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The Occasional Case Against Broad Dissemination and Implementation:

Retaining a Role for Specialty Care in the Delivery of Psychological Treatments

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Abstract

Mental illness imposes a staggering public health burden in the United States. Although the past 40 years have witnessed tremendous advances in the identification of evidence-based practices (EBPs) in psychological treatments, gaps persist between treatment in experimental settings and services available in the community. In response, considerable attention and large financial commitments have focused in recent years on broad dissemination and implementation efforts designed to improve the quality of psychological services delivered by a variety of generalist practitioners across practice settings. Increasingly, under the influence of the Patient Protection and Affordable Care Act, it is envisioned that these generalists will practice in integrated primary care settings. These advances hold enormous potential, and yet, given the tremendous diversity of mental health problems and human suffering, broad dissemination and implementation efforts to generalists alone may not be sufficient to adequately address the burden of mental illness. Some EBPs may prove too complex for universal dissemination, and the time and expense required for quality dissemination and implementation preclude large-scale training in the treatment of low base rate disorders. As dissemination and implementation efforts work to ensure a quality generalist mental health care workforce, herein we highlight the vital need for available specialty care in the delivery of psychological treatments. Given traditional barriers that interfere with the accessibility of specialty care, we propose the transformative potential of a specialty behavioral telehealth care workforce, transacting with the generalist practitioner workforce to collectively ensure the highest quality and timely delivery of needed treatments to affected individuals.

Keywords

dissemination; implementation; technology; telemedicine; evidence-based practice

Mental illness imposes a staggering public health burden in the United States. Almost half of the population suffers from a mental disorder at some point in their lives (Kessler, Berglund, et al., 2005), and roughly 1 in 4 Americans has suffered from a mental disorder in the past year (Kessler, Chiu, Demler, & Walters, 2005). These estimates are particularly striking when considering the enormous individual, family, and societal costs associated with mental

disorders. When left untreated, these disorders are associated with elevated rates of general medical disorders (Roy-Byrne et al., 2008), frequent comorbid mental disorders (Kessler, Chiu, et al., 2005), poorer educational attainment (Breslau, Lane, Sampson, & Kessler, 2008), disability in life roles (Merikangas et al., 2007), and reduced health-related quality of life (Comer, Blanco, et al., 2011). Evidence of the societal burden of mental disorders is portrayed in reports of high health care utilization and costs and losses in worker productivity (e.g., Greenberg et al., 1999). As an example, major depressive disorder (MDD) is intricately linked to workforce impairments, with 20% to 30% of individuals with moderate or severe MDD unemployed and/or collecting disability (Birnbaum et al., 2010). Workers with MDD miss more days than their nondepressed counterparts, accounting for 225 million missed workdays each year and corresponding to an estimated \$36.6 billion in annual lost productivity (Kessler et al., 2006). Individuals with serious mental illness earn roughly \$16,000 less annually, yielding an estimated total lost earnings of \$193.2 billion nationally each year.

Despite the daunting statistics, the past 40 years have witnessed tremendous advances in the identification of evidence-based practices (EBPs) in psychological treatment with the potential to improve clinical outcomes for a considerable share of the mental health problems affecting the population (Barlow, 2004, 2008; Kendall, 2011; Roth & Fonagy, 2005). Regrettably, however, substantial problems in the broad availability and quality of psychological treatments constrain effective care for the majority of affected individuals. Herein, we first briefly review the inadequate current state of mental health care delivery and consider the leading models and solutions for redressing the situation that dominate current theory, research, training, and funding decisions. Following this, we outline difficulties inherent in effectively disseminating complex treatments on a broad scale and the relatively reduced local relevance of broadly disseminating treatments for low base rate disorders. As dissemination and implementation efforts work to ensure a quality generalist mental health care workforce, we highlight the vital need for available specialty care in the delivery of psychological treatments in order to fully address the enormous and broad-based societal burden of mental illness.

Crisis of Availability and Quality in the Delivery of Psychological Treatments

Despite the development of well-tolerated and research-supported treatments, current mental health service delivery models fail to reach adequate numbers of affected individuals. Systematic barriers interfere with the timely provision of needed care for affected individuals, and gaps persist between treatment in experimental settings and services available in the community (Sandler et al., 2005; Weisz, Sandler, Durlak, & Anton, 2005). For example, as of 2003 only 40% of Americans with a mental disorder over the previous 12 months received any treatment for their condition in the prior year, and less than one third of treated Americans received care from a mental health care professional (Wang, Lane, et al., 2005). There is no indication that this state of affairs has meaningfully changed in the past decade. As the U.S. population tops 300 million individuals, it can be estimated that at least 50 million Americans are not receiving needed, adequate mental health care. Among those

who do receive care, the median delay in treatment initiation after initial disorder onset ranges from 6 to 23 years across disorders (Wang, Berglund, et al., 2005). Only 25% to 40% of individuals afflicted with mood disorders, generalized anxiety disorder, panic disorder, or drug dependence make initial treatment contact in the first year of disorder onset. Less than 10% of individuals afflicted with posttraumatic stress disorder, social anxiety disorder, or a disruptive behavior disorder make treatment contact in their first year of disorder onset (Wang, Berglund, et al., 2005).

Such failures and delays in the utilization of mental health care can be attributed in large part to problems in care availability. Inadequate numbers of mental health professionals, particularly in remote regions, impinge on the availability of care. A substantial proportion of U.S. counties, particularly those in rural regions, have no psychologist, psychiatrist, or social worker (National Organization of State Offices of Rural Health, 2011). Long wait lists at underfunded clinics can substantially slow the speed with which services are delivered. Such factors may help to explain, in part, recent national trends showing that psychological treatments and psychotherapy have assumed a less prominent role in outpatient care (Olfson & Marcus, 2010). Quality of care further constrains EBP delivery to affected individuals. Those who do receive psychological treatments are not necessarily receiving EBPs. Regrettably, programs showing the strongest support are not widely disseminated, and when effective programs are disseminated, they are rarely implemented with fidelity (Sandler et al., 2005), particularly when delivered in overburdened facilities with high staff turnover. Limitations in the availability of EBP place heavy clinical demands on the pharmacologic dimensions of mental health care. Primary care physicians typically fill geographic workforce gaps in mental health care but lack the training and time to adequately address the needs of those seeking mental health care. Indeed, we have seen a progressive expansion in recent years in use of off-label psychotropic regimens with unfavorable side effects to treat disorders for which well-tolerated psychological EBPs are established (Comer, Mojtabai, & Olfson, 2011; Comer, Olfson, & Mojtabai, 2010; Olfson, Crystal, Huang, & Gerhard, 2010).

The Blossoming of Dissemination and Implementation Science

Given the inadequate state of psychological treatment delivery, considerable attention and large financial commitments of over several billion dollars have focused in recent years on innovative solutions to the problems of treatment availability and quality. Consequently, activities to promote utilization of psychological EBPs have emerged rather quickly, focused on established scientific principles of dissemination and implementation (Beidas & Kendall, 2010; McHugh & Barlow, 2010, 2012). In health care, the purposeful distribution of relevant information and materials to practitioners constitutes *dissemination*, and the adoption and integration of disseminated information and materials into actual clinical practice constitutes *implementation* (Lomas, 1993).

The uptake of innovations in practical settings has long captured scholarly attention across a diverse range of fields, including agriculture, anthropology, communications, education, ethnology, health care, and marketing (e.g., Ryan & Gross, 1943; Tarde, 1903), but formal applications to clinical psychology constitute a relatively nascent field of study. The seminal writing of American sociologist Everett Rogers (1962) considered key elements associated

with the spread of ideas and techniques across disciplines. Of course, in myriad ways the spread of psychological EBPs to clinical settings is qualitatively distinct from the varied pursuits of seemingly unrelated disciplines—such as, say, agriculturalists determining whether rural farmers might adopt high-yielding hybrid seed corns—but several universal themes remain relevant, including the roles of *complexity* (innovations that are too complex will not be incorporated into practice) and *trial-ability* (people are less likely to adopt innovations they are being asked to incorporate without an initial trial period) in influencing uptake (Rogers, 2003). Rogers also considered how an innovation's *relative advantage over existing methods* influenced uptake, as well as its *compatibility with existing operations* and the *observability of its results* (see Rogers, 2003, for further information). Importantly, our field's innovations do not always lend themselves to sufficient levels of implementation standardization. Uniformity in psychological treatment delivery cannot be assured across settings, and research finds variable therapist adherence across providers, which can in turn be associated with variable clinical response (Smith, Hall, Jang, & Arndt, 2009; Webb, DeRubeis, & Barber, 2010). This may explain, in part, why psychological EBPs do not always outperform usual care on primary outcomes in community settings (Southam-Gerow et al., 2010; Weisz et al., 2009).

Recognizing the critical need to improve the broad quality of mental health care, a number of health care delivery systems have developed large-scale dissemination and implementation efforts (Bruns & Hoagwood, 2008; Clark, 2012; Clark et al., 2009; Daleiden, Chorpita, Donkervoet, Arensdorf, & Brogan, 2006; Gleacher et al., 2011; McHugh & Barlow, 2010, 2012; Ruzek, Karlin, & Zeiss, 2012), and a number of treatment development groups have demonstrated some encouraging gains in promoting research-supported treatments in practice settings (e.g., Beidas, Edmunds, Marcus, & Kendall, 2012; Lochman et al., 2009; Kendall & Khanna, 2008). Formal evaluations of large-scale dissemination and implementation programs are ongoing, but early efforts do reveal some consistent findings. First, didactic training is necessary, but not sufficient, for lasting and quality implementation in practice settings. Competency components—including ongoing expert consultation or supervision after initial didactics—are essential for trainees to acquire the skills necessary to administer treatments with fidelity and skill (Beidas, Mehta, Atkins, Solomon, & Merz, 2013; Crits-Christoph et al., 1998; Herschell, McNeil, & McNeil, 2004; McHugh & Barlow, 2010, 2012; Miller, Yahne, Moyers, Martinez, & Pirritano, 2004; Sholomskas, Syracuse-Siewert, Rounsaville, Ball, & Nuro, 2005). Competency components typically entail application of disseminated EBPs or techniques in the trainees' actual practices (Daleiden et al., 2006; Gleacher et al., 2011), and so training requires a steady flow of patients with the very problems targeted by the disseminated treatments. Didactic trainings are of limited utility if there are not subsequent opportunities to develop competency under applied supervision. Indeed, there is preliminary evidence that delay between initial EBP training and actual opportunities to use newly taught methods in practice can interfere with acquired competency in EBPs and clinician intention to use EBPs after dissemination efforts have ended (e.g., Palinkas et al., 2008).

Second, the matter of sustainability presents a major problem (see Stirman et al., 2012). Sustainability has been described as too often a “latent goal,” implied but rarely pursued

actively (Lyon, Frazier, Mehta, Atkins, & Weisbach, 2011). Although one of the goals of competency components is to enhance sustainability of knowledge and skill gains at an individual level, the goal of sustainability at the organizational level has remained more elusive (see Beidas & Kendall, 2010). Factors interfering with organizational sustainability include low levels of agency support, the absence of internal program champions, and insufficient or fluctuating agency resources (Atkins, Graczyk, Frazier, & Abduil-Adil, 2003; Glisson et al., 2008). Less addressed is the matter of workforce stability. Community agencies—particularly overburdened, underfunded clinics—are beset by high staff turnover (Glisson et al., 2008). Given the relatively long-term nature of quality dissemination and implementation efforts, by the time training has been completed (or even sooner), a trainee may no longer work at the agency. Despite the resources invested in training this individual, the knowledge and skill do not transfer to the next individual to hold the position. Fortunately, there is some evidence that introducing EBPs and incorporating fidelity checks may have a protective effect for clinics, reducing staff turnover (e.g., Aarons, Sommerfeld, Hecht, Silovsky, & Chaffin, 2009; Glisson et al., 2008).

Third, the matter of complexity influences the ongoing uptake of EBPs in general practice settings. Innovations that are too complex are not expected to be routinely incorporated, or incorporated with fidelity, into everyday practice (Rogers, 2003). Regrettably, busy practitioners may not have sufficient time to truly absorb and master all of the nuances of a highly complex treatment protocol. Indeed, innovation adopters show preference for “user-friendly,” “plug-and-pay” products (Rogers, 2003). Things get even more complicated for practitioners when considering the very large number of distinct manuals requiring developed expertise—some targeting very focused clinical problems, others addressing broad families of problems, and many largely overlapping with one another (Barlow, Allen, & Choate, 2004). Moreover, the professional training of mental health care providers varies widely. Some psychological EBPs may be too complex for inadequately trained practitioners to implement. We must also consider the complexity of treatment delivery—a treatment may be easily mastered by a practitioner, but if it is too complex to be delivered in an existing agency practice, uptake is unlikely. Rogers (2003) noted that across innovations, compatibility with existing operations greatly influences ultimate adoption. Simple alterations to existing procedures are more readily adopted (Stirman, Crits-Christoph, & De-Rubeis, 2004). And even when organizational support is strong, individual provider factors can interfere with the adoption of EBPs (see Gallo & Barlow, 2012).

Finally, for many of the above reasons, quality dissemination and implementation efforts are enormously expensive. The larger, more successful programs that have incorporated didactics and extended competency training have cost hundreds of millions of dollars—and many still have not actualized the large and lasting impacts aspired to at initiative outset. As such, large-scale dissemination efforts are understandably confined to the most highly prevalent conditions, as focusing available resources on the dissemination of EBPs for the most prevalent conditions has the potential to improve practices for a majority of treatment seekers.

These early lessons from the blossoming science of dissemination and implementation have already had an enormous impact on treatment development. Given the impeding costs and

intricate complexities of quality dissemination and implementation efforts, it has become apparent that some of the great advances in treatment development over the past 40 years may not be feasible for broad dissemination and implementation. In an effort to develop protocols that can smoothly lend themselves for broad adoption and sustained implementation, a new generation of interventions research has emerged in recent years incorporating realities about the feasibility of broad dissemination and implementation into the very earliest stages of treatment development. Two of the most prominent lines of research explicitly incorporating dissemination feasibility into treatment development include (a) transdiagnostic treatment protocols and (b) modular treatment protocols (see McHugh, Murray, & Barlow, 2009). Single-disorder manuals have grown so numerous that it has now become exceedingly difficult for practicing clinicians to become proficient in every supported manual—and it is not clear how best to choose among or prioritize them for training. This state of affairs has regrettably hampered efforts at widespread dissemination and diminished the public health significance of the availability of psychological EBPs (Barlow et al., 2004, 2011; Farchione et al., 2012). So as to avoid unnecessarily burdening practicing clinicians with the need to learn a seemingly excessive number of often redundant diagnosis-specific protocols, *transdiagnostic treatments* focus on similarities and overlying features across disorders, particularly those from neighboring classes of diagnoses, and on distilling and incorporating common principles among supported treatments (Craske et al., 2009; Ellard, Fairholme, Boisseau, Farchione, & Barlow, 2010; Fairburn, Cooper, Shafran, & Wilson, 2008; Fairburn et al., 2009; Farchione et al., 2012; Kendall, Hudson, Gosch, Flannery-Schroeder, & Suveg, 2008; Norton & Hope, 2005; Sullivan et al., 2007; Weersing, Rozenman, Maher-Bridge, & Campo, 2012). *Modular treatments* offer another approach to redressing the treatment manual proliferation barrier to broad dissemination. Whereas traditional manuals apply multiple treatment components in a more linear format, it is becoming increasingly apparent that not every patient will benefit from each and every treatment component in an indicated treatment. Compared to the more theoretical transdiagnostic approaches based on new conceptions of psychopathology (Barlow et al., 2011; Fairburn et al., 2008), modular approaches take a more empirical approach and address the above problems through treatment redesign—procedures from supported protocols for specific identified problems are structured as free-standing modules, and decision flowcharts guide module selection and sequencing (Chorpita, 2007; Chorpita & Weisz, 2005; Harvey, Watkins, Mansell, & Shafran, 2004; Weisz & Chorpita, 2011; Weisz et al., 2012).

Broad Dissemination and the Problem of Low Base Rate Disorders

These exciting advances in dissemination and implementation science, and their impacts on treatment development, hold great potential to elevate the public health relevance of psychological EBPs and meaningfully relieve the suffering of truly large numbers of affected individuals. And yet, given the tremendous diversity of mental health problems, broad dissemination and implementation efforts alone may not be sufficient to adequately address the immense prevalence and burden of mental illness.

Notably, the time and expenses associated with quality dissemination and implementation might preclude large-scale competency training in the treatment of low base rate disorders

(e.g., trichotillomania, Tourette syndrome, chronic tic disorders, selective mutism, schizophrenia, paraphilias). Limited funding for dissemination and implementation efforts necessitates difficult decisions concerning clinical priorities and optimal resource allocations, and undoubtedly the treatment of the most common conditions affecting the population must take priority. For example, the Improving Access to Psychological Therapies (Clark, 2012; Clark et al., 2009) program in the United Kingdom focuses on the common mood and anxiety disorders. In the United States, the Veterans Health Administration (VHA) has committed hundreds of millions of dollars to the implementation of centralized dissemination efforts requiring all clinicians in VHA settings across the nation to complete training in EBPs for depression, anxiety, and traumatic stress disorders (Ruzek et al., 2012). State mental health programs also explicitly focus on clinical areas of greatest need in the communities to be served (e.g., Gleacher et al., 2011). Given the large funds required to disseminate EBPs for the most common conditions, it is unlikely that there will be much funding left over for adequate broad-based training in the treatment of less common mental health problems. Individual practice settings may be unlikely to devote the considerable time and resources necessary for quality implementation into training staff in the treatment of conditions that affect only very small proportions of their patient flow. Moreover, with research showing that ongoing competency consultation is required for effective dissemination, in which experts consult with trainees on the application of disseminated EBPs to the trainee's actual practice (Beidas et al., 2012; Crits-Christoph et al., 1998; Herschell et al., 2004; Miller et al., 2004; McHugh & Barlow, 2010, 2012; Sholomskas et al., 2005), the absence of a steady flow of patients with the very problems targeted by dissemination efforts for low base rate conditions may be limiting.

Failure to ensure adequate competency in the delivery of supported interventions for very serious but less prevalent clinical targets constitutes an enormous public health concern. A disorder affecting even just 1% of the U.S. population still affects roughly 3 million Americans. Let us consider the examples of childhood Tourette syndrome, chronic tic disorders, and trichotillomania. These conditions collectively affect between 1% and 2% of children (Kurlan, 2010; Scharf, Miller, Mathews, & Ben-Shlomo, 2012; Tabori Kraft et al., 2012), but habit reversal training (HRT)—an empirically supported treatment for these conditions—is not part of any large-scale dissemination effort. Currently, one of the more common reasons children with these conditions do not receive appropriate care is a reported lack of experts in the treatment of these conditions in their area (Woods, Conelea, & Himle, 2010). Despite the burden and reduced quality of life associated with these conditions (Diefenbach, Tolin, Hannan, Crocetto, & Worhunsky, 2005), given the realities of what is required for quality dissemination and ongoing competency consultation it may be hard to meaningfully advance broad participation at the funding or trainee level in the large-scale spread of HRT.

Transdiagnostic treatment models, developed in part to support dissemination efforts, offer promise for the treatment of related families of common conditions, such as mood and anxiety disorders, or the eating disorders (Fairburn et al., 2009; Farchione et al., 2012), but offer little for the treatment of low base rate disorders best treated with specialized methods not shared in the treatment of more common conditions. Despite the enormous value of transdiagnostic treatments from a dissemination standpoint and from a public health

perspective, the optimal course of treatment for some conditions will likely remain single-disorder methods. Modular treatment approaches, despite their emphasis on individualized sequences of treatment components, also necessarily focus on common treatment components (see Chorpita & Weisz, 2005; Weisz et al., 2012). Low base rate disorders that are best treated with specialized, uncommon methods are not addressed within treatment algorithms designed to address the broad majority of individuals seeking care. Adaptive treatment models may also delay the timely initiation of needed treatment components in favor of initial trial and error with more universal approaches.

Broad Dissemination and the Problem of Complex Treatments

As previously noted, innovations that are too complex will not be routinely incorporated, or incorporated with fidelity, into everyday practice (Rogers, 2003). The broad diversity of educational backgrounds across the mental health workforce (Ellis, Konrad, Thomas, & Morrissey, 2009) further underscores the importance of complexity considerations when allocating resources for dissemination efforts. Some psychological EBPs may be too complex for inadequately or insufficiently trained practitioners to implement. Compatibility with existing ways of operating also greatly influences ultimate EBP adoption rates, with simple alterations to existing procedures being more readily implemented (Rogers, 2003; Stirman et al., 2004). Accordingly, from a dissemination and implementation standpoint, treatment developers are advised to keep things simple, with the goal of efficacy needing to be balanced with a (potentially competing) need for “deliverability.”

As such, in the context of broad dissemination and implementation, there may be little role for treatments that cannot be readily implemented sufficiently for delivery by professionals in overburdened clinics representing a broad array of training and experience. The parallel in other health care disciplines would be unthinkable. Imagine if the field of medicine decided to no longer promote organ transplantation research and training, simply because it is too complicated for the vast majority of the health care workforce. Of course, organ transplantation is a dramatic and heroic procedure that prevents imminent death, unlike most psychological EBPs, but the reduced-quality-adjusted life years associated with mental disorders, relative to the general population and to other common chronic conditions (Grandes, Montoya, Arietaleanizbeaskoa, Arce, & Sanchez, 2011), as well as occasional immediate reductions in mortality, certainly underscore the urgency of effective mental health care regardless of method complexity.

Intervention science has historically paid insufficient attention to matters of deliverability in treatment development. As we now remedy this situation that has regrettably hampered the real-world impact and relevance of our efforts (see Barlow et al., 2011; Chorpita & Weisz, 2005), we must also be cautious against overcorrection. Within a mindset of broad dissemination and implementation, we must be cautious against new and maladaptive implicit assumptions that could pervade research and funding decisions (e.g., if a treatment cannot be broadly disseminated to the full range of providers in practice, it lacks merit and public health significance).

Putting All of Our Eggs in the Broad Dissemination Basket: The Limitations of an Exclusively Generalist Mental Health Care Workforce

Broad and effective dissemination and implementation efforts, in the event that they actualize their tremendous potential, will afford a high-quality workforce of generalist practitioners who are well-equipped to address with competency the majority of presenting mental health problems. But how can we ensure effective care for patients requiring mental health care for disorders so uncommon that they are not worth the considerable investment necessary for broad dissemination and implementation efforts? And how can we ensure effective care for patients who would benefit from interventions that are too complex for effective broad dissemination?

In medicine, the generalist practitioner role typically falls within the scope of primary care. Primary care physicians are trained to address basic diagnosis and treatment of common medical conditions and illnesses, just as community mental health practitioners after effective dissemination efforts would presumably be expert in diagnosing and treating the “common colds” of mental disorders that characterize the majority of patient presentations (e.g., anxiety and depressive disorders). However, another equally essential role of medical primary care that is not systematically shared by the generalist mental health care provider is the referral of patients to appropriate specialty care as needed. By definition, the role of the primary care physician is not to provide direct intervention for *every* patient problem, but rather to effectively treat the most common presentations with uncomplicated methods and to accurately identify when a problem merits the attention of a specialist with more relevant expertise, training, and/or experience. Conversely, specialists are not the best equipped to address the diversity of general problems encountered in primary care.

In the context of the Patient Protection and Affordable Care Act (2010), it is expected that there will be an expanding role for a primary mental health care workforce as behavioral health is increasingly integrated into primary medical care. The Affordable Care Act includes key provisions to reorganize health services and strengthen the quality and cost-efficiency of primary care by incentivizing more direct interfaces between primary care and behavioral health care. Specifically, to reduce long-standing problems of access, decentralized decision making, and health care fragmentation (Barry & Huskamp, 2011), current reforms ultimately envision the co-location of mental health and primary care providers at integrated health care settings that provide interdisciplinary team-based services. Such shifts more explicitly recognize the central role of mental and behavioral health as a vital part of comprehensive health care, while at the same time it is anticipated that there will consequently be a reduced role for free-standing mental health practices. Given the highly diverse array of mental health needs presenting in primary care settings, a quality workforce of generalist practitioners will be indispensable in these integrated primary care settings.

At present, however, it is not clear what the generalist mental health care workforce is to do when presented with problems outside of those targeted by rigorous dissemination efforts. If a mental health worker who has completed high-quality competency training in the treatment of anxiety and depression is presented with a child suffering with, say,

trichotillomania, should he or she be expected to treat this child despite the lack of rigorous competency training in HRT? For comparison, in medicine, primary care physicians do not remove malignant tumors—this falls under the practice of surgical oncologists who have completed advanced education and relevant competency training and, importantly, see a high volume of cancer patients. Indeed, clinical trials show that surgical effectiveness is positively linked with surgeon patient volume (Pasquali et al., 2012). Similarly, in mental health care, psychological EBPs delivered in rigorous specialty settings for narrow groups of patients do appear to outperform EBPs delivered by generalist providers in community mental health settings (see Kendall et al., 2008, versus Weisz et al., 2009).

To maximize effective care for the majority of patients who present for treatment, as well as for patients suffering from low base rate conditions that collectively affect very large numbers of individuals, specialty care must play a prominent role in the delivery of mental health care. We would do well to complement our broad dissemination and implementation efforts with rigorous training for generalist providers in the identification and appropriate referral of patients more appropriately treated by specialty mental health care. But first we will need to vastly extend the reach of specialty care in order to ensure that generalist practitioners have appropriate referral options. To date, a number of geographic and financial obstacles have hindered the broad availability of specialty care. It is these obstacles to which we now turn our attention.

Traditional Obstacles Hinder the Availability of Specialty Care

Despite the need for effective specialty care for low base-rate disorders, and for the delivery of complex interventions, at present specialty options are limited for the majority of affected individuals. Regrettably, families dwelling in impoverished, rural, or other remote regions have limited access to general mental health care, let alone specialty care. Often, specialty programs are concentrated in academic centers and confined to clinical research trials, and some affected individuals may not meet standard inclusion criteria for such trials (Blanco et al., 2008).

The limited availability of specialty mental health care is understandable from a supply and demand standpoint. From an economic perspective, there are relatively few geographic regions in which it makes sense to build specialty practices for low base rate conditions. As such, specialty programs are typically confined to metropolitan regions with large populations. To address problems of access and local workforce shortages in specialty care, many specialty programs are increasingly offering intensive treatment formats, in which patients travel for brief (e.g., 1–3-week) periods of all-day sessions in treatment not offered in their local communities. These programs show promise (e.g., Angelosante, Pincus, Whitton, Cheron, & Pian, 2009; Davis, Ollendick, & Öst, 2009; Flancabaum, Rockmore, & Franklin, 2011; Santucci, Ehrenreich, Trosper, Bennett, & Pincus, 2009; Storch et al., 2007), but intensive treatments are costly for patients—they typically entail a hotel stay, as well as the cost of a full course of treatment billed in one time, and are rarely covered substantially by third-party payers. Importantly, intensive treatment formats are rarely available to Medicaid patients, who constitute the majority of individuals presenting to community mental health centers.

The absence of available specialty psychological care can place increased demands on the pharmacologic dimensions of mental health care. In mental health practice, when patients do not improve after exhausting available psychological treatment options, patients are often referred for psychotropic medication. Research certainly supports the role that psychopharmacology can play in the effective management of mental disorders, but exhausting available psychological treatment options varies substantially across regions. It is reasonable to assume that poor access to specialty psychological care often leads to medication referrals before adequate psychological EBP trials have failed.

For these reasons, we call for a renewed sense of urgency to define and promote a vital and modern role for specialty mental health care and to minimize systematic barriers to the availability and accessibility of specialty care for affected individuals. We believe technological innovations may be central to this effort.

Technological Innovations May Overcome Traditional Barriers to Care

Technological innovations may offer a promising vehicle for overcoming traditional barriers to specialty care. In recent years, rapidly developing computer technology, the broadening availability of the Internet, and increasingly sophisticated capacities for live broadcasting via affordable webcams are transforming many aspects of our daily lives—changing how we work, learn, and communicate. In 2009, 77% of U.S. citizens had regular Internet access, and roughly 70% had household Internet access, (U.S. Census Bureau, 2011). These numbers are particularly striking when one considers that in 2003 only 53% of U.S. households had Internet access (and only 19% of households in 1997). In addition, the American Recovery and Reinvestment Act of 2009 included the investment of several billions of dollars to expand broadband Internet access in underserved areas. Taken together, the household availability of broadband appears to be rising considerably, and it is conceivable that in the coming years broadband Internet access will show the same household ubiquity currently demonstrated for telephones.

These innovations are already beginning to transform health care delivery (Field & Grigsby, 2002). *Telemedicine* refers to the use of electronic media to facilitate real-time interactions for the provision of care usually delivered in person (American Academy of Child and Adolescent Psychiatry, Work Group on Quality Issues, 2008). The use of real-time interactions between patient and provider distinguishes telemedicine from other forms of e-health that draw chiefly on Internet-facilitated bibliotherapy or self-management modalities. For mental health care, a discipline that relies primarily on verbal communication and visual observation, such methods may offer a transformative potential to overcome geographical barriers to specialty care. Innovative telemethods extend the availability of expert services by addressing regional workforce shortages in specialty care. Individuals dwelling in rural or impoverished regions—areas typically beset by insufficient availability of expert mental health care—can participate in real-time interactive treatment conducted by experts, regardless of geographic proximity to a specialty clinic. A growing body of work supports the preliminary efficacy, feasibility, tolerability, and sustainability of telemethods for delivering evidence-based care to individuals in need (see Dimeff, Paves, Skutch, & Woodcock, 2010). With low-income and rural families among the fastest growing

populations gaining access to the Internet (Horrigan, 2009), the growing potential for technological innovations to transform specialty care for the most traditionally underserved and remote families holds enormous promise.

Toward a Specialty Behavioral Telehealth Care Model

Given the limits of broad dissemination and implementation to local mental health care workforces—particularly for low base rate disorders and complex treatments—and given traditional barriers that interfere with the broad availability of specialty care, we believe there may be a vital role for real-time *specialty behavioral telehealth care*. In a specialty behavioral telehealth care model, high-quality specialty services would be offered in real time through the use of videoconferencing and related technologies, either directly to patients in their homes or to other private locations with Internet access. Generalists confronted with patient presentations for which they have not completed competency training could easily identify credentialed specialists online and make a quality referral, regardless of patients' geographic proximity to specialty care in their area. The broader availability of specialty referral options would presumably reduce the high patient volume that burdens primary care settings, shorten waitlists, and allow the generalist workforce to allocate increased resources to what it does best—the basic diagnosis and treatment of common mental health problems.

Specialty mental health “clinics” may be housed online, rather than be geographically bound, and systematically deliver specialty care for low base rate disorders and conditions requiring involved treatment methods that are not easily disseminated to generalist mental health settings. In light of current licensing regulations and pending reform, the only geographic limitation would be that at this time providers in most states cannot deliver care to individuals outside of states in which they are licensed. Not only do telemethods offer more cost- and resource-efficient care than traditional in-office care (Khanna, Aschenbrand, & Kendall, 2007; McCrone et al., 2004; Newman, 2000), but such an Internet-delivered format would liberate specialty providers from practicing only in metropolitan regions with large populations.

From a provider's standpoint, the demand for specialty care would be much larger if the provider's services were accessible to an entire affected statewide population, a situation that would allow for overcoming key economic barriers to developing specialty practices for less common conditions. With higher and steadier demands for specialty care, the supply of specialty providers would presumably increase as well, providing more affordable options for those in need.

As an illustration of the great potential of specialty behavioral telehealth care for complex treatments, let us consider the case of Parent–Child Interaction Therapy (PCIT; Eyberg & Funderburk, 2011). PCIT is a highly specialized short-term intervention for several early childhood behavior problems that incorporates principles of play therapy into structured behavioral parent training, drawing on attachment and social learning theories to emphasize positive attention, consistency, problem solving, and effective communication. Research has shown substantial empirical support for the efficacy of PCIT in reducing child disruptive

behavior problems and parent distress, and in increasing parent confidence in the ability to manage child behavior (Hood & Eyberg, 2003; Nixon, Sweeney, Erickson, & Touyz, 2003, 2004; Schuhmann, Foote, Eyberg, Boggs, & Algina, 1998; see also Comer et al., 2013). Follow-up data show that gains are maintained across time (see Zisser & Eyberg, 2010). The outcomes are among the more impressive that intervention science has to offer, and they can reverse enormous costs to society by offsetting trajectories at a very early age toward delinquency and criminality. Furthermore, PCIT adaptations are now showing great promise in reducing early childhood internalizing problems as well (Comer et al., 2012; Puliafico, Comer, & Pincus, 2012).

What distinguishes PCIT from related protocols and makes it a relatively more complex treatment to broadly disseminate than several other EBPs is the systematic use of real-time, in-session parent coaching. For the majority of PCIT treatment, the therapist monitors family interactions from an observation room (typically from behind a one-way mirror) and provides live, individualized coaching via a bug-in-the-ear device worn by the parent. This format affords live evidence-based parent feedback in an unobtrusive manner. Moreover, PCIT incorporates a highly structured behavioral coding system (Eyberg, Nelson, Duke, & Boggs, 2005), and so although therapist adherence is essential for delivery of all EBPs, flexibility in the delivery of PCIT may be particularly problematic.

Several initiatives have shown some early promise for the feasibility of disseminating and implementing PCIT in community settings (Franco, Soler, & McBride, 2005; Lyon & Budd, 2010; Niec, Eyberg, & Chase, 2012). However, traditional PCIT requires a custom-built facility with a one-way mirror and bug-in-the-ear communication capacities so that the therapist can communicate directly to parents unobtrusively from an observation room. Given that most mental health and primary care settings are not physically equipped for traditional PCIT, most PCIT implementation programs have been forced to make adaptations—for example, having the therapist whisper the parent coaching while in same room as the family—although it is not clear what effect these adaptations have on treatment effectiveness (Franco et al., 2005). Problems of protocol fidelity have also been noted in broad PCIT implementation efforts (Franco et al., 2005). Furthermore, PCIT is mastery based. Rather than prescribing a specific number of sessions, PCIT has families proceed from one module to the next, and ultimately complete treatment, after parents meet specific criteria on coached skills. Initial PCIT implementation projects in frontline clinical settings have noted that families are taking longer to meet mastery criteria and complete treatment, and are showing higher dropout rates, than families seen in rigorous PCIT specialty settings (Franco et al., 2005; Lyon & Budd, 2010; Niec et al., 2012).

In a specialty behavioral telehealth care model, a real-time, Internet-based interactive videoconferencing format may be a particularly promising vehicle for the delivery of PCIT by certified PCIT specialty care providers. Given the considerable support for PCIT in treating early childhood disorders, an Internet-delivered PCIT format—in which therapists and parents meet via videoconferencing and parent–child interactions are broadcast live from the family’s home via a web camera—has the potential to deliver evidence-based treatments directly to families residing in communities where such treatments are of limited availability, where local practice settings are not physically equipped to provide PCIT, or

where dissemination and implementation efforts have deemed PCIT too complex or infeasible for the training of minimally trained professionals in clinics with high staff turnover. Among child treatments, PCIT may be particularly amenable to an Internet-delivered format given that the specialized PCIT therapist is not supposed to be physically present for the majority of treatment but rather unobtrusively monitoring from a separate room and providing live feedback via a parent-worn bug-in-the-ear device. Using Internet-based videoconferencing methods, specialized PCIT therapists can provide in-the-moment feedback to parents via Bluetooth earpieces worn by the parent during parent-child interactions, regardless of a family's proximity to a specialty PCIT-equipped mental health facility. Internet-delivered PCIT can afford a quantity of therapist contact comparable to that afforded in traditional in-clinic PCIT. In addition, treating families in their natural settings may actually enhance the ecological validity of treatment by providing feedback and live coaching in the very settings in which child behavior is problematic. In our own work we have begun to systematically evaluate the potential of an Internet-based PCIT format delivered directly to families' homes. Initial work is quite promising, supporting the preliminary feasibility and utility of such methods (e.g., Comer, McNeil, & Eyberg, 2011). We are currently conducting multiple randomized controlled trials evaluating Internet-delivered PCIT relative to traditional in-clinic PCIT and to a waitlist control, the results of which will inform the extent to which Internet-delivered PCIT holds promise for inclusion in a specialty behavioral telehealth care mode.

As an illustration of the potential of specialty behavioral telehealth care for low base rate disorders, let us consider the case of chronic tic disorders, which affect just 1% of the general population (Robertson, Eapen, & Cavanna, 2009). Effective psychological treatment for these disorders entails specialized multicomponent treatment emphasizing tic awareness training, competing response training, and function-based intervention (Woods et al., 2008). General self-monitoring, contingency management, or relaxation training, alone, do not appear to be sufficient (Reese, Timpano, Siev, Rowley, & Wilhelm, 2010). Research suggests that only 10% of mental health care providers are equipped to implement these specialized procedures (Marcks, Woods, Teng, & Twohig, 2004), and one of the more common reasons affected individuals do not receive appropriate care is a reported lack of experts in the treatment of these conditions in their area (Woods et al., 2010). In a specialty behavioral telehealth care model, a real-time, Internet-based interactive videoconferencing format may be a promising vehicle for the delivery of awareness and competing response training by certified HRT specialty care providers. Given the considerable support for HRT in managing Tourette syndrome and other chronic tic disorders, an Internet-delivered HRT format in which therapists and patients meet via videoconferencing has the potential to deliver evidence-based treatment directly to individuals residing in communities where such specialty treatment is of limited availability and/or where dissemination and implementation efforts have deemed tic disorders too rare of a clinical presentation to be worth a training investment. Empirical work has already begun to support the delivery of HRT via videoconferencing (Himle, Olufs, Himle, Tucker, & Woods, 2010), although larger controlled evaluations are certainly needed. Related work has also begun examining the potential of Internet-delivered EBPs for a number of other low base rate disorders as well, such as obsessive compulsive disorder (e.g., Comer et al., in press; Himle et al., 2006). For

example, Storch and colleagues (2011) evaluated a web-camera-delivered family-based cognitive behavior therapy, including exposure and response prevention, for childhood obsessive compulsive disorder relative to a waitlist comparison. Roughly 80% of youth treated with web-camera-delivered cognitive behavior therapy were treatment responders, versus only 13% of youth in the waitlist condition. Gains were generally maintained at a three-month follow-up assessment. We encourage increased research efforts and funding opportunities for the development and evaluation of complex treatments and treatments for low base rate disorders that draw on technological innovations to extend the broad availability of specialty care.

In addition, online meeting applications are increasingly making it broadly feasible and manageable to hold videoconferencing sessions for more than two attendants. Future work will be needed to evaluate the potential of real-time group treatment formats in specialty behavioral telehealth, given the potential for group treatments to aid cost containment for payers and to optimize provider resources.

Moreover, inadequate response to EBPs (treatment resistance)—even among individuals with high base rate disorders, such as depression and anxiety—presents specific challenges in generalist mental health settings, and a specialty behavioral telehealth workforce may offer innovative and meaningful solutions. Despite positive overall success rates among EBPs for common conditions, pooled rates of inadequate response or nonresponse to EBPs typically still fall between 35% and 55% (Hofmann, Asnaani, Vonk, Sawyer, & Fang, 2012). The need to adequately attend to the problems of treatment resistance is critical both from the perspective of the patient and from the perspective of optimizing the overall system of care. Regarding the individual inadequately responding patient, not only do presenting clinical concerns fail to remit, but failure to respond to an EBP places the individual at risk for further clinical deterioration, including the subsequent development of secondary disorders and problematic substance use (Kendall & Kessler, 2002; Kendall, Safford, Flannery-Schroeder, & Webb, 2004; Kessler & Price, 1993). Regarding the overall system of care, given that ineffective treatment in community mental health settings is linked with increased numbers of therapy sessions utilized by patients (e.g., Weiss, Catron, Harris, & Phung, 1999), failure of patients to improve can create “logjams” in a clinic’s ability to initiate timely treatment for new patients in need of care. Regrettably, although up to half of individuals with common disorders receiving our strongest treatments do not sufficiently improve, in most geographic regions there are limited options at present for addressing the clinical needs of these patients.

Let us consider the example of childhood anxiety disorders, which collectively constitute the most prevalent class of disorders affecting youth (Comer & Olfson, 2010). Treatment incorporating EBPs for youth anxiety has been associated with up to a 60%–80% response rate in specialty clinics (Walkup et al., 2008), but EBPs in community settings delivered by generalist providers have not outperformed usual care, with only 50% of children assigned to receive EBP showing diagnostic response (Southam-Gerow et al., 2010). Despite strong dissemination and implementation efforts promoting EBPs for child anxiety, a meaningful proportion of treated anxious youth will not respond adequately to EBPs in generalist settings. Although several metropolitan regions and academic hubs have specialty child

anxiety clinics that yield improved outcomes relative to generalist settings, the majority of geographic regions do not, limiting the options for most generalist providers treating treatment-resistant anxious patients to either (a) abandoning treatment, (b) “staying the course” with treatment that is not working, or (c) initiating a pharmacology referral. Although psychotropic interventions, such as antidepressant medication, are associated with significant improvements in child anxiety (e.g., Walkup et al., 2008), a pharmacologic approach may be at odds with patient/family preferences, and importantly, for younger ages consensus psychiatry guidelines for anxiety disorders recommend exhausting high-quality nonpharmacologic options before initiating a pharmacologic intervention (Gleason et al., 2007). In a specialty behavioral telehealth care model, a real-time, Internet-based interactive videoconferencing format may be a promising vehicle for the delivery of second-step EBP for treatment-resistant child anxiety by specialists in exposure-based treatments. Given the considerable support for exposure-based treatments for managing childhood anxiety disorders, an Internet-delivered format in which therapists and patients meet via videoconferencing has the potential to deliver evidence-based treatment directly to individuals residing in communities where such second-step specialty treatment is of limited availability.

Getting From Here to There: Next Steps Toward the Reality of a Specialty Behavioral Telehealth Workforce

In the event that specialty behavioral telehealth receives continued empirical support, consensus guidelines and practice parameters for such care will be needed. Specifically, behavioral telehealth care providers will need to comply with Health Insurance Portability and Accountability Act (1996) regulatory guidelines related to use, disclosure, and storage of confidential information. As such, when selecting online meeting applications or videoconferencing software, therapists are advised at a minimum to choose a platform that (a) uses the Advanced Encryption Standards (AES) algorithm, (b) allows users to host unlisted meetings, (c) requires an invitation from the “host” (i.e., therapist) for attendance, (d) requires all meeting attendees to log in with an e-mail address and a strong password, (e) requires approval of “Forgot Password” requests, (f) provides identification of all meeting attendees, and (g) does not store or retain any session information on its network after a session is complete. For additional security, it is helpful for the platform to use at least a Secure Sockets Layer (SSL)/Transport Layer Security (TLS) encryption tunnel, rather than just the standard HTTP port 80. It is also recommended that patients generate access IDs that do not include any personally identifying information in them (e.g., last names, dates of birth), and therapists and patients should avoid using last names during sessions. Nonetheless, as considered in depth elsewhere (Van Allen & Roberts, 2011), technological innovations and opportunities are advancing at a pace more rapid than the development of relevant regulatory, ethical, and legal standards. We must be extremely cautious against allowing technology-assisted practices operating in the absence of guidance from the broader professional community, particularly given the unique privacy, security, and liability concerns inherent in such care. In recent years, a guiding dialogue has begun to unfold on the management of threats to confidentiality (Schwartz & Lonborg, 2011; Yuen, Goetter, Herbert, & Forman, 2012)—addressing such key issues as privacy protection and encryption—but we still undoubtedly have a very long way to go before consensus practice

parameters addressing matters of patient information security can be expected. In the interim, patients participating in behavioral telehealth care must be clearly informed prior to their consent to treatment that the field currently has no consensus on the role and methods of technology in psychological treatment.

Liability matters must also be considered. It is more difficult to ensure patient safety when the provider has less control over the patient's environment. It may be that certain high-risk patients, such as suicidal patients or patients engaging in serious self-harm behaviors, may be inappropriate for specialty behavioral telehealth care.

Logistical and regulatory issues of competency will need to be addressed. How should specialists best be credentialed? At present, there are no overarching guidelines here, but individual treatment developers are increasingly outlining training and certification guidelines for their specific protocols. For example, training requirements outlined for PCIT include (a) 40 hours of face-to-face contact with a PCIT master trainer that includes PCIT didactics, coding practice, case observations, and guided coaching; (b) advanced live training on actual cases roughly –two to six months after initial training to focus on skill refinement and treatment adherence; (c) completion of at least two PCIT cases to completion while in contact with a PCIT master trainer; and (d) integrity checks by a PCIT master trainer reviewing treatment recordings to confirm satisfactory skill development.

For quality assurance in the delivery of specialty behavioral telehealth care, there will be a need for specialty providers not only to satisfy individual training criteria for each intervention in which they would like to be credentialed but also to complete formal competency training in the general delivery of behavioral telehealth care. Indeed, the subtleties of communication, such as eye contact and body language, may not be as easy to capture in Internet-delivered treatment, and the accuracy of behavioral observations will likely merit special efforts. However, there is no evidence to date that the effectiveness of psychological assessment and treatment are compromised, or that the therapeutic alliance suffers, when treatment is conducted via videoconferencing (Bouchard et al., 2004; Cook & Doyle, 2002; Germain, Marchand, Bouchard, Guay, & Drouin, 2010; Yuen et al., 2012). Given the variability of relevant Internet delivery issues across interventions, ideally, developers of individual EBPs will also increasingly develop clear training criteria for the competent delivery of their respective protocols via the Internet. In addition, given current trends in mental health care and the increasing incorporation of technology into treatment delivery formats, professional regulatory boards may do well to consider incorporating focused didactic and practice-based training in behavioral telehealth care into accreditation decisions.

Payer issues will need to be addressed. Current Procedural Terminology (CPT) code 98969, introduced in the past few years, characterizes online services provided by a nonphysician health care provider. This code does not specify the conduct of psychotherapy and is not reimbursed by many third-party payers. Currently, the individual psychotherapy CPT codes (90804 –90829) refer to face-to-face visits in an office, outpatient facility, inpatient hospital, partial hospital, or residential care facility, and so within the current health care procedural terminology it is not readily clear how specialty behavioral telehealth care providers are to

most appropriately characterize their work. Clarifying this matter will be of critical importance in order to ensure that specialty behavioral telehealth services are available to the full spectrum of individuals needing care regardless of economic resources. To date, federal and state programs (e.g., Medicaid, Department of Veterans Affairs, Department of Defense) have collectively been more progressive than private health insurance programs in providing reimbursement for behavioral telehealth services. For example, although Medicaid reimbursement varies from state to state, 40 U.S. states already reimburse for behavioral telehealth services (Center for Telehealth and eHealth Law, 2011). Many of these states provide for such services by reimbursing under traditional psychotherapy CPT codes (90804–90829), plus a separate code (Q3014) for a “telehealth originating site facility fee.” States differ with regard to whether documentation is needed to authenticate that services were provided to a rural or otherwise remote region. For example, recently California Law AB 415 streamlined approval processes for telehealth services delivery by removing the previous MediCal rule requiring documentation of an existing barrier for the patient to in-person services. In contrast, coverage for behavioral telehealth in Oklahoma is limited to rural and other underserved regions. Among states requiring documentation that the patient resides in an “underserved region,” there remains variability in the extent to which required documentation must attest to a lack of *any* mental health care in the patient’s region, or whether the absence of available *specialty* care is sufficient. However, trends across states toward increasing Medicaid coverage for behavioral telehealth (Center for Telehealth and eHealth Law, 2011) are nonetheless highly encouraging with regard to ensuring the accessibility of behavioral telehealth for all.

In addition, whereas many medical CPT codes do address the variability in complexity across patient encounters (e.g., CPT code 99203 vs. 99205), none of the current psychotherapy codes account for complexity. Distinctions that characterize the complexity of medical care have impacts on patient coverage and reimbursement, and as such the development of formal specialty behavioral telehealth care may merit reconsideration of CPT codes for psychotherapy to account for the necessity of additional expertise. There is certainly precedent in non-U.S. health care systems for the use of distinct codes to designate varying levels of procedural complexity in psychotherapy, as well as the varying credentials required to provide such procedures associated with different levels of reimbursement (e.g., the Australian government’s distinction between “psychological therapy” and “focussed psychological strategies”; Australian Psychological Society, 2011).

Matters of licensure and practice jurisdiction will also need to be further resolved. At this time, providers in most states cannot deliver care to individuals outside of states in which they are licensed. However, licensure regulations appear to be evolving, as some states with particularly large rural and otherwise underserved populations are increasing their allowance of licensing reciprocity across state lines to allow providers in other states to practice within state lines. Given that several federal health care systems already allow mental health providers to cross state lines in their practice (e.g., Veterans Health Administration, Department of Defense), the confines of state-based licensure may become less relevant as telehealth options for treatment delivery continue to evolve.

Moreover, as Kazdin and Blase (2011) noted, given the enormous discrepancy between the numbers of patients in need and the numbers of providers available, even doubling the mental health care workforce might yield only a minor public health impact. Although a specialty behavioral healthcare workforce that can transcend traditional geographic barriers to care holds enormous promise for extending the *quality* and *reach* of specialty care, it is clear that the emergence of such a workforce, alone, cannot adequately address the enormous discrepancy between the number of affected individuals and the relatively small number of providers. Diverting difficult-to-treat patients from primary to specialty care may accelerate the flow of patients at primary care settings but may inadvertently create new backlogs at specialty settings. Indeed, many specialty centers in metropolitan and other geographically narrow regions already operate with considerable waitlists, and broadening patient catchment areas to include entire statewide regions in the absence of increasing the numbers of specialty providers would presumably only worsen this problem. We must be cautious against relieving one funnel problem only to inadvertently create another.

Accordingly, in the coming years, we will need to allocate considerable resources to the training of substantially greater numbers of specialty providers who are competent in the conduct of behavioral telehealth care. Similar to the situation in other health care disciplines, there will likely be an increased role for degree and certification programs specific to specialty care for various low base rate conditions and for specific treatments. Given critical needs for provider availability and cost containment, as in other specialty health care disciplines that have increasingly incorporated roles for physician assistants, there may be increasing roles for supervised mental health care technicians who can provide a high volume of quality specialty care over the Internet.

Nonetheless, although the emergence of a specialty behavioral telehealth care workforce has the potential to expand the quality and reach of effective mental health care, simply increasing the number of specialty behavioral telehealth care providers, alone, cannot adequately resolve the mental health care workforce-power problem so well articulated by Kazdin and Blase (2011). We next turn our attention to low-intensity options that will be needed in order to complement real-time specialty behavioral telehealth care.

Buttressing Real-Time Specialty Behavioral Telehealth With Low-Intensity Options

Kazdin and Blase (2011) discussed how an exclusive focus on individual in-person/face-to-face psychological treatment delivery is insufficient to adequately address the large numbers of individuals in need of treatment, strictly from a mental health workforce-power perspective. The dramatic discrepancy between the large numbers of individuals in need of care and the relatively small numbers of individuals delivering care is such that even doubling the mental health care workforce would yield only a minor public health impact (Kazdin & Blase, 2011). Accordingly, Kazdin and Blase have called for a broadened portfolio of treatment delivery models in order to appreciably expand the public health impact of psychological services. The real-time specialty behavioral telehealth care we have outlined above—in which high-quality specialty services are offered through the use of videoconferencing—holds enormous potential for expanding the quality and geographic

accessibility of specialty options, but it may nonetheless be restricted by its own workforce-power problems in the absence of complementary low-intensity specialty options.

Indeed, traditional in-person specialty clinics clustered around academic and metropolitan centers typically operate with sizable waitlists as is, and so even doubling the workforce at these clinics may not have a discernible impact if they are to now become responsible for delivering real-time Internet-based care to expanded statewide catchment regions. Disruptive innovations that reframe and simplify existing services for the majority of consumers may be important as well (see Rotheram-Borus, Swendeman, & Chorpita, 2012). In other fields, examples of disruptive innovations include ATMs, which now satisfy customer needs in the majority of individual banking transactions, and the mass distribution of nonprescription eyeglasses, which adequately meet the needs of 4 out of every 5 individuals needing corrective lenses.

Evidence-based, technology-driven self-help options and related mobile technologies for self-monitoring and education will likely have an important role in a broadened specialty stepped care model that can more adequately accelerate the flow of affected individuals into needed specialty services. Computerized guided and “pure” self-help options are showing increasing support for a range of clinical presentations (e.g., Clarke et al., 2002; see also Dimeff et al., 2010). Importantly, however, treatment models requiring individuals to first fail to respond to low-intensity options before graduating on to more demanding treatments can certainly aid cost and resource containment, but such stepped care models can also introduce inefficiencies in care for some—and failure to respond to lower intensity treatments may discourage some patients in great need from seeking further care (see Wilson, Vitousek, & Loeb, 2000). This is particularly concerning in light of high rates of premature treatment dropout (Deane, Wootton, Hsu, & Kelly, 2012; Huas et al., 2011). Roughly 70% of mental health care dropouts occur before the third session (Olfson et al., 2009), underscoring the importance of initiating indicated treatment from the outset. Accordingly, central to a research agenda supporting the role of specialty behavioral telehealth within a broadened portfolio of treatment delivery models will be the need to identify *for whom* guided self-help and other low-intensity treatments are appropriate and for whom real-time specialty behavioral telehealth as a first-line intervention is warranted. For example, considerable support has been found for guided self-help in the treatment of bulimia nervosa and binge eating disorders, including programs relying solely on Internet-based materials and e-mail-based therapist support (Wilson & Zandberg, 2012). At the same time, guided self-help is contraindicated for anorexia nervosa. To determine *when* patients treated with low-intensity options might benefit from a “step up” to real-time specialty behavioral telehealth, increased research is needed to go beyond an examination of main outcomes for low-intensity options and to begin to identify early indicators of inadequate response or nonresponse as well as expected trajectories of treatment response. Importantly, although in this article we have emphasized technology-based formats for low-intensity treatment options, in the years immediately ahead print options will certainly continue to play a very prominent role in bibliotherapy, “pure” and guided self-help, and an overall stepped care model for many affected individuals, particularly given the current—but very rapidly expanding—state of Internet accessibility across the population.

Finally, research will be needed to identify how real-time specialty behavioral telehealth can be incorporated into larger stepped care models. To date, large-scale adaptive treatment models systematically incorporating technology-based interventions have traditionally incorporated the technology-based interventions at the lowest steps of care. For example, in the Improving Access to Psychological Therapies program (Clark, 2012; Clark et al., 2009), for many common problems computerized programs such as Beating the Blues and FearFighter are included at lower steps of care, and inadequate responders are then referred to non-technology-based, in-person psychological treatment. Unlike such existing stepped care models, the incorporation of real-time specialty behavioral telehealth would actually entail incorporating technology into the *higher* steps of care for many patients. In order to inform the optimal flow of patients between primary and specialty mental health care, large-scale evaluations of stepped care algorithms will do well to incorporate real-time specialty behavioral telehealth options at higher treatment steps. Such work will be essential not only for evaluating the optimal treatment of individuals with low base rate conditions or conditions for which complex treatments are indicated but also for evaluating the optimal treatment of geographically remote individuals with high base rate conditions, such as depression, who fail to respond to treatment provided by generalist mental health workers. Moreover, research indicates that poor early treatment response significantly predicts poor ultimate clinical response following a full course of treatment in a given setting (e.g., Bradford et al., 2011; Lutz, Stulz, & Köck, 2009; Van et al., 2008). Given that at least half of patients with high base rate disorders seem to respond to EBPs in generalist settings, a cost-effectiveness perspective would suggest that generalist practices certainly remain the optimal initial disposition for patients with high base rate disorders but that increased efforts will be needed to monitor early response (and lack thereof) in order to identify individuals who may most benefit from referral to a specialty provider.

Concluding Thoughts

Given the considerable gaps that persist between psychological treatments in experimental settings and services available in the community, pioneering broad dissemination and implementation efforts have emerged with the enormous promise to improve practices for a majority of patients seeking mental health care (see Beidas & Kendall, 2010; McHugh & Barlow, 2010, 2012). Importantly, however, these very exciting efforts may nonetheless fail to sufficiently address the tremendous burden of mental illness for considerable numbers of affected individuals in need, even if these efforts fully actualize their enormous promise. As dissemination and implementation efforts work to ensure a quality generalist mental health care workforce, presently we have highlighted the vital need for available specialty care in the delivery of psychological treatments. Given traditional barriers that interfere with the accessibility of specialty care for affected individuals, we have proposed the transformative potential of a specialty behavioral telehealth care workforce, transacting with the generalist practitioner workforce as well as low-intensity treatment options to collectively ensure the highest quality and timely delivery of needed treatments to affected individuals.

Needless to say, the field is just at the very earliest stages of evaluating the potentials of Internet-delivered specialty care, and a tremendous amount of work is required before behavioral telehealth care is to be considered a serious vehicle for the systematic delivery of

specialty services. Our aim here is certainly not to argue that specialty behavioral telehealth care models are well supported or that they are self-evident and should be prima facie accepted. Rather, we call for a sense of urgency to develop and study the potential of such a specialty care delivery model for various conditions and treatments in light of the limits of broad dissemination and implementation.

This will require systematic research to evaluate the feasibility, credibility, acceptability, efficacy, and then effectiveness of Internet-delivered formats, as well as their performance in the context of stepped care models. As such, considerable funding will be needed to support these investigations, and funding agencies charged with reducing the burden of mental illness would do well to allocate substantial resources to such efforts. In these times of reduced federal support for mental health interventions research, there remains a pressing need to retain a focus on the psychological treatment of low base rate disorders that collectively affect millions upon millions of individuals. We must also continue to support the development and refinement of supported treatments that may not lend themselves to being readily implemented by the broad spectrum of professionals providing care, who vary greatly in training and experience. Moreover, focused research is needed to detect early indicators of poor treatment response among patients with high base rate conditions, in order to identify as early in treatment as possible which individuals may benefit most from specialty care. Research will be needed to identify which cases of poor response would benefit from a simple specialty behavioral telehealth consultation in which the generalist provider consults briefly with a remote specialist while continuing to treat the patient him or herself, and which cases would benefit from a full specialist referral in which the patient's direct care is transferred to the remote specialist. Indeed, the spectrum of psychological stepped care options will likely need to entail (a) low-intensity technology-based options with little or no direct therapist involvement at lower steps; (b) direct care from a generalist provider, and then direct care from a generalist provider seeking consultation from a (typically remote) specialist at second and third steps; and (c) direct care from a specialty provider (via behavioral telehealth in most regions) at the highest step.

Disparities in Internet access and technological literacy may interfere with the accessibility of specialty behavioral telehealth care in the immediate coming years, as 1 in 4 families does not currently have household Internet (U.S. Census Bureau, 2011). However, national trends find that demographic groups that currently have the lowest access to and facility with the Internet—for example, senior citizens and low-income and rural-dwelling families—are showing the most rapid growth in adoption of household Internet (Horrihan, 2009). Importantly, recent trends and large federal investments in the expansion of broadband Internet to underserved areas suggest it is conceivable that broadband Internet access will soon show the same household ubiquity currently shown for telephones. As we approach broadband access for almost all U.S. homes regardless of geography or income, proof-of-concept research efforts are essential to evaluate the merits of Internet-delivered mental health care.

In conclusion, broad dissemination and implementation efforts are already showing enormous promise for improving the general public's access to supported psychological interventions. Given difficulties inherent in effectively disseminating complex treatments on

a broad scale, and the relatively reduced local relevance of disseminating treatments for low base rate disorders, we believe a specialty behavioral telehealth care system may be key to fully redressing the societal burden of mental illness and maximizing the public health relevance of the remarkable advances in intervention science that have occurred over the past 40 years. In place of a delivery model that expects primary care providers to effectively treat all local individuals in a catchment area regardless of symptom presentation, we believe mental health providers in primary care settings may be best suited to treat the most common problems with common treatment elements, and to incorporate an increasingly prominent professional role to identifying, allocating, and referring patients for appropriate specialty care as needed. Rather than “shoe-horning” all cases into an overburdened general purpose system and reducing the overall quality of care for all, distinguishing generalist from specialty care in the delivery of psychological treatments can redirect our focus and resources into identifying and matching patients to the most appropriate care. We believe technological innovations may be central to this effort.

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Biographies



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REFERENCES

- Aarons GA, Sommerfeld DH, Hecht DB, Silovsky JF, Chaffin MJ. The impact of evidence-based practice implementation and fidelity monitoring on staff turnover: Evidence for a protective effect. *Journal of Consulting and Clinical Psychology*. 2009; 77(2):270–280. [PubMed: 19309186]
- American Academy of Child and Adolescent Psychiatry, Work Group on Quality Issues. Practice parameter for telepsychiatry with children and adolescents. *Journal of the American Academy of Child and Adolescent Psychiatry*. 2008; 47:1468–1483. [PubMed: 19034191]
- American Recovery and Reinvestment Act of 2009, Pub. L. No. 111-5, 123 Stat. 115. 2009. Retrieved from <http://www.gpo.gov/fdsys/pkg/PLAW-111publ5/pdf/PLAW-111publ5.pdf>

- Angelosante AG, Pincus DB, Whitton SW, Cheron D, Pian J. Implementation of an intensive treatment protocol for adolescents with panic disorder and agoraphobia. *Cognitive and Behavioral Practice*. 2009; 16:345–357.
- Atkins MS, Graczyk PA, Frazier SL, Abdul-Adil J. Toward a new model for promoting urban children's mental health: Accessible, effective, and sustainable school-based mental health services. *School Psychology Review*. 2003; 32:503–514.
- Australian Psychological Society. Table of Medicare benefits schedule of fees and rebates for psychological items (as of 1 November 2011). 2011 Retrieved from http://www.psychology.org.au/Assets/Files/2011-Table-of-MedicareBenefits_Web.pdf.
- Barlow DH. Psychological treatments. *American Psychologist*. 2004; 59:869–878. [PubMed: 15584821]
- Barlow, DH., editor. *Clinical handbook of psychological disorders*. 4th ed.. New York, NY: Guilford Press; 2008.
- Barlow DH, Allen LB, Choate ML. Toward a unified treatment for emotional disorders. *Behavior Therapy*. 2004; 35:205–230.
- Barlow, DH.; Farchione, TJ.; Fairholme, CP.; Ellard, KK.; Boisseau, CL.; Allen, LB.; May, JTE. Unified protocol for transdiagnostic treatment of emotional disorders: Therapist guide. New York, NY: Oxford University Press; 2011.
- Barry CL, Huskamp H. Moving beyond parity—Mental health and addiction under the ACA. *New England Journal of Medicine*. 2011; 365:973–975. [PubMed: 21848453]
- Beidas RS, Edmunds JM, Marcus SC, Kendall PC. An RCT of training and consultation as implementation strategies for an empirically supported treatment. *Psychiatric Services*. 2012; 63:660–665. [PubMed: 22549401]
- Beidas RS, Kendall PC. Training therapists in evidence-based practice: A critical review of studies from a systems-contextual perspective. *Clinical Psychology: Science and Practice*. 2010; 17:1–30. [PubMed: 20877441]
- Beidas, RS.; Mehta, T.; Atkins, M.; Solomon, B.; Merz, J. Dissemination and implementation science: Research models and methods. In: Comer, JS.; Kendall, PC., editors. *Oxford handbook of research strategies for clinical psychology*. New York, NY: Oxford University Press; 2013. p. 62-86.
- Birnbaum HG, Kessler RC, Kelley D, Ben-Hamadi R, Joish VN, Greenberg PE. Employer burden of mild, moderate, and severe major depressive disorder: Mental health services utilization and costs, and work performance. *Depression and Anxiety*. 2010; 27:78–89. [PubMed: 19569060]
- Blanco C, Olfson M, Goodwin RD, Ogburn E, Liebowitz MR, Nunes EV, Hasin DS. Generalizability of clinical trial results for major depression to community samples: Results from the National Epidemiologic Survey on Alcohol and Related Conditions. *Journal of Clinical Psychiatry*. 2008; 69:1276–1280. [PubMed: 18557666]
- Bouchard S, Paquin B, Payeur R, Allard M, Rivard V, Fournier T, Lapierre J. Delivering cognitive-behavior therapy for panic disorder with agoraphobia in videoconference. *Telemedicine Journal and e-Health*. 2004; 10:13–24. [PubMed: 15104911]
- Bradford A, Cully J, Rhoades H, Kunik M, Kraus-Schuman C, Wilson N, Stanley M. Early response to psychotherapy and long-term change in worry symptoms in older adults with generalized anxiety disorder. *American Journal of Geriatric Psychiatry*. 2011; 19(4):347–356. [PubMed: 21427643]
- Breslau J, Lane M, Sampson N, Kessler RC. Mental disorders and subsequent educational attainment in a US national sample. *Journal of Psychiatric Research*. 2008; 42:708–716. [PubMed: 18331741]
- Bruns EJ, Hoagwood K. State implementation of evidence-based practice for youths, part I: Responses to the state of the evidence. *Journal of the American Academy of Child and Adolescent Psychiatry*. 2008; 47:369–373. [PubMed: 18356704]
- Center for Telehealth and eHealth Law. 50 state Medicaid statute survey. Washington, DC: Author; 2011. Retrieved from <http://ctel.org/wp-content/uploads/2011/06/CTeL-50-State-Medicaid-Statute-Survey-Part-I.pdf>
- Chorpita, BF. *Modular cognitive-behavioral therapy for childhood anxiety disorders*. New York, NY: Guilford Press; 2007.

- Chorpita, BF.; Weisz, JR. Modular approach to therapy for children with anxiety, depression, or conduct problems. Honolulu, HI: University of Hawaii at Manoa; Boston, MA: Judge Baker Children's Center, Harvard Medical School; 2005.
- Clark, DM. The English Improving Access to Psychological Treatments (IAPT) program: History and progress. In: McHugh, K.; Barlow, DH., editors. Dissemination and implementation of evidence-based psychological interventions. New York, NY: Oxford University Press; 2012. p. 61-77.
- Clark DM, Layard R, Smithies R, Richard DA, Suckling R, Wright B. Improving access to psychological therapy: Initial evaluation of two UK demonstration sites. *Behaviour Research and Therapy*. 2009; 47:910–920. [PubMed: 19647230]
- Clarke G, Reid E, Eubanks D, O'Connor E, DeBar LL, Kelleher C, Gullion C. Overcoming depression on the Internet (ODIN): A randomized controlled trial of an Internet depression skills intervention program. *Journal of Medical Internet Research*. 2002; 4:e14. [PubMed: 12554545]
- Comer JS, Blanco C, Hasin DS, Liu SM, Grant BF, Turner JB, Olfson M. Health-related quality of life across the anxiety disorders: Results from the National Epidemiologic Survey on Alcohol and Related Conditions (NESARC). *Journal of Clinical Psychiatry*. 2011; 72:43–50. [PubMed: 20816036]
- Comer JS, Chow C, Chan PT, Cooper-Vince C, Wilson LS. Psychosocial treatment efficacy for disruptive behavior problems in very young children: A meta-analytic examination. *Journal of the American Academy of Child and Adolescent Psychiatry*. 2013; 52(1):26–36. [PubMed: 23265631]
- Comer JS, Furr JM, Cooper-Vince C, Kerns C, Chan PT, Edson L, Freeman JB. Internet-delivered treatment for early-onset OCD: A preliminary case series. *Journal of Clinical Child and Adolescent Psychology*. (in press).
- Comer, JS.; McNeil, CB.; Eyberg, SM. Development of an Internet-delivered protocol for in-home Parent–Child Interaction Therapy; Paper presented at the 45th annual meeting of the Association for Behavioral and Cognitive Therapies; Toronto, Ontario, Canada. 2011 Nov.
- Comer JS, Mojtabai R, Olfson M. National trends in the antipsychotic treatment of psychiatric outpatients with anxiety disorders. *American Journal of Psychiatry*. 2011; 168:1057–1065. [PubMed: 21799067]
- Comer, JS.; Olfson, M. The epidemiology of anxiety disorders. In: Simpson, HB.; Schneier, F.; Neria, Y.; Lewis-Fernandez, R., editors. *Anxiety disorders: Theory, research, and clinical perspectives*. New York, NY: Cambridge University Press; 2010. p. 6-19.
- Comer JS, Olfson M, Mojtabai R. National trends in child and adolescent psychotropic polypharmacy in office-based practice, 1996–2007. *Journal of the American Academy of Child and Adolescent Psychiatry*. 2010; 49:1001–1010. [PubMed: 20855045]
- Comer JS, Puliafico AC, Aschenbrand SG, McKnight K, Robin JA, Goldfine M, Albano AM. A pilot feasibility evaluation of the CALM Program for anxiety disorders in early childhood. *Journal of Anxiety Disorders*. 2012; 26:40–49. [PubMed: 21917417]
- Cook JE, Doyle C. Working alliance in online therapy as compared to face-to-face therapy: Preliminary results. *CyberPsychology & Behavior*. 2002; 5:95–105. [PubMed: 12025884]
- Craske MG, Rose RD, Lang A, Welch SS, Campbell-Sills L, Sullivan G, Roy-Byrne PP. Computer-assisted delivery of cognitive behavioral therapy for anxiety disorders in primary-care settings. *Depression and Anxiety*. 2009; 26:235–242. [PubMed: 19212970]
- Crits-Christoph P, Siqueland L, Chittams J, Barber JP, Beck AT, Frank A, Woody G. Training in cognitive, supportive-expressive, and drug counseling therapies for cocaine dependence. *Journal of Consulting and Clinical Psychology*. 1998; 66:484–492. [PubMed: 9642886]
- Daleiden EL, Chorpita BF, Donkervoet C, Arensdorf AM, Brogan M. Getting better and getting them better: Health outcomes and evidence-based practice within a system of care. *Journal of the American Academy of Child and Adolescent Psychiatry*. 2006; 45:49–756.
- Davis TE, Ollendick TH, Öst L. Intensive treatment of specific phobias in children and adolescents. *Cognitive and Behavioral Practice*. 2009; 16:294–303. [PubMed: 20161063]
- Deane FP, Wootton DJ, Hsu C, Kelly PJ. Predicting dropout in the first 3 months of 12-step residential drug and alcohol treatment in an Australian sample. *Journal of Studies on Alcohol and Drugs*. 2012; 73:216–225. [PubMed: 22333329]

- Diefenbach GJ, Tolin DF, Hannan S, Crocetto J, Worhunsky P. Trichotillomania: Impact on psychosocial functioning and quality of life. *Behaviour Research and Therapy*. 2005; 43:869–884. [PubMed: 15896284]
- Dimeff, LA.; Paves, AP.; Skutch, JM.; Woodcock, EA. Shifting paradigms in clinical psychology: How innovative technologies are shaping treatment delivery. In: Barlow, DH., editor. *Handbook of clinical psychology*. New York, NY: Oxford University Press; 2010. p. 618-649.
- Ellard KK, Fairholme CP, Boisseau CL, Farchione TJ, Barlow DH. Unified protocol for the transdiagnostic treatment of emotional disorders: Protocol development and initial outcome data. *Cognitive and Behavioral Practice*. 2010; 17:88–101.
- Ellis AR, Konrad TR, Thomas KC, Morrissey JP. County-level estimates of mental health professional supply in the United States. *Psychiatric Services*. 2009; 60:1315–1322. [PubMed: 19797370]
- Eyberg, SM.; Funderburk, B. Parent–Child Interaction Therapy protocol. Gainesville, FL: PCIT International; 2011.
- Eyberg, SM.; Nelson, MM.; Duke, M.; Boggs, SR. Manual for the Dyadic Parent–Child Interaction Coding System. 3rd ed.. Gainesville, FL: PCIT International; 2005.
- Fairburn CG, Cooper Z, Doll HA, O'Connor ME, Bohn K, Hawker DM, Palmer RL. Transdiagnostic cognitive-behavioral therapy for patients with eating disorders: A two-site trial with 60-week follow-up. *American Journal of Psychiatry*. 2009; 166:311–319. [PubMed: 19074978]
- Fairburn, C.; Cooper, Z.; Shafran, R.; Wilson, GT. Eating disorders: A transdiagnostic protocol. In: Barlow, DH., editor. *Clinical handbook of psychological disorders: A step-by-step treatment manual*. 4th ed.. New York, NY: Guilford Press; 2008. p. 578-614.
- Farchione TJ, Fairholme CP, Ellard KK, Boisseau CL, Thompson-Hollands J, Carl JR, Barlow DH. Unified protocol for transdiagnostic treatment of emotional disorders: A randomized controlled trial. *Behavior Therapy*. 2012; 43:666–678. [PubMed: 22697453]
- Field MJ, Grigsby J. Telemedicine and remote patient monitoring. *Journal of the American Medical Association*. 2002; 288:423–425. [PubMed: 12132953]
- Flanckbaum M, Rockmore L, Franklin ME. Intensive behavior therapy for tics: Implications for clinical practice and overcoming barriers to treatment. *Journal of Developmental and Physical Disabilities*. 2011; 23:61–69.
- Franco E, Soler RE, McBride M. Introducing and evaluating Parent–Child Interaction Therapy in a system of care. *Child and Adolescent Psychiatric Clinics of North America*. 2005; 14:351–366. [PubMed: 15694790]
- Gallo KP, Barlow DH. Factors involved in clinician adoption of evidence-based interventions in mental health. *Clinical Psychology: Science and Practice*. 2012; 19:93–106.
- Germain V, Marchand A, Bouchard S, Guay S, Drouin M. Assessment of the therapeutic alliance in face-to-face or videoconference treatment for posttraumatic stress disorder. *Cyberpsychology, Behavior, and Social Networking*. 2010; 13:29–35.
- Gleacher AA, Nadeem E, Moy AJ, Whited AL, Albano A, Radigan M, Hoagwood KE. Statewide CBT training for clinicians and supervisors treating youth: The New York State Evidence Based Treatment Dissemination Center. *Journal of Emotional and Behavioral Disorders*. 2011; 19:182–192.
- Gleason MM, Egger L, Emslie GJ, Greenhill LL, Kowatch RA, Lieberman AF, Zeanah CH. Psychopharmacological treatment for very young children: Contexts and guidelines. *Journal of the American Academy of Child and Adolescent Psychiatry*. 2007; 46(12):1532–1572. [PubMed: 18030077]
- Glisson C, Schoenwald SK, Kelleher K, Landsverk J, Hoagwood K, Mayberg S, Green P. Therapist turnover and new program sustainability in mental health clinics as a function of organizational culture, climate, and service structure. *Administration and Policy in Mental Health and Mental Health Services Research*. 2008; 35:124–133. [PubMed: 18080741]
- Grandes G, Montoya II, Arieteleanizbeaskoa MS, Arce VV, Sanchez AA. The burden of mental disorders in primary care. *European Psychiatry*. 2011; 26:428–435. [PubMed: 21306876]
- Greenberg PE, Sisitsky T, Kessler RC, Finkelstein SN, Berndt ER, Davidson JR, Fyer AJ. The economic burden of anxiety disorders in the 1990s. *Journal of Clinical Psychiatry*. 1999; 60:427–435. [PubMed: 10453795]

- Harvey, AG.; Watkins, ER.; Mansell, W.; Shafran, R. Cognitive behavioral processes across psychological disorders: A transdiagnostic approach to research and treatment. Oxford, England: Oxford University Press; 2004.
- Health Insurance Portability and Accountability Act of 1996, Pub. L. 104-191, 110 Stat.1936. 1996. Retrieved from <http://www.gpo.gov/fdsys/pkg/PLAW-104publ191/pdf/PLAW-104publ191.pdf>
- Herschell A, McNeil C, McNeil D. Clinical child psychology's progress in disseminating empirically supported treatments. *Clinical Psychology: Science and Practice*. 2004; 11:267–288.
- Himle JA, Fischer DJ, Muroff JR, Van Etten ML, Lokers LM, Abelson JL, Hanna GL. Videoconferencing-based cognitive-behavioral therapy for obsessive-compulsive disorder. *Behaviour Research and Therapy*. 2006; 44:1821–1829. [PubMed: 16466688]
- Himle MB, Olufs E, Himle J, Tucker BP, Woods DW. Behavior therapy for tics via videoconference delivery: An initial pilot test in children. *Cognitive and Behavioral Practice*. 2010; 17:329–337.
- Hofmann SG, Asnaani A, Vonk IJJ, Sawyer AT, Fang A. The efficacy of cognitive behavior therapy: A review of meta-analyses. *Cognitive Therapy and Research*. 2012; 36:427–440. [PubMed: 23459093]
- Hood KK, Eyberg SM. Outcomes of Parent–Child Interaction Therapy: Mothers' reports of maintenance three to six years after treatment. *Journal of Clinical Child and Adolescent Psychology*. 2003; 32(3):419–429. [PubMed: 12881030]
- Horrigan JB. Home broadband adoption. 2009 Retrieved from the Pew Internet & American Life Project website: <http://pewinternet.org/Reports/2009/10-Home-Broadband-Adoption-2009.aspx>.
- Huas C, Godart N, Foulon C, Pham-Scottez A, Divac S, Fedorowicz V, Rouillon F. Predictors of dropout from inpatient treatment for anorexia nervosa: Data from a large French sample. *Psychiatry Research*. 2011; 185(3):421–426. [PubMed: 20546922]
- Kazdin AE, Blase SL. Rebooting psychotherapy research and practice to reduce the burden of mental illness. *Perspectives on Psychological Science*. 2011; 6:21–37.
- Kendall, PC. *Child and adolescent therapy: Cognitive-behavioral procedures*. 4th ed.. New York, NY: Guilford Press; 2011.
- Kendall PC, Hudson JL, Gosch E, Flannery-Schroeder E, Suveg C. Cognitive-behavioral therapy for anxiety disordered youth: A randomized clinical trial evaluating child and family modalities. *Journal of Consulting and Clinical Psychology*. 2008; 76:282–297. [PubMed: 18377124]
- Kendall PC, Kessler RC. The impact of childhood psychopathology interventions on subsequent substance abuse: Policy implications, comments, and recommendations. *Journal of Consulting and Clinical Psychology*. 2002; 70(6):1303–1306. [PubMed: 12472302]
- Kendall, PC.; Khanna, MS. *CBT4CBT: Computer-based training to be a cognitive-behavioral therapist ... for anxious youth*. Ardmore, PA: Workbook Publishing; 2008.
- Kendall PC, Safford S, Flannery-Schroeder E, Webb A. Child anxiety treatment: Outcomes in adolescence and impact on substance use and depression at 7.4-year follow-up. *Journal of Consulting and Clinical Psychology*. 2004; 72(2):276–287. [PubMed: 15065961]
- Kessler RC, Akiskal HS, Ames M, Birnbaum H, Greenberg P, Hirschfeld RA, Wang PS. Prevalence and effects of mood disorders on work performance in a nationally representative sample of U.S. workers. *American Journal of Psychiatry*. 2006; 163:1561–1568. [PubMed: 16946181]
- Kessler RC, Berglund P, Demler O, Jin R, Merikangas KR, Walters EE. Lifetime prevalence and age-of-onset distributions of DSM-IV disorders in the National Comorbidity Survey Replication. *Archives of General Psychiatry*. 2005; 62:593–602. [PubMed: 15939837]
- Kessler RC, Chiu W, Demler O, Walters EE. Prevalence, severity, and comorbidity of 12-month DSM-IV disorders in the National Comorbidity Survey Replication. *Archives of General Psychiatry*. 2005; 62:617–627. [PubMed: 15939839]
- Kessler RC, Price RH. Primary prevention of secondary disorders: A proposal and agenda. *American Journal of Community Psychology*. 1993; 21(5):607–633. [PubMed: 8192124]
- Khanna M, Aschenbrand SG, Kendall PC. New frontiers: Computer technology in the treatment of anxious youth. *Behavior Therapist*. 2007; 30:22–25.
- Kurlan R. Tourette's syndrome. *New England Journal of Medicine*. 2010; 363:2332–2338. [PubMed: 21142535]

- Lochman JE, Boxmeyer C, Powell N, Qu L, Wells K, Windle M. Dissemination of the Coping Power Program: Importance of intensity of counselor training. *Journal of Consulting and Clinical Psychology*. 2009; 77:397–409. [PubMed: 19485582]
- Lomas J. Diffusion, dissemination, and implementation: Who should do what? *Annals of the New York Academy of Sciences*. 1993; 703:226–235. [PubMed: 8192299]
- Lutz W, Stulz N, Köck K. Patterns of early change and their relationship to outcome and follow-up among patients with major depressive disorders. *Journal of Affective Disorders*. 2009; 118(1–3): 60–68. [PubMed: 19217669]
- Lyon AR, Budd KS. A community mental health implementation of Parent–Child Interaction Therapy (PCIT). *Journal of Child and Family Studies*. 2010; 19:654–668. [PubMed: 20877583]
- Lyon AR, Frazier SL, Mehta T, Atkins MS, Weisbach J. Easier said than done: Intervention sustainability in an urban after-school program. *Administration and Policy in Mental Health and Mental Health Services Research*. 2011; 38:504–517. [PubMed: 21416160]
- Marcks BA, Woods DW, Teng EJ, Twohig MP. What do those who know, know? Investigating providers' knowledge about Tourette syndrome and its treatment. *Cognitive and Behavioral Practice*. 2004; 11:298–305.
- McCrone P, Knapp M, Proudfoot J, Ryden C, Cavanagh K, Shipiro DA, Tylee A. Cost-effectiveness of computerized cognitive-behavioral therapy for anxiety and depression in primary care: Randomized controlled trial. *British Journal of Psychiatry*. 2004; 185:55–62. [PubMed: 15231556]
- McHugh RK, Barlow DH. The dissemination and implementation of evidence-based psychological treatments: A review of current efforts. *American Psychologist*. 2010; 65:73–84. [PubMed: 20141263]
- McHugh, RK.; Barlow, DH. *Dissemination and implementation of evidence-based psychological interventions*. New York, NY: Oxford University Press; 2012.
- McHugh RK, Murray HW, Barlow DH. Balancing fidelity and adaptation in the dissemination of empirically-supported treatments: The promise of transdiagnostic interventions. *Behaviour Research and Therapy*. 2009; 47:946–953. [PubMed: 19643395]
- Merikangas KR, Ames M, Cui L, Stang PE, Ustun T, Von Korff M, Kessler RC. The impact of comorbidity of mental and physical conditions on role disability in the US adult household population. *Archives of General Psychiatry*. 2007; 64:1180–1188. [PubMed: 17909130]
- Miller WR, Yahne CE, Moyers TB, Martinez J, Pirritano M. A randomized trial of methods to help clinicians learn motivation interviewing. *Journal of Consulting and Clinical Psychology*. 2004; 72:1050–1062. [PubMed: 15612851]
- National Organization of State Offices of Rural Health. *Statement on reducing behavioral health disparities in rural communities*. Sterling Heights, MI: Author; 2011.
- Newman MG. Recommendations for a cost-offset model of psychotherapy allocation using generalized anxiety disorder as an example. *Journal of Consulting and Clinical Psychology*. 2000; 68:549–555. [PubMed: 10965629]
- Niec, LN.; Eyberg, S.; Chase, RM. Parent–Child Interaction Therapy: Implementing and sustaining a treatment program for families of young children with disruptive behavior disorders. In: Rubin, A., editor. *Programs and interventions for maltreated children and families at risk*. Hoboken, NJ: Wiley; 2012. p. 61-69.
- Nixon RD, Sweeney L, Erickson DB, Touyz SW. Parent–Child Interaction Therapy: A comparison of standard and abbreviated treatments for oppositional defiant preschoolers. *Journal of Consulting and Clinical Psychology*. 2003; 71(2):251–260. [PubMed: 12699020]
- Nixon RD, Sweeney L, Erickson DB, Touyz SW. Parent–Child Interaction Therapy: One- and two-year follow-up of standard and abbreviated treatments for oppositional preschoolers. *Journal of Abnormal Child Psychology*. 2004; 32(3):263–271. [PubMed: 15228175]
- Norton PJ, Hope DA. Preliminary evaluation of a broad-spectrum cognitive-behavioral group therapy for anxiety. *Journal of Behavior Therapy and Experimental Psychiatry*. 2005; 36:79–97. [PubMed: 15814078]
- Olfson M, Crystal S, Huang C, Gerhard T. Trends in antipsychotic drug use by very young, privately insured children. *Journal of the American Academy of Child and Adolescent Psychiatry*. 2010; 49:13–23. [PubMed: 20215922]

- Olfson M, Marcus SC. National trends in outpatient psychotherapy. *American Journal of Psychiatry*. 2010; 167:1456–1463. [PubMed: 20686187]
- Olfson M, Mojtabai R, Sampson NA, Hwang I, Druss B, Wang PS, Kessler RC. Dropout from outpatient mental health care in the United States. *Psychiatric Services*. 2009; 60:898–907. [PubMed: 19564219]
- Palinkas LA, Schoenwald SK, Hoagwood K, Landsverk J, Chorpita B, Weisz JR. Research Network on Youth Mental Health. An ethnographic study of implementation of evidence-based treatments in child mental health: First steps. *Psychiatric Services*. 2008; 59:738–746. [PubMed: 18586990]
- Pasquali SK, Li JS, Burstein DS, Sheng S, O'Brien SM, Jacobs ML, Jacobs JP. Association of center volume with mortality and complications in pediatric heart surgery. *Pediatrics*. 2012; 129:e370–e376. [PubMed: 22232310]
- Patient Protection and Affordable Care Act, Pub. L. No. 111-148, 124 Stat. 119. 2010. Retrieved from <http://www.gpo.gov/fdsys/pkg/PLAW-111publ148/pdf/PLAW-111publ148.pdf>
- Puliafico AC, Comer JS, Pincus DB. Adapting Parent–Child Interaction Therapy to treat anxiety disorders in young children. *Child and Adolescent Psychiatric Clinics of North America*. 2012; 21(3):607–619. [PubMed: 22800997]
- Reese HE, Timpano KR, Siev J, Rowley T, Wilhelm S. Behavior therapy for Tourette's syndrome and chronic tic disorders: A web-based video illustration of treatment components. *Cognitive and Behavioral Practice*. 2010; 17:16–24.
- Robertson MM, Eapen V, Cavanna AE. The international prevalence, epidemiology, and clinical phenomenology of Tourette syndrome: A cross-cultural perspective. *Journal of Psychosomatic Research*. 2009; 67:475–483. [PubMed: 19913651]
- Rogers, EM. *Diffusion of innovations*. Glencoe, IL: Free Press; 1962.
- Rogers, EM. *Diffusion of innovations*. 5th ed.. New York, NY: Free Press; 2003.
- Roth, A.; Fonagy, P. *What works for whom? A critical review of psychotherapy research*. 2nd ed.. New York, NY: Guilford Press; 2005.
- Rotheram-Borus MJ, Swendeman D, Chorpita BF. Disruptive innovations for designing and diffusing evidence-based interventions. *American Psychologist*. 2012; 67:463–476. [PubMed: 22545596]
- Roy-Byrne PP, Davidson KW, Kessler RC, Asmundson GG, Goodwin RD, Kubzansky L, Stein MB. Anxiety disorders and comorbid medical illness. *General Hospital Psychiatry*. 2008; 30(3):208–225. [PubMed: 18433653]
- Ruzek, JI.; Karlin, BE.; Zeiss, A. Implementation of evidence-based psychological treatments in the Veterans Health Administration. In: McHugh, K.; Barlow, DH., editors. *Dissemination and implementation of evidence-based psychological interventions*. New York, NY: Oxford University Press; 2012. p. 78-96.
- Ryan B, Gross NC. The diffusion of hybrid seed corn in two Iowa communities. *Rural Sociology*. 1943; 8:15–24.
- Sandler I, Ostrom A, Bitner MJ, Ayers TS, Wolchik S, Daniels DS. Developing effective prevention services for the real world: A prevention service development model. *American Journal of Community Psychology*. 2005; 35:127–142. [PubMed: 15909790]
- Santucci LC, Ehrenreich JT, Troster SE, Bennett SM, Pincus DB. Development and preliminary evaluation of a one-week summer treatment program for separation anxiety disorder. *Cognitive and Behavioral Practice*. 2009; 16:317–331. [PubMed: 21935300]
- Scharf JM, Miller LL, Mathews CA, Ben-Shlomo Y. Prevalence of Tourette syndrome and chronic tics in the population-based Avon Longitudinal Study of Parents and Children cohort. *Journal of the American Academy of Child and Adolescent Psychiatry*. 2012; 51:192–201. [PubMed: 22265365]
- Schuhmann EM, Foote RC, Eyberg SM, Boggs SR, Algina J. Efficacy of Parent–Child Interaction Therapy: Interim report of a randomized trial with short-term maintenance. *Journal of Clinical Child Psychology*. 1998; 27(1):34–45. [PubMed: 9561935]
- Schwartz TJ, Lonborg SD. Security management and telepsychology. *Professional Psychology: Research and Practice*. 2011; 42:419–425.

- Sholomskas DE, Syracuse-Siewert G, Rounsaville BJ, Ball SA, Nuro KF. We don't train in vain: A dissemination trial of three strategies of training clinicians in cognitive behavioral therapy. *Journal of Consulting and Clinical Psychology*. 2005; 73:106–115. [PubMed: 15709837]
- Smith DC, Hall JA, Jang M, Arndt S. Therapist adherence to a motivational-interviewing intervention improves treatment entry for substance-misusing adolescents with low problem perception. *Journal of Studies on Alcohol and Drugs*. 2009; 70(1):101–105. [PubMed: 19118398]
- Southam-Gerow MA, Weisz JR, Chu BC, McLeod BD, Gordis EB, Connor-Smith JK. Does cognitive behavioral therapy for youth anxiety outperform usual care in community clinics? An initial effectiveness test. *Journal of the American Academy of Child and Adolescent Psychiatry*. 2010; 49:1043–1052. [PubMed: 20855049]
- Stirman S, Crits-Christoph P, DeRubeis RJ. Achieving successful dissemination of empirically supported psychotherapies: A synthesis of dissemination theory. *Clinical Psychology: Science and Practice*. 2004; 11:343–359.
- Stirman SW, Kimberly J, Cook N, Calloway A, Castro F, Charns M. The sustainability of new programs and innovations: A review of the empirical literature and recommendations for future research. *Implementation Science*. 2012; 7:17–19. [PubMed: 22417162]
- Storch EA, Caporino NE, Morgan JR, Lewin AB, Rojas A, Brauer L, Murphy TK. Preliminary investigation of web-camera delivered cognitive-behavioral therapy for youth with obsessive-compulsive disorder. *Psychiatry Research*. 2011; 189:407–412. [PubMed: 21684018]
- Storch EA, Geffken GR, Merlo LJ, Mann G, Duke D, Munson M, Goodman WK. Family-based cognitive-behavioral therapy for pediatric obsessive-compulsive disorder: Comparison of intensive and weekly approaches. *Journal of the American Academy of Child and Adolescent Psychiatry*. 2007; 46:469–478. [PubMed: 17420681]
- Sullivan G, Craske MG, Sherbourne C, Edlund MJ, Rose RD, Golinelli D, Roy-Byrne PP. Design of the Coordinated Anxiety Learning and Management (CALM) study: Innovations in collaborative care for anxiety disorders. *General Hospital Psychiatry*. 2007; 29:379–387. [PubMed: 17888803]
- Tabori Kraft J, Dalsgaard S, Obel C, Thomsen PH, Henriksen TB, Scahill L. Prevalence and clinical correlates of tic disorders in a community sample of school-age children. *European Child and Adolescent Psychiatry*. 2012; 21(1):5–13. [PubMed: 22038343]
- Tarde, G. *The laws of imitation*. Parsons, EC., translator. New York, NY: Holt; 1903.
- U.S. Census Bureau. Table 1153 and Table 1154. Statistical abstract of the United States: 2011. 2011. Retrieved from <http://www.census.gov/compendia/statab/2011/tables/11s1154.pdf>
- Van HL, Schoevers RA, Kool S, Hendriksen M, Peen J, Dekker J. Does early response predict outcome in psychotherapy and combined therapy for major depression? *Journal of Affective Disorders*. 2008; 105(1–3):261–265. [PubMed: 17521743]
- Van Allen J, Roberts MC. Critical incidents in the marriage of psychology and technology: A discussion of potential ethical issues in practice, education, and policy. *Professional Psychology: Research and Practice*. 2011; 42:433–439.
- Walkup JT, Albano A, Piacentini J, Birmaher B, Compton SN, Sherrill JT, Kendall PC. Cognitive behavioral therapy, sertraline, or a combination in childhood anxiety. *New England Journal of Medicine*. 2008; 359(26):2753–2766. [PubMed: 18974308]
- Wang PS, Berglund P, Olfson M, Pincus HA, Wells KB, Kessler RC. Failure and delay in initial treatment contact after first onset of mental disorders in the National Comorbidity Survey Replication. *Archives of General Psychiatry*. 2005; 62:603–613. [PubMed: 15939838]
- Wang PS, Lane M, Olfson M, Pincus HA, Wells KB, Kessler RC. Twelve-month use of mental health services in the United States: Results from the National Comorbidity Survey Replication. *Archives of General Psychiatry*. 2005; 62:629–640. [PubMed: 15939840]
- Webb CA, DeRubeis RJ, Barber JP. Therapist adherence/competence and treatment outcome: A meta-analytic review. *Journal of Consulting and Clinical Psychology*. 2010; 78:200–211. [PubMed: 20350031]
- Weersing V, Rozenman MS, Maher-Bridge M, Campo JV. Anxiety, depression, and somatic distress: Developing a transdiagnostic internalizing toolbox for pediatric practice. *Cognitive and Behavioral Practice*. 2012; 19:68–82. [PubMed: 24653642]

- Weiss B, Catron T, Harris V, Phung TM. The effectiveness of traditional child psychotherapy. *Journal of Consulting and Clinical Psychology*. 1999; 67(1):82–94. [PubMed: 10028212]
- Weisz, JR.; Chorpita, BF. Mod squad for youth psychotherapy: Restructuring evidence-based treatment for clinical practice. In: Kendall, PC., editor. *Child and adolescent therapy: Cognitive-behavioral procedures*. 4th ed.. New York, NY: Guilford Press; 2011. p. 379-397.
- Weisz JR, Chorpita BF, Palinkas LA, Schoenwald SK, Miranda J, Bearman SK. the Research Network on Youth Mental Health. Testing standard and modular designs for psychotherapy with youth depression, anxiety, and conduct problems: A randomized effectiveness trial. *Archives of General Psychiatry*. 2012; 69:274–282. [PubMed: 22065252]
- Weisz JR, Sandler IN, Durlak JA, Anton BS. Promoting and protecting youth mental health through evidence-based prevention and treatment. *American Psychologist*. 2005; 60:628–648. [PubMed: 16173895]
- Weisz JR, Southam-Gerow MA, Gordis EB, Connor-Smith JK, Chu BC, Langer DA, Weiss B. Cognitive– behavioral therapy versus usual clinical care for youth depression: An initial test of transportability to community clinics and clinicians. *Journal of Consulting and Clinical Psychology*. 2009; 77:383–396. [PubMed: 19485581]
- Wilson GT, Vitousek KM, Loeb KL. Stepped care treatment for eating disorders. *Journal of Consulting and Clinical Psychology*. 2000; 68:564–572. [PubMed: 10965631]
- Wilson GT, Zandberg LJ. Cognitive-behavioral guided self-help for eating disorders: Effectiveness and scalability. *Clinical Psychology Review*. 2012; 32:343–357. [PubMed: 22504491]
- Woods DW, Conelea CA, Himle MB. Behavior therapy for Tourette’s disorder: Utilization in a community sample and an emerging area of practice for psychologists. *Professional Psychology: Research and Practice*. 2010; 41(6):518–525.
- Woods, DW.; Piacentini, J.; Chang, S.; Deckersbach, T.; Ginsburg, G.; Peterson, A.; Wilhelm, S. *Managing Tourette syndrome: A behavioral intervention for children and adults*. New York, NY: Oxford University Press; 2008.
- Yuen EK, Goetter EM, Herbert JD, Forman EM. Challenges and opportunities in Internet-mediated telemental health. *Professional Psychology: Research and Practice*. 2012; 43:1–8.
- Zisser, A.; Eyberg, SM. Parent–Child Interaction Therapy and the treatment of disruptive behavior disorders. In: Weisz, JR.; Kazdin, AE., editors. *Evidence-based psychotherapies for children and adolescents*. 2nd ed.. New York, NY: Guilford Press; 2010. p. 179-193.