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The Theory-Practice Gap in Cognitive Behavioral Therapy: Reflections and a Modest Proposal to Bridge the Gap

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This paper examines the issues related to the gap between theory and practice in the area of cognitive-behavioral therapy. The article begins with a review of the evidence for such a gap, and having demonstrated that the gap exists, provides a discussion of some of the factors that are likely important in its genesis and maintenance. The article then focuses on potential strategies to reduce the theory-practice gap that go beyond the common recommendation for both efficacy and effectiveness research. In particular, we provide recommendations for protocol planning and design, training and competency maintenance, dissemination research, and implementation and policy change. We conclude with the proposition that theory and research should not only inform practice, but that practice should have a reciprocal benefit on theory and research.

Keywords: cognitive-behavior therapy; theory; practice; dissemination

THE UNDERSTANDING OF PSYCHOPATHOLOGY has steadily increased with the scientific and technological advances made in recent decades. Both psychological assessment tools as well as the classification systems used to diagnose and predict the course of mental illness have dramatically improved over the last 30 years (Hyman, 2011; Meyer et al., 2001). These recent advances shed new light on the prevalence and perniciousness of psychological disorders. For instance, 30% of adults and 19% of children and adolescents in the United States show serious psychological distress and are in need of treatment (Kessler, Chiu, Demler, & Walters, 2005; Kessler et al., 2009; Lopez-Duran, 2011). These rates appear to be similar around the globe. Fortunately, there are over 400 psychological treatments currently in practice (Corsini & Wedding, 2011). Even more fortunately, there is a growing trend to empirically identify efficacious, effective, and efficient psychotherapies. This trend has been referred to as the emphasis on empirically supported treatment or the development of evidence-based practice (herein referred to as ESTs; Lambert, 2010). ESTs are treatments that have demonstrated efficacy in clinical research trials (Kazdin, 2008), but many also incorporate sound procedures for psychotherapy in general.

ESTs are primarily the product of clinical theorists, are most often conducted in the clinical laboratory, and are mostly conducted by clinical researchers. Clinical scientists have begun to notice a disquieting trend, however, which is that ESTs are seldom put into use by practitioners in the community and health care at large (Kazdin, 2008; McHugh & Barlow, 2012). Despite the fact that a number of interventions have been found to be efficacious for a variety of major psychological disorders (e.g., depression, anxiety, bulimia nervosa, etc.), surveys of practitioners indicate that these treatments are rarely utilized to treat patients who suffer from these conditions. Low utilization of ESTs in community mental health clinics has also been noted for eating disorders (Haas & Clopton, 2003), substance-use disorders (Santa Ana et al., 2008), and mood disorders (Kessler, Merikangas, & Wang, 2007). For instance, a study by Ehlers, Gene-Cos, and Perrin (2009) of family physicians in the United Kingdom revealed that only 11% of patients treated for

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posttraumatic stress disorder (PTSD) were provided with evidence-based treatment for the disorder. Further, only 6.9% of bulimia nervosa patients in the U.S. were provided with cognitive-behavioral therapy (CBT), despite its established efficacy for this disorder (Chambless & Ollendick, 2001). Finally, although clinical guidelines suggest the use of CBT with all patients who display signs of psychosis (NICE, 2009), only about 50% of schizophrenia sufferers are apparently provided with this treatment (Berry & Haddock, 2008).

It appears that the lack of utilization for ESTs in routine practice is not the only characteristic of this gap. Emerging evidence suggests that even when practitioners attempt to implement ESTs, this implementation is less than optimal. In other words, treatment manuals are loosely followed, and thus the application of treatments bear only a loose resemblance to the empirically tested protocols. For example, a relatively recent study (Stobie, Taylor, Quigley, Ewing, & Salkovskis, 2007) found that 40% of patients who suffered from obsessive-compulsive disorder and who were allegedly offered CBT had in actuality undergone a treatment that met minimal criteria for CBT. Similarly, Kessler et al. (2007) found that only 20.9% of individuals who suffered from depression in a 12-month period were offered adequate psychological or pharmacological intervention.

Difficulties in the transfer of laboratory produced and tested treatments to the community has been termed *theory-practice gap*. In describing this gap, Brownson, Colditz, and Proctor (2012) indicated that it signifies a discrepancy from "care that *could be*, where health care is informed by scientific knowledge, and the care *that is* in routine practice" (p. xi; italics in original). Thus, the theory-practice gap can simply be defined as the poor transport and uptake of knowledge and technology, as related to health care, from clinical science to clinical practice. Acknowledging the magnitude of this problem, the Institute of Medicine (2001) described this gap as a "chasm."

Although there is sometimes a willingness to blame clinicians for their apparent refusal to take up and employ evidence-based therapies, in fact there are many factors that contribute to the theory-practice gap in CBT. Expanding upon Shafran et al.'s (2009) evaluation, these factors can be grouped into three broad categories. The first two of these categories concern practitioner beliefs regarding the relevance and practicality of ESTs. The remaining barrier, which acts to perpetuate the first two barriers, concerns the relatively poor training about and knowledge of dissemination of ESTs, which in turn stems from the underfunded nature of the field.

Many practitioners have questioned the relevance of efficacy trials, and claim that the conditions studied in such trials are often less severe than what is typically observed in practice (Kazdin, 2008). Furthermore, some practitioners have indicated that the samples typically allowed in clinical trials include too many exclusion criteria and, as a result, are too homogeneous and do not resemble the diverse, heterogeneous clientele observed in routine practice, who present with dual diagnoses and/or multiple problems. It should be noted, however, that it is also possible to question how diverse clinical samples truly are, and recommend the use of treatment manuals for those patients who most closely approximate the presentation of cases treated in clinical trials (Stirman, Crits-Christoph & DeRubeis, 2004).

Second, some practitioners have questioned the practicality of using treatment manuals, as mandated by the EST movement. For instance, some have claimed that treatment manuals are too rigid, and thus do not account for individual differences in, or the preferences of, their clients (Borntrager, Chorpita, Higa-McMillan, & Weisz, 2009). In an early survey of this area, Addis and Krasnow (2000) found that the major concern about treatment manuals was that they were rigid, inflexible, and did not allow for the integration of the art of psychotherapy into clinical practice.

Barlow, Levitt, and Bufka (1999) have reported that a number of practitioners harbor misconceptions regarding ESTs, which act as a major barrier to their adoption in routine practice. McHugh and Barlow (2012) more recently argued that these misconceptions largely stem from practitioners' doubt of the applicability of the scientific approach to practice. Such doubt is often centered in the belief that psychotherapy is more "art" than science (McHugh & Barlow). Similarly, Baker, McFall, and Shoham (2009) have suggested that psychologists have yet to assume a leadership role in using and disseminating empirically supported interventions, despite the impressive scientific record of CBT and other psychosocial interventions. Baker et al. maintained that the relatively scarce use of ESTs among psychologists may stem from ambivalence among practitioners in regards to the role of science in practice, coupled with inadequacies in scientific training, both of which conspire to lead to higher value upon clinical anecdotes than group-based research outcomes.

Third, some practitioners are either unaware of ESTs and/or are unable to effectively implement these interventions in their clinics or practice settings (McHugh & Barlow, 2012). In this regard, the apparent gap between theory and practice may

be more of a testament to the lack of resources allocated to translational research than to the desire to implement empirically supported interventions, per se. As Brownson and colleagues (2012) maintained, only about 0.1% of total annual health expenditure is allocated toward dissemination and implementation (D&I) research. This poor knowledge dissemination hinders practitioners from receiving necessary training, delays the transition of practices from the laboratory to the clinic setting, and may even perpetuate common misconceptions regarding ESTs, such as their inapplicability to clinical practice.

Several other criticisms have been leveled against the EST movement. Most notably, opponents criticize the movement for being biased toward short-term therapies, such as CBT, to the exclusion of other longer-term modalities. Also, opponents have criticized the outcome-oriented nature of the movement, arguing that efficacy has narrowly been defined as symptom diminution and behavioral change. Thus, concepts such as functioning, life satisfaction, and general optimism have been largely neglected (Chambless & Ollendick, 2001). Moreover, opponents of ESTs in general, and CBT in specific, have noted the relative lack of attention given to therapeutic relationship factors in treatments. Such an assertion, however, ignores the fact that treatments that rely heavily on the therapeutic relationship have also been written into treatment manuals (e.g., Gibbons et al., 2012). Further, a number of CBT manuals maintain that relationship factors are probably necessary, although it is unlikely that such factors are sufficient for therapeutic change (Dobson & Dobson, 2009).

Unfortunately, it appears that populations that might benefit most from ESTs are the same populations that have no access to, or are rarely offered such treatments. For instance, there is evidence that members of ethnic and racial minority groups tend to make less use of mental health services than the majority population and terminate therapy sooner than members of majority groups (Wang et al., 2005; Ward, 2007). These disturbing facts exist despite the fact that ethnically and racially diverse populations experience greater economic and functional burden from emotional and behavioral disorders in comparison to individuals of majority groups (Huang, 2002). A study by Preciado (2012) found an absence of cultural elements in randomized control trials of CBT, and some clinical trials had loosely defined "cultural adaptations" of CBT. Thus, in some studies the delivery of otherwise unchanged CBT protocols, when provided by therapists of the target culture, were characterized as adaptations.

Addressing the Barriers

IS CBT RELEVANT IN ROUTINE PRACTICE?

As noted, some CBT efficacy trials have been criticized because the exclusion criteria in such trials are so stringent that the target disorder and patient samples eventually allowed into the trial do not resemble their counterparts in routine practice (Kazdin, 2008). In other words, clients in the "real world" are more heterogeneous than those seen in research trials, and the disorders treated in clinical settings are more severe, atypical, and often present with one or more comorbid condition. As such, results of efficacy trials are sometimes typified as irrelevant in routine practice, and the application of ESTs becomes a futile pursuit.

Although it is true that most studies validating CBT have taken the form of efficacy trials, a number of *effectiveness* (conducted in real-world clinical settings) trials have been carried out in recent years. Evidence from such effectiveness trials supports the use of CBT in clinical settings (McHugh & Barlow, 2012). It appears that comparable outcomes are achieved when CBT is administered to heterogeneous clientele with varied clinical presentations (Farrell, Schlup, & Boschen, 2010; Houghton, Saxon, Bradburn, Ricketts, & Hardy, 2009; Stewart & Chambless, 2007). A meta-analysis of 56 effectiveness studies that examined CBT for adult anxiety revealed that CBT produced large pre-post treatment effects, which strongly suggests that CBT is generally effective in remediating adult anxiety (Stewart & Chambless, 2009). Of key relevance to the current discussion, the effect sizes from effectiveness trials are roughly comparable to those obtained in efficacy studies, which gives further credence to the application of ESTs in real-world settings.

IS CBT PRACTICAL?

The American Psychological Association Division 12 Task Force on Promotion and Dissemination of Psychological Procedures (Chambless et al., 1998) has developed a list of criteria to evaluate the level of scientific support for a given intervention. One criterion for the highest level of support (i.e., well-established treatments) stipulates that a treatment must utilize a treatment manual, and thus have a standardized form of administration. From a dissemination perspective, the need for a treatment manual is understandable: Any practitioner who wants to implement an efficacious treatment must comprehend what it is (and is not) in order to know whether or not the intervention is being delivered as intended. Unfortunately, it appears that practitioners may be uneasy regarding the idea of manualized care (Kendall, 1998). For example,

Addis and Krasnow (2000) discovered a range of opinions and concerns toward therapy manuals in a national survey of U.S. psychologists. They also demonstrated that beliefs about the inflexibility of manuals was related to more negative overall opinions about treatment manuals and their deployment in clinical practice.

Ollendick, King, and Chorpita (2006) summarized this uneasiness, expressing concern that clinicians may believe that treatment manuals are associated with inflexibility and may harm or even eliminate such issues as creativity, innovation, or what are sometimes seen as the "artistic" aspects of the process of psychotherapy. A number of proponents of the EST movement have responded to the concern about inflexible treatment manuals. For instance, Kendall (1998) has argued that treatment manuals can be used in a flexible, adaptive manner. He maintained that good manuals allow for innovation and creativity within the theoretical and conceptual bounds of therapy, without sacrificing treatment fidelity. Kazdin (2000) argued that "it is a convenient straw man to argue that manuals are too rigid for clinical use" (p. 136). From his perspective, some critics of manuals have perhaps used perceived rigidity as a justification to continue to practice consistent with their preferred models. He has also asserted there are no good alternatives to the use of manuals in the delivery of therapy, as they provide the primary way to demonstrate that evidence-based interventions are actually being deployed as they were written and intended. Some authors have gone further still and argued that some practitioners may actually prefer the use of treatment manuals, given their organized and instructional nature (e.g., LeCroy, 2008). Other authors have advocated a broader view of dissemination, arguing that traditional education and supervision methods are only some of the possible tools to promote the adoption of evidence-based therapies in practice (Addis & Waltz, 2002). Some of the ideas related to dissemination are discussed below.

DO CLINICIANS KNOW ABOUT CBT AND OTHER ESTS?

A study by Boisvert and Faust (2006) revealed that many clinicians had little knowledge about outcome research. Moreover, many clinicians believed that research findings were more negative than what they are in reality. This lack of knowledge was not related to therapist experience, theoretical orientation, or perceived knowledge of the literature. Boisvert and Faust suggested that practitioners' poor familiarity with the outcome literature serves to exacerbate the gap of theory-practice, and functions to sever the dialogue between researchers and practitioners. One fairly direct implication of such research is that proponents of evidence-based psychotherapy (cf. Goodheart, Kazdin, & Sternberg, 2006) need to do a considerably better job to translate research evidence into useful and practical models, which can be utilized in clinical practice by the modal practitioner. For example, it may be that therapists understand the conceptual framework related to certain models of care, but do not know how to translate these models into practice. Alternatively, they may know specific interventions, but not the conceptual model that underpins such interventions, and therefore cannot flexibly use these models in practice and fail to see their relevance. To our knowledge, no research to date addressed these potential competing models related to the theory-practice gap.

WHY ADDRESS THE GAP?

Some practitioners and indeed some researchers acknowledge the presence of a gap between theory and practice, but they are reluctant to bridge the gap, as they argue that the demands and dictates of research and practice are fundamentally irreconcilable. Proponents of this view maintain that research, by definition, is highly structured, planned, and "clean," while practice is often unstructured, unpredictable, and "messy" (Goodheart et al., 2006). As such, these disciplines may deal with nonoverlapping subject matters, and therefore it is not important to try to reconcile these various efforts. It could even be argued that research trials are conducted as "proof of concept" efforts, to show that a particular intervention can work under ideal circumstances, rather than whether it might work in the clinic setting.

Our perspective on this divide is that such arguments stem from the poor scientific training and general cynicism regarding the scientific enterprise that is held by a large number of practicing psychologists on the one hand, and a potential arrogance and disrespect for the vagaries of clinical practice by some research psychologists on the other. As Baker and colleagues (2009) argue, by adopting this spirit, psychologists have thus far failed to create a vital and robust applied science. As a result, psychologists are losing battles to other health-care providers, especially medical personnel, despite the lustrous empirical track-record of CBT in comparison to pharmacotherapy and other medical interventions.

It has been argued that the broad implementation of ESTs is important for both practical and ethical reasons. At a practical level, knowledge about ESTs allows program managers to recruit appropriately trained clinicians. At the level of the clinician,

knowledge about ESTs allows decisions about which interventions to prioritize for identifiable disorders. Thus, this knowledge base permits efficiency in making administrative and clinical decisions. From an ethical perspective, knowledge about ESTs also helps therapists to provide the highest level of care, which is an ethical imperative. For example, if a clinician is aware of the literature base, and knows that CBT is recommended as a first line of treatment for moderate levels of major depression, it is arguably unethical to use a nonsupported treatment, as such course of action will likely result in a longer course of treatment and with less certain outcomes. In other words, clinicians who are scientifically trained are more likely to conduct a cost-benefit analysis of using certain treatment protocols for particular clients. With all other things being equal, and if such an analysis is done correctly and impartially, the clinician will more likely resort to an EST since the validated nature of ESTs (even if not for the specific configuration of problems and moderating factors that a specific patient presents with) makes them the preferred choice for a number of conditions. As an analogy, it falls below the required standard of care and is likely a cause of legal action if a surgeon performed an intervention that is not evidence based. Why would or should the standard of care be any less in the area of mental health?

Given all of the above, we believe that the correction of cynicism about ESTs should start early in the graduate training of mental health therapists. Put differently, a solid scientific education coupled with quality training regarding the flexible implementation of most ESTs is required to help combat the divide between science and practice. Further, we echo Kazdin's (2008) sentiments in that clinicians should be encouraged to adopt research roles more often than the current tradition allows. This activity would help the integration of science into regular practice, and ultimately bridge the gap in perspectives. Similarly, as argued below, we believe that scientists would benefit from the experience of "the trenches" of routine practice, and this exposure would likely help program developers better address practitioners' concerns.

Bridging the Gap

Increased access to and training for optimal delivery of ESTs is now viewed by the funders of health care systems, and those who deliver health care as an urgent mandate. The widespread recognition about the economic, social, and personal costs of mental disorders, as well as the demand for evidence-based treatments, has never been greater. Kazdin (2008) aptly argued that internal debates in the field regarding the relevance of ESTs distract from the chief question: "How do we get our treatments to the many people in need of service?" (p. 202). Given the urgency of the matter, a number of researchers have offered suggestions on how to mend the gap between theory and practice. The recommendations made in the literature are related to the planning and design of effectiveness trials, training or maintenance of practitioner competencies after the conclusion of effectiveness trials, or to dissemination and policy change.

PROTOCOL PLANNING AND DESIGN

Shafran and colleagues (2009) have made a number of excellent recommendations regarding the development and evaluation of ESTs in clinical practice. For example, they suggested that one way to address concerns of the relevance of ESTs in routine practice is to have treatment developers explicitly describe how their trials address issues of comorbidity and disorder severity. It was also recommended that practitioners be provided with the appropriate supervision and training over the course of effectiveness trials, as to ensure proper training and protocol fidelity. In addition, Shafran et al. argued that clinicians should be encouraged to use outcome measures at set intervals throughout the protocol, and that training in the use of such measures should be easily accessible and affordable to clinicians. Shafran et al. also noted that most trials fail to analyze therapist effects as a moderator of outcome. As such, they recommend that trials consider and analyzes the effects of therapist expertise and level of training on treatment outcome. If such effects are to be routinely used as part of effectiveness trials, quality measures of therapist competence and skill level need to be designed and utilized. In addition, it was suggested that mechanisms of action, an often illusive and neglected part of effectiveness research, should be routinely examined through dismantling protocols.

Finally, Shafran and colleagues (2009) recommended that future research should abandon the one-size-fits-all model. Thus, there should be an enhanced focus on matching clients to treatment type and intensity in an effort to reduce costs and allocate resources appropriately. In turn, administering less intensive, self-help, or web-based interventions for clients who only require such services could allow for increased benefit to those who require face-to-face contact or more intensive interventions, as the resources would be more available for such purposes. Significant efforts are needed to examine to what extent treatments can be tailored to meet the needs of individual clients, while retaining their optimal levels of efficacy. There may well be a trade-off between fidelity to the

original treatment model and adaptation to the specific treatment model and exigencies and particularities of a given case, and this interaction likely has implications for a variety of issues, such as acceptability of the treatment to the client, the perceived "fit" of the treatment to the client, the therapist-client relationship, and outcome. Moreover, for a more complete understanding of the psychotherapy process, the movement towards evidence-based practice can likely be integrated into the literature on empirically supported relationship factors.

Finally, developers should create manuals that are widely accessible at a reasonable cost. For example, open access web sites could be created for the dissemination and evaluation of ESTs. Finally, as Chorpita, Daleiden and Weisz (2005) have recommended, treatment manuals should allow for an idiographic element, wherein the protocol is systematically adapted to fit the characteristics of individual clients.

TRAINING AND COMPETENCY MAINTENANCE

The training of mental health providers remains one of the most important pillars of effective CBT dissemination and implementation. The difficulty thus far has partly stemmed from the utilization of one-size-fits-all training models, which tend to be focused around theoretical approaches to therapy, rather than to specific protocols for specific clinical problems. Therapy training also tends towards didactic, course and workshop training, which can be a necessary first step in training, but does not substitute for hands-on experiential practice with expert supervision. Also, given the diffused nature of training in ESTs, a number of details are neglected in training. For instance, McHugh and Barlow (2012) argued that competency training (or "procedural learning for the application of knowledge to a clinical encounter"; p. 44), as opposed to didactic training (efforts designed to increase knowledge about the intervention), are understudied and consequently not well understood. Further, much like efforts to match therapies to clients based on client characteristics, efforts to train practitioners should be tailored to their needs, skill level, and credentials. As McHugh and Barlow have argued, "the fundamental challenges of training are when to train, what interventions to provide training in, and who should serve as trainers" (p. 49).

Despite the relative infancy of the field of dissemination research (Brownson et al., 2012), there is emergent evidence that longer durations of training in general, and longer competency training in particular, are associated with better outcomes for CBT (Rakovshik & McManus, 2010). Furthermore, some studies (e.g., Beidas & Kendall, 2010) suggest that didactic training alone is not sufficient to change a practitioner's behaviors. Rather, ongoing consultation and case supervision appear to be critical elements of competency enhancement and maintenance (Rakovshik & McManus). Armed with this evolving literature base, treatment developers should pay particular attention to their training models and procedure to ensure appropriate implementation of their protocols. We argue that research needs to be devoted to which methods of competency training are most effective for psychotherapy practice. For example, most training programs precede practical training by didactic knowledge. It may be, however, more effective to intersperse education and training, increasing the difficulty and complexity of cases as the trainee develops and shows competency of basic building blocks. Such an approach has been used for some time in the development of competent surgery and medical skills (Leung, 2002), and this training model might perhaps be of use in evidence-based psychotherapy. Yet another model is the case-based model of training, as has been used in fields such as nursing (Thomas, O'Connor, Albert, Boutain, & Brandt, 2001). This model uses actual cases, with all of their complexities, to train clinicians to conceptualize and plan interventions. It has been argued by Malcolm Gladwell in his book *Outliers* that it requires 10,000 hours of experience to attain world-class competence at a given activity (Gladwell, 2008). If this assertion is valid, then training programs should never expect emerging clinicians to be competent, but they should rather expect that competency will evolve over time and as a result of ongoing experience.

DISSEMINATION, IMPLEMENTATION, AND POLICY CHANGE

The EST movement has for the most part relied on passive and, what McHugh and Barlow (2012) called, diffused efforts of dissemination and public exposure, to date. These initial efforts need to be supplanted by more focused, directed strategies. First, such directed strategies must examine current models of dissemination and modify and synthesize them to better fit extant data (Schoenwald, McHugh & Barlow, 2012). Dissemination strategies, much like implementation efforts, range from ineffective to effective, and as such, research that identifies the success of these strategies is welcome.

Barlow (2004) has proposed that nomenclature influences the speed at which information is widely accepted and disseminated. He recommended that psychologists begin labeling ESTs such as CBT as "psychological treatments" in order to help

differentiate them from more generic psychotherapy. He has argued that this relabeling would allow for better integration of these treatments into the health care system. Barlow (2010) later argued that the dissemination of CBT and other supported treatments not only depends on their acceptance in the mental health community, but also upon the exclusion of harmful and unbeneficial therapies from routine practice. As such, he suggested that front-line researchers, in collaboration with practitioners, should come to consensus about the definitions of harmful treatments and treatment effects (Lilienfeld, 2007).

Finally, it has been suggested that researchers and protocol developers do not adequately share the results of their efficacy and effectiveness trials with key funders and stakeholders. Consequently, the pillars of effective dissemination and implementation (development, training, contextualization, etc.) are not sufficiently bolstered. It is therefore recommended that researchers need to provide the results of their research with key stakeholders and policy makers. Figure 1 characterizes this hypothesized relationship. One challenge for the field will be who, or what agency, should take responsibility for such an effort. Although there do exist some notable efforts to bring together psychotherapy research results for the purposes of meta-analyses (Cuijpers, Anderson, Donker, & van Straten, 2011; Cuijpers et al., 2011), it is likely the case that no single research group, professional organization, or even a nation-level system can take on the responsibility to accumulate such data-bases, since the efforts must be interprofessional and international in scope. It may be possible that web-based technology can be developed, perhaps sponsored by an international health organization, such as the World Health Organization or a consortium of international research agencies, to form a repository of evidence-based psychotherapies. These organizations could build on the excellent work of existing national groups, such as Britain's National Institute for Health and Clinical Excellence (see http://www.nice.org.uk/), which, from our perspective, is the best example in the world to date of bridging evidence and clinical practice—for a wide range of health issues and diagnoses.

The Practice-Theory Gap: How Should Practice Inform Theory?

We want to close this article with a brief discussion of one of the critical aspects of the theory-practice gap, but one that is often neglected in discussions of the topic. The issue that we refer to is the critical issue of the bridge between practice and science. In many discussions of the science-practice or theory-practice gap, there is a certain directionality to the discussion, which is that theorists design the intervention, clinical scientists develop and test the intervention, and then practitioners are expected to implement the intervention. This idea, that interventions begin in the university or research context, are evaluated there, and then disseminated to the field or practice, is highly normative in many areas of applied science, but fails to capitalize on the range and depth of knowledge of many practitioners. Also, although

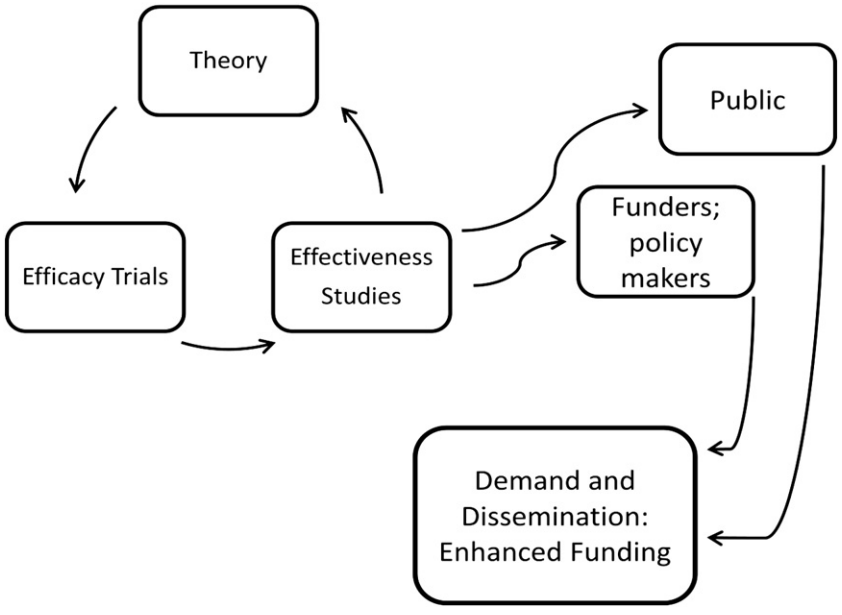

FIGURE 1 The conceptual linkage among treatment development factors and dissemination research.

there have been many instances where clinicians have been consulted during the development of cognitive-behavioral therapies (cf. Martell, Dimidjian & Herman-Dunn, 2010), this expertise is not always utilized. A modest proposal that we would make is that one way to bridge this gap is for developers and evaluators of interventions to always include an expert panel of clinicians on the development and evaluation team. This panel should be empowered to make broad comments on the scope or nature of the intervention, and to even modify specific elements of the treatment, including the treatment manual. Our suspicion is that this incorporation of clinicians would go some distance to ensure that the resulting interventions are more applicable to the clinical world than is sometimes currently the case, more acceptable to the working clinician, and more easily implemented in the clinical setting. Although we can well imagine that this process of direct consultation would require extra time and effort to develop and test any given intervention, we suspect that the potential benefits far outweigh the initial costs.

Overall, our belief is that the field of CBT has evolved tremendously since the early days of clinical research. As a field, we now can point with justifiable pride at the number and range of interventions that exist and meet criteria for being empirically supported. Our suspicion is that the "next generation" of research must be focused on implementation, dissemination, and effectiveness work, and that the emerging field of dissemination science (Brownson et al., 2012) will have much to provide the field as it moves in this direction. This is indeed an exciting time to address the gaps among science, theory, and practice.

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