Behaviour Research and Therapy xxx (2009) 1–4

Contents lists available at ScienceDirect

Behaviour Research and Therapy

journal homepage: www.elsevier.com/locate/brat

Dissemination of effective mental health treatment procedures: Maximizing the return on a significant investment

Bruce F. Chorpita*, Jennifer Regan

Department of Psychology, University of California, Los Angeles, United States

Keywords:
Evidence-based practice
Dissemination
Implementation
Quality improvement

A B S T R A C T

While much is known about the efficacy of evidence-based practices, it is currently less clear how to implement these practices into the broader mental health system. Dissemination and implementation research will play a critical role in addressing this uncertainty. This commentary reviews the most recent and compelling research related to these topics while advocating a broader and more defined perspective of dissemination for future research. Three of the authors' most pressing questions are proposed and explored.

As demonstrations of promising mental health technologies continue to accumulate, the topic of dissemination has become increasingly relevant in the mental health sciences (Becker, Nakamura, Young, & Chorpita, 2009). Within this field, dissemination has often been implicitly conceptualized as the delivery into practice settings those specific mental health treatment technologies that have been developed and tested successfully in research settings and contexts (see Andrews & Titov, in this issue). However, for the purposes of our commentary, we choose to define dissemination somewhat more broadly as the delivery of knowledge—at all levels—and the management of practitioner attitudes and intentions designed to increase the impact of practitioner behaviors on clinical outcomes. This expanded definition touches not only on issues of treatments and training procedures, but also on the complex and dynamic formulations related to system change, innovation, and large-scale implementation (e.g., Fixsen, Naoom, Blasé, Friedman, & Wallace, 2005; Rogers, 2003; Van de Ven & Hargrave, 2004). Each of the articles in this special issue, whose collective content is both thoughtful and highly innovative, makes a number of interesting specific points, but the issue as a whole reinforces the larger idea that dissemination is a topic that now requires our explicit attention and energy—suggesting perhaps that dissemination is not something likely to happen easily on its own, no matter how promising the developments in the clinical procedures.

Of the many models related to organizational and institutional change, Rogers' (2003) work on innovation adoption is perhaps most relevant to dissemination of innovate clinical procedures in the mental health field. This is because Rogers' model deals explicitly with the idea of organizations that attempt to adopt externally developed technologies and institutions (e.g., clinical protocols and practice guidelines) that were imposed by outside forces—very much the landscape of disseminating evidence-based practices in mental health. Rogers' model discusses factors that facilitate innovation and practice change in terms of two broad categories: (1) properties of the technology or innovation itself (e.g., the characteristics of a clinical protocol to be disseminated), and (2) the social process factors, such as characteristics of the change agents or the nature of the communication channels. Regarding properties of the technology, the model outlines further that dissemination (or more accurately, diffusion) is enhanced by relative advantage, compatibility, observability, and lower complexity. Thus, in this context, clinical protocols that have greater efficacy relative to usual care, are compatible with existing clinical institutional procedures and values, possess features that are observable by others within the organization, and reduce complexity are likely to achieve the greatest penetration into clinical practice. With respect to the social process, Rogers states that diffusion is further accelerated by change agents who are credible and similar to individuals in the host organizations and who are capable of high levels of effort, and by communication channels that ultimately involve activation of peer-to-peer networks. In light of these theoretical considerations, the papers in this special raise several questions related to dissemination that we see as important to review.

Question 1: Regarding clinical treatment technologies, does the academic institution currently ask enough dissemination relevant questions?

* Corresponding author.
E-mail address: chorpita@ucla.edu (B.F. Chorpita).

0005-7967/$ – see front matter © 2009 Published by Elsevier Ltd.
doi:10.1016/j.brat.2009.07.002

Evidence-based treatments have by definition demonstrated some advantage relative to other approaches (Chambless & Hollon, 1998); however, for the purposes of facilitating dissemination, those advantages must be relative to existing normative operations of practice organizations. Recently, Weisz, Jensen-Doss, and Hawley (2006) showed that although evidence-based treatments for children are typically superior to usual care, studies testing innovative treatments relative to true usual care historically represent a small fraction of the treatment outcome literature (Kazdin, Bass, Ayers, & Rodgers, 1990). In the literature in general, attention to characteristics of the treatment other than their relative advantage (e.g., compatibility, complexity) has historically been even lower (Chorpita, 2003).

In contrast, papers in the current special issue repeatedly address issues related to the fit between the clinical protocol and the therapist setting, yielding some important insights. For example, the notion of multi-problem or comorbidity focused procedures (McHugh, Murray, & Barlow, in this issue) is quite relevant to the concerns and the challenges faced by everyday clinical providers, and as Shafran et al. (in this issue) point out, whether real or perceived, concerns about how current evidence-based procedures address comorbidity are barriers to adoption. This is a fundamental issue of compatibility, in that clinicians must perceive that evidence-based practices are designed and well-suited to fit their routine caseload. Although most clinical research occurs in the context of specialty programs (e.g., an "anxiety" laboratory) that are part of the academic institution, the majority of clinical practice occurs in generalist settings, in which practitioners must handle many different problem types, sometimes simultaneously (Chorpita, Bernstein, & Miranda, in press). Ruzek and Rosen (in this issue) and McHugh et al. (in this issue) discuss issues of reducing protocol complexity and adapting treatments when needed, pointing out that it is more likely that focusing broadly on core competencies as opposed to rigid adherence to highly operationalized protocols will result in more efficient and feasible dissemination. Not all researchers agree on issues of protocol adaptation, however (e.g., Shafran et al., in this issue).

This raises a critical issue regarding the importance of fidelity to a particular model, and the degree to which fidelity is critical to successful outcomes. In the context of Rogers' model, rigid adherence to fidelity is likely to come with a cost—that is, organizations are likely to be more successful with adopting a new practice to the extent that they can make locally relevant adaptations to that practice, known as "reinvention." Given the inconsistent findings regarding the importance of fidelity (Henggeler, Melton, Brondino, Scherer, & Hanley, 1997; Loeb et al., 2005), it is important to ask whether one should assume that fidelity is necessary until proven otherwise, or, conversely, to assume that adaptation is acceptable until proven otherwise. The paper by Nadort et al. (in this issue) speaks to this concern by finding that schema therapy (ST) for borderline personality disorder was just as effective in reducing symptoms whether it included therapist telephone availability (TTA) or not. As TTA is a particularly burdensome component of the intervention, removing or adapting it could ease its implementation into regular mental health care.

In terms of reducing the complexity of interventions, the paper by Craske et al. (in this issue) offers a promising example. The preliminary analyses provided some support for the acceptability of their computerized CBT program (i.e., CALM) designed for use by novice clinicians in primary care settings. Results showed that clinicians rated the program highly favorably and relatively easy to use and that patients indicated understanding of the material contained in the program, assessed by self-report as well as quiz tests. Assuming the results support the efficacy of the intervention, CALM could represent a more flexible and cost-effective implementation of CBT practices in a primary care setting.

In general, our field appears to offer too little guidance at the moment regarding the issue of treatment protocol characteristics, an issue that has significant implications for adoption and sustainability of evidence-based practices. In our opinion, the focus of clinical research will need more often to include features of treatments other than simply their relative advantage over control groups (which is of course a prerequisite for dissemination), such as their compatibility with existing business procedures, their complexity, and their robustness to adaptation in order to inform efforts that are ultimately successful in the real world.

Question 2: Are we also doing enough to study the social processes relevant to dissemination?

As many of the papers in this issue point out, it is critical to extend our research beyond questions about whether treatments work and even how they work, if we are to answer the larger questions of their intended public health impact (e.g., Fixsen et al., 2005). Even investigations of other aspects of treatments such as their complexity or their compatibility with existing business routines may be insufficient in this regard. By way of example in the children's mental health arena, we have far greater implementation of treatments with some of the least support (e.g., EMDR for childhood anxiety; see Muris, Merckelbach, Holdrinet, & Sijsenaar, 1998, who found EMDR significantly worse outcomes relative to exposure on a measure of social anxiety) than of treatments with some of the highest support (e.g., self-verbalization procedures for ADHD; e.g., Meichenbaum & Goodman, 1971), presumably due at least in part to factors related to the social influence process.

Germane to this discussion is the issue of training procedures and media as well as trainer characteristics. As Ruzek and Rosen (in this issue) point out, research has shown that although traditional training workshops are not often successful in changing therapist practices (Jensen-Doss, Cusack, & de Arellano, 2008), greater change is associated with more interactive trainings that include demonstration of skills and opportunities for behavior rehearsal (Fixsen et al., 2005). In an effort to address the need for more innovative training methods, Dimeff et al. (in this issue) conducted a study comparing an interactive, multimedia online training (OLT) to an instructor-led workshop (ILT) to a text manual in training community mental health providers in dialectical-behavior therapy (DBT) skills. Here, the online training included both audio and visual material to engage the trainee as well as clinical simulations, expert insights, and knowledge checks to assess understanding of the material. Results showed that, although OLT and ILT were hypothesized to be equivalent in impact, OLT outperformed both ILT and the text manual in improving clinician knowledge of DBT skills post-training, findings which were maintained at a 90-day follow-up. Results also indicated that clinicians in the OLT and ILT conditions reported larger gains in self-efficacy and greater satisfaction with the training than those in the text manual group. It is important to note, however, that clinicians achieved only minimal to moderate competency in DBT skills by the end of the study. Although this finding could be attributed in part to the inclusion of DBT-naïve clinicians, it also likely indicates the need for continuing supervision in improving clinicians' skills. Indeed, the authors conclude that OLT may represent a high quality, accessible, and affordable technology to be used as a supplement to traditional training methods for ESTs rather than a replacement. Ruzek and Rosen (in this issue) also presented some compelling evidence supporting the added benefit of continued supervision in training.

In addition to focusing on more influential training methods and trainer characteristics, there may also be a need to address trainee characteristics before successful implementation can occur. Ruzek and Rosen (in this issue) cited a recent survey in which it was found

Please cite this article in press as: Chorpita, B.F., Regan, J., Dissemination of effective mental health treatment procedures: Maximizing the return on a..., Behaviour Research and Therapy (2009), doi:10.1016/j.brat.2009.07.002

that professionals working with traumatic stress who held negative opinions about evidence-based practices (EBP) did so not because of theoretical or philosophical beliefs but rather due to lack of access to training and concerns about the limited generalizability of these practices to their client populations (Gray, Elhai, & Schmidt, 2007). The authors also referenced a study in which the two most concerning barriers to clinicians' use of exposure therapy in the treatment of PTSD were lack of sufficient training and concern about the safety of exposure therapy (Becker, Zayfert, & Anderson, 2004). Although these findings are limited to the trauma literature, they suggest that further research on provider perceptions of treatment practices and how they might affect dissemination is needed. Perhaps by designing trainings specifically to target provider perceptions and existing knowledge of EBPs, we could address misperceptions that are limiting the use of EBPs in standard practice (e.g., Borntrager et al., 2009; Shafran et al., in this issue).

Related to therapist characteristics and how these may affect the implementation process are organizational factors that can also impede dissemination, such as staff turnover and emotional exhaustion. Aarons, Fettes, Flores, and Sommerfeld (in this issue) addressed this issue directly by examining the effect of EBP implementation and fidelity monitoring on emotional exhaustion in 21 case management teams working to reduce child neglect. Here, the authors alluded to the importance of innovation-values fit in the implementation literature (Klein & Sorra, 1996) and hypothesize that the EBP, in this case, SafeCare, would predict lower levels of emotional exhaustion due to a high level of fit between the innovation and the values of the service providers. Results were consistent with this hypothesis perhaps, as they suggest, due to the fit of the EBP with the services that were already in place, the inclusion of an overarching structure for organizing and providing services, and perceived effectiveness of the EBP as compared to services as usual. Results also showed that those providers assigned to the services as usual with monitoring condition experienced the highest levels of emotional exhaustion, which suggests that imposing an outside monitoring system on usual care alone might negatively affect providers' sense of control and autonomy. Overall, this study demonstrates an interesting and innovative design to investigate the effects of trainings content, design, and their fit with the host organization. Continued designs such as these that compare different training approaches in terms of their effects on organizational outcomes (e.g., exhaustion, attitudes, burnout) are greatly needed if we are to understand better how to optimize dissemination efforts.

A separate set of issues relevant to the social diffusion process involves the idea of peer networks for innovation. Rogers (2003) argues that diffusion is likely to occur more quickly to the extent that innovations are spread through peer networks (e.g., a clinician down the hall lending someone a protocol or recommending a particular workshop or training program), which suggests that we should begin to investigate more thoroughly the performance of host organizations in training and coaching roles designed to facilitate dissemination, with effectiveness research progressing from examining "real-world cases and real-work therapists" to examining "real-world supervisors and managers" of the interventions as well (Chorpita, 2003). As Ruzek and Rosen (in this issue) and Shafran et al. (this issue) discuss, we may need to move the current "purveyors" of implementation from researchers, whose set of skills may not extend to those required to disseminate a practice, to the health care organizations that have the capacity to develop infrastructures that can promote long-term implementation and modify ongoing practices as needed. To this end, we should focus our efforts on maintaining an open dialogue with those service-level providers who are motivated and equipped to help us achieve our end goal of long-term implementation of EBPs.

Question 3: Are we trying to install our technologies or improve theirs?

Backing one step further conceptually, it becomes important to consider the assumptions underlying definitions of dissemination—to answer a fundamentally larger question. The current dissemination proposition within evidence-based mental health practice is essentially a "collective action" institutional change model, whereby new institutions and rules have been established to facilitate certain innovations and constrain others. Dissemination in that sense differs from diffusion, in that dissemination implies an institutional agent as the source of the innovation—treatments are being built in laboratories and installed in clinics. Another view is that such treatment innovations can develop directly in the host organizations (Chorpita, 2002; Daleiden, Chorpita, Donkervoet, Arensdorf, & Brogan, 2006). That is, rather than install highly structured protocols into a new setting, it may be possible to infer some of the general principles underlying effective treatment procedures and to inform existing care in such a way as to enhance its effectiveness. Our approach of abstracting discrete procedures from the evidence-based treatment outcome literature in general and encouraging their incorporation into existing routine clinical practice is one example of such a model (e.g., Daleiden et al., 2006). Thus, an alternative to the all-or-nothing conceptualization of evidence-based practice (one is either doing the program or not) is the idea of "enhanced usual care," in which one is using more or less of the procedures that are commonly associated with positive outcomes (e.g., the use of exposure in anxiety cases). Thus, we may need to examine models that examine not only the dissemination of treatment protocols or programs, but also of principles and specific procedures (e.g., Ruzek & Rosen, in this issue).

Kazdin (2008) raises this point with respect to the limitations of the all-or-nothing model to address all questions relevant to the world's mental health concerns. Addressing the issue of the literature's ability to generate answers regarding a simple intersection of clinical problem and ethnic group intersection, Kazdin illustrates that there will likely never be enough research to answer definitively what works for each group, concluding "the matrix (Treatments $\times$ Problems $\times$ Groups) cannot be filled by conducting clinical treatment trials" (p. 210). When such issues as treatment setting, culture, age, and gender are brought into play, that already unsolvable problem space expands at least several hundred-fold. Thus, whether we like it or not, it will be necessary to think not only about dissemination of specific programs but also about dissemination of the general knowledge that has accumulated as a result of our existing clinical outcome research (e.g., Chorpita & Daleiden, 2009; Garland, Hawley, Brookman-Frazee, & Hurlburt, 2008). That knowledge will always need to be generalized to some new context, and our research going forward may need to examine the impact of the diffusion of that knowledge base as well as the efficiency and cost effectiveness of such diffusion relative to the dissemination of integrated evidence-based programs. We will need to know where one notion of dissemination affords the greater advantage and thus whether and where the other notion might provide a suitable complement.

Either way, the writing is on the wall. Although there are hundreds upon hundreds of well-designed randomized clinical trials, only a tiny fraction of these inform what happens in routine clinical care. This is a poor return on our public investment in science and research, and although continued investment in treatment outcome research is important, it is also time to consider how to maximize the return on those investments already made. Papers such as those in this special issue are beginning to move the conversation in the proper direction, and their ideas and insights are long overdue.

Please cite this article in press as: Chorpita, B.F., Regan, J., Dissemination of effective mental health treatment procedures: Maximizing the return on a..., Behaviour Research and Therapy (2009), doi:10.1016/j.brat.2009.07.002

References

Aarons, G. A., Fettes, D. L., Flores, L. E., Jr., & Sommerfeld, D. H. Evidence-based practice implementation and staff emotional exhaustion. *Behaviour Research and Therapy*, doi: 10.1016/j.brat.2009.07.006.

Andrews, G., & Titov, N. Hit and miss: innovation and the dissemination of evidence based psychological treatments. *Behaviour Research and Therapy*, doi: 10.1016/j.brat.2009.07.007.

Becker, C. B., Zayfert, C., & Anderson, E. (2004). A survey of psychologists' attitudes toward and utilization of exposure therapy for PTSD. *Behaviour Research and Therapy, 42*, 277–292.

Becker, K. D., Nakamura, B. J., Young, J., & Chorpita, B. F. (2009). What better place than here, what better time than now? Advancing the dissemination and implementation of evidence-based practices. *The Behavior Therapist, 32*, 89–96.

Borntrager, C., Chorpita, B. F., Higa, C., & Weisz, J. R. (2009). Provider attitudes toward evidence-based practices: are the concerns with the evidence or with the manuals? *Psychiatric Services, 60*(5), 1–5.

Chambless, D. L., & Hollon, S. D. (1998). Defining empirically supported therapies. *Journal of Consulting and Clinical Psychology, 66*, 7–18.

Chorpita, B. F. (2002). Treatment manuals for the real world: where do we build them? *Clinical Psychology: Science and Practice, 9*, 431–433.

Chorpita, B. F. (2003). The frontier of evidence-based practice. In A. E. Kazdin, & J. R. Weisz (Eds.), *Evidence-based psychotherapies for children and adolescents* (pp. 42–59). New York: Guilford Press.

Chorpita, B. F., Bernstein, A. D., & Miranda, J. Creating public health policy. In Barlow D. H. (Ed.) *Handbook of Clinical Psychology*. New York: Oxford, in press.

Chorpita, B. F., & Daleiden, E. L. (2009). Mapping evidence-based treatments for children and adolescents: application of the distillation and matching model to 615 treatments from 322 randomized trials. *Journal of Consulting and Clinical Psychology, 77*, 566–579.

Craske, M. G., Roy-Byrne, P. P., Stein, M. B., Sullivan, G., Sherbourne, C., & Bystritsky, A. Treatment for anxiety disorders: efficacy to effectiveness to implementation. *Behaviour Research and Therapy*, doi: 10.1016/j.brat.2009.07.012.

Daleiden, E. L., Chorpita, B. F., Donkervoet, C. M., Arensdorf, A. A., & Brogan, M. (2006). Getting better at getting them better: health outcomes and evidence-based practice within a system of care. *Journal of the American Academy of Child and Adolescent Psychiatry, 45*, 749–756.

Dimeff, L. A., Koerner, K., Woodcock, E. A., Beadnell, B., Brown, M. Z., Skutch, J. M., et al. Which training method works best? A randomized controlled trial comparing three methods of training clinicians in dialectical behavior therapy skills. *Behaviour Research and Therapy*, doi: 10.1016/j.brat.2009.07.011.

Fixsen, D. L., Naoom, S. F., Blasé, K. A., Friedman, R. M., & Wallace, F. (2005). *Implementation research: A synthesis of the literature*. Tampa, FL: University of South Florida: Louis de la Parte Florida Mental Health Institute, The National Implementation Research Network. (FMHI Publication #231).

Garland, A. F., Hawley, K. M., Brookman-Frazee, L., & Hurlburt, M. S. (2008). Identifying common elements of evidence-based psychosocial treatments for children's disruptive behavior problems. *Journal of the American Academy of Child & Adolescent Psychiatry, 47*, 505–514.

Gray, M. J., Elhai, J. D., & Schmidt, L. O. (2007). Trauma professionals' attitudes toward and utilization of evidence-based practices. *Behavior Modification, 31*, 732–748.

Henggeler, S. W., Melton, G. B., Brondino, M. J., Scherer, D. G., & Hanley, J. H. (1997). Multisystemic therapy with violent and chronic juvenile offenders and their families: the role of treatment fidelity in successful dissemination. *Journal of Consulting and Clinical Psychology, 65*, 821–833.

Jensen-Doss, A., Cusack, K. J., & de Arellano, M. A. (2008). Workshop-based training in trauma-focused CBT: an in-depth analysis of impact on provider practices. *Community Mental Health Journal, 44*, 227–244.

Kazdin, A. E. (2008). Evidence-based treatments and delivery of psychological services: shifting our emphases to increase impact. *Psychological Services, 5*, 201–215.

Kazdin, A. E., Bass, D., Ayers, W. A., & Rodgers, A. (1990). Empirical and clinical focus of child and adolescent psychotherapy research. *Journal of Consulting and Clinical Psychology, 58*, 729–740.

Klein, K. J., & Sorra, J. S. (1996). The challenge of innovation implementation. *Academy of Management Review, 21*, 1055–1080.

Loeb, K. L., Wilson, G. T., Labouvie, E., Pratt, E. M., Hayaki, J., Walsh, B. T., et al. (2005). Therapeutic alliance and treatment adherence in two interventions for bulimia nervosa: a study of process and outcome. *Journal of Consulting and Clinical Psychology, 73*, 1097–1107.

McHugh, R. K., Murray, H. W., & Barlow, D. H. Balancing fidelity and adaptation in the dissemination of empirically-supported treatments: the promise of transdiagnostic interventions. *Behaviour Research and Therapy*, doi: 10.1016/j.brat.2009.07.005.

Meichenbaum, D. H., & Goodman, J. (1971). Training impulsive children to talk to themselves: a means of developing self-control. *Journal of Abnormal Psychology, 77*, 115–126.

Muris, P., Merckelbach, H., Holdrinet, I., & Sijsenaar, M. (1998). Treating phobic children: effects of EMDR versus exposure. *Journal of Consulting and Clinical Psychology, 66*, 193–198.

Nadort, M., Arntz, A., Smit, J. H., Giesen-Bloo, J., Eikelenboom, M., Spinhoven, P., et al. Implementation of outpatient schema therapy for borderline personality disorder with versus without crisis support by the therapist outside office hours: a randomized trial. *Behaviour Research and Therapy*, doi: 10.1016/j.brat.2009.07.013.

Rogers, E. M. (2003). *Diffusion of innovations* (5th ed.). New York: Free Press.

Ruzek, J. I., & Rosen, R. C. Disseminating evidence-based treatments for PTSD in organizational settings: a high priority focus area. *Behaviour Research and Therapy*, doi: 10.1016/j.brat.2009.07.008.

Shafran, R., Clark, D. M., Fairburn, C. G., Arntz, A., Barlow, D. H., Ehlers, A., et al. Mind the gap: improving the dissemination of CBT. *Behaviour Research and Therapy*, doi: 10.1016/j.brat.2009.07.003.

Van de Ven, A. H., & Hargrave, T. J. (2004). Social, technical, and institutional change. In M. S. Poole, & A. H. Van de Ven (Eds.), *Handbook of organizational change and innovation*. New York: Oxford.

Weisz, J. R., Jensen-Doss, A., & Hawley, K. M. (2006). Evidence-based youth psychotherapies versus usual clinical care: a meta-analysis of direct comparisons. *American Psychologist, 61*, 671–689.

Please cite this article in press as: Chorpita, B.F., Regan, J., Dissemination of effective mental health treatment procedures: Maximizing the return on a..., Behaviour Research and Therapy (2009), doi:10.1016/j.brat.2009.07.002