Is supervision necessary?
Examining the effects of internet-based CBT training with and without supervision

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Objective: To investigate the effect of Internet-based training (IBT), with and without supervision, on therapists' (N = 61) cognitive– behavioral therapy (CBT) skills in routine clinical practice.
Method: Participants were randomized into 3 conditions: (1) Internet-based training with use of a consultation worksheet (IBT-CW); (2) Internet-based training with CBT supervision via Skype (IBT-S); and (3) "delayed-training" controls (DTs), who did not receive the training until all data collection was completed. The IBT participants received access to training over a period of 3 months. CBT skills were evaluated at pre-, mid- and posttraining/wait using assessor competence ratings of recorded therapy sessions.
Results: Hierarchical linear analysis revealed that the IBT-S participants had significantly greater CBT competence at posttraining than did IBT-CW and DT participants at both the mid- and posttraining/wait assessment points. There were no significant differences between IBT-CW and the delayed (no)-training DTs.
Conclusions: IBT programs that include supervision may be a scalable and effective method of disseminating CBT into routine clinical practice, particularly for populations without ready access to more-traditional "live" methods of training. There was no evidence for a significant effect of IBT without supervision over a nontraining control, suggesting that merely providing access to IBT programs may not be an effective method of disseminating CBT to routine clinical practice.

Keywords: Internet-based training in cognitive– behavioral therapy, dissemination, therapist competence, supervision

There is increasing evidence for the efficacy of cognitive–behavioral therapy (CBT) treatments for a wide range of psychological disorders (see Layard & Clark, 2014, for a review). However, the demand for CBT in routine clinical practice exceeds the supply of competent CBT providers (Shafran et al., 2009). The resulting bottleneck raises questions regarding effective methods of CBT training, as well as scalability of CBT dissemination in populations without ready access to CBT trainers or funding for this resource-intensive undertaking (Patel & Bloch, 2009; Rakovshik & McManus, 2010).

Internet-based training (IBT) has been suggested as a viable alternative to more-resource-intensive forms of CBT dissemination (Bennett-Levy & Perry, 2009; Carroll & Rounsaville, 2007; Fairburn & Cooper, 2011; Helgadottir & Fairburn, 2014; Weingardt & Villafranca, 2005). Four trials have shown some positive effects of IBT on therapists' competence, as assessed through standardized role plays (Dimeff et al., 2009; Rakovshik et al., 2013; Sholomskas et al., 2005). However, it is not known whether the positive effects of IBT demonstrated in these controlled research settings (i.e., a brief training for a limited number of skills with standardized assessment) will generalize to improvements in therapists' competence in uncontrolled routine practice settings. Thus, it is not known whether IBT is an effective method for training practitioners who must adapt, modify, and generalize the skills to provide competent CBT treatment to patients with a wide array of clinical presentations.

Supervision provided via online teleconferencing has been offered as a way to make clinical supervision available to practitioners in rural or remote settings (Bennett-Levy, & Perry, 2009; Wood, Miller, & Hargrove, 2005). Although there is a growing body of literature regarding the use, utility, and ethical considerations related to this modality of supervision (e.g., Kanz, 2001; Rousmaniere, Abbass, & Frederickson, 2014; Weingardt, Cucciare, Bellotti, & Lai, 2009), its impact on supervisees' clinical skills as determined by observer assessment has not yet been empirically evaluated.

There is increasing evidence that inclusion of supervision in training programs is associated with better outcomes for therapist, trainees, and patients (Bambling, King, Raue, Schweitzer, & Lambert, 2006; Mannix et al., 2006; Öst, Karlstedt & Widén, 2012; Rakovshik & McManus, 2010). Schoenwald, Sheidow, and Chapman (2009) have additionally found that supervisors' focus on adherence to treatment principles predicted greater therapist adherence in providing treatment. However, lack of conceptual methodological rigor in evaluating specific models and theories of clinical supervision (Beidas & Kendall, 2010; Milne, Aylott, Fitzpatrick, & Ellis, 2008) make it premature to regard supervision as anything other than a global construct. Supervisory models more specific to CBT (e.g., Armstrong & Freeston, 2006; Bennett-Levy & Thwaites, 2007; Butler, 2011; Padesky, 1996) emphasize the importance of modeling CBT principles such as collaboration and the Socratic method and testing beliefs through observation, reflection, and behavioral change. The declarative–procedural–reflective (DPR) model (Bennett-Levy, 2006), for which some empirical support was found in a survey of 120 experienced CBT practitioners (Bennett-Levy, McManus, Westling, & Fennell, 2009), suggests that procedural skills could be enhanced using four strategies: modeling, role-play, self-experiential work, and reflective practice. Although these components, and the principles

identified above, contribute to CBT training with demonstrated efficacy, rigorous hypothesis testing has not been applied to test their effectiveness in supervision.

Learning theory may also help to clarify the role of supervision within therapist skill development. In reviewing effective clinical supervision, Milne et al. (2008) point out that 23 out of 28 (82%) of the identified mechanisms of change (e.g., changes in supervisee's attitudes, emotional self-awareness, motivation, or skills) can be classified according to Lewin's (1946) and Kolb's (1984) experiential cycle of adult learning theory, a formulation of adult learning that involves both intellectual and experiential learning. However, it should be noted that these mechanisms of change are not limited to the actual interaction between supervisor and therapist—the process of preparing for supervision by reflecting on the application of acquired knowledge and skill to specific clinical cases may prompt the therapist to consolidate, generalize, and apply new learning. Recent studies have highlighted the relationship between reflective practice and skill acquisition (Bennett-Levy & Padesky, 2014; Milne et al., 2008; Rakovshik & McManus, 2013). Therefore, in considering the impact of supervision on learning, it is important to distinguish the effects of a therapist's independent preparation for supervision from those gained as a result of the interaction with the supervisor.

The present study

Due to the burden of disease associated with psychological disorders (World Health Organization [WHO], 2008) and the limited availability of evidence-based treatments in Russia (Kholmogorova, Garanian, & Krasnov, 2013), the present study provided IBT with an emphasis on CBT for anxiety disorders to mental health providers in Russia and Ukraine. Given the geographical dispersal of this population over 10 time zones, an IBT approach seemed the most feasible method of providing training. Little is known about the relative efficacy of IBT with use of a consultation worksheet (IBT-CW) and IBT with supervision (IBT-S) in comparison with nonactive delayed-training control (DT) in culturally and geographically diverse countries like Russia and Ukraine. We hypothesized that (1) therapists in both IBT conditions would demonstrate significantly higher posttraining competence than would those in the DT condition and (2) therapists receiving access to IBT-S would additionally demonstrate significantly higher posttraining competence than would those in the IBT-CW condition.

Method

Study design

Therapists (N = 61) were randomized to one of three conditions: nontraining control (DT: n = 20), IBT with use of a consultation worksheet (IBT-CW: n = 19), or IBT with Skype supervision (IBT-S: n = 22). Therapists in both IBT conditions received access to a 20-hr online CBT training program and were given a new block of training monthly over the course of 3 months. DT participants received no training during a 3-month "wait" period, during which they submitted the same competence assessments as in the IBT conditions.

Participants

Participants (N = 61) were practicing mental health providers from Russia (n = 47) and Ukraine (n = 14). Participants were predominately female (n = 43; 70%), a proportion in line with other samples of practicing therapists reported in the literature (e.g., Dimeff et al., 2009 [68.9%]; McManus, Westbrook, Vazquez-Montes, Fennell, & Kennerley, 2010 [74%]). Three professions were represented: psychologists (n = 49; 80%), psychiatrists (n = 5; 8%), and psychiatrists–psychotherapists (n = 7; 12%), which in Russia and Ukraine is based on a medical degree similar to that for psychiatry but with a focus on psychotherapeutic treatment as well as pharmacotherapy. Participants worked in a variety of clinical contexts (i.e., inpatient settings, independent practice, government clinics, private clinics, and university student psychological services) and were geographically dispersed over five time zones and 11 cities. Participants reported a mean of 87.11 (SD = 218.21) hr of prior CBT study. This included self-study, attendance at workshops, or CBT-oriented supervision. More than half the sample (57%) rated themselves as having no existing CBT skills. Comparisons across training conditions were evaluated through chi-square tests for categorical variables and analysis of variance for continuous variables and revealed no significance differences between conditions for any baseline variables, including pretraining CBT competence.

Recruitment.

Rolling recruitment was conducted from February 2008 to August 2011 by disseminating information about the trial through government clinics, hospitals, private clinics, professional Web sites, the charitable organization ProBono Alliance (http://appme.ru), and by word of mouth. Due to the network-based nature of the recruitment strategy, it

cannot be known how many practitioners were given information about the study.

Randomization.

Allocations to DT, IBT-CW, or IBT-S were conducted by an external online service (www.sealed envelope.com) using a random permuted block method. Participants were stratified according to their total amount of previous CBT training dosage, using a criterion of more or less than 38 hr (the median for the first four participants). Both participants and the principal investigator were informed of allocation simultaneously via e-mails generated by the randomization service.

Procedure

Ethical approval for the study was granted by University of Oxford and is not required for nonpharmacological interventions in Russia and Ukraine. After giving informed consent and completing the baseline assessments (i.e., demographic information and a recording of a clinical session accompanied by the patient's written CBT formulation), participants were informed of their allocation. Participants in the IBT-CW and IBT-S conditions were instructed to register with the IBT Web site. Those allocated to DT were informed that they would be given access to the training program after a 3-month wait period.

Training interventions

Internet-based instruction.

The training program consisted of presentations from the IBT program at the Oxford Cognitive Therapy Centre (OCTC; part of the Oxford Health NHS Foundation Trust), divided into three blocks of instruction: (1) CBT theory formulation and assessment, (2) general CBT skills (i.e., collaborative working, agenda setting, Socratic questioning and behavioral experiments), and (3) protocols for treating panic disorder with agoraphobia (PD) and obsessive–compulsive disorder (OCD). These training presentations include videos of instruction and clinical role plays, with simultaneous display of a PowerPoint presentation delivered by an expert in the field; a full description of the materials can be found in (Rakovshik et al., 2013).

These training modules were chosen on the basis of several factors: (a) available training materials; (b) protocols that demonstrated basic CBT techniques and methods with established efficacy; and (c) protocols that could fill a perceived treatment deficit within current mental health services for this population, as recommended for training efforts (Bee & Bee, 1994). With these considerations, treatment protocols for OCD and PD presented a suitable combination of accessible training materials, addressing perceived treatment deficits (several of the clinical directors contacted in preparation for recruitment mentioned these two disorders as "treatment-resistant") and being illustrative of key CBT methods and techniques (e.g., focus on maintaining cycles, catastrophic interpretations of cognitions or somatic sensations, use of behavioral experiments to test anxiety-related predictions).

Given the prevalence of depression and suicide in the given patient populations (WHO, 2008), it would have been preferable to include training on the treatment of depression; however, such a module was not available. Aspects of CBT for depression were covered in the other modules (e.g., assessment, formulation, and behavioral activation). Furthermore, given that there is some evidence that it may be more effective to teach the principles of a treatment approach rather than the details of manuals (Beidas, Koerner, Weingardt, & Kendall, 2011), this choice of training materials was considered a pragmatic compromise.

The IBT modules were translated by professional Russian interpreters, reviewed and edited by the first author, and then added to the presentations as subtitles by the Oxford Health NHS Foundation Trust. Subtitles appeared simultaneously with the audio component of the training below the instructional video. The duration of the modules was 20 hr over the course of 3 months (approximately 7 hr per month); participants allocated to IBT-S or IBT-CW were able to watch each presentation up to 10 times per month. The Oxford Health NHS Foundation Trust's platform for the IBT did not have the technology to monitor the frequency or duration of participants' viewing of the presentations.

Consultation worksheet.

The IBT-CW and IBT-S conditions completed a translated version of Padesky's (2009–2011) Consultation Worksheet[1] on a monthly basis during training. Item 4 ("Do you have the knowledge and skill to properly implement the CBT treatment? If not, ask for help with these skills and this knowledge.") was modified to read "If not, how could you apply what you have already learned during the training to this case?" Both IBT conditions submitted this worksheet at the end

[1] The worksheet was adapted and used with permission from the author.

of each block of training (three times in all). The form was sent out when requesting clinical recordings. If the worksheet was not returned with the other materials, then one additional e-mail was sent as a reminder. This process was the same for both the IBT-CW and IBT-S conditions.

Skype supervision.

The IBT-S condition additionally received three 30-min individual supervision sessions at monthly intervals via Skype (90 min in total) in Russian from the first author.[2] Prior to each supervision session, IBT-S participants were required to submit Padesky's (2009 –2011) modified consultation worksheet. Supervision focused on developing and updating a CBT conceptualization for at least one patient and development and review of a treatment plan. In keeping with Schoenwald et al.'s (2009) findings on the positive effects of supervisors' focus on adherence to treatment principles, as well as existing models of CBT supervision, which emphasize the importance of modeling the principles of the therapy in the supervisory approach, the following structure and sequence was adopted. Supervision began by setting an agenda and clarifying a main supervision question. Cases were discussed through reviewing the existing formulation and prompting the therapist via Socratic method to apply their knowledge of CBT to the patient's idiosyncratic presentation. If the formulation was found to be incomplete, the supervisee was asked to investigate this topic further in the next session. When indicated by the patient presentation, general CBT skills covered in the IBT modules were discussed with a modified focus (e.g., lapse/relapse management, formulation of complex cases, flashback management). The supervisees were prompted to demonstrate how they would implement relevant skills from the IBT training (e.g., guided discovery, planning and conducting behavioral experiments) in a role-play format, with the supervisor subsequently providing feedback and suggestions. Supervision sessions ended with a review of what had been learned and a request for feedback on the utility of the session for the supervisee. Supervisory sessions could utilize the "screen sharing" function with Skype, thus allowing use of the computer screen as a virtual whiteboard for drawing collaborative formulations or demonstrating interventions such as continua modification (Padesky, 1994).

Measures

Participants' CBT skills were assessed by rating recordings of therapeutic sessions with Young and Beck's (1980, 1988) Cognitive Therapy Scale (CTS). This measure has demonstrated a high level of internal consistency, and although it has been criticized for variable interrater reliability, it is widely used to assess CBT competence and is currently considered one of the better available measures (Muse & McManus, 2013). There are several adaptations of the CTS in existence, and the version used in the present study was the 11-item version that has the most thorough available manual (Young & Beck, 1988). A mean per item was calculated as the reported measure of competence. This approach, rather than reporting the total score, is in keeping with suggestions by Muse and McManus (2013) to facilitate comparison between versions of the CTS containing a variable number of items.

All recordings were assessed blind to stage of training by the first author. Fourteen recordings (>10%) were chosen at random and assessed by a second independent rater, the fifth author,[3] who was blind to condition and stage of training. Both raters were bilingual, allowing them to assess the recordings without translation and to rate them on the original (English language) version of the CTS. The reliability rater was given a copy of the scale and rated all recordings independently; no training to consensus was conducted. According to the recommendations of Shrout and Fleiss (1979), interclass correlations (ICC) were calculated using SPSS's two-way random effects model on the basis of independently produced ratings. The ICC for mean CTS scores per item for this sample (n = 14) was 0.85 (p <.001), indicating a high level of interrater agreement.

Statistical analyses

Power calculation.

Because effect sizes from a previous IBT trial (Rakovshik et al., 2013) were large (d 0.77–1.10), it was considered justified to expect a similar or larger effect size in this trial, which provides three times more IBT instruction and includes supervision. A two-tailed power calculation (using G power) showed that a sample size of N = 57 (19 per condition) has 85.0% power to detect an effect size of d = 1.0 at p < .05 for the primary comparison.

[2] Consultant cognitive behavioral psychotherapist in the UK National Health Service and director of the Master of Science and Postgraduate Diploma in CBT at the University of Oxford.

[3] Consultant psychiatrist in the UK National Health Service and a graduate of University of Oxford's Postgraduate Diploma in CBT

Training outcome.

All outcome analyses were conducted on an intention-to-train sample consisting of the total number of participants entered into the trial (N = 61). The effect of conditions' change in CTS scores over time and the Time x Condition interaction were assessed by fitting linear random effect models with random intercept and with random coefficients. This analysis considered that multiple measurements were nested within subjects. A sensitivity analysis was conducted by adjusting for the randomization factor *prior CBT dosage;* its effect was nonsignificant, of the order 10^{-3}.

Results

Participant flow and retention

Details of retention for participants can be found in Figure 1. There were no significant differences between retention rates between trial conditions, likelihood ratio(4) = 2.05, p = .73.

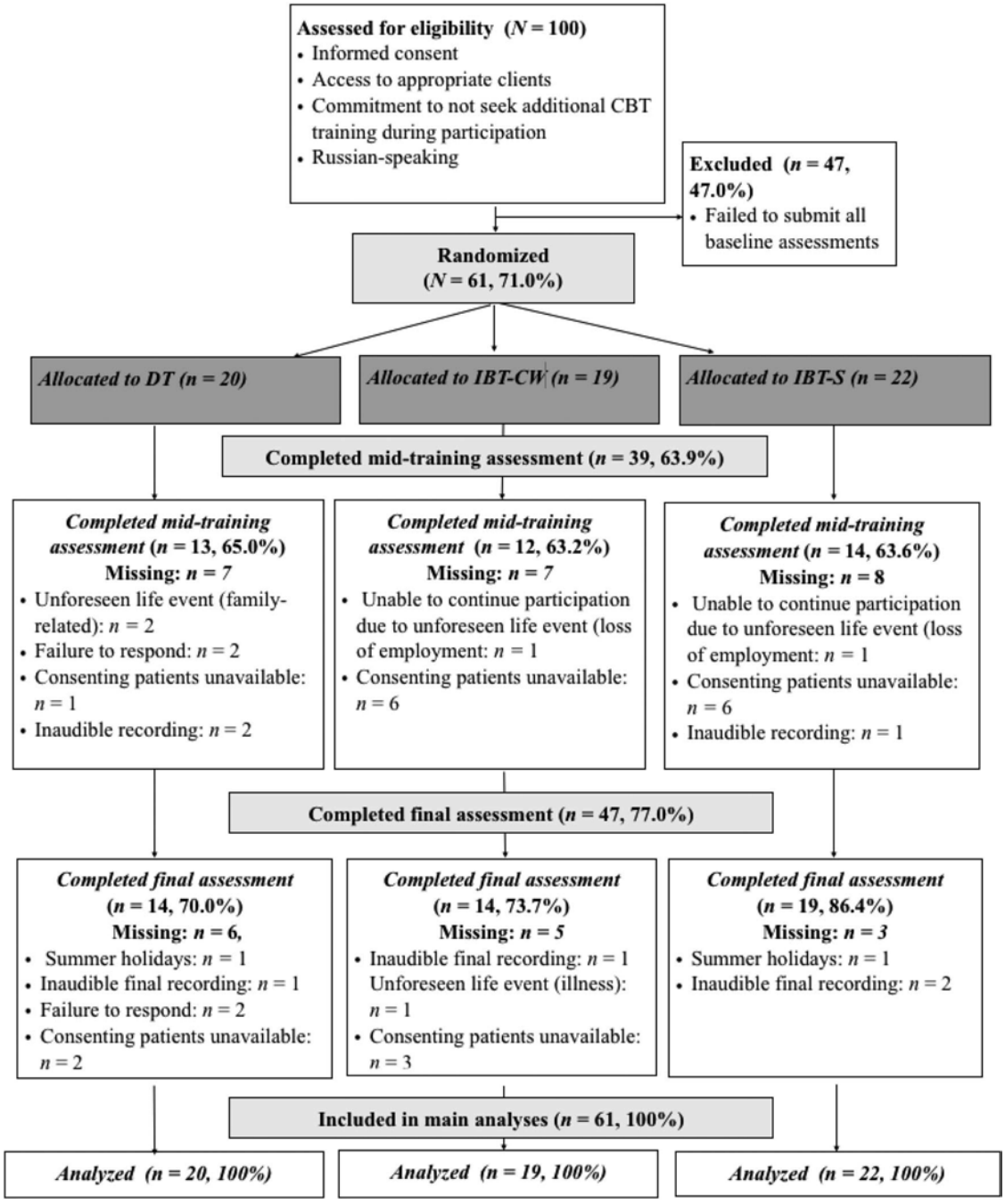

Figure 1. CONSORT diagram showing the flow of participants through the trial by condition ("delayed-training" control [DT] vs. Internet-based training with a consultation worksheet [IBT-CW] vs. Internet-based training with supervision [IBT-S]) and reasons for exclusion, missing data, or dropout. CBT cognitive–behavioral therapy.

Outcome analyses

Table 1 presents summary statistics for participants' outcomes. There was no significant effect of Condition on CTS mean item scores. CTS mean item scores significantly increased over time, from baseline to Time 1 (T1): 1.1 (95% confidence interval [CI = 0.6, 1.5], $p < .001$); from baseline to Time 2 (T2): 1.2 (95% CI [0.8, 1.6], $p < .001$; see Figure 2). There was a significant Time x Condition interaction, with IBT-S showing significantly higher CBT competence posttraining than did IBT-CW and DT. There was no significant Time x Condition interaction for IBT-CW when DT was taken as the comparison category (see Table 2). As can be seen in Table 3, at the posttraining assessment, the IBT-S condition scored significantly higher than did either the IBT-CW or DT condition, which did not differ.

There was no difference in rates of completion for monthly consultation worksheets (Padesky, 2009–2011) between the two active training conditions. Percentage of completion and significance of Pearson chi-square tests for the IBT-CW and IBT-S participants were, respectively, at T1: 68.4% and 90.9% (p =.70), at T2: 78.9% and 86.4% (p = .53), and at Time 3 (T3): 78.9% and 72.7% (p = .64).

Table 1 Cognitive Therapy Scale Mean per Item Scores by Training Condition

	Baseline		Midtraining/wait		Posttraining/wait	
Training condition	*N* (%)	*M* (*SD*) [Range]	*N* (%)	*M* (*SD*) [Range]	*N* (%)	*M* (*SD*) [Range]
DT	20 (33)	2.09 (1.2) [0.2–4.5]	13 (21)	2.25 (1.3) [0.8–4.7]	14 (23)	2.17 (1.2) [0.4–4.6]
IBT-CW	19 (31)	2.39 (0.9) [0.8–4.0]	12 (19)	2.40 (1.0) [1.0–3.8]	14 (23)	2.87 (1.0) [0.6–4.2]
IBT-S	22 (36)	2.33 (0.9) [0.7–4.0]	14 (23)	3.41 (0.8) [1.7–4.4]	19 (31)	3.56 (0.9) [2.1–4.8]
Total	61 (100)	2.28 (1.0) [0.2–4.5]	39 (63)	2.73 (1.1) [0.8–4.7]	47 (76)	2.90 (1.1) [0.4–4.8]

Note. DT "delayed-training" control; IBT-CW Internet-based training with a consultation worksheet; IBT-S Internet-based training with supervision.

Table 2 Linear Mixed Effect Models Comparing IBT-CW and IBT-S With "Delayed Training" at Each Time Point Adjusting for Prior CBT Dosage

Measure	Estimate	*p*	95% CI
Average CBT competence for DT at baseline	2.03	<.001	[1.60, 2.46]
Average increase in CBT competence for DT from baseline to midtraining/wait	0.16	.503	[−0.31, 0.63]
Average increase in CBT competence for DT from baseline to posttraining/wait	0.07	.749	[−0.40, 0.53]
Difference in CBT competence between IBT-CW and DT at baseline	0.30	.338	[−0.31, 0.92]
Difference in CBT competence between IBT-S and DT at baseline	0.24	.421	[−0.34, 0.83]
Difference in CBT competence between IBT-CW and DT at midtraining/wait	−0.15	.660	[−0.82, 0.52]
Difference in CBT competence between IBT-S and DT at midtraining/wait	0.92	.005	[0.27, 1.56]
Difference in CBT competence between IBT-CW and DT at posttraining/wait	0.40	.223	[−0.24, 1.04]
Difference in CBT competence between the IBT-S and DT groups at posttraining/wait	1.15	<.001	[0.55, 1.75]

Note. DT "delayed-training" control; IBT-CW Internet-based training with a consultation worksheet; IBT-S Internet-based training with supervision; CBT cognitive-behavioral therapy; CI confidence interval.

Table 3 Linear Mixed Effect Models Comparing IBT-CW and DT With Internet-Based Training With Supervision at Each Time Point Adjusting for Prior CBT Dosage

Measure	Estimates	*p*	95% CI
Average CBT competence for IBT-S at baseline	2.27	<.001	[1.86, 2.68]
Average increase in CBT competence for IBT-S from baseline to midtraining/wait	1.08	<.001	[0.63, 1.52]
Average increase in CBT competence for the IBT-S from baseline to posttraining/wait	1.22	<.001	[0.83, 1.62]
Difference in CBT competence between IBT-CW and IBT-S at baseline	0.06	.850	[−0.55, 0.66]
Difference in CBT competence between DT and IBT-S at baseline	−0.24	.421	[−0.83, 0.35]
Difference in CBT competence between IBT-CW and IBT-S at midtraining/wait	−1.07	.001	[−1.73, −0.41]
Difference in CBT competence between DT and IBT-S at midtraining/wait	−0.92	.005	[−1.56, 0.27]
Difference in CBT competence between IBT-CW and IBT-S at posttraining/wait	−0.75	.015	[−1.36, −0.15]
Difference in CBT competence between the DT and IBT-S groups at posttraining/wait	−1.15	<.001	[−1.75, −0.55]

Note. DT "delayed-training" control; IBT-CW Internet-based training with a consultation worksheet; IBT-S Internet-based training with supervision; CBT cognitive-behavioral therapy; CI confidence interval.

Discussion

Findings

The present study compares the CBT competence of therapist participants allocated to Internet-based training with supervision via Skype (IBT-S) to those receiving Internet-based training with use of the consultation worksheet alone (IBT

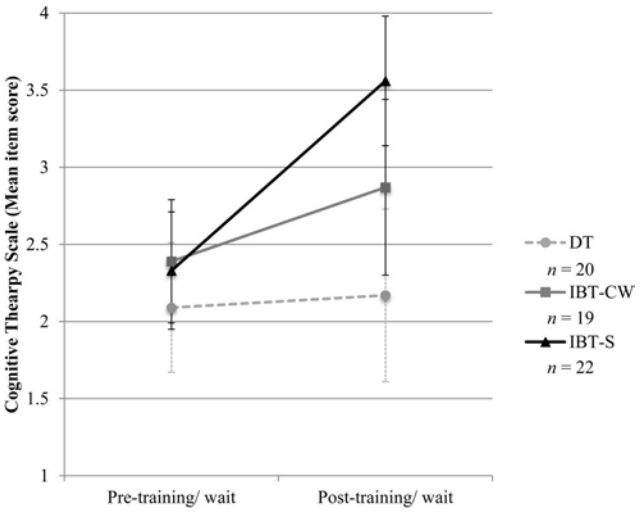

Figure 2. Cognitive Therapy Scale mean scores and confidence intervals at pre- and postintervention/wait for the "delayed-training" control (DT), Internet-based training with a consultation worksheet (IBT-CW), and Internet-based training with supervision (IBT-S). Significant effects at posttraining/wait: DT versus IBT-S, d = 1.04; IBT-CW versus IBTS, d = 0.97.

-CW) and a delayed-training control (DT). Results suggest that IBT with supervision has significant positive effects on therapists' clinical CBT skills in routine clinical practice compared to both IBT-CW and DT. Contrary to our expectations, there was no significant effect on therapists' clinical CBT skills of IBT without supervision compared to those not receiving IBT.

These results are largely in keeping with existing studies and raise questions regarding the positive effect on therapists' CBT skills in routine clinical practice of the addition of supervision to IBT training. Similar to the results found by Dimeff et al. (2009, 2015) and Sholomskas et al. (2005), there were no significant differences at posttraining /wait for the control condition versus IBT-CW comparison. We did not find the positive effects reported by Rakovshik et al. (2013; d = 0.77–1.10) for the DT versus IBT comparison. Although this study was similar in design (i.e., using a nonactive control instead of a manual condition) and provided three times more training, measurement of the change in therapists' skills assessed their CBT competence with patients in routine clinical practice rather than using standardized role plays. The variability in patient presentation in routine clinical practice may prove a challenging arena for using new skills, making it less likely that therapists will show significant positive effects of training.

In contrast, the condition with access to the IBT program and supervision (IBT-S) demonstrated significant differences with large effect sizes compared to the other two conditions (DT vs. IBT-S [d = 1.04] and IBT-CW vs. IBT-S [d = 0.97]). Thus, the present study demonstrates that with addition of supervision, IBT training can remain effective, even when therapists must generalize and maintain skills in routine clinical practice across a variety of clinical presentations.

Limitations

Conclusions from the present study should be made in the context of its limitations. Studies such as Mannix et al. (2006) would suggest that gains made in therapist competence might not be maintained without continued supervision during their further consolidation. Because there was no long-term follow-up in this study, it is not known whether the effects produced after 3 months of training would change or be maintained over a longer period.

Effects may also have been limited by the brief nature of this IBT program. Given that many of the participants reported minimal or no previous experience with CBT, the present study provided relatively brief CBT training. The IBT gave an equivalent of about 4 days of clinical instruction (20 hr) and 90 min of supervision (30 min monthly for 3 months). This is a relatively low dose of training for fairly inexperienced CBT providers (Rakovshik & McManus, 2010), and it is possible that a more-intense training without supervision would lead to similar effects compared to a less-intense training with supervision. Supervision may have been hampered further by unfamiliarity between supervisor and supervisees as well as by technical problems in using online video conferencing (e.g., distorted sound or picture, interruptions in the conversation due to variations in Internet speed).

Alternately, the effects seen could be due to the added element of support and accountability that came with the monthly supervision sessions' leading to increased engagement with the IBT rather than being a result of the content of supervision per se. Bennett-Levy, Hawkins, Perry, Cromarty, and Mills (2012) reported that additional support resulted in increased completion of IBT. In contrast, our study demonstrated no difference in dropouts between

conditions, and there was not a significant difference in the completion of the consultation worksheets between the two active training conditions (IBT-S vs. IBT-CW), which suggests that the effect of supervision cannot be accounted for merely by increased completion of the worksheet task by those receiving support and accountability during monthly supervision. It should be noted, however, that completion rates may not fully reflect the extent to which participants engaged with this task. Future research examining the worksheet content may provide insight into the process of learning and engagement both across and between the IBT-S and IBT-CW conditions.

A further limitation relates to the blindness of the primary assessor's ratings of therapists' competence. The assessor was blind to the stage of training (i.e., was not aware whether the recording was completed pretraining, posttraining, or at follow- up). However, due to the very limited number of accredited Russian-speaking CBT therapists, the first author acted as both the supervisor and primary rater. This means that it was not possible to conceal which condition the therapists were allocated to, therefore raising the possibility that the role of supervisory bias and familiarity resulted in more-favorable competence ratings for the IBT-S group (Dennhag, Gibbons, Barber, Gallop, & Crits-Christoph, 2012; Martino, Ball, Nich, Frankforter, & Carroll, 2009). Although the possibility of bias cannot be ruled out, reliability checks were carried out on 10% of recordings by an independent assessor, indicating a high level of interrater agreement and suggesting that the competence ratings were reliable and accurate.

Conclusions and future directions

Results of this study indicate that IBT programs with the inclusion of supervision may be a scalable and effective method of disseminating CBT into routine clinical practice, particularly for populations without ready access to more traditional live methods of training. This study failed to find a significant effect of IBT with the consultation worksheet alone over a nontraining control, which suggests that merely providing access to IBT programs, even when therapists are prompted to apply what they are learning to specific cases, may not lead to a significant improvement in therapists' CBT skills within routine clinical practice.

Due to the design of the study, we can only speculate on which elements of the Skype supervision were salient in improving therapists' CBT competence. It may be that the interactive nature of supervision (compared to the didactic approach of the IBT alone) helped participants identify blocks in implementing what they had learned in the IBT and to plan further treatment according to the specific needs of a given clinical presentation, as would be consistent with Lewin's (1946) and Kolb's (1984) adult learning theory. According to Bennett-Levy's (2006) DPR model, role play, modeling, and supported reflection offered in supervision sessions may have helped to develop participants' procedural skills, although data supporting this model was drawn from a survey of experienced CBT practitioners and may not be applicable to the relatively inexperienced CBT practitioners in this study. There is a need for further validation of these and other relevant models using rigorous experimental design. Future studies will help to determine "active elements" in supervision of CBT practitioners.

Future research is needed to establish the sustainability of IBT effects on therapist and patient outcomes. Studies providing more-comprehensive IBT training and prolonged follow-up are needed to assess the longitudinal effects of IBT on therapists' competence and patients' outcomes. Although the results of the current study indicate that IBT with supervision may be an effective method of obtaining adoption in principle and early implementation for CBT treatments, it is not known whether this approach to training would be sufficient in facilitating persistence in implementation for individual therapists or within larger services (Tansella & Thornicroft, 2009). Research is needed to examine not just the longitudinal outcome for individual patients but also the continued use of CBT treatments by therapists trained using IBT programs over a sustained period of time.

The current window of opportunity granted by favorable social policy and increased interest in dissemination of evidence-based psychological treatments offers both risk and opportunity. If therapists are trained in CBT without effective evidence-based training practices, efficacious treatments may be rendered inert in routine practice, to the detriment of both treatment provider and patient. However, if rigorous empirical research guides the development of effective and scalable CBT training programs, then the bottleneck between supply and demand can be widened and much-needed treatments can be made available by training therapists from a wide range of geographically and culturally disparate populations.

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