kazdin, 2010). With recent developments in the academic disciplines that touch

on mental health—for example, the neuroscience revolution and the explosion of technology—corresponding changes can be seen in mental health interventions. Our chapters track some of the most exciting of these changes. Taken together, the chapters reflect an impressive blend of intelligence, creativity, and sheer hard work by talented clinical scientists pursuing treatments that work. In this volume, these scientists have summarized their work on a variety of specific intervention programs, highlighted critical ethical and legal issues, spelled out the need for a solid developmental foundation, probed what is known about ethnic and cultural variations in relation to treatment outcome, presented strategies for personalizing evidence-based therapy, addressed the potential of technology to spread effective interventions, explained how clinical neuroscience can enrich intervention science, and described successes and challenges in efforts to implement tested interventions across states and entire nations.

Taken together, the chapters paint a vivid picture of the state of the field. The chapters nicely complement what we know about general trends from broad-based reviews and meta-analyses of published trials (e.g., Kazdin, Bass, Ayers, & Rodgers, 1990; Weisz, 2004; Weisz et al., in press). The meta-analyses, now spanning research across 5 decades, have shown rather consistent beneficial effects of the kinds of interventions described in this volume. The effects are relatively durable and robust, not significantly different at immediate posttreatment than at follow-up assessments averaging 11 months later, and not significantly different across racial/ethnic groups (Weisz et al., in press). But meta-analyses have also revealed nuances that can inform future developments. For example, intervention effects are especially strong for anxiety- and conduct-related problems, but markedly weaker for youth depression and attention-deficit/hyperactivity disorder (ADHD)-related difficulties (Weisz et al., in press), highlighting a need for further treatment development and testing in these challenging domains. The chapters in this book take us beyond such generalizations, describing specific treatments that produce the effects, summarizing the evidence, noting strengths and limitations, and highlighting new frontiers into which the research is now pushing.

FUTURE DIRECTIONS

The chapters convey some of the specific challenges that need to be confronted in the next era of research. Some of these reflect findings that reveal limitations in current treatments; others reflect questions generated by new directions in clinical science, psychology, psychiatry, and neuroscience. We discuss these challenges in the following sections and summarize them in Table 33.1.

Coverage of Conditions and Types of Dysfunction

The accounts presented in these chapters tell us a good deal about the breadth of coverage of youth problems and dysfunction in current treatment research. Tested treatments have now been developed to address multiple internalizing conditions within the anxiety and obsessive–compulsive cluster (in this volume, see Franklin, Morris, Freeman, & March, Chapter 3; and Kendall, Crawford, Kagan, Furr, &

TABLE 33.1. Challenges for the Future in Evidence-Based Psychotherapy

1. Expand coverage to forms of dysfunction that lack evidence-based psychotherapies, and address boundary conditions (e.g., age constraints) that limit the range of therapies.
2. Build evidence-based psychotherapies that are more fully informed by developmental science.
3. Broaden the array of theoretical models tested, encompassing more of the treatment models widely used in practice.
4. Build an array of treatment packaging and delivery models to address the challenges of comorbidity, heterogeneity within conditions, and shifting needs during episodes of care.
5. Extend scope, duration, and density of outcome assessment to increase the information value of findings across informants and to permit fair comparisons to usual care.
6. Build and strengthen research on how therapist behavior and the therapeutic relationship relate to youth and family treatment engagement, completion, and outcome.
7. Delineate the effective range of evidence-based psychotherapies in regard to youth and family clinical and demographic characteristics.
8. Use dismantling, microtrials, and related designs to identify necessary and sufficient conditions for treatment benefit.
9. Use multiple strategies (mediation analysis and much more) to identify mechanisms of change that explain why evidence-based psychotherapies work.
10. Leverage the methods and findings of neuroscience to strengthen therapy research and ultimately make therapies better targeted, more efficient, and more effective.
11. Develop and test evidence-based psychotherapies under clinical practice conditions to foster robust treatment design and garner evidence on effectiveness in clinical care.
12. Build and test strategies for adapting treatments to new contexts, making them robust across institutional, linguistic, regional, and cultural boundaries.

Podell, Chapter 2), including posttraumatic stress disorder (PTSD) following maltreatment and other forms of trauma (Cohen, Mannarino, & Deblinger, Chapter 15, this volume); depressive disorders (in this volume, see Jacobson, Mufson, & Young, Chapter 5; Rohde, Chapter 4); multiple externalizing conditions ranging from chronic disobedience and aggression to disruptive behavior disorders and criminal behavior (in this volume, see Buchanan, Chamberlain, & Smith, Chapter 11; Forgatch & Gewirtz, Chapter 6; Henggeler & Schaeffer, Chapter 12; Kazdin, Chapter 9; Powell, Lochman, Boxmeyer, Barry, & Pardini, Chapter 10; Sanders & Turner, Chapter 25; Webster-Stratton & Reid, Chapter 8; and Zisser-Nathenson, Herschell, & Eyberg, Chapter 7) and ADHD (Pelham, Gnagy, Greiner, Fabiano, Waschbusch, & Coles, Chapter 13, this volume); autism and related disorders along the spectrum (in this volume, see Davlantis, Dawson, & Rogers, Chapter 16; and Koegel, Koegel, Vernon & Brookman-Frazee, Chapter 17); habit problems such as enuresis and encopresis (Mellon & Houts, Chapter 19, this volume); eating disorders (LeGrange & Robin, Chapter 18, this volume); substance abuse (Waldron, Brody, & Hops, Chapter 20, this volume); and suicidal and nonsuicidal self-injury (Spirito, Esposito-Smythers, & Wolff, Chapter 14, this volume) . Indeed, the problems and disorders for which evidence-based psychotherapies now exist encompass most of the concerns that bring children and adolescents into clinical care.

That said, many mental health problems and disorders of childhood and adolescence lack strong evidence-based psychotherapies, and some of our field's

success stories carry caveats and boundary conditions. As examples, psychosocial treatment success with ADHD has been largely limited to preadolescents, some of the most beneficial parent training programs for conduct problems and disorder may not travel so well up the developmental ramp into adolescence, and cognitive-behavioral therapy (CBT) for depression may not often outperform usual care that includes antidepressant medication. More broadly, youth psychotherapies that appear quite successful in efficacy trials may show markedly diminished effects when tested in more clinically representative conditions and compared to usual clinical care (Weisz, Jensen-Doss, & Hawley, 2006, Weisz, Kuppens, et al., 2013). So, while evidence-based psychotherapies exist for many conditions that propel youths into treatment, there are treatment orphans, and some successful treatments carry caveats that pose empirical challenges for the future.

Connection between Intervention Science and Developmental Science

One strategy for broadening the array of treatments and the developmental range within which treatments have impact might be to draw more heavily from developmental science. As Cicchetti and Toth (Chapter 28, this volume) emphasize, the principles and findings of developmental psychology, and developmental psychopathology, provide a strong conceptual scaffolding for treatment development and design. Research on cognitive, social, personality, and neuropsychological development, and child–caregiver interactions from infancy through adolescence, have the potential to undergird and inform the creation of treatments for a broad range of dysfunction. Despite what seem to be excellent prospects for developmentally informed intervention, developmental science and clinical science have not been closely linked, and few treatments appear to have been prompted or much informed by developmental theory or findings.

Instead, treatments for juvenile internalizing conditions appear to be primarily downward extensions of interventions originally developed for adults. Most treatments for juvenile externalizing conditions and habit-related problems (e.g., enuresis and substance abuse) appear to have drawn most heavily from behavioral theory and research, and to some extent cognitive and family systems theory, not developmental science. One could argue that this is not a problem. After all, evidence indicates that the treatments described in this volume generate positive effects, on average. However, the evidence also shows that a substantial percentage of youngsters receiving these treatments apparently do not benefit.

A key question for our field is whether youth treatment fit and benefit might be enhanced if interventions were built on a more substantial understanding of the characteristics and capacities of children at different developmental periods and the developmental trajectories that create opportunities for change. As one of many examples, it is possible that the CBT technique of having children identify and critique their own cognitions (e.g., cognitions associated with depression, with anxiety, or with interpersonal aggression) might work well for youngsters who have achieved the developmental capacity to observe and reflect on their own thinking but not so well in youngsters who have not. In this and other respects there appear to be multiple logically appealing connections between developmental and clinical science. To date, unfortunately, those seemingly logical connections have

not been investigated and exploited very fully in ways that dramatically alter the nature or use of interventions. The developmental perspective advanced by Cicchetti and Toth (Chapter 28, this volume; see also Cicchetti & Natsuaki, 2014) may help change this state of affairs.

Coverage of Theoretical Perspectives on Youth Treatment

The evidence-based psychotherapies encompass several of the influential theoretical perspectives that have guided youth treatment historically, but certainly not all the relevant theories. Behavioral (operant, classical, and modeling) approaches are common among the tested treatments, as are cognitive-behavioral applications; and family systems perspectives are evident in some treatments (e.g., Le Grange & Robin, Chapter 18, this volume). But numerous other schools of therapy (e.g., psychodynamic, client-centered, humanistic) are largely missing from the roster. A similar pattern is evident in meta-analyses of published treatment outcome research (e.g., Kazdin et al., 1990; Weisz, Weiss, Han, Granger, & Morton, 1995; Weisz et al., in press), with the great majority of the studies in those meta-analyses testing behavioral and cognitive-behavioral treatments.

A problem with this state of affairs is that many of the nonbehavioral treatment models that are common in everyday clinical practice are rarely found in the child and adolescent research literature (see, e.g., Kazdin et al., 1990; Weisz et al., in press). We have a strong and rapidly expanding evidence base on treatments that are not so widely used in practice, and we have a weak and barely growing evidence base on the approaches that are especially common in practice, some of which might prove to be effective if properly tested (Kazdin, 2015; Weisz, Kuppens, et al., 2013). Indeed, in a meta-analysis of randomized trials comparing certified evidence-based youth psychotherapies to usual clinical care (Weisz et al., 2013), 29% of the studies showed either negligible differences (effect sizes < 0.10) or superior effects for usual care, suggesting that we may have something to learn from everyday clinical practice. The treatment approaches that service providers use and trust clearly warrant more attention in clinical trials than they have received to date. The disparity between the scope of evidence and the scope of practice is illustrated by Kazdin's (2000) count identifying more than 550 named therapies that are used with children and adolescents, only a tiny percentage of which have been subjected to any empirical test. The field could profit from research that broadens the array of empirically tested treatment models. Researchers willing to take on this challenge will find no shortage of candidate models.

Intervention Packaging and Delivery Models and Strategies

The intervention programs described in this volume convey a broad and ever-broadening array of models for providing treatment content to the youth and family. To be sure, the most common model follows the tradition of weekly office visits with a therapist. However, Kazdin and Blase (2011) have argued that this traditional model is not likely to meet the massive need of the population for effective mental health care, and that a variety of delivery models will be needed. Several of our chapters illustrate steps in this direction, including:

- Embedding core principles and skill illustrations within videotaped vignettes for parents (in this volume, Sanders & Turner, Chapter 25; Webster-Stratton & Reid, Chapter 8).
- Using therapists as coaches, guiding parents as they interact with their children in real time (in this volume, Kazdin, Chapter 9; Zisser-Nathenson et al., Chapter 7).
- Treating enuresis using home-based behavioral training with a urine alarm, and encopresis with an innovative game board protocol (Mellon & Houts, Chapter 19, this volume).
- Building ADHD intervention into summer day camp programming (e.g., Pelham et al., Chapter 13, this volume).
- Adapting a depression coping skills intervention to the needs of incarcerated youths and youths with substance use disorders (Rohde, Chapter 4, this volume).
- Therapy in motion, using a peripatetic-therapist-in-the-youth's-environment model (Henggeler & Schaeffer, Chapter 12, this volume).
- Guiding child welfare program youths by teaching behavioral skills to foster care providers (Buchanan, Chamberlain, & Smith, Chapter 11, this volume).
- Teaching parents and others in the child's environment to use pivotal response training (Koegel et al., Chapter 17, this volume) building on what children on the autism spectrum find naturally reinforcing.
- Using a naturalistic developmental approach to address early autism and autism risk, and tracking changes in the brain that are associated with this treatment (Davlantis et al., Chapter 16,, this volume).
- Teaching behavioral skills to parents via highly readable books with DVD guidance included (e.g., Pincus, 2012; Kazdin, Chapter 9, this volume; Kazdin & Rotella, 2008), and via parent-friendly articles on specific ways to help children change their behavior (see, e.g., *www.slate.com/authors.alan_kazdin.html*).
- Accelerating population outreach by delivering training and intervention through the Internet and related technology (in this volume, Cuijpers, Ebert, Reijnders, & Stikkelbroek, Chapter 32; Kendall et al., Chapter 2; Merry, Stasiak, Dunnachie, Anstiss, Lucassen, & Cargo, Chapter 23).
- Using individualized metrics, frequent monitoring of treatment response, customized and customizable treatments, and other approaches to personalize the delivery of otherwise standardized evidence-based treatments (Ng & Weisz, Chapter 29, this volume).

While the current array of treatment packaging and delivery strategies is impressive, it seems clear that continued creativity will be needed to address the massive need in the global youth population, and the variety of ways youth dysfunction presents in relation to treatment (see Kazdin, 2000; Weisz, 2004; Weisz, Krumholz, Santucci, Thomassin, & Ng, 2015). The episodic, recurrent nature of many youth conditions may call for models that encompass regular periodic monitoring of the child's status, or "checkups," with treatment resumed as needed. The likelihood that not all youths diagnosed with the same disorder will manifest all symptoms of that disorder, or need all the same treatment elements, suggests the

potential value of modular treatment strategies that optimize individual tailoring of intervention. As an example, some youths treated for depression do not manifest marked cognitive distortion, and others seem to have strong social skills; for such youths, a treatment program in which cognitive and social skills training are optional modules could make for enhanced efficiency.

As a third illustration of how our treatment delivery models may need to be stretched, we note that most evidence-based psychotherapies are focused on a single condition or homogeneous cluster of them. By contrast, most treated children do not present with only one problem or diagnosis, or even one at a time (Angold, Costello, & Erkanli, 1999; Copeland, Shanahan, Erkanli, Costello, & Angold, 2013; Jensen & Weisz, 2002), and even conditions that may seem quite different superficially, such as depression and conduct disorder, often co-occur. The fact that different problems and diagnoses coincide so regularly suggests that we may need models for blending and combining elements of some rather distinct treatments (see, e.g., Chorpita & Weisz, 2009; Weisz et al., 2012).

Scope, Sources, Duration, and Density of Assessment in Treatment Research

As De Los Reyes, Augenstein, and Aldao (Chapter 31, this volume) have noted, assessment produces "the evidence" in *evidence-based treatment.* The body of work surveyed in this volume illustrates how assessment has expanded in scope, intensity, and rigor in treatment research over the years. In the best research, child dysfunction is now assessed from multiple perspectives, often including youth, parent, and teacher reports, and ideally including direct observation of the treated youth's behavior. Formal diagnostic assessment is often included now, in part to assess the clinical significance of treatment-related change. Increasingly, such measures of problems, symptoms, and diagnoses, are complemented by assessments of real-world functioning—grades and school behavior reports, for example, and arrests, where relevant. Beyond the treated youth, assessments focus increasingly on dispersion of treatment benefit—for example, increases in parents' child management skills, parenting confidence, parental stress and mental health, and even changes in marital satisfaction associated with changes in child behavior.

As the scope of assessment expands, so does the challenge of how to evaluate the input of multiple informants. Youths, parents, and teachers, for example, may all report their perspectives on the same young person's behavior, emotions, and mental health. Most experts agree that there is no "gold standard" in such assessment, and that multiple perspectives add value. However, informants are likely to differ from one another in their opportunities to observe the youth, in their interpretations of what they observe, and therefore in what they report on various assessment instruments. What are we to do with the conflicting reports that can arise given these informant differences? De Los Reyes et al. (Chapter 31, this volume) propose an *operations triad model,* intended to guide the use and interpretation of multi-informant, multimethod clinical assessments. In this model, converging and diverging findings across informants and methods become grist for the researcher's mill, and potentially for the clinician as well. Within this model, differences across informants may reflect a certain amount of measurement error, but they can

also be used to clarify the clinical picture of the individual in various contexts (see De Los Reyes, 2011).

The increasing breadth and intensity of outcome assessment is a positive feature, and the work of De Los Reyes and colleagues can help us capitalize on it. We would add that there is room for expansion in the *duration* of outcome assessment as well. In a recent meta-analyses spanning 5 decades of youth therapy research (Weisz et al., in press), fewer than one-third of the studies included any assessment other than immediate posttreatment; and for that one-third, the mean follow-up lag time was 10–11 months after the end of treatment. So, we know relatively little about the long-term holding power of effects generated by most treatments, and therefore little about whether or when there may be a need for treatment supplements, booster sessions, and the like, to maintain gains.

Measurement density also needs attention in future work. In some areas of treatment research—depression, for example—there is increasing interest in the impact of treatment on the *pace of recovery*. Regardless of whether outcomes at the end of treatment show a target treatment to be superior to a control or to comparison condition, it may be important to know whether the target treatment accelerated relief and symptom reduction. Reducing symptoms and suffering is valuable in its own right, but efficiency is a concern of many who pay the costs of mental health care, and frequent assessment is required to gauge efficiency. Another reason to move toward denser schedules of assessment is the increasing emphasis on comparisons between structured, protocol-guided treatments and usual clinical care (see Weisz et al., 2015). In such comparisons, the duration of usual care cannot be controlled (otherwise, the care is not "usual"); thus, it is not possible to match the protocol-guided treatment and usual care on treatment length or dose. With frequent (e.g., weekly or monthly) routine assessment on outcome measures of interest, slopes of change can be monitored and compared across treatment conditions in ways that do not require artificially limiting the duration of usual care.

Treatment Benefit as a Function of Therapist Behavior and the Therapeutic Relationship

The treatment outcome research literature is particularly strong in describing intervention procedures, but weak in helping therapists build a warm, empathic relationship and a strong working alliance with the children and families who receive the interventions. This gap is striking in light of the widespread belief that quality of the therapeutic relationship or alliance is critical to treatment success. In some research, child and adolescent therapists have rated the therapeutic relationship as more important than the specific techniques used in treatment (Motta & Lynch, 1990), and some treated children may agree. Kendall and Southam-Gerow (1996), for example, found that children treated for anxiety disorders using the Coping Cat program rated their relationship with the therapist as the most important aspect of treatment. We should be cautious here; clients may like their therapist and the relationship, even in the absence of therapeutic change.

Clinical scientists are now building a body of evidence aimed at (1) defining what a positive therapeutic relationship is, (2) establishing how best to measure it, (3) identifying therapist characteristics and behaviors that foster it, and (4) testing

the extent to which such a relationship actually predicts outcome when evidence-based psychotherapies are used. In the treatment of children, both child–therapist and parent–therapist alliances may need to be understood; in fact, the two may show different patterns of association with treatment attendance, engagement, and outcome (see, e.g., Hawley & Weisz, 2005). Progress is now being made in assessing and understanding the roles of child and parent alliances, using youth- and parent-report assessment of therapeutic alliance (e.g., Kazdin, Whitley, & Marciano, 2006), as well as an observational approach based on coding of actual therapy sessions for child and parent alliances with the therapist (McLeod & Weisz, 2005). Kazdin et al. (2006), for example, found that both child–therapist and parent–therapist alliances predicted therapeutic gains in children treated with evidence-based interventions for externalizing problems (and parent–therapist alliance predicted improved parenting practices); McLeod and Weisz (2005), focusing on treatment as usual for internalizing problems, found that the child–therapist alliance predicted therapeutic gains in child anxiety, whereas the parent–therapist alliance predicted therapeutic gains in child anxiety and depression. As these findings illustrate, both questionnaire and observational approaches have identified some significant associations between alliance and treatment outcome. On the other hand, a meta-analysis of 38 studies (McLeod, 2011) found only a modest weighted mean relationship between measures of alliance and youth treatment outcome (r = .14); notably, much of the research does not show that alliance *precedes* symptom change. We need more research assessing alliance and symptoms at multiple points throughout treatment, to clarify whether there is in fact a simple causal path, a bidirectional relation, or some other pattern of association.

More broadly, we need the most sophisticated methods we can muster to learn all we can about whether there are, in fact, patterns of therapist behavior and therapist–youth interaction that predict good treatment outcomes; this can be valuable in usual clinical care (e.g., Hawley & Weisz, 2005; McLeod & Weisz, 2005), and it seems especially timely in relation to structured, protocol-guided treatments (e.g., Kazdin et al., 2006), which may call for a special set of skills. As an example, effective use of such treatments may require agile, multitasking therapists who can maintain attention to a structured treatment plan, remain responsive to what the youths and parents bring to the session, find ways to connect the treatment agenda to the youngster's real life concerns, nurture a warm relationship, and make sessions lively and engaging. Tests of these and other speculations on therapist–process–outcome connections within evidence-based practice are likely to be a valuable component of the research agenda for many years.

Identifying the Effective Range of Treatments

The youth treatment outcome literature is much stronger in demonstrating benefit than in identifying the boundary conditions that constrain benefit. For each treatment, we need to know as much as possible about the range of youth and family clinical and demographic characteristics within which the treatments are helpful and outside of which effects diminish. Even the best-supported treatments are beneficial for some conditions and some youths but not others, with benefit potentially limited by comorbid conditions, age, socioeconomic status (SES), ethnicity, family

configuration, or other clinical and demographic factors; but until recent years, research left us relatively uninformed about such constraints. Fortunately, the chapters in this volume show a marked increase in attention to these issues since the time of our first edition (Kazdin & Weisz, 2003).

Given the relative youth of our field, it is not surprising that most tested treatments lack provisions for dealing with many variations in language, values, customs, child-rearing traditions, beliefs and expectancies about child and parent behavior, and distinctive stressors, resources, values, and preferred learning styles associated with different cultural traditions. However, a number of the interventions described in this volume have ventured into new cultural territory (in this volume, see Forgatch & Gewirtz, Chapter 6; Webster-Stratton & Reid, Chapter 8; Zisser-Nathenson et al., Chapter 7), and efforts to transport treatments across national and ethnic boundaries have necessitated some treatment adaptation (see, in this volume, Merry et al., Chapter 23; Ogden, Askeland, Christensen, Christiansen, & Kjøbli, Chapter 22). It certainly does seem possible that the interplay between cultural factors and treatment characteristics may influence the relationship between child/family and therapist, the likelihood of treatment completion versus dropout, and the clinical outcome of the treatment process (Weisz et al., 1995). Huey and Polo (Chapter 21, this volume) suggest that, to the extent that evidence is now available, evidence-based psychotherapies may be rather robust across certain ethnic and racial boundaries, but research on this topic is still in early days (Huey, Tilley, Jones, & Smith, 2014). We need more research building on the work described by Huey and Polo, assessing the extent to which treatment persistence, process, and outcome are moderated by race, ethnicity, culture, and a variety of other child and family characteristics and their interaction, and testing the extent to which culturally sensitive design and adaptation of therapies improves treatment process and outcome.

Understanding the Necessary and Sufficient Conditions for Treatment Benefit

Among the diverse treatments that are considered evidence-based, a substantial subset are omnibus or multicomponent in form, with various concepts and skills brought together in one protocol, and with termination considered appropriate only when all the concepts and skills have been covered. For some of these treatments, all the elements may well be needed, but often the evidence base is too poorly developed to clarify just which elements are truly necessary or whether a subset of them, used alone, might be sufficient to produce most of the benefit possible from the treatment. Indeed, it is the absence of such a clear picture that often stimulates development of multicomponent interventions; new concepts and skills are added when in doubt, because it seems that they may help, and *they probably can't hurt*.

One result of this process may be treatments with *adipose tissue*, components that do not contribute much to the outcomes achieved. For a variety of reasons, including the time and expense of treatment, we need interventions that are as efficient as possible. Treatments that fall short of this goal are apt to clash with the current emphasis on managing costs and time. Increasing treatment efficiency will enhance the attractiveness of the interventions to practitioners and payers,

improve the teachability of the procedures and time to mastery, and increase the likelihood that youths and families will stay the course to the end of treatment. That said, some treatment elements may not enhance outcome directly but still may be useful to retain. For example, elements that enhance the acceptability of treatment, minimize dropout rates, or increase patient and therapist compliance with the treatment regimen may serve as the "spoonful of sugar that makes the medicine go down" and be valuable to keep for that reason (Lyon & Koerner, 2016).

In our field, a traditional pathway to understanding which treatment elements are necessary and sufficient is *dismantling* research, in which various treatment components are broken apart and tested separately and in various combinations. In principle, such research should provide the key to understanding necessity and sufficiency within the evidence-based treatments; but the task is complex when the same protocol includes many elements, because the number of combinations multiplies quickly as components are added. A further complication is that different subgroups of youths may respond differently to different subsets of treatment components. Leijten et al. (2015) have described a promising "microtrials" methodology for addressing this complexity. Identifying necessary and sufficient conditions may be particularly challenging for some of the more complex multicomponent treatments and particularly those targeting comorbid conditions, but it is these treatments and these conditions for which streamlining may be most needed.

Identifying Mechanisms of Change that Explain Why Treatments Work

The job of streamlining treatments would, of course, be greatly simplified if we knew the specific change processes that make the treatments work. However, at this point, we know much more about what outcomes are produced by evidence-based therapies than about what happens in treatment that actually *causes* those outcomes (Kazdin, 2000). This is understandable for at least two reasons. First, simple logic dictates that we first find out *whether* a treatment works, so that we can know whether there is a benefit that needs an explanation. Second, figuring out *why* (i.e., what the causal mechanisms are) is not a simple task or a quick one. These difficulties notwithstanding, the task is critical for the field. Failure to identify core causal processes could mean a proliferation of treatments administered rather superstitiously "because they work," but without an understanding of the change processes that must be set in motion to produce results. This in turn would raise the risk of including therapy components that add to treatment burden without actually contributing to change.

To understand *how* treatments actually work, we need a new generation of research on mechanisms underlying change. One element of this process (but *only* one) is testing hypothesized mediators of outcome. Data-analytic procedures have been developed for mediation testing, including tests of differing mediation models (e.g., Baron & Kenney, 1986; Hayes, 2015; Valeri & VanderWeele, 2013), and the raw material needed for such procedures exists in many treatment investigators' datasets. In a review, Weersing and Weisz (2002) noted that 63% of clinical trials in the areas of anxiety, depression, and disruptive behavior included measures of potential mediators in their designs, but only six of the 67 studies surveyed had included any formal mediation test.

As the chapters in this volume show, mediation testing has surged since the Weersing–Weisz (2002) review, at least in problem domains for which substantial samples can be obtained for trials. Investigation of proposed mediators is now a part of the youth treatment outcome research agenda in areas as diverse as depression, anxiety, posttraumatic stress, conduct problems, delinquency, substance use and abuse, and sex offending. Many of the findings support mediational processes that are integral to the treatment models. Some open up areas of controversy regarding prominent models, sparking debate and further analysis, and ultimately leading to a sharper image of how mediation does and does not operate in relation to prominent treatment models.

While mediation tests have real value, a case has been made that such tests alone cannot tell us what the mechanisms of change are for any treatment. Kazdin (2007) has noted that mediation tests can be used to explain statistically an association between independent and dependent variables in an outcome study, but the mediators thus identified cannot alone tell us the processes or events that are responsible for change, the reasons why change occurred, or how change came about. Identifying mechanisms of change, Kazdin notes, requires that investigators (1) demonstrate a strong and specific association among the intervention employed, the proposed mediator, and therapeutic change (ideally ruling out alternative plausible processes that are *not* associated with change); (2) show consistency in the pattern across replications; (3) conduct experimental tests in which the proposed mediator or mechanism is manipulated, demonstrating its impact; (4) establish a timeline in which proposed mechanisms precede their proposed effects; (5) provide evidence of a gradient in which increasing degrees or doses of the proposed mechanism are associated with larger changes in the outcomes of interest; and (6) establish the plausibility of the hypothesized operation of the mechanism vis-à-vis findings in the broader evidence base—does the proposed mechanism of action make sense in light of what we know based on relevant studies, and even common sense?

This rich agenda for establishing mechanisms of change goes far beyond the simple statistics of standard mediation testing and clearly will require extended effort by serious clinical scientists conducting and synthesizing multiple studies within each treatment domain. The work will be challenging, but the payoff could be enormous. With increased understanding of the mechanisms of therapeutic change within the different domains of dysfunction, the prospects will increase for us to (1) identify crosscutting principles for use in designing, refining, and streamlining interventions, (2) train therapists by teaching them what processes they need to set in motion rather than simply what techniques to use; and (3) understand and reverse treatment failures by focusing on the change processes that need to be activated to produce success.

Harnessing the Neuroscience Revolution

The search for mediators and mechanisms of change may be especially enriched by the methods and findings of neuroscience, which is now central to the discipline of psychology. In fact, as suggested by Peverill and McLaughlin (Chapter 30, this volume), neuroscience has the potential to address three critical questions in psychotherapy research:

1. Which individuals are more or less likely to respond to specific treatments, or treatment components?
2. Which clinically meaningful subgroups within broad categories of psychopathology are best matched to specific treatments, or treatment components?
3. What neural mechanisms may index mechanisms of change, explaining why treatments work when they do, and why not when they do not?

Research addressing these questions to date has focused mainly on psychotherapy with adults, but that work illustrates the potential of neuroscience to shed light on child and adolescent psychotherapy, and some work with these younger populations has already begun. In relation to the first question noted earlier (i.e., which people will respond to which treatments?), multiple studies have shown that adults with social anxiety disorder who, at pretreatment, show greater response to negative facial emotion in the dorsal and ventral occipitotemporal cortex (visual processing areas of the brain), improve more than others when treated with CBT (see, e.g., Klumpp, Fitzgerald, & Phan, 2013). And research with children and adolescents (McClure et al., 2006) indicated that pretreatment amygdala activity in response to viewing fearful faces was negatively associated with clinician-reported improvement in children receiving CBT (or medication) for anxiety disorders. Some findings now indicate that information about neural processes may markedly outperform clinical and behavioral measures in predicting outcome. As one example from adult research, Whitfield-Gabrieli et al. (2015) found that pretreatment clinical and behavioral measures accounted for only 12% of the variance in treatment outcome when CBT was used to treat social anxiety disorder, but that outcome was predicted with 81% accuracy when data on structural and functional connectivity were added.

Using the methods of neuroscience to identify mechanisms of change in youth psychotherapy may be especially challenging given the stringent requirements for identification of mechanisms (see Kazdin, 2007), but the benefits of success could be enormous. Learning which switches, when flipped, lead to genuine therapeutic change could allow us to streamline treatments with a focus on the change processes that matter most, and conceivably create new interventions that go directly to the mechanisms and surpass the success of current treatments. Identifying mechanisms can be difficult using self-report measures, which carry significant measurement error and often show marked differences across informants. As an alternative, or complement, measures of neural functioning may provide the kind of rigorous evidence most needed to unearth true mechanisms. Although we lack definitive studies in this sphere to date, Peverill and McLaughlin (Chapter 30, this volume) provide a very helpful example of how this might be done, building on existing evidence and moving to the next step in the domain of child and adolescent psychotherapy.

Studying Evidence-Based Psychotherapies in Relation to Clinical Practice

It is instructive to note that not all who share our interest in quality mental health care share our enthusiasm for the evidence-based, manual-guided treatments tested in randomized controlled trials (RCTs; see, e.g., Lilienfeld, Ritschel, Lynn,

Cautin, & Latzman, 2013; Stewart, Chambless, & Baron, 2012). Many mental health care professionals are genuinely concerned that this new generation of manual-guided treatments is either not relevant to the work they do or not appropriate for the clients they treat. The specific worries are diverse, but among those frequently mentioned are (1) that the use of prescriptive, manual-guided treatments will limit creativity and innovation, and may risk turning therapists into mere technicians who follow cookie-cutter procedures; (2) that manual adherence will interfere with development of a productive therapeutic relationship and constrain the therapist's ability to individualize treatment; (3) that the treatments have only been tested with simple cases with low levels of psychopathology and may not work with more severe and complex cases; (4) that the treatments tend to focus on single problems or disorders and may therefore not work with comorbid cases; and (5) that the complexity and volatility of clinically referred individuals and their families make each session unpredictable and a predetermined series of session plans unworkable. Related concerns are reflected in broader critiques of clinical research, extending even to studies of medical intervention (e.g., Ionnadis, 2016).

Some of these points may not be valid, and others may not apply equally to all evidence-based psychotherapies, but it would be a mistake simply to dismiss the arguments out of hand. At a minimum, we need to understand the concerns that make many practitioners reluctant to use these structured treatments, so that we can grasp and address impediments to evidence-based treatment (EBT) implementation in practice settings. A second good reason to attend to the concerns is that some may be valid, at least for a number of EBTs; addressing points that are valid could improve the robustness and viability of the treatments (see Lilienfield et al., 2013; Weisz, 2014; Weisz, Ugueto, Cheron, & Herren, 2013). One point on which proponents and opponents may agree is that most of the concerns can be construed as empirical questions warranting research attention. In this respect, the different perspectives on evidence-based practice can be valuable heuristically.

Differences between the perspectives of treatment researchers and treatment providers may be understood partly in relation to the distinction between efficacy and effectiveness research. Most evidence on evidence-based psychotherapies is clustered at the *efficacy* end of the continuum (i.e., derived from studies involving carefully arranged and somewhat idealized conditions designed to maximize the opportunity to show treatment effects). For practitioners, the apparent gap between the conditions prevailing in most treatment research and the conditions of actual youth mental health practice raise questions about whether the resultant treatments can work well in a practice context (Weisz, Ugueto, et al., 2013). The efficacy research versus clinical practice gap may include characteristics of the treated individuals (e.g., youths in the clinic may be more severely disturbed, more likely to meet criteria for a diagnosis, more likely to have numerous comorbidities, and less motivated for treatment), their families (e.g., more parental psychopathology, family life event stressors, and perhaps even maltreatment), reasons for seeking treatment (e.g., not recruited from schools or through ads, but referred by caregivers because of unusually serious problems or family crisis, or even court-ordered referrals), the settings in which treatment is done (e.g., more financial forms to complete, more bureaucracy, and sometimes a less welcoming approach in the clinic), the therapists who provide the treatment (e.g., not graduate students

or research assistants hired by and loyal to the advisor and committed to his or her treatment research program, but rather staff therapists who barely know the treatment developer or the tested treatment, and who may prefer different treatment methods), the incentive system (e.g., not paid by the treatment developer to deliver his or her EBT with close adherence to the manual, but paid by the clinic to see many cases and with no method prescribed), and the conditions under which therapists deliver the treatment (not graduate students' flexible time, but strict productivity requirements, paperwork to complete, and little time to learn a manual or adhere closely to it).

Such differences between psychotherapy in many RCTs and psychotherapy in clinical practice can lead practitioners to question the relevance of the evidence to their own clinical practice. On the plus side, the same differences may also be viewed as a nascent agenda for treatment researchers. Indeed, the very real-world factors that experimentalists might view as a nuisance (e.g., child comorbidity, parent pathology, life stresses that produce no-shows and dropouts, therapists with heavy caseloads) and thus attempt to avoid (e.g., by recruiting and screening cases, applying exclusion criteria, hiring their own therapists) or control, may in fact be precisely what we need to include, to understand, and to address, if we are to develop psychosocial treatment protocols that work well in practice (Weisz, 2014). Treatments that cannot cope with these real-world factors may not fare so well in practice, no matter how efficacious they are in well-controlled laboratory trials.

Thus, another critical direction for research on evidence-based psychotherapies is toward clinical practice. Testing treatments under conditions more and more like those of actual practice in mental health service settings may be a way to build especially robust treatments and an evidence base that supports their use in everyday clinical care.

Implementing Treatments within New Populations and Contexts

Even as researchers work to refine treatments for young people and boost their impact and clinical practice relevance, there is exciting work under way addressing the challenges of treatment implementation in new settings. This includes research on implementation of treatments in health maintenance organizations (HMOs) and with incarcerated youths (Rohde, Chapter 4, this volume), statewide service systems (Hoagwood, Peth-Pierce, Glaeser, Whitmyre, Shorter, & Vardanian, Chapter 27, this volume), a nationwide array of services (in this volume, see Merry et al., Chapter 23; Ogden et al., Chapter 22; Scott, Chapter 24), and across multiple national and cultural boundaries (in this volume, see Forgatch & Gewirtz, Chapter 6; Henggeler & Schaefer, Chapter 12; Powell et al., Chapter 10; Sanders & Turner, Chapter 25; Webster-Stratton & Reid, Chapter 8).

As the work of implementation and transporting builds and extends, we are apt to see increasingly sophisticated models of how to plan, design, revise, and refine treatments to achieve good fit with particular populations and contexts (see, e.g., the rich array of articles in the journal *Implementation Science*). An explicit *deployment-focused model* (see Weisz, 2004; Weisz et al., 2015) is one approach, proposing steps of treatment development and testing to build interventions that will fit the specific contexts for which they are ultimately intended. In addition, the

model-building process will almost certainly need to include attention to the broad array of policy and practical considerations that can work for or against implementation. As one example, a significant impediment to the spread of evidence-based psychotherapies in the United States is that effective use of the treatments requires considerable training and supervision, both of which are more costly for financially strapped clinicians and provider organizations than simply continuing current practice patterns. Because reimbursement is based on units of service rather than which particular treatment is being done, or whether it is effective, there is little incentive for bringing in new practices. In fact, increased cost paired with no increased income is a clear *dis*incentive working *against* the implementation of new evidence-based practices. As this example illustrates, our models of implementation will likely need to encompass theoretical, clinical, and very practical considerations—including money, and the way it must figure into decision making by those who run organizations and provide clinical care.

CONCLUDING COMMENTS

We have come a long way, as a field, from the early precursors we described in Chapter 1 (this volume). After slow ferment between the time of Aristotle and psychoanalytic theory, child and adolescent psychotherapy and related research accelerated quickly through the 20th century, with an output of more than 1,500 youth treatment outcome studies by the year 1999 (see Kazdin, 2000). As one index of the payoff from that output, the *Journal of Clinical Child Psychology* (now the *Journal of Clinical Child and Adolescent Psychology*) devoted an entire issue, in 1998, to articles reporting on 27 youth treatments meeting multiple criteria for the status of "empirically supported psychosocial interventions" (see Lonigan, Elbert, & Johnson, 1998). A 10-year update issue of the same journal (Silverman & Hinshaw, 2008) reported on 46 "evidence-based psychosocial treatments." This number will easily be surpassed by a series of evidence-base update articles in the same journal beginning in 2014 and still under way, which already encompasses interventions for 10 broad problem areas (Southam-Gerow & Prinstein, 2014). As research intensity and output have surged, so has attention to the responsible conduct of research in relation to ethical and legal issues, as described by Fried and Fisher (Chapter 26, this volume). This book brings together descriptions of evidence-based psychotherapies for young people and the evidence on those therapies written by the treatment developers who know them best. These accounts are complemented by a focus on developmental and ethical issues in the field and research on implementation of evidence-based psychotherapies across a range of populations and contexts.

In this final chapter, we have noted several characteristics of the treatments and the evidence that are particularly admirable, including breadth of coverage of significant youth problems and disorders, a creative array of treatment delivery models, an increasingly rich mix of informants and measures in outcome assessment, and recently expanded attention to moderators and mediators of treatment outcome. But we also find areas in which progress is needed and topics that warrant close attention in future research, as outlined in Table 33.1. Among these, we note a need to extend outcome research to treatment models that are widely used

in clinical practice but poorly represented in the research literature thus far. We note how little is currently known about the ways therapist behavior and the therapeutic relationship relate to treatment persistence and outcome, particularly in the world of manual-guided treatments. We stress the need to identify mechanisms of action that explain why treatments work. We emphasize the need to understand evidence-based psychotherapies and how they perform in the arena of clinical practice, with more of the research carried out under conditions like those practitioners confront. And we stress the need to build a science and a viable model of treatment implementation and transportability, to guide ever-increasing efforts to apply tested interventions in new contexts and with new populations.

Viewed in historical perspective, the trajectory of research on child and adolescent psychotherapy is quite remarkable, particularly in recent decades. The clinical scientists whose work fills this book have built that recent trajectory. We laud the work of these leaders who have brought us to such a significant point in psychotherapy research. At the same time, we honor members of the emerging next generation as they work to take evidence-based psychotherapy to new levels, for the benefit of children, adolescents, and their families.

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