

# A Pilot Study Disseminating Cognitive Behavioral Therapy for Depression: Therapist Factors and Perceptions of Barriers to Implementation

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**Abstract** This preliminary report on dissemination of Cognitive Behavioral Therapy (CBT) for depression assessed numerous therapist factors thought to influence implementation in a community setting. Participants were 24 therapists, aged 26–61 who participated in three, 1-day workshops and 8 months of ongoing group consultation. Attitudes toward empirically supported treatments (ESTs) and readiness to change were positively correlated whereas attitudes toward ESTs were negatively correlated with perceived client barriers to implementation. Therapists' report of client and setting factors were negatively associated with therapists' reports of implementation of CBT. Results are discussed in terms of implications and recommendations for dissemination and implementation of ESTs.

**Keywords** CBT · Dissemination · Barriers · Readiness to change · Attitudes · Implementation

Cognitive Behavior Therapy (CBT) is an empirically supported treatment (EST) with data supporting its usefulness in treating depression. Although there is research to suggest

that training therapists in CBT results in improved client outcomes (Cukrowicz et al. 2005; Simons et al. 2010), CBT remains relatively unavailable to those in the community who need it most. The burgeoning field of dissemination and implementation science has developed in response to this science-practice gap. The National Institutes of Health define dissemination as “the purposive distribution of information and intervention materials to a specific public health or clinical practice audience” whereas implementation is “the use of strategies to try out, integrate and begin to use evidence-based health interventions and change practice patterns within specific settings” (The Hill Group 2011). In line with the definitions above, it might be appropriate to first identify empirically supported dissemination models and then address issues related to implementation.

There is a surprising paucity of literature on empirically supported training models. At present, workshops appear to be the most accessible training modality for community therapists. However, 1-day workshops result in little change in provider practices (Jensen-Doss et al. 2008). In contrast, ongoing consultation and supervision is one approach that holds promise as an effective strategy for successful dissemination and implementation (Wiltsey Stirman et al. 2004). Our research group recently tested a training model that combined the workshop format with ongoing consultation in a dissemination trial conducted through an academic-community partnership in South Bend, Indiana (Simons, et al. 2010). Briefly, this trial provided an initial 2-day workshop on CBT for depression to community therapists. A subset of workshop participants ( $n = 12$ ) working in a depression clinic at a community mental health center elected to participate in ongoing tri-weekly group consultation calls with an off-site expert trainer, Dr. Christine

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Padesky. This trial proved to be effective not only in training therapists to deliver CBT competently (as per the Cognitive Therapy Rating Scale, CTRS; Young and Beck 1980) but also in terms of observed significant improvement in client outcomes as compared to treatment as usual. Exit interviews with the participating therapists revealed that although this study appeared to be effective from a *dissemination* perspective, there were a number of ways the dissemination model could be improved that would facilitate *implementation* and *sustainability* (Barton et al. 2010). Findings from the qualitative analyses of these exit interviews guided important modifications to the approach to dissemination used in the current study. For example, we learned that even in the context of a dissemination trial that provided ongoing expert consultation, there are important contextual factors such as characteristics of the community setting, the therapists, and the clients that may present as barriers or facilitators of implementation.

Indeed, numerous factors are thought to limit or facilitate the extent to which ESTs penetrate community therapists' practice (Shafran et al. 2009). Damschroder and colleagues (2009) recently developed the Consolidated Framework for Implementation Research in which they review five broad domains of constructs implicated in implementation research: (1) intervention characteristics; (2) inner (e.g., affiliated clinics) and (3) outer (e.g., political, economic, social context) setting; (4) individuals' characteristics; and (5) the implementation process. Ideally, each dissemination/implementation project would evaluate the effect of each variable within each domain. The present study set out to collect information on these multiple factors with a particular focus on setting, trainee and client characteristics that may impact knowledge uptake and retention, generalization of knowledge, and maintenance of newly developed skills (Ford 1979; Ford and Weissbein 1997).

Previous research has identified attitudes toward ESTs (e.g., Aarons 2004; Nelson and Steele 2007; Weisz et al. 1995) and organizational readiness to change (e.g., Gotham 2004) as potential barriers to dissemination and implementation. However, there are surprisingly few studies examining these factors simultaneously *within* the context of a dissemination trial that concurrently assesses additional perceived barriers—such as fit with the agency's philosophy and training burden on time—while monitoring implementation efforts. This pilot study is a preliminary report on a dissemination effort that included assessment of therapist factors (i.e., attitudes toward ESTs, readiness to change) that may serve as barriers to uptake *as well as* therapist report of implementation together with a broader range of variables (client, setting, and therapist) thought to influence implementation.

## Present Study

The present dissemination trial reflects an academic-community partnership in Lane County, Oregon. The impetus for this project came from many sources. LaneCare, a public insurance company in Lane County, approached the authors about providing CBT training. This was, at least in part, due to the fact that Oregon now mandates that 75% of state supported mental health treatment be empirically supported. As part of an effort to respond to this mandate, LaneCare clinicians requested training in CBT for depression. The authors collaborated with LaneCare to develop a workshop plus consultation training model embedded in a research context to allow for the examination of questions regarding factors that may influence the success of the training. However, even though the state mandate likely served as motivation to participate in the training, there were no contingencies around therapist participation in the training or involvement in the study. This had implications not only for the sample size of the current study but also for the amount and kind of data reported hereafter.

It is thus important to note that the present study is largely exploratory in nature. The following aims were articulated a priori. We sought to examine the interrelations between baseline therapist variables, and attitudes toward ESTs and readiness to change variables pre- and post-training. We also explored the extent to which therapist, client, and setting factors served as perceived barriers to implementing the CBT strategies learned in the trainings. This is one of few studies to examine the interrelations between pre- and post-training attitudes toward ESTs and readiness to change *and* subsequent reported perception of barriers to implementation and self-reported usage of CBT by community therapists.

## Method

### Participants

Participants were therapists ( $n = 24$ ) from five community agencies in Lane County, Oregon who voluntarily attended three separate 1-day workshops on CBT for depression and ongoing consultation sessions over 8 months.

### Procedures

#### Training

The training was provided by a partnership between LaneCare and the University of Oregon Psychology Clinic Dissemination Team. The initial workshop was offered to

all interested therapists in the community and focused on CBT for depression in teens and adults. Four modules were extensively covered in the initial training: case conceptualization, behavioral activation, thought records, and behavioral experiments. The workshop included didactics, live as well as video demonstrations, and experiential exercises (e.g., completing a personal thought record).

Additional training was offered to therapists who elected to participate in the ongoing “LaneCare CBT Dissemination Project”. As mentioned above, based on the findings from the exit interviews of our published trial (Simons et al. 2010), we instituted three major modifications of the dissemination model. First, rather than holding one, 2-day workshop on continuous days, the present training included three, 1-day workshops each spaced 1 month apart so as to allow for the consolidation of learning between trainings. Second, case conceptualization was emphasized throughout each workshop to serve as a roadmap for therapist delivery of CBT as therapists in the initial study reportedly felt confused about when to proceed with the CBT interventions learned. Finally, the present study supplemented the therapist training to include an additional workshop for supervisors which targeted supervisory issues and procedures from a CBT perspective. This modification was made for two reasons. One, therapists in the initial dissemination trial felt challenged by having an off-site consultant when they often had questions they would ideally bring to weekly supervision with their on-site supervisor. Two, LaneCare requested that supervisors receive training in CBT supervision because these individuals were less likely to move on from the agency making it more likely that these CBT training efforts would be sustainable.

One month after the initial workshop, participants attended a second workshop focused on structure both within session (e.g., agenda setting, bridge sessions, review homework, introduce new ideas, assign homework, summary and obtain feedback) and across therapy (e.g., psychoeducation, goal setting, monitoring, behavioral activation, cognitive interventions, underlying assumptions, behavioral experiments, core belief work) using the case conceptualization as a guide for which interventions to use when. While this workshop included some didactics, the smaller group format facilitated therapist learning through guided discovery, live demonstrations, role plays, and experiential exercises. In this workshop, therapists were assisted in identifying new clients with whom they began to implement CBT.

One month later, a third workshop was provided to participants with an additional meeting for supervisors. The third workshop focused on using the case conceptualization to guide therapist selection of interventions. This third workshop functioned more as a consultation period during which therapists could present their initial CBT

implementation efforts and collaborate with the trainer to address perceived barriers to implementation.

Finally, an ongoing series of group consultation sessions occurred every 3–5 weeks. The first session began 1 month after the third workshop. Consultation groups differed from workshops in that the content of these sessions was largely driven by the therapists who brought in specific topics/issues related to their ongoing implementation efforts that the group responded to under the guidance of the trainers. Two agencies requested and were provided with additional individual agency consultation sessions at their sites to facilitate their learning of CBT. Therapists at one agency met biweekly with a trainer and used the consultation hour to focus on individual therapists’ questions and concerns. Another agency met less regularly and used the consultation hour to address difficulties incorporating CBT into their primary model (i.e., Parent Management Training and Multidimensional Treatment Foster Care).

## Design

Therapists completed a battery of questionnaires prior to attending the first workshop. This battery included a questionnaire obtaining demographic information and other therapist variables (e.g., prior exposure to CBT). In addition, therapists completed measures assessing (1) attitudes toward ESTs and (2) readiness to change. Eight months after the initial workshop therapists were re-administered the attitudes and readiness measures. In addition, they completed questionnaires regarding their usage of CBT and perceived barriers to implementation.

## Measures

### *Demographics and Baseline Therapist Variables*

Prior to the initial workshop, therapists completed a questionnaire that was used to assess variables such as age, gender, experience, theoretical orientation, and previous exposure to CBT.

### *Attitudes Toward ESTs*

The Modified Practice Attitudes Scale (MPAS; Chorpita et al., unpublished measure, 2004) was used to assess attitudes toward ESTs. This measure was selected over the more commonly cited Evidence-Based Practice Attitude Scale (EBPAS, Aarons 2004) due to its observed incremental sensitivity to change when disseminating ESTs that do not emphasize manuals but rather refer to evidence-based practice more generally (Borntrager et al. 2009). The MPAS consists of eight items and uses a 5-point Likert-

scale on which therapists endorse their level of agreement with each item. An example item is “I am willing to use new and different types of treatments if they have evidence of being effective”. Five items are reversed-scored. Total scores reflect therapist attitudes: higher scores indicate more positive attitudes (possible range 0–32). The inter-class correlations (ICCs) from the present study reflected adequate internal reliability, Cronbach  $\alpha = 0.72$ .

#### *Therapist Readiness for Change*

The original Organizational Readiness for Change measure (ORC; TCU IBR) was designed to assess 18 content domains (e.g., program needs, pressure for change, training, climate) with 115 items using a 5-point Likert scale. In an effort to reduce the assessment burden and improve response rates, only four subscales of the ORC were administered in the present study. Specifically, given our focus on therapist specific perceived facilitators and barriers, the following subscales were retained: adaptability, professional growth, readiness to change, and previous training utilization. Item wording was slightly modified to better fit the current study application and setting. Adequate reliabilities have been observed across these subscales in addictions samples (Cronbach  $\alpha$ 's range: 0.64–0.76). Cronbach  $\alpha$ 's in the current sample were comparably adequate: adaptability = 0.65; professional growth = 0.64; readiness to change = 0.75; previous training utilization = 0.58. Average scores were computed for each subscale with higher scores reflective of greater adaptability, commitment to professional growth, readiness to change and use of previous trainings.

#### *Self-Reported Implementation*

Self-reported implementation of CBT was obtained 8 months after the initial workshop. General implementation, or use of, CBT was assessed by the items “Have you used any ideas from the workshops?” and “Have you used any materials from the workshops?” using a 5-point Likert scale that ranged from “Not At All” to “Very Much”. Eleven additional items were included to assess usage of more specific CBT processes or interventions extensively covered in the trainings. Specifically, using the same 5 point Likert scale, therapists were asked “To what extent have you used the following aspects of the CBT training with your clients?” Aspects of CBT assessed were: cognitive case conceptualization, thought records, Socratic dialogue, behavioral experiments, behavioral activation, collaborative empiricism, agenda setting, symptom monitoring, homework, feedback, and capsule summaries. ICCs were strong and demonstrated good cohesion of the items, Cronbach  $\alpha = 0.88$ . As such, an aggregate implementation

score was created through averaging the usage items and used in all subsequent analyses; higher scores indicated greater usage.

#### *Perceived Barriers to Implementation*

To our knowledge, no widely used measure of barriers to implementation of ESTs exists in the psychotherapy literature. Funk et al. (1991) created the “Barriers to Research Utilization Scale” for the field of nursing that contained some items relevant to the dissemination efforts in the psychotherapy field (e.g., “There is insufficient time on the job to implement new ideas”), but also includes many other, less relevant items (e.g., “Physicians will not cooperate with implementation”). Consequently, we created a self-report form that attempted to capture the major perceived barriers identified across existing dissemination reports. Fifteen items were generated. The content of the items appeared to reflect three broad domains—client, therapist, setting—and the psychometrics in this small sample are promising. Specifically, items suggesting client comorbidities, symptom severity, cognitive ability and receptivity to CBT demonstrated good cohesion as per ICCs, Cronbach  $\alpha = 0.84$ . The proposed therapist domain included four items assessing therapist comfort, ease of use, perceived relevance, and fit with therapist style; ICCs were adequate, Cronbach  $\alpha = 0.68$ . The third domain assessed factors related to the setting that potentially served as perceived barriers to implementation: training, supervision, resources (e.g., books, training videos), and fit with agency philosophy; ICCs were adequate, Cronbach  $\alpha = 0.60$ . One additional barrier item “lack of time” did not appear to “fit” in any of one of the aforementioned domains either content-wise or statistically, rather it fit within both therapist and setting domains. Therefore, four factors (three broad domains—client, therapist, setting—and the individual item “lack of time”) were investigated as perceived barriers and included in subsequent analyses.

#### *Statistical Analyses*

All analyses were run using SAS Version 9.1 (SAS Institute, Cary, NC). Given the exploratory nature of the present study, no Bonferroni corrections were made. General linear models evaluated whether pre-workshop variables such as demographics, therapeutic orientation, and prior exposure to CBT were related to attitudes toward ESTs, ORC subscales, usage and perceived barriers to implementation. Relations between continuous measures (e.g., attitudes toward ESTs, ORC, usage and perceived barriers) were examined through Pearson product-moment correlations. Tests were two-tailed and alphas set at 0.05.

## Results

### Clinician Demographics and Baseline Descriptive Statistics

Participants were 24 therapists, aged 26–61 ( $M = 42.85$ ,  $SD = 9.86$ ), representing 5 community agencies. Sixty-two percent were female and the majority was Caucasian (90.48%). Therapists had a wide range of years of experience in the field; 31.58% of the sample had 10–20 years, and 31.58% had 1–3 years. The majority of therapists treated primarily depression and anxiety (95.24%). Two-thirds had their Masters degree whereas the remaining had either a Bachelors (9.52%) or a Doctorate (23.81%) with nearly half trained in the discipline of Social Work (47.62%). Approximately half the sample was licensed (55.00%) at the initiation of training and the most commonly cited primary orientation was Cognitive Behavioral Therapy (27.78%) followed by nearly one-quarter indentifying with a Systems orientation (22.22%). Forty-two percent of the sample carried an ongoing caseload of 21–30 clients with another 31.58% reporting they carried a caseload of greater than 40 clients. More than half (57.9%) the therapists had previously attended a CBT workshop; 63.2% had read both a comprehensive book on CBT and research articles; 31.6% had been supervised in CBT; 15.8% had served as a CBT supervisor; and, 36.8% had formal, university level education in CBT.

### Interrelations Among Baseline Therapist Variables, Attitudes Toward ESTs and ORC Subscales

General linear models revealed that therapists who worked primarily with children endorsed higher levels of adaptability ( $M = 3.90$ ,  $SD = 0.49$ ) as opposed to their counterparts ( $M = 3.41$ ,  $SD = 0.53$ ),  $F(1, 16) = 4.19$ ,  $P = 0.057$ . Therapists who worked primarily with teens reported higher levels of previous training utilization ( $M = 3.66$ ,  $SD = 0.48$ ) as opposed to their counterparts ( $M = 2.94$ ,  $SD = 0.51$ ),  $F(1, 16) = 6.95$ ,  $P = 0.018$ . No differences were observed among those who worked primarily with adults and those who did not.

Therapists who were licensed endorsed significantly more favorable attitudes toward ESTs ( $M = 25.75$ ,  $SD = 4.20$ ) than those who were unlicensed ( $M = 21.50$ ,  $SD = 2.33$ ),  $t(14) = 3.25$ ,  $P = 0.025$ . Therapists who reported their primary orientation was CBT held significantly more favorable attitudes toward ESTs as compared to therapists with an alternative primary orientation,  $F(3, 12) = 4.16$ ,  $P = 0.031$ . Therapists with more years of experience as well as supervisors held more favorable

**Table 1** Descriptive statistics of attitudes toward empirically supported treatments and the organizational readiness for change subscales

Variable	Time point	Mean	SD
Attitudes	Pre	23.94	3.92
	Post	24.47	4.36
Readiness to change	Pre	3.62	0.68
	Post	3.67	0.48
Professional growth	Pre	3.79	0.57
	Post	3.63	0.68
Adaptability	Pre	3.67	0.54
	Post	3.60	0.65
Training utilization	Pre	3.49	0.55
	Post	3.40	0.60

SD Standard Deviation, Pre baseline, Post 8 months after the initial training occurred

attitudes toward ESTs,  $r = 0.54$ ,  $P = 0.03$  and  $t(14) = 2.31$ ,  $P = 0.037$ , respectively. Finally,  $t$ -tests revealed that therapists who had previously attended a CBT workshop held marginally significantly more favorable attitudes toward ESTs,  $t(14) = 2.01$ ,  $P = 0.064$ .

Previous training utilization was significantly positively correlated with both readiness to change and professional growth prior to initiation of training. These interrelations were replicated at follow-up with the addition of an observed positive correlation between readiness to change and professional growth. There was also a significant positive correlation between attitudes toward ESTs and the adaptability subscale of the ORC at follow-up. See Table 1 for descriptive statistics and Tables 2 and 3 for the correlation matrices of these variables at baseline and 8 months post training, respectively.

### Perceived Barriers to Implementation: Therapist, Client, and Setting Factors

Lack of time was the greatest perceived barrier to implementation of CBT, followed by thinking that clients' cognitive ability would limit CBT's effectiveness. Lack of on-site supervision was the third highest perceived barrier to implementation. See Table 4 for descriptive statistics of perceived barriers to implementation.

Neither perceived therapist nor setting barriers were significantly correlated with attitudes toward ESTs or the ORC subscales. However, there was a highly significant negative correlation observed between perceived client barriers and attitudes toward ESTs both pre- and post-workshop,  $r = -0.71$ ,  $P = 0.009$  and  $r = -0.69$ ,  $P = 0.0032$ , respectively. In addition, post-workshop adaptability

**Table 2** Correlation matrix of attitudes toward empirically supported treatments and the organizational readiness for change subscales at baseline

Variable	Attitudes	Readiness to change	Professional growth	Adaptability	Training utilization
Attitudes	1.00				
Readiness to change	−0.19	1.00			
Professional growth	0.19	0.63**	1.00		
Adaptability	0.33	0.31	0.38	1.00	
Training utilization	−0.06	0.56*	0.63**	0.35	1.00

\*  $P < 0.05$ , \*\*  $P < 0.01$ **Table 3** Correlation matrix of attitudes toward empirically supported treatments and the organizational readiness for change subscales at follow-up

Variable	Attitudes	Readiness to change	Professional growth	Adaptability	Training utilization
Attitudes	1.00				
Readiness to change	−0.35	1.00			
Professional growth	−0.44 <sup>+</sup>	0.66**	1.00		
Adaptability	0.55*	0.018	−0.10	1.00	
Training utilization	0.067	0.62*	0.53*	0.38	1.00

<sup>+</sup>  $P < 0.10$ , \*  $P < 0.05$ , \*\*  $P < 0.01$ **Table 4** Perceived barriers to implementation of empirically supported treatments

Barrier	Mean	SD
Lack of time	3.00	1.36
Therapist	1.98	0.64
This approach seems cumbersome and difficult.	1.62	0.96
This approach doesn't fit with my counseling style.	2.06	1.12
The approach to treatment does not seem relevant to the needs of your clients.	1.94	0.65
You have felt comfortable using this approach in your agency.*	3.88	0.86
Setting	1.81	0.67
My agency does not have the resources (e.g., books, training videos) to use this approach.	1.69	0.87
I do not feel properly trained to use this approach.	2.08	0.90
Lack of supervision in this approach.	2.25	1.29
This approach doesn't comply with my agency's treatment philosophy.	1.44	0.73
Client	1.95	0.82
I am concerned the approach you described will not work with my clients because of...		
i. Axis I comorbidities.	1.56	1.09
ii. Axis II comorbidities	2.12	1.31
iii. Axis III conditions.	1.94	1.53
iv. Axis IV difficulties.	2.12	1.41
v. Axis V severity.	1.69	1.14
vi. Symptom severity.	1.69	0.87
vii. Low cognitive ability.	2.37	1.02
viii. My client may not be receptive to CBT.	2.12	1.02

The above items were prefaced with the following: To what extent do you think each of the following has kept you from making more use of this approach? \* Item was reversed scored. *SD* Standard Deviation. Scale scores ranged from 1 (not at all) to 5 (very much)

was significantly negatively correlated with perceived therapist barriers,  $r = -0.60$ ,  $P = 0.013$ .

### Self-reported Implementation of CBT

On average, therapists reported using “some” CBT over the 8 months since training began. In terms of specific processes or interventions, on average, therapists reported using Socratic dialogue the most, followed by agenda setting and homework. See Table 5 for descriptive statistics of self-reported usage of CBT. No significant interrelations were observed between usage and either attitudes toward ESTs or the ORC subscale, pre- or post-training. Although perceived therapist barriers were not significantly associated with self-reported usage, both perceived client and setting barriers were significantly negatively correlated with usage,  $r = -0.61$ ,  $P = 0.035$  and  $r = -0.84$ ,  $P = 0.0011$ .

### Discussion

The overarching aim of the present study was to explore the interrelations between therapist variables, usage of CBT, and perceived barriers to adoption and implementation in a multi-agency dissemination project. Four findings are highlighted and discussed in terms of their implications for assessment, training and implementation efforts. First, the results show that therapist attitudes toward ESTs and readiness to change variables were correlated both before and after training in CBT. Second, these therapist variables

were also associated with therapist perceptions of barriers to implementation of CBT, most especially beliefs about how effective or applicable CBT would be to the therapist’s particular client caseload. Third, therapists’ self-reported adaptability after training was associated with perceptions that CBT did not fit well with their counseling style and was cumbersome to use, for example. Finally, it was found that these therapist concerns about client factors in addition to characteristics of the setting in which therapists worked were associated with limited CBT implementation in the current project.

### Implications for Assessment

These findings demonstrating significant interrelationships between therapist variables, perceptions of barriers to implementation of CBT, and reported usage are preliminary but begin to suggest some ways that training, dissemination and implementation efforts could be improved. For instance, therapists in the current study reported concern that CBT’s effectiveness would be limited with clients with cognitive disabilities and Axis II comorbidities. Similarly, Kramer and Burns (2008) found therapists were concerned about clients with cognitive disabilities perhaps because RCTs had neglected to include clients with these difficulties in their study. Numerous studies suggest that community therapists believe that RCTs, on which ESTs are based, do not include clients as complex, comorbid and severe as the clients they treat in “real world” settings limiting the perceived applicability of the reported effectiveness of the ESTs under examination (Bohart et al. 1998; Henry 1998; Weisz et al. 1995). Some of these beliefs/concerns are directly contradicted by the research literature. In a recent article designed to “improve the dissemination of CBT”, Shafran et al. (2009) cited commonly held therapist beliefs as a major barrier to dissemination, yet they found that there was little research evidence for many of these clinician-held concerns. For instance, the concern that CBT is ineffective for clients with comorbid personality disorders is contradicted by research demonstrating the utility of CBT for various anxiety disorders with clients with comorbid personality disorders (e.g., Dreesen and Arntz 1998).

The results reported here replicate a growing body of literature which suggests that it might be valuable for training and dissemination researchers to systematically assess and target therapist beliefs, attitudes, and readiness prior to the initiation of training. This is a notion analogous to the idea that clients often benefit from psychoeducation to dispel myths or false beliefs about their symptoms, “socialization” into the treatment model and motivational interviewing (MI) to jumpstart change. Trainees may benefit from similar interventions. This study highlights

**Table 5** Therapist reported implementation of cognitive behavioral therapy processes and interventions

Process/intervention	Mean	SD
Case conceptualization	3.00	1.24
Thought records	3.20	1.32
Socratic questioning	3.56	1.31
Behavioral experiments	3.11	1.08
Behavioral activation	3.00	1.75
Collaborative empiricism	3.14	1.46
Agenda setting	3.38	1.44
Symptom monitoring	2.46	1.45
Homework	3.38	1.12
Feedback	2.77	1.23
Capsule summaries	3.00	1.35
Used ideas from the workshops	3.92	0.76
Used materials from the workshops	3.47	0.72
Aggregate usage	3.10	0.82

SD Standard Deviation. Scale scores ranged from 1 (not at all) to 5 (very much)

therapist beliefs that may interfere with learning ESTs and implementing them in community settings.

Assessment of therapist beliefs about their own readiness to change, attitudes towards what they will be learning and how they will implement this new learning is handicapped by a lack of standardized measures or a battery of instruments as well as lack of information about which measures are most appropriate for which questions. For example, the present study administered the MPAS whereas previous research has more commonly administered the EBPAS. We chose the MPAS based upon the findings of Bortrager and colleagues (2009). Specifically, they found it to be more sensitive to *general* attitudes toward ESTs whereas the EBPAS emphasizes attitudes toward *treatment manuals*. As the current dissemination project highlighted use of the cognitive case conceptualization to guide treatment and did not utilize a manual, use of the MPAS over the EBPAS was an important design choice. It seems many researchers are moving away from disseminating manuals and the MPAS might be more appropriate than the EBPAS in these situations. Given the high degree of interrelations between therapist variables such as attitudes toward ESTs (as per the MPAS), readiness to change, perceived barriers to implementation, and subsequent usage observed in the current study, some combination of these measures may be most useful, in future dissemination efforts. If researchers were to employ the same or similar measures across studies, it might be easier to identify indicators for successful adoption and implementation in a more timely manner.

In addition to identifying indicators for successful implementation, identification of perceived barriers to adoption is critical. Both perceived client and setting barriers were significantly negatively correlated with reported implementation in the present study. Although these findings are consistent with previous literature, this is the first published study, to our knowledge, to have employed a more comprehensive, yet brief, self-report measure of barriers to implementation in the context of a dissemination trial that demonstrates promising psychometrics albeit in a very small sample. This measure needs assessment of its psychometric properties but the general language adopted by the measure (as opposed to being specific to CBT for depression) is generalizable across the dissemination and implementation science literature.

### Implications for Training

This study has implications not only for assessment but also for training strategies in dissemination trials. There is work to suggest that tailoring dissemination strategies to match the readiness of the therapist (Moulding et al. 1999) and that targeting negative attitudes toward ESTs (Nelson

and Steele 2007) may facilitate successful adoption and implementation. Saldana et al. (2007) used random-effects regression models in a large sample of community-based therapists who treated adolescents and similarly found numerous ORC subscales correlated with the EBPAS. Because of the developing literature demonstrating the convergent validity of these measures, it may be possible to use these measures to effectively and efficiently target baseline therapist factors throughout training to promote widespread dissemination.

The correlation between therapist adaptability and favorable attitudes toward ESTs suggests a potentially important focus for training. That is, it might be important to target therapist self-perceptions of adaptability early in the process of training. Or, it might be important to disseminate ESTs in a framework that highlights the flexibility of the protocol or intervention. There is literature to suggest that therapists hold negative perceptions of ESTs because they view them to be rigid (Mahrer 2005) and as we observed in the present study, perhaps some therapists view themselves as less adaptable. This combination of therapist and intervention variables would lead to a mismatch that might compromise the success of the dissemination effort. Recently, Chorpita (2007) developed a modular-based approach to training in CBT for childhood anxiety disorders. Although not necessarily designed for this reason, one effect of this approach is perhaps the welcomed increase in the role of the therapist afforded by the flexibility of the decision-making, treating planning, etc. Bortrager and colleagues (2009) found this modular-based approach did indeed improve therapist attitudes toward ESTs. This perceived flexibility was an important element in designing the approach to training in the present study which resulted in maintenance of favorable attitudes toward ESTs throughout the entirety of training.

Another finding from the present study suggests an important focus for training. Specifically, therapists in the current study reported that lack of on-site supervision was a barrier to implementation. We identified the importance of on-site expertise (Barton et al. 2010) in our previous dissemination effort (Simons et al. 2010) and subsequently supplemented training in the present study with a specific emphasis and additional workshop on supervisory issues from a CBT perspective. However, despite our efforts, not all participating therapists had supervisors who were willing to participate in the training and other therapists had participating supervisors who did not currently carry a client caseload. These supervisors reported that they felt they had a more limited understanding of the practical applications of CBT. These factors may have limited the benefit of the approach to training taken. It might therefore be important to conduct more intensive training directly with the supervisors, as opposed to the single workshop



session devoted to supervisors in the present study. Or, perhaps more extensive consultation, beyond 8 months, is important for therapists whose supervisors do not engage in clinical work.

As previously mentioned, systematic assessment of therapists' beliefs and concerns might allow for a more tailored approach to training. Specifically, if indeed therapists endorsed the belief that CBT does not work as effectively for clients with comorbidities, it might be critical to develop demonstrations with more complex cases, or work with each therapist to identify complex "training" cases from the start. Successful delivery of CBT with these clients, although perhaps more challenging, might more rapidly dispel any notions about the effectiveness of CBT and encourage the therapist to experiment using CBT with other cases in their caseload. In order to facilitate this learning, more time for live demonstrations or role plays within the consultation hour might be useful. Although these procedures tend to invoke some degree of anxiety for those involved, they might have greater practical implications to the therapists in training.

#### Implications for Implementation and Sustainability

As the field moves forward in identifying empirically supported dissemination models, it may be important to identify specific aspects of ESTs that are easier to implement. In the present study of CBT for depression, Socratic Dialogue was the specific process reportedly used most by therapists after the training. It may be that this process was something therapists felt "fit" best with their style. The next two most frequently used processes/interventions were agenda setting and homework assignment. These elements of CBT were highlighted throughout training and emphasized as key components of effective CBT. Implicit in the previous statement is that our training not only included didactics, role plays, and demonstrations, for instance, but also we took every opportunity to discuss and incorporate the implications of research findings. For instance, the trainers highlighted the work of Shaw and colleagues suggesting that the structure items on the CTRS were most related to client outcomes (Shaw et al. 1999). In addition, the trainers discussed the findings of Bryant et al. (1999) that suggested therapist review of homework was critical to client homework compliance and that homework completion appears to be a critical component leading to successful response to CBT (e.g., Rees et al. 2005; Simons et al., *under review*). Therefore, it is possible that therapists were motivated by the research to incorporate these effective components into clinical practice. It might also be that these structure items are more easily learned by training therapists. Milne et al. (1999) found that therapists obtained high scores on the structure items of the CTRS

within 1 week of training and were maintained throughout training. They suggested these structure-related aspects may be simpler to teach and incorporate into clinical practice as compared to other CBT interventions (e.g., thought records, behavioral experiments).

To extend the previous recommendation to adapt training efforts in ways that are analogous to our work with clients, we suspect that structuring the consultation hour and the progression through training much as a therapist would proceed with a client would likely be beneficial. Specifically, training that begins with systematic assessment of beliefs, attitudes and readiness to change followed by psychoeducation and perhaps MI may be most valuable. Subsequently, if indeed structure-related elements of CBT are most easily learned and would perhaps provide the therapist with a sense of mastery as client symptoms improve, then training would proceed with a focus on use of agenda setting, homework review and assignment, etc. Following these elements would be the perhaps more complex interventions such as use of thought records, behavioral experiments, and core belief work. In order to maximize this learning and promote implementation, identifying one or two training cases with which to "practice" and "experiment" these elements might be helpful. In doing so, the therapist would work with the trainer to develop an individualized homework assignment that would foster implementation between consultation sessions. Review of the homework in the following consultation period would maximize the gains made and allow for trouble-shooting any difficulties while learning proceeded in an idiographic manner for the therapist, maximized within a group learning context. Given the success of this approach to behavior change with our clients, logic suggests it may be successful with therapist behavior change as well; however, an empirical test of this recommendation is necessary.

Furthermore, incorporation of systematic measurement of perceived barriers to change throughout therapist attempts to implement CBT is recommended. Extended use of the perceived barriers scale developed for this study would allow trainers to identify therapist concerns *during* the dissemination trial. The trainer could then work with the therapist to develop homework assignments to test out their concerns, experiment with new techniques with curiosity, and promote utilization.

Lack of time was the highest endorsed barrier to implementation in the present study. This finding replicates previous research. Dunn et al. (1998) reported that the most frequently cited barrier to utilization of research in practice in a sample of nurses was lack of time. Similarly, Pagoto and colleagues (2007) found that therapists reported lack of time as a barrier to use of evidence-based practice in an open-ended survey. Despite the unique situation in Oregon

whereby therapists are mandated to deliver ESTs, they are not provided with compensation for training time which might explain the success of their efforts to a large degree. This situation is not unlike the government mandate to disseminate CBT in the UK. However, because the UK operates under a single payer system, therapists are afforded the luxury of receiving salary for their training time. Until a similar opportunity presents itself under managed care conditions, dissemination and implementation scientists must continue to seek the least demanding and most efficient approaches to training via supplemental web-based trainings, for instance (e.g., Sholomskas et al. 2005). However, though the dissemination and implementation science literature is still much in its infancy, there seems to be little that can replace the time spent in consultation with an expert trainer (Wiltsey Stirman et al. 2004). Therefore, collaboration with the agency and supervisors to address these setting-related perceived barriers to implementation is particularly important.

### Limitations

There are several noteworthy limitations of the present study. First, the sample size was quite small ( $N = 24$ ) making it difficult to detect effects and relationships that were not large in magnitude. Second, the therapists in the current study self-selected to participate in the ongoing training. They entered into the project with relatively high readiness to change and favorable attitudes toward ESTs as opposed to being a more diverse group of therapists with regard to degree of openness to ESTs. These two limitations limit the generalizability of the findings presented here. Third, despite the sensitivity of the MPAS and the applicability of its focus, the majority of the dissemination literature has employed the EBPAS making it difficult to compare our findings across studies. Fourth, although adequate, relatively poor psychometrics were observed on at least one subscale ( $\alpha: 0.60$ ) making the results of this study vulnerable to method variance. Additional research regarding the psychometrics of the perceived barriers measure generated for this study in a larger sample is warranted. Finally, all data reported here were obtained via therapist self-report. We were most interested in taking a closer look at therapists' perceptions and their experience; however, a stronger approach would have been to obtain objective observations of CBT implementation. There is some data to suggest that therapist report of strategies employed in psychotherapy sessions (including reports of frequency and intensity) do not correlate with objective ratings (Hulburt et al. 2010). The fact that we relied on self-report only is a serious limitation of this study for the reason mentioned above, but also because of the potential for common method bias that is likely at play.

### Future Directions

An important future direction for this line of research is to include, in one study, a multi-method, multi-informant approach to collection of the numerous variables thought to be implicated in dissemination and implementation science. Proctor and colleagues (2009) present a comprehensive conceptual model of implementation research that considers the intervention strategies, implementation strategies (e.g., systems environment, organization, supervision), and three levels of outcomes—implementation (e.g., feasibility, costs, sustainability), service (e.g., efficiency, effectiveness, patient-centeredness), and client (e.g., satisfaction, symptomatology) as important areas for research. With larger samples more advanced statistics such as structural equation modeling could be employed to examine the pathways and relations among these variables. Unfortunately, the current study focused primarily on the implementation outcomes and does little by way of advancing research on service outcomes, for instance. More comprehensive, larger scale studies will thus make important contributions to the developing literature.

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