2013

Psychological treatments: Putting evidence into practice and practice into evidence.

David J. A. Dozois
University of Western Ontario, ddozois@uwo.ca

Presidential Address – Psychological Treatments:

Putting Evidence into Practice and Practice into Evidence

David J. A. Dozois, Ph.D.

University of Western Ontario

Abstract

In June 2011, the CPA Board of Directors launched a taskforce on the Evidence-Based Practice of Psychological Treatments. The purpose of this taskforce was to operationalize what constitutes evidence-based practice in psychological treatment, to make recommendations about how psychologists can best integrate evidence into practice and to disseminate information to consumers about evidence-based interventions. An important impetus for this taskforce was the continuing and widening scientist-practitioner gap. There are both barriers and opportunities when it comes to promoting greater reliance on the scientific literature and greater uptake of empirically supported treatments among practitioners. Two main factors prevail. For one, there is considerable controversy over what constitutes best evidence. The second is that researchers often do not communicate their findings in a manner that effectively translates their results from the laboratory to the clinic. It is crucial that we not only make practice evidence-based, but that we also make evidence practice-based. In this article, I focus on current issues and opportunities with respect to evidence-based practice and identify strategies for closing the gap between research and practice.

Keywords: evidence-based practice; evidence-based treatment; empirically supported treatment; decision-making; bridging research and practice; psychotherapy

Presidential Address – Psychological Treatments:

Putting Evidence into Practice and Practice into Evidence

A number of years ago, as I was heading out of the house to attend my undergraduate classes, my father said to me, "What do you have today, David?" I told him, "I have personality and motivation" – "Good for you!" he said. I am fortunate to have had and continue to have a great relationship with my parents. We have a lot of fun together and my parents have always been an incredible encouragement to me. In preparing for my address, my dad – a retired minister – also provided me with some good advice: "If you don't strike oil in the first 20 minutes, stop boring".

As President of the Canadian Psychological Association (CPA), I have the special honour of providing an address to the membership. I intend to use this platform to share with Canadian psychologists some ideas related to evidence-based practice. Part of my Presidential mandate was for CPA to develop its own position on the evidence-based practice of psychological treatments to support and guide practice as well as to inform stakeholders. Psychological health and disorders are clearly a priority for many of Canada's stakeholder groups (e.g., Mental Health Commission of Canada, Treasury Board, Public Health Agency of Canada) and their effective treatment needs to become a priority for CPA as well. When I first brought this idea to the CPA Board of Directors in March, 2011, Dr. Lorne Sexton, who was on the board in the portfolio of Professional Affairs, and who had just chaired a task force on prescriptive authority for psychologists, said, "And I thought prescription privileges was controversial".

To be sure, this is a sensitive topic and I hope that I will deal with it appropriately and at least do it some justice. In his classic monograph, "*Why I don't attend case conferences*", Paul Meehl (1973) began by stating "The first portion of the paper will be highly critical and

aggressively polemic (If you want to shake people up, you have to raise a little hell). The second part, while not claiming grandiosely to offer a definitive solution to the problem, proposes some directions of thinking and 'experimenting' that might lead to a significant improvement over current conditions" (p. 227). Although I have no intention of raising a little hell, I would similarly like to highlight the problem and then move toward some potential…not grandious or definitive…but potential solutions.

After briefly highlighting some of the outcome data that support the idea that psychological treatments are effective for a variety of mental health problems, I would like to address the difficult fact that the empirical research is often not utilized by practitioners. There are various reasons why clinicians may not read the literature or apply it to their practices and I will focus on some of these concerns. Following this brief review, I will provide a quick update on the work of the CPA Task Force on Evidence-Based Practice of Psychological Treatments because I think it helps to address the issue of "What is evidence-based practice?" and "How should evidence be used?" both of which have been cited as barriers to promoting greater reliance on the scientific literature among practitioners. I will conclude with some recommendations – both for the practitioner and scientist – for bridging the gap between science and practice.

Efficacy of Psychological Treatments

Psychological treatments are efficacious for a number of different disorders (e.g., Australian Psychological Society, 2010; Chambless & Ollendick, 2001; Epp & Dobson, 2010; Nathan & Gorman, 1998; Ruscio & Holohan, 2006). Although space restrictions preclude a fulsome review of this literature, I will give a couple of examples. The Australian Psychological Society (2010) published a comprehensive review of the best evidence available on the efficacy

of psychological interventions for a broad range of mental disorders. The research was evaluated according to its evidentiary level, quality, relevance and strength. Included in this document were systematic reviews and meta-analyses, randomized controlled trials, non-randomized controlled trials, comparative studies and case series.

I will just focus on the findings for the treatment of adults for illustration purposes (see Table 1). For depression, the highest level of empirical support was for cognitive-behavior therapy (CBT), interpersonal psychotherapy (IPT), brief psychodynamic psychotherapy, and CBT-oriented self-help interventions. The highest level of support for bipolar disorder was obtained for CBT, IPT, family therapy, mindfulness-based cognitive therapy and psychoeducation as treatments adjunctive to pharmacotherapy. Across the anxiety disorders (including generalized anxiety disorder, panic disorder, specific phobia, social anxiety, obsessive-compulsive disorder and posttraumatic stress disorder) the highest level of evidence obtained was for CBT. Both CBT and Motivational Interviewing were deemed effective for substance-use disorders. Whereas CBT was the most consistently supported treatment for bulimia nervosa and binge eating disorder, family therapy and psychodynamic therapy obtained the most support for anorexia nervosa. CBT also had the most support for sleep disorders, sexual disorders, pain, chronic fatigue, somatization, hypochondriasis and body dysmorphic disorder. CBT and family therapy were considered the most effective interventions for psychotic disorders. Finally, dialectical behavior therapy received the most empirical support for borderline personality disorder (Australian Psychological Society, 2010). I should note that there was some support noted for other types of interventions as well although they did not have the highest degree of research support.

This is positive news. Not only are many psychological treatments effective for treating mental health problems, they also demonstrate longevity. In the case of depression, for example, CBT is equally effective as medication for the treatment of an acute episode (DeRubeis, Gelfand, Tang & Simons, 1999; DeRubeis et al., 2005; DeRubeis, Webb, Tang, & Beck, 2010) but significantly reduces the risk of relapse relative to pharmacotherapy (Hollon et al., 2005). In fact, the average risk of relapse following antidepressant medication is more than double the rate following CBT (i.e., 60% compared to 25% based on follow-up periods of 1 to 2 years; see Gloaguen, Cottraux, Cucherat, & Blackburn, 1998).

In addition to the efficacy of psychological interventions, a strong economic case can also be made for their cost recovery. David M. Clark (CPA's 2011-12 Honorary President) and his colleagues (2009), for example, argued that psychological treatments would largely pay for themselves by reducing the costs associated with disability and increasing revenue related to return to work and increased productivity (also see Centre for Economic Performance's Mental Health Policy Group, 2012; D. M. Clark, 2012; Layard, Clark, Knapp, & Mayraz, 2007; Myhr & Payne, 2006). The cost-effectiveness of these interventions, and the importance of evidence-based practice, was also highlighted recently in a report of the Mental Health Commission of Canada (2012).

The Scientist-Practitioner Gap

Notwithstanding compelling data on their efficacy and effectiveness, few practitioners utilize the treatments that have garnered the strongest scientific support. Don't get me wrong, many psychologists do keep up with the literature and practice in an evidence-based manner (Beutler, Williams, Wakefield, & Entwistle, 1995; Sternberg, 2006). Yet there is considerable evidence of a scientist-practitioner gap (Babione, 2010; Lilienfeld, 2010; Ruscio & Holohan,

2006; Meehl, 1987; Stewart & Chambless, 2007). For instance, few clients with depression and panic disorder receive scientifically supported treatments (Lilienfeld, 2010). Although the majority of psychologists (88%) surveyed *reported* using CBT techniques to treat anxiety, most did not use exposure or response prevention in the treatment of obsessive-compulsive disorder and 76% indicated that they rarely or never used interoceptive exposure in the treatment of panic disorder (Freiheit, Vye, Swan, & Cady, 2004).

Roz Shafran and her colleagues (2009) reported that, in 1996, psychodynamic psychotherapy was the most common psychological treatment offered for generalized anxiety disorder, panic disorder and social phobia. Supportive counseling was the most common treatment for PTSD in the UK despite treatment guidelines (NICE, 2005) which recommend trauma-focused psychological interventions as the treatments of choice. Sadly, many practitioners remain uninformed of relevant research, believe that it is not relevant for their practices, and neglect to evaluate outcome in their own clinical work (Lehman, 2010; Parrish & Rubin, 2011; Stewart & Chambless, 2007).

This issue came to light a few years ago in an article written by Baker, McFall and Shoham (2008) and published in *Psychological Science in the Public Interest.* The *Washington Post* picked up this story, titled “Is your therapist a little behind the times?”

Baker, McFall and Shoham (2009) write:

> *A young woman enters a physician's office seeking help for diabetes. She assumes that the physician has been trained to understand, value and use the latest science related to her disorder. Down the hall, a young man enters a clinical psychologist's office seeking help for depression. He similarly assumes that the psychologist has been trained to understand, value and use current research on his disorder. The first patient would be*

justified in her beliefs; the second, often, would not. This is the overarching conclusion of a two-year analysis that [was] published on the views and practices of hundreds of clinical psychologists.

Barriers to Promoting Greater Reliance on the Scientific Literature

Well what are some of the barriers to promoting greater reliance on the scientific literature? Pagoto et al. (2007) posed questions to members of various professional listservs in clinical psychology, health psychology and behavioural medicine to identify an initial (rather than representative) list of barriers and facilitators regarding evidence-based practice. Respondents were asked to submit their top 1-2 barriers and facilitators. The top barrier pertained to *attitudes* toward evidence-based practice. For example, there is the perception that "EBP forces psychology to become a hard science, thereby dampening the discipline's humanity" (p. 700). Concern was also expressed that clinical evidence is more valuable than scientific evidence. This finding concurs with Stewart and Chambless (2007) who sampled 519 psychologists in independent practice. Practitioners mildly agreed that psychotherapy outcome research has much meaning for their practices; they moderately to strongly agreed that past clinical experience affects their treatment decisions, whereas there was only mild agreement that treatment outcome research influences usual practice (also see Shafran et al., 2009).

This issue is extraordinarily complex. I do not pretend to have the answers nor could I adequately describe in this article all of the arguments surrounding this debate (for review, see Hunsley, 2007a; Norcross, Beutler, & Levant, 2005; Westen, Novotny, & Thompson-Brenner, 2004). In a nutshell, we have diversity of perspectives on the "truth" and what is important in therapy. At one end of the spectrum, are researchers who work tirelessly to develop and disseminate the results from randomized controlled trials. These individuals may caricature some

psychotherapists as flying by the seat of their pants rather than grounding their work in evidence. On the other end we have front line clinicians who work tirelessly to help their patients with complex, comorbid problems. These practitioners may caricature researchers as ivory tower academics who do not understand the clinical realities of day-to-day practice and study unrepresentative patients in highly controlled environments (Fertuck, 2007).

A number of arguments are cited in the literature as to why clinicians may not use or value the scientific literature (see Hunsley, 2007a; Kazdin, 2008; Shafran et al., 2009; Westen et al., 2004). For example, arguments have been advanced that research trials have limited applicability to actual clinical practice. Patients treated in psychotherapy outcome trials, for example, are believed to be less severe and less complex (e.g., with fewer comorbid conditions) than are individuals seen in actual practice. In contrast to this idea, however, patients in regular clinical practices are often excluded from clinical trials because they do not meet their severity or duration criteria (e.g., Stirman, DeRubeis, Crits-Christoph, & Brody, 2003; Stirman, DeRubeis, Crits-Christoph, & Rothman, 2005). In addition, many therapy trials permit most types of comorbidity (e.g., DeRubeis et al., 2005; Hollon et al., 2005).

Another related criticism pertains to the idea that research findings may not generalize to clinical practice (Margison et al., 2000; Ruscio & Holohan, 2006). In other words, there may be a difference between efficacy (i.e., that the intervention works under highly controlled conditions) and effectiveness (i.e., that the intervention also works under normal circumstances). In a review of the treatment effectiveness literature, however, Hunsley and Lee (2007) concluded that the majority of the effectiveness studies show completion rates and outcomes comparable to the results typically obtained in randomized controlled trials (also see Teachman et al., 2012).

Others have reacted to the randomized controlled trial (RCT) as the "gold standard" of research. RCTs may be optimal for research in medicine, some claim, but are not necessarily the most appropriate way to investigate psychotherapy outcome (Bohart, 2005; Westen & Morrison, 2001). In the realm of psychotherapy, this reactivity to RCTs has been further reinforced by the development of lists of empirically-supported treatments. Commissioned by Division 12 (Clinical Psychology) of the American Psychological Association (APA), the Task Force on Promotion and Dissemination of Psychological Procedures published its 1995 report, which listed treatments considered to be either well-established or probably efficacious according to a standard set of criteria (e.g., Chambless et al., 1996). These criteria were also adopted by the Clinical Section of CPA in their task force report, *Empirically Supported Treatments in Psychology: Implications for Canadian Professional Psychology* (Hunsley, Dobson, Johnston, & Mikail, 1999a, 1999b).

The APA's criteria for empirically supported treatments elicited both enthusiasm and controversy. Although there was excitement about the recognition of "effective" psychological treatments there were also myriad concerns. For example, some psychologists expressed resistance to this top-down approach and perceived the criteria to be overly rigid and restrictive, arguing that the type of research deemed necessary to produce supportive evidence for a treatment is incompatible with schools of psychotherapy outside of the cognitive and behavioural framework (see Bryceland & Stam, 2005; Stuart & Lilienfeld, 2007). Although I believe the movement toward ESTs is well-intentioned, I agree that there are issues with defining evidence in this limited manner.

The reality though is that we need rigorous controlled research to evaluate the impact of our interventions. The tight experimental control, operational definitions, random assignment,

precise measurement and statistical significance – all of which makes us concerned about external and ecological validity – is at the crux of the experimental design (Kazdin, 2008; Lilienfeld, 2010). Obviously RCTs do not answer all of our questions and the findings need to be applied to the real world, but we do need controlled research.

You see, science sets up safeguards against biases. I may see a depressed individual improve in therapy and conclude that my intervention worked. In addition to my own clinical observations, there may also be self-report data available (e.g., the Beck Depression Inventory-II; Beck, Steer, & Brown, 1996) which indicates significant improvement. Yet my conclusion may be erroneous because rival explanations could account for this change (e.g., regression to the mean due to repeated measurement, spontaneous remission; see Lilienfeld, 2010).

It is tempting for us as clinicians (and I note here that I do have a small private practice as well) to conclude that the research does not apply to my individual case; that somehow applying a particular evidence-based treatment is akin to the Procrustean dilemma. Procrustes was a mythological character who boasted that every guest invited to his house would fit the guest room bed, irrespective of his or her size. Such claim attracted considerable attention. What Procrustes failed to mention, however, was how he could make this happen – either by cutting off their legs or stretching them to make them fit the bed (see Kuyken, Padesky, & Dudley, 2009). As therapists, we obviously don't want to cut off or distort a client's experience to fit our prexisting theories and present a "one size fits all" type of intervention (Kuyken et al., 2009). However, it would also be erroneous to conclude that, because a patient does not map on perfectly well to the RCT, I should not pay attention to this research. As Meehl (1973) pointed out, doing so involves "[f]ailing to understand probability logic as applied to a single case" (p. 234). Incidentally, when I was in graduate school at the University of Calgary, the writings of

Paul Meehl were pivotal to our training. I hope that this is still the case and encourage students, researchers and clinicians to make Meehl's work a staple in your academic diet.

We might be tempted to state that we are not dealing with groups or the nomothetic, we are dealing with an *individual*, with the ideographic. However, decades of research has demonstrated that if we depart from actuarial decision making we will get it wrong more times that we will get it right (Dawes, Faust, & Meehl, 1989; Grove & Lloyd, 2006; Meehl, 1954). As humans, we are prone to a range of biases that include confirmation bias, illusory correlations, neglect of base rates and availability heuristics to name a few (Chapman & Chapman, 1969, 1975; Chwalisz, 2003; Paley, 2006; Turk & Salovey, 1985; Tversky & Kahneman 1973). As Lilienfeld (2010) pointed out, scientific thinking is not natural for many of us; it is, in many ways, "uncommon sense, because it requires us to set aside our gut hunches and intuitions in lieu of convincing data… Science requires us to override more automatic, effortless, and intuitive modes of thinking with more controlled, effortful, and reflective modes of thinking" (p. 282). Science helps to reduce human error. As Meehl (1987) stated we need a "general scientific commitment not to be fooled and not to fool anybody else" (p. 9). The desire to not to be fooled and not to fool anybody else needs to be fundamental to our fabric as psychologists which is why evidence-based practice is so crucial.

Evidence-Based Practice

There is growing recognition in the field that the practice of professional psychology should be based on valid evidence regarding which approaches to invention are most likely to be successful. In 2006, the APA established a task-force on evidence-based practice in psychology that attempted to acknowledge multiple types of research evidence (APA Presidential Task Force, 2006): "Evidence-based practice in psychology is the integration of the best available

research with clinical expertise in the context of patient characteristics, culture, and preferences" (APA, 2006, p. 273; also see Spring, 2008). Unfortunately, the APA task force identified evidence on a continuum "from uncorroborated clinical observations through meta-analyses of the results of RCTs" (Stuart & Lilienfeld, 2007, p. 615). The task force also said little about the need for ongoing idiographic evaluation of one's clinical cases. In addition, at the heart of the three circles is "clinical decision making" – yet, as I have discussed earlier, clinical decision-making is heavily prone to error.

CPA Task Force on Evidence-Based Psychological Treatments

As one of my presidential initiatives, the CPA Board of Directors launched a Task Force on the Evidence-Based Practice of Psychological Treatments in June, 2011. The purpose of this taskforce was to operationalize what constitutes evidence-based practice in psychological treatments, to make recommendations about how psychologists can best integrate evidence into practice and to disseminate information to consumers about evidence-based interventions. An important impetus for this taskforce was the continuing and widening scientist-practitioner gap.

The Task Force (I co-chaired with Dr. Sam Mikail) was populated last summer and began its work in September, 2011. Task force members were chosen to represent a variety of research, practice, knowledge-translation, consumer and community perspectives. There is also good representation from different theoretical orientations, including interpersonal, emotion-focused, cognitive-behavioural and psychodynamic perspectives.

We produced a document that operationalizes what constitutes evidence-based practice of psychological treatment. The members of the task force were interested in a definition of evidence-based practice that was complex enough to incorporate the following ideas: (1) peer-reviewed research evidence is central; (2) one should be evidence-based not only in his or her

general fund of knowledge but also in session-by-session work; (3) the process involves one of collaboration with a client/patient (rather than a top down process). The Task Force on Evidence-Based Practice of Psychological Treatments will soon be releasing its final document which will be posted on the website of the Canadian Psychological Association (see http://www.cpa.ca/aboutcpa/committees/cpataskforces/).

The next step involved establishing a hierarchy of evidence that was respectful of diverse research methodologies, palatable to different groups of individuals and yet comprehensive and compelling (see Figure 1). For example, we stated that "Although all research methodologies have some potential to provide relevant evidence, psychologists should first consider findings that are replicated across studies and that have utilized methodologies that address threats to the validity of obtained results (e.g., internal validity, external validity, generalizability, transferability). Thus, psychologists should consider the best available evidence, highest on the hierarchy of research evidence. Evidence lower on the hierarchy should be considered only to the extent that better research evidence does not exist, or if there are clear factors that mitigate against using the best evidence." As shown in this figure, the psychologist is to use the hierarchy of evidence to make initial treatment decisions and then monitor change over time, feeding back to the hierarchy again when necessary.

In March and April, 2012, the task force sought feedback on these core elements. Our next steps involved developing vignette examples to illustrate the process of being evidence-based in one's practice and making specific recommendations for the CPA Board for further development and dissemination. We have also developed an annotated resource list that will direct practitioners to where they can find the necessary information on evidence-based practice. A guide was also be developed to highlight for the general public the added value that

psychologists bring relative to other practitioners (e.g., research base, evidence-based focus, etc.).

It is important to point out that evidence-based practice is a *process* by which the best evidence available is used to make optimal clinical decisions. Some psychologists equate evidence-based practice with empirically-supported therapies but the two are not synonymous. There are, in fact, many ways to provide evidence-based treatment without employing techniques that are explicitly empirically supported (e.g., by focusing on effectiveness trials and naturalistic studies or by emphasizing evidence-based *procedures* and principles of practice). Clinical practice should be evidence-*informed* but it doesn't need to be evidence-*driven* (Bohart, 2005).

Closing the Gap Between Science and Practice

Although there is controversy regarding what constitutes "evidence", the vast majority of psychologists do support the idea that they should practice in a manner that is evidence-based. So what can scientists and practitioners do to close the gap? I think that the work of the CPA Task Force has been important in terms of providing a palatable definition of evidence-based practice that is neither too restrictive nor too diluted. We have also derived a hierarchy of evidence that is open to diverse methodologies but that focuses on the need to balance internal and external validity. Yet we need to do more to close this gap. What follows are some suggestions for the scientist and for the practitioner about how we can work together to improve evidence-based practice and practice-based evidence.

Recommendations for Scientists

Better Translation of Science. First, we need better strategies for communicating and translating research into practice. Beutler, Williams, Wakefield, and Entwistle (1995) conducted a survey of practitioners and clinical academic psychologists. Of the practitioners, 47% reported

reading research articles at least monthly, 21% less than monthly, and 32% never. Beutler et al. argued, however, that practitioners do generally value research but need strategies to help them translate scientific findings into clinical practice. Generally speaking, we do not do a particularly good job of this.

We do not translate well our findings from science to practice. I remember an old cell phone commercial that highlighted the idea that you have fewer dropped calls and less interference if you use this particular service. The ad started with a man at the airport calling his partner, "Honey… I'm…leaving…you". Of course with the right cell phone service, the message would have been accurately received: "Honey, I'm not leaving without you". We need to make sure that *our* results…*our* messages are received clearly and accurately. Academic research articles may not even be the best venue for communicating research findings to clinicians (Beutler et al., 1995). In addition, the sheer number of research articles makes "keeping up" virtually impossible. As Spring (2011) noted there are over 8,000 research articles published every day which is why clinical practice guidelines and systematic reviews are so important.

Perhaps we will get better at translating science over time. In the spring of 2012, when the CPA Board met with local psychologists in university, hospital and private-practice settings in Halifax, I had the privilege of speaking with Dr. Michelle Eskritt who is an Associate Professor at Mount Saint Vincent University. Michelle informed me about an innovative new four-year Bachelor of Science program in science communication. The program intends to train individuals who can be good communicators of science. There is a related program at Laurentian University. We must create infrastructure for more efficient and effective translation of clinical research from the laboratory to the practice arena (King, 2006). Researchers need to make evidence *practice*-based. To quote Lawrence Green (2007), professor of epidemiology and

biostatistics at University of California, San Franciso, "if we want more evidence-based practice, we need more practice-based evidence." We need to do more to make research useful to the clinician.

More Effectiveness Trials and Better Communication with Practitioners. Second, as mentioned previously we must demonstrate not only efficacy (that the intervention works under highly controlled conditions) but also effectiveness (that the intervention also works under normal circumstances). Earlier I noted the review by Hunsley and Lee (2007) which demonstrated that efficacy and effectiveness trials are comparable in terms of completion rates and outcome; however, there are only a small number of effectiveness trials in the literature.

Related to the need for more effectiveness trials is the need for better communication between scientists and clinicians (Teachman et al., 2012). Communication is two-way not one way and practitioners understandably do not want to be disseminated upon (Wilson, 2011). There is an important voice that scientists also need to hear about what works in the real world. One way the Society of Clinical Psychology (APA Division 12) is attempting close the gap between science and practice is by providing clinicians with a voice in the research process. In various surveys, clinicians are afforded the opportunity to provide feedback on their use of empirically supported treatments in real-world practice. It is hoped that by fostering two-way rather than one-way communication, clinicians will be more likely to make use of research findings and that greater collaboration will take place (Goldfried, 2010).

Increased Research on Mechanisms of Change. Third, we need more research on mechanisms of change. Numerous studies have shown that psychological interventions are effective for a host of conditions. What we don't understand well is *why*. Increased research on mechanisms of change is important and could help clinicians to determine which therapeutic

ingredients to emphasize (D. A. Clark, in press; Kazdin, 2008). Demonstration of a link does not necessarily inform us about why such a relation exists. For example, just because I know that gender is a risk factor in depression (with females twice as likely to become depressed as males) does not help me to understand *why* this is the case (Ingram, Miranda, & Segal, 1998; Ingram & Price, 2010). Similarly, just because a treatment works does not mean that we understand why or can capitalize on the mechanism of change.

In some of my own research, my colleagues and I have demonstrated that a well-organized negative representation of self (i.e., the organization of the self-schema) meets sensitivity, specificity and stability criteria as a vulnerability factor for depression (Dozois, 2007; Dozois & Dobson, 2001a, 2001b; Dozois, Eichstedt, Collins, Pheonix, & Harris, 2012; Lumley, Dozois, Hennig, & Marsh, 2012; Seeds & Dozois, 2010). In previous research, we have shown that negative cognitive organization remains stable even though people improve from an episode of depression. In one randomized clinical trial, we examined the effects of cognitive therapy (CT) plus pharmacotherapy (PT) compared to medication alone on depressive symptoms, surface level cognitions and deeper level cognitions (i.e., cognitive organization; Dozois et al., 2009). Symptom reduction was equivalent for CT+PT and PT alone. Group differences were also not significant on more surface-level cognition (i.e., automatic thoughts, dysfunctional attitudes). Individuals in CT+PT, however, showed greater cognitive organization for positive content and less interconnectedness of interpersonal negative content than did those treated with pharmacotherapy alone (this is illustrated in Figure 2). Obviously this finding needs to be replicated and examined in CT alone compared to PT alone, and I am working on that now with Dr. Lena Quilty and colleagues at the Centre for Mental Health and Addiction in Toronto. Nonetheless, this is the first evidence to suggest that the trait-like vulnerability of a highly

interconnected negative self-structure can be modified by CT+PT. This finding may help to explain why CT reduces the risk of relapse or recurrence – it seems to change deeper-level cognition. Of course, an alternative explanation may be that relapse prevention has more to do with the accessibility of the schema (e.g., cognitive reactivity) than its organization per se (cf. Segal et al., 1999, Segal et al., 2006). The flood of negative thoughts that occur once the schema is activated and what a patient does with such thoughts (e.g., ruminating on them versus acceptance; Wells, in press) may be the most important predictor of relapse. Nonetheless, if these findings are replicated and a shift in the organization of self-representation is an important mechanism of long-term treatment change, then treatments can target this explicitly.

By understanding how treatment works, we will be in a better position to capitalize on and match patients to variables that are critical to outcome (Kazdin, 2008). We will also be able to deliver treatment "doses" to specific patients in a manner that will maximize resources (cf. Day, Eyer, & Thorn, in press).

Related to mechanisms of change is the movement toward evidence-based *procedures* (e.g., core procedures that are important to use in the treatment of different problems and conditions, such as behavioral activation, cognitive restructuring, exposure, acceptance-based strategies, and so on). For example, transdiagnostic protocols (Dozois, Seeds, & Collins, 2009; Mansell, Harvey, Watkins, & Shafran, 2009; McHugh, Murray, & Barlow, 2009) – treatments that target pathological mechanisms that are common across disorders – may enhance the relevance of the research to practice and circumvent many issues related to comorbidity (Shafran et al., 2009).

Training in Evidence-Based Thinking. Forth, we need to shift our graduate education so that we go beyond helping students learn the content of how to administer empirically-supported

treatments to also training psychologists in evidence-based practice (Babione, 2010; Bauer, 2007; Hershenberg, Drabick & Vivian, 2012; Hunsley, 2007b; Lee, 2007; Leffler, Jackson, West, McCarty & Atkins, in press). In other words, we need to train students how to think critically, respect and understand scientific knowledge and empirical methodologies, and integrate this information to make scientifically-informed clinical decisions within the context of a patient's needs and background. As Babione (2010) pointed out, students "need to be knowledgeable of when it is beneficial to adhere to a particular modality, when to modify it, or when to abandon it and place heavier focus on the other components of the evidence-based framework" (p. 447). We need to teach our students how to think in an evidence-based manner so that they can adapt to novelty and integrate new research into their practices.

Perhaps it is time for clinical programs to evaluate their curriculum not only for the content of knowledge but for the process of learning. We need to ensure that we are modeling evidence-based practice, providing the best training and asking the right questions (see Lee, 2007; Leffler, et al., in press).

Recommendation for Practitioners

Clinicians, too, can take steps to narrow the research-practice gap. Below, I outline some considerations for practitioners:

Measure Treatment Progress Systematically. By routinely administering reliable and valid indices of patient functioning, practitioners may better determine whether a particular intervention is effective (see Fitzpatrick, 2012; Overington & Ionita, 2012; Sales & Alves, 2012) and make informed treatment decisions that are less clouded with confirmation biases and other heuristics (Dozois & Dobson, 2010; Kazdin, 2008). As illustrated in the hierarchy (see Figure 1),

we need to determine how things are going through ongoing evaluation and then refer back to hierarchy if necessary.

I use a variety of psychometric indices in my own private practice. In addition to determining efficacy, there are other important advantages to monitoring change over time. For example, collecting data in therapy demonstrates to clients that the therapist is confident in his or her ability to help, is credible and respects accountability. Data can also be used to examine the stability of the treatment response (e.g., to ensure that a patient's change does not simply reflect a flight into health). For instance, Jarrett, Vittengl, and Clark (2008) demonstrated that additional treatment may be indicated to prevent relapse when a patient's depression scores are in the mild range or higher during any the last 6 weeks of therapy. Psychometric data also provides a clear indication of when treatment is successful and can be safely terminated. Finally, data gathered over time can be tabulated across different cases, and can allow therapists to evaluate their own efficacy among patients with different diagnoses and client characteristics (see Dozois & Dobson, 2010).

Capitalize on Clinician's Knowledge and Experiences. We also need to capitalize on clinician's knowledge and experiences. As Kazdin (2008) contends, we often consider *research* to be the contribution to knowledge and practice as the application of that knowledge. However, this is an unfortunate way of viewing the contributions that scientists and practitioners make and only reifies the scientist-practitioner gap. Clinical work can and does contribute importantly to science. By systematically coding their experiences, clinicians can contribute to the existing body of knowledge and transfer important information to the next generation of psychologists. We need direct collaborations between those who identify themselves as primarily scientists and

those whose primary identification is as a clinician. Our discipline needs the experience and expertise of practitioners (Kazdin, 2008).

One exciting development has been the establishment of Practice Research Networks which are designed to foster collaboration among researchers and clinicians by conducting naturalistic studies in psychotherapy. These networks provide the infrastructure for practice-based evidence to complement evidence-based practice (Audin et al., 2001; Castonguay et al., 2010; Castonguay, Locke, & Hayes, 2011; Norquist, 2001). Castonguay and colleagues (2010) note that typical evidence-based strategies (e.g., RCTs), although important, have reflected a "top-down" approach that may have contributed to "empirical imperialism" (p. 328) – scientists who treat few patients tell clinicians who rarely conduct research what variables should be studied to improve outcome. In contrast, practice research networks involve clinical practitioners in the community collaborating with researchers to decide on the research questions, design the methodology and implement the studies with the goal of increasing effectiveness research while also maintaining scientific rigor. The Pennsylvania Psychological Association Practice Research Network was the first psychotherapy network devoted specifically to this type of collaborative research (Castonguay et al., 2010). Tasca and his colleagues have recently received a CIHR Planning and Meeting Grant to launch a psychotherapy practice research network in Canada (Tasca, 2012a, 2012b). And there are others as well (e.g., a Practice Research Network being developed at York University).

Conclusion

The gap between science and practice needs to be filled both by the scientist and by the practitioner. As Kazdin (2008) cogently argues, the "researcher is not likely to say, 'There is no

solid evidence for any treatment, so I am going to withhold best guesses by experienced professionals.' Similarly, practicing clinicians, in need of help for their relatives, are likely to search the Web, read extensively, and make phone calls to medical centers and experts to identify what the evidence is for the various surgical, pharmacological, and other alternatives for their parents or children with significant medical problems. The clinician is not likely to say, 'My relative is different and unique and the evidence really has not been tested with people like her, so I am going to forgo that treatment'" (p. 151).

We need science so that opinion doesn't prevail (Nathan & Gorman, 1998). We must not forget that human judgment and memory are fallible. We need more science in practice. We need to train psychologists so that they think in an evidence-based manner and make conscious, explicit and judicious use of evidence in their day-to-day practices. We also need more practice in science – to rely on the strength and expertise of our clinicians to improve science. For the good of our profession and for the health and well-being of Canadians, we must to work together to study, to practice, to foster, to develop and to disseminate evidence-based practice and practice-based evidence.

References

APA Presidential Task Force on Evidence-Based Practice. (2006). Evidence-based practice in psychology. *American Psychologist, 61,* 271-285.

Babione, J. M. (2010). Evidence-based practice in psychology: An ethical framework for graduate education, clinical training, and maintaining professional competence. *Ethics & Behavior, 20,* 443-453.

Baker, T. B., McFall, R. M., & Shoham, V. (2008). Current status and future prospects of clinical psychology: Toward a scientifically principled approach to mental and behavioral health care. *Psychological Science in the Public Interest, 9,* 67-103.

Baker, T. B., McFall, R. M., & Shoham, V. (2009). Is your therapist a little behind the times? *Washington Post* (November, 15, 2009), Retrieved December 8, 2009, from http://www.washingtonpost.com/wp-dyn/content/article/2009/11/13/AR2009111302221.html

Bauer, R. M. (2007). Evidence-based practice in psychology: Implications for research and research training. *Journal of Clinical Psychology, 63,* 685-694.

Beck, A. T., & Dozois, D. J. A. (2011). Cognitive therapy: Current status and future directions. *Annual Review of Medicine, 62,* 397-409.

Beck, A. T., Steer, R. A., & Brown, G. K. (1996). *Beck Depression Inventory Manual* (2nd. ed.). San Antonio: Psychological Corporation.

Beutler, L. E., Williams, R. E., Wakefield, P. J., & Entwistle, S. R. (1995). Bridging scientist and practitioner perspectives in clinical psychology. *American Psychologist, 50,* 984-994.

Bohart, A. C. (2005). Evidence-based psychotherapy means evidence-informed, not evidence-driven. *Journal of Contemporary Psychotherapy, 35,* 39-53.

Bryceland, C., & Stam, H. (2005). Empirical validation and professional codes of ethics: Description or prescription? *Journal of Constructivist Psychology, 18,* 131-155.

Butler, A. C., Chapman, J. E., Forman, E. M., & Beck, A. T. (2006). The empirical status of cognitive-behavioral therapy: A review of meta-analyses. *Clinical Psychology Review, 26,* 17-31.

Castonguay, L. G., Boswell, J. F., Zack, S. E., Baker, S., Boutselis, M. A., et al. (2010). Helpful and hindering events in psychotherapy: A practice research network study. *Psychotherapy: Theory, Research, Practice, Training, 47,* 327-344.

Castonguay, L. G., Locke, B. D., & Hayes, J. A. (2011). The Center for Collegiate Mental Health: An example of a practice-research network in university counseling centers. *Journal of College Student Psychotherapy, 25,* 105–119.

Centre for Economic Performance's Mental Health Policy Group. (2012). *How mental illness loses out in the NHS*. London School of Economics and Political Science. London, UK.

Chambless, D. L. & Ollendick, T. H. (2001). Empirically supported psychological interventions: Controversies and evidence. *Annual Review of Psychology, 52,* 685-716.

Chambless, D. L., Sanderson, W. C., Shoham, V., Bennett Johnson, S., Pope, K. S., Crits-Christoph, P., Baker, M., Johnson, B., Woody, S. R., Sue, S., Beutler, L., Williams, D. A., & McCurry, S. (1996). An update on empirically validated therapies. *The Clinical Psychologist, 49,* 5-18.

Chapman, L. J., & Chapman, J. P. (1969). Illusory correlation as an obstacle to the use of valid psychodiagnostic signs. *Journal of Abnormal Psychology, 74,* 271-280.

Chapman, L. J., & Chapman, J. P. (1975). The basis of illusory correlation. *Journal of Abnormal Psychology, 84,* 574-575.

Chwalisz, K. (2003). Evidence-based practice: A framework for twenty-first-century scientist-practitioner training. *The Counseling Psychologist, 31,* 497- 528.

Clark, D. A. (in press). Cognitive restructuring: A major contribution of cognitive therapy. In D. J. A. Dozois (Ed.), *CBT: General Strategies. Volume 1.* In S. G. Hofmann (Series Ed.), *Cognitive-behavioral therapy: A complete reference guide*. Oxford: Wiley-Blackwell.

Clark D. M. (2012). It is inexcusable that mental health treatments are still underfunded. *The Guardian*, June 18, 2012. Retrieved from http://www.guardian.co.uk on August 1, 2012.

Clark D. M., Layard R., Smithies R., Richards D. A., Suckling R., & Wright B. (2009). Improving access to psychological therapy: Initial evaluation of two UK demonstration sites. *Behaviour Research and Therapy, 47,* 910–920.

Dawes, R. M., Faust, D., & Meehl, P. E. (1989). Clinical versus actuarial judgment. *Science, 243,* 1668-1674.

Day, M. A., Eyer, J. C., & Thorn, B. E. (in press). Therapeutic relaxation. In D. J. A. Dozois (Ed.), *CBT: General Strategies. Volume 1.* In S. G. Hofmann (Series Ed.), *Cognitive-behavioral therapy: A complete reference guide*. Oxford: Wiley-Blackwell.

DeAngelis, T. (2010). Mending the split, the Kazdin way. *APA Monitor on Psychology, 41(6),* 45.

DeRubeis, R. J., Gelfand, L. A., Tang, T. Z., & Simons, A. D. (1999). Medications versus cognitive behavior therapy for severely depressed outpatients: Mega-analysis of four randomized comparisons. *American Journal of Psychiatry, 156,* 1007-1013.

DeRubeis, R. J., Hollon, S. D., Amsterdam, J. D., Shelton, R. C., Young, P. R., Salomon, R. M., et al. (2005). Cognitive therapy vs medications in the treatment of moderate to severe depression. *Archives of General Psychiatry, 62,* 409-416.

DeRubeis, R. J., Webb, C. A., Tang, T. Z., & Beck, A. T. (2010). Cognitive therapy. In K. S. Dobson (Ed.), *Handbook of cognitive-behavioral therapies* (3rd ed., pp. 277-316). New York: Guilford.

Dozois, D. J. A. (2007). Stability of negative self-structures: A longitudinal comparison of depressed, remitted, and nonpsychiatric controls. *Journal of Clinical Psychology, 63,* 319-338.

Dozois, D. J. A., Bieling, P. J., Patelis-Siotis, I., Hoar, L., Chudzik, S., McCabe, K., et al. (2009). Changes in self-schema structure in cognitive therapy for major depressive disorder: a randomized clinical trial. *Journal of Consulting and Clinical Psychology, 77*, 1078-1088.

Dozois, D. J. A., & Dobson, K. S. (2010). Depression. In M. M. Antony & D. H. Barlow (Eds.), *Handbook of assessment and treatment planning for psychological disorders* (2nd ed., pp. 344-389). New York: Guilford Press.

Dozois, D. J. A., & Dobson, K. S. (2001a). A longitudinal investigation of information processing and cognitive organization in clinical depression: Stability of schematic interconnectedness. *Journal of Consulting and Clinical Psychology, 69*, 914-925.

Dozois, D. J. A., & Dobson, K. S. (2001b). Information processing and cognitive organization in unipolar depression: Specificity and comorbidity issues. *Journal of Abnormal Psychology, 110,* 236-246.

Dozois, D. J. A., Eichstedt, J. A., Collins, K. A., Pheonix, E. & Harris, K. (2012). Core beliefs, self-perception, and cognitive organization in depressed adolescents. *International Journal of Cognitive Therapy, 5,* 99-112.

Dozois, D. J. A., Seeds, P. M., & Collins, K. A. (2009). Transdiagnostic approaches to the prevention of depression and anxiety. *Journal of Cognitive Psychotherapy: An International Quarterly, 23,* 44-59.

Epp, A. M., & Dobson, K. S. (2010). The evidence base for cognitive-behavioral therapy. In K. S. Dobson (Ed.), *Handbook of cognitive-behavioral therapies* (3rd ed., pp. 39-73). New York: Guilford.

Fertuck, E. A. (2007). Review of Evidence-based psychotherapy: Where theory and practice meet. *Psychotherapy: Research, Practice, Training, 44,* 115-120.

Fitzpatrick, M. (2012). Blurring practice-research boundaries using progress monitoring: A personal introduction to this issue of *Canadian Psychology*. *Canadian Psychology, 53,* 75-81.

Freiheit, S. R., Vye, D., Swan, R., & Cady, M. (2004). Cognitive-behavioral therapy for anxiety: Is dissemination working? *The Behavior Therapist, 27*, 25–32.

Gloaguen, V., Cottraux, J., Cucherat, M., & Blackburn, I. M. (1998). A meta-analysis of the effects of cognitive therapy in depressed patients. *Journal of Affective Disorders, 49*, 59-72.

Goldfried, M. R. (2010). Results of the survey of clinicians' experiences in using an empirically supported treatment for panic disorder. The Clinical Psychologist, 63(4), 1-3.

Green, L. W. (2007, October). *PRECEDE-PROCEED and RE-AIM as frameworks for practice-based planning and evaluation: If we want more evidence-based practice, we need more practice-based evidence*. CDC Oral Health Workshop, Atlanta, GA.

Grove, W. M., & Lloyd, M. (2006). Meehl's contribution to clinical versus statistical prediction. *Journal of Abnormal Psychology, 115,* 192-194.

Hershenberg, R., Drabick, D. A. G., Vivian, D. (2012). An opportunity to bridge the gap between clinical research and clinical practice: Implications for clinical training. *Psychotherapy, 49*, 123-134.

Hollon, S. D., DeRubeis, R. J., Shelton, R. C., Amsterdam, J. D., Salomon, R. M., O'Reardon, J. P., et al. (2005). Prevention of relapse following cognitive therapy vs medications in moderate to severe depression. *Archives of General Psychiatry, 62*, 417-422.

Hunsley, J. (2007a). Addressing key challenges in evidence-based practice in psychology. *Professional Psychology: Research and Practice, 38*, 113-121.

Hunsley, J. (2007b). Training psychologists for evidence-based practice. *Canadian Psychology, 48*, 32-42.

Hunsley, J., Dobson, K. S., Johnston, C., & Mikail, S. F. (1999a). Empirically supported treatments in psychology: Implications for Canadian professional psychology. *Canadian Psychology, 40*, 289-302.

Hunsley, J., Dobson, K. S., Johnston, C., & Mikail, S. F. (1999b). The science and practice of empirically supported treatments. *Canadian Psychology, 40*, 316-319.

Hunsley, J., & Lee, C. M. (2007). Research-informed benchmarks for psychological treatments: Effiacy studies, effectiveness studies, and beyond. *Professional Psychology: Research and Practice, 38*, 21-33.

Ingram, R. E., Miranda, J., & Segal, Z. V. (1998). *Cognitive vulnerability to depression.* New York: Guilford Press.

Ingram, R. E., & Price, J. M. (2010). Understanding psychopathology: The role of vulnerability. In R. E. Ingram & J. M. Price (Eds.), *Vulnerability to psychopathology* (2nd ed., pp. 3-17). New York: Guilford.

Jarrett, R. B., Vittengl, J. R., & Clark, L. A. (2008). Preventing recurrent depression. In M. A. Whisman (Ed.), *Adapting cognitive therapy for depression: Managing complexity and comorbidity* (132-156). New York: Guilford Press.

Kazdin, A. E. (2008). Evidence-based treatment and practice: New opportunities to bridge clinical research and practice, enhance the knowledge base, and improve patient care. *American Psychologist, 63,* 146-159.

Kessler, R. C., Soukup, J., Davis, R. B., Foster, D. F., Wilkey, S. A., Van Rompay, M. I., et al. (2001). The use of complementary and alternative therapies to treat anxiety and depression in the United States. *American Journal of Psychiatry, 158*, 289–294.

King, M. C. (2006). Preparing psychology and psychologists for new health care markets. *Canadian Psychology, 47*, 51-56.

Kuyken, W., Padesky, C. A., & Dudley, R. (2009). *Collaborative case conceptualization: Working effectively with clients in cognitive-behavioral therapy*. New York: Guilford.

Layard, R., Clark, D. M., Knapp, M., & Mayraz, G. (2007). Cost-benefit analysis of psychological therapy. *National Institute Economic Review, 202*, 90–98.

Lee, C. M. (2007) From clinical trials to professional training: A graduate course in evidence-based interventions for children, youth, and families. *Training and Education in Professional Psychology, 1*, 215-223.

Leffler, J. M., Jackson, Y., West, A. E., McCarty, C. A., & Atkins, M. S. (in press). Training in evidence-based practice across the professional continuum. *Professional Psychology: Research and Practice.*

Lilienfeld, S. O. (2010). Can psychology become a science? *Personality and Individual Differences, 49,* 281-288.

Lumley, M. N., Dozois, D. J. A., Hennig, K., & Marsh, A. (2012). Cognitive organization, perceptions of parenting and depression symptoms in early adolescence. *Cognitive Therapy and Research, 36,* 300-310.

Mansell, W., Harvey, A., Watkins, E., & Shafran, R. (2009). Conceptual foundations of the transdiagnostic approach to CBT. *Journal of Cognitive Psychotherapy: An International Quarterly*, *23,* 6-19.

Margison, F. R., McGrath, G., Barkham, M., Clark, J. M., Audin, K., Connell, J., & Evans, C. (2000). Measurement and psychotherapy: Evidence-based practice and practice-based evidence. *British Journal of Psychiatry*, *177,* 123-130.

McHugh, R. K., Murray, H. W., & Barlow, D. H. (2009). Balancing fidelity and adaptation in the dissemination of empirically-supported treatments: The promise of transdiagnostic interventions. *Behaviour Research and Therapy*, *47,* 946-953.

Meehl, P. E. (1954). *Clinical versus statistical prediction: A theoretical analysis and a review of the evidence.* Minneapolis, MN: University of Minnesota Press.

Meehl, P. E. (1973). Why I do not attend case conferences. In P. E. Meehl (Ed.), *Psychodiagnosis: Selected papers* (pp. 225-302). Oxford, England: University of Minnesota Press.

Meehl, P. E. (1987).Theory and practice: Reflections of an academic clinician. In E. F. Bourg, R. J. Bent, J. E. Callan, N. F. Jones, J. McHolland, & G. Stricker (Eds.) *Standards and evaluation in the education and training of professional psychologists* (pp. 7–23). Norman, Oklahoma: Transcript Press.

Mental Health Commission of Canada (2012). *Changing directions, changing lives: The mental health strategy for Canada.* Calgary, Alberta: Author.

Myhr, G., & Payne, K. (2006). Cost-effectiveness of cognitive behavioural therapy for mental disorders: implications for public health care funding policy in Canada. *Canadian Journal of Psychiatry, 51*, 662–670.\

Nathan, P. E., & Gorman, J. M., (Eds.) (1998). *A guide to treatments that work*. London: Oxford University Press.

NICE. (2005). Clinical guideline 26: Posttraumatic stress disorder: The management of PTSD in adults and children in primary and secondary care. London: Gaskell and The British Psychological Society. http://guidance.nice.org/CG26.

Norcross, J. C., Beutler, L. E., & Levant, R. F. (Eds.). (2005). *Evidence-based practice in mental health: Debate and dialogue on the fundamental questions*. Washington, DC: American Psychological Association.

Overington, L., & Ionita, G. (2012). Progress monitoring measures: A brief guide. *Canadian Psychology, 53*, 82-92.

Pagoto, S. L., Spring, B., Coups, E. J., Mulvaney, S., Contu, M., & Ozakinci, G. (2007). Barriers and facilitators of evidence-based practice perceived by behavioral science health professionals. *Journal of Clinical Psychology, 63*,695-705

Paley, J. (2006). Evidence and expertise. *Nursing Inquiry, 13*, 82-93.

Parrish, D. E., & Rubin, A. (2011). An effective model for continuing education training in evidence-based practice. *Research on Social Work Practice, 21*, 77- 87.

Ruscio, A. M., & Holohan, D. R. (2006). Applying empirically supported treatments to complex cases: Ethical, empirical, and practical considerations. *Clinical Psychology: Science and Practice, 13*, 146-162.

Sales, C. M. D., & Alves, P. C. G. (2012). Individualized patient-progress systems: Why we need to move towards a personalized evaluation of psychological treatments. *Canadian Psychology, 53,* 115-121.

Seeds, P. M., & Dozois, D. J. A. (2010). Prospective evaluation of a cognitive vulnerability-stress model for depression: The interaction of schema self-structure and negative life events. *Journal of Clinical Psychology, 66,* 1307-1323.

Shafran, R., Clark, D. N., Fairburn, C. G., Arntz, A., Barlow, D. H., Ehlers, A., Freeston, M., Garety, P. A., Hollon, S. D., Ost, L. G., Salkovskis, P. M., Wilson, G. T., & Williams, J.M.G. (2009). Mind the gap: Improving the dissemination of CBT. *Behaviour Research & Therapy*, 47, 902-909.

Spring, B. (2011, November). *Evidence-based practice: What's new and how can it help you?* Paper presented at the annual meeting of the Association for Behavioral and Cognitive Therapies, Toronto, Ontario.

Spring, B. (2008). Evidence-based practice in clinical psychology: What it is, why it matters; what you need to know. *Journal of Clinical Psychology, 63,*611-631.

Sternberg, R. J. (2006). Evidence-based practice: Gold standard, gold plated, or fool's gold? In C. D. Goodheart, A. E. Kazdin, & R. J. Sternberg (Eds.), Evidence-based psychotherapy: Where practice and research meet (pp. 261–271). Washington, DC: American Psychological Association.

Stewart, R. E., & Chambless, D. L. (2007). Does psychotherapy research inform treatment decisions in private practice? *Journal of Clinical Psychology, 63,* 267-281.

Stirman, S. W., DeRubeis, R. J., Crits-Christoph, P., & Rothman, A. (2003). Can the randomized controlled trial literature generalize to nonrandomized patients? *Journal of Consulting and Clinical Psychology, 73*, 127–135.

Stuart, R. B., & Lilienfeld, S. O. (2007). The evidence missing from evidence-based practice. *American Psychologist, 62*, 615-616.

Tasca, G. A. (2012a). Psychotherapy Practice Research Network (PPRNET): Bridging the gap between psychotherapy practice and research. *GP Psychotherapist*, Spring, 12-14.

Tasca, G. A. (2012b). Psychotherapy Practice Research Network (PPRNET): Bridging the gap between psychotherapy practice and research. *Psynopsis, 34* (2), 15, 17.

Teachman, B. A., Drabick, D. A. G., Hershenberg, R., Vivian, D., & Wolfe, B. E. Bridging the gap between clinical research and clinical practice: Introduction to the special section. *Psychotherapy, 49*, 97-100.

Turk, D. C., & Salovey, P. (1985). Cognitive structures, cognitive processes, and cognitive-behavior modification: II. Judgments and interferences of the clinician. *Cognitive Therapy and Research, 9, 19-33.*

Tversky, A., & Kahneman, D. (1973). Availability: A heuristic for judging frequency and probability. *Cognitive Psychology, 5,* 207-232.

Wells, A. (in press). Meta-cognitive therapy. In D. J. A. Dozois (Ed.), *CBT: General Strategies. Volume 1.* In S. G. Hofmann (Series Ed.), *Cognitive-behavioral therapy: A complete reference guide*. Oxford: Wiley-Blackwell.

Westen, D., & Morrison, K. (2001). A multidimensional meta-analysis of treatments for depression, panic, and generalized anxiety disorder: An empirical examination of the status

of empirically supported therapies. *Journal of Consulting and Clinical Psychology, 69,* 875-899.

Westen, D., Novotny, C. M., & Thompson-Brenner, H. (2004). The empirical status of empirically supported psychotherapies: Assumptions, findings, and reporting in controlled clinical trials. *Psychological Bulletin, 130,* 631–663.

Wilson, G. T. (2011, November). In S. Rego (Chair), *I know they work, but how do I do It? Strategies for integrating evidence-based treatments into your practice.* Panel Discussion presented at the annual meeting of the Association for Behavioral and Cognitive Therapies, Toronto, Ontario.

Woody, S. R., Weisz, J., & McLean, C. (2005). Empirically supported treatments: 10 years later. *The Clinical Psychologist, 58 (4),* 5-11.

Table 1. Psychological Treatments with the Highest Level of Support (Adults)

Mood Disorders
Depression
Cognitive-behavior therapy
Interpersonal psychotherapy
Psychodynamic psychotherapy
Self-help (CBT-oriented)
Bipolar Disorder[1]
Cognitive-behavior therapy
Interpersonal psychotherapy
Family therapy
Mindfulness-based cognitive therapy
Psychoeducation

Anxiety Disorders
Generalized anxiety disorder
Cognitive-behavior therapy
Panic disorder
Cognitive-behavior therapy
Specific phobia
Cognitive-behavior therapy
Social anxiety
Cognitive-behavior therapy
Obsessive-compulsive disorder
Cognitive-behavior therapy
Posttraumatic stress disorder
Cognitive-behavior therapy

Substance-Use Disorders
Cognitive-behavior therapy
Motivational Interviewing

Sleep Disorders
Cognitive-behavior therapy

Eating Disorders
Anorexia Nervosa
Family Therapy
Psychodynamic psychotherapy
Bulimia Nervosa
Cognitive-behavior therapy
Binge-Eating Disorder
Cognitive-behavior therapy

Somatoform Disorders
Pain
Cognitive-behavior therapy
Chronic Fatigue
Cognitive-behavior therapy
Somatization
Cognitive-behavior therapy
Hypochondriasis
Cognitive-behavior therapy
Body Dysmorphic
Cognitive-behavior therapy

Borderline Personality Disorder
Dialectical Behavior Therapy

Psychotic Disorders
Cognitive-behavior therapy
Family Therapy

Dissociative Disorders
Cognitive-behavior therapy[2]

[1] as adjunct to medication
[2] Few studies have investigated the effectiveness of treatments for dissociative disorders

Source: Australian Psychological Society (2010). *Evidence-based Psychological Interventions: A Literature Review (Third Edition).* Melbourne, VIC: Author.

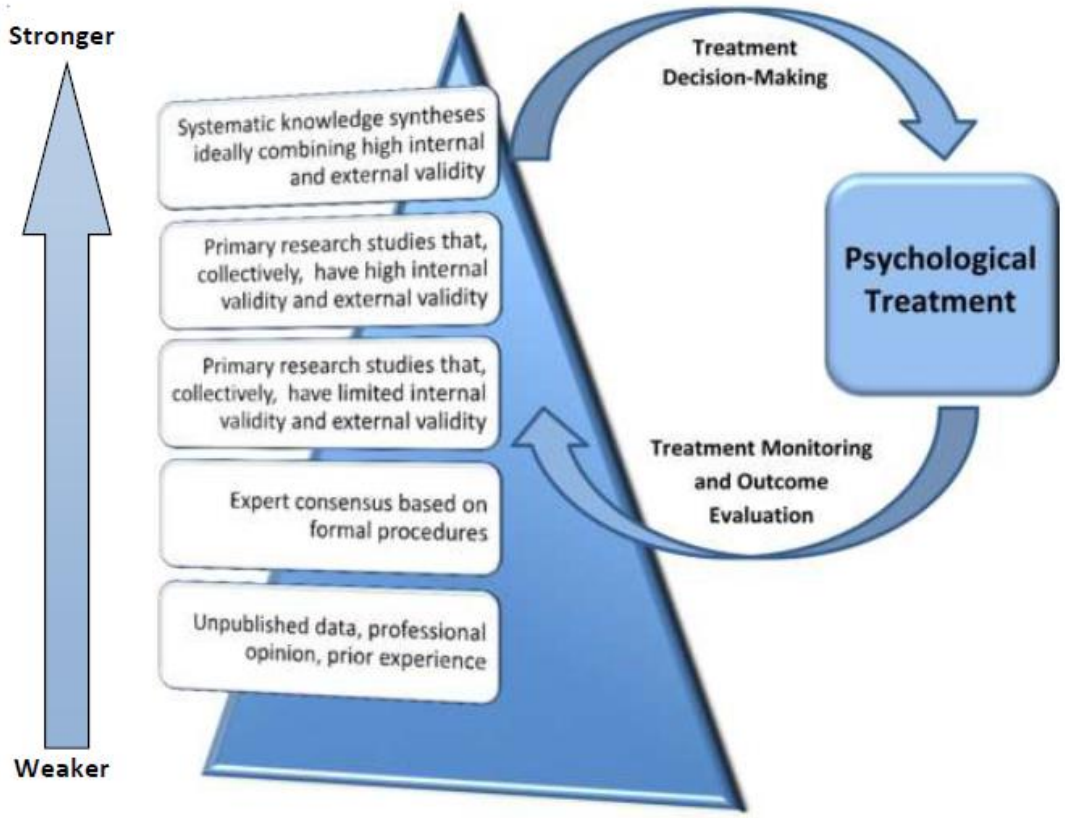

Figure 1. The hierarchy of research evidence related to clinical practice.

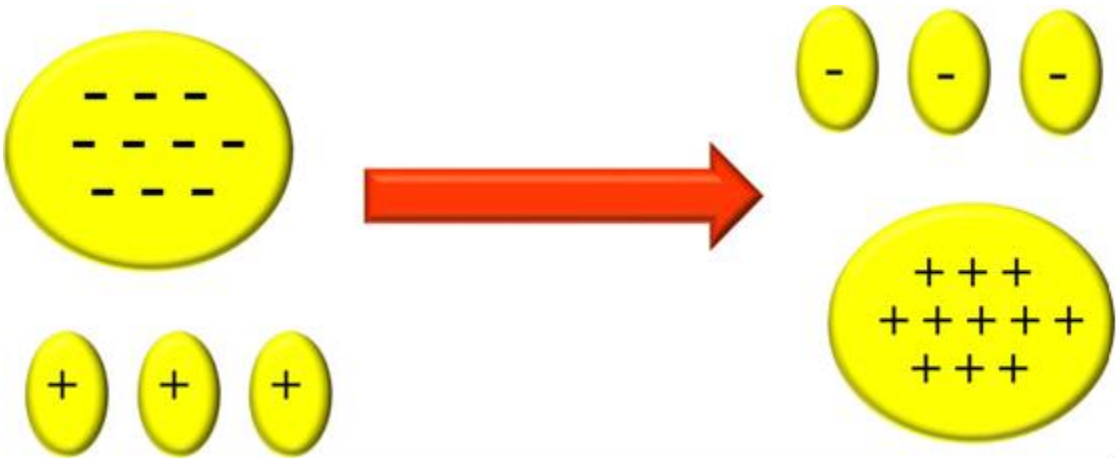

Figure 2. Changes in Cognitive Organization as a Function of Cognitive Therapy