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The Dissemination of Mindfulness-based Therapies: A Pilot Study Training Clinicians to use the 3-Minute Breathing Space Practice

Andrew Zajicek
University of Colorado Boulder

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The Dissemination of Mindfulness-based Therapies: A Pilot Study Training

Clinicians to use the 3-Minute Breathing Space Practice

Andrew Zajicek

Department of Psychology and Neuroscience

University of Colorado at Boulder

Senior Honors Thesis

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Honors Committee:

Dr. Sona Dimidjian, Department of Psychology and Neuroscience (Thesis Advisor)

Dr. Joanna Arch, Department of Psychology and Neuroscience (Honors Representative)

Dr. David Barnett, Department of Philosophy

Abstract

Bridging the gap between science and practice warrants the dissemination of empirically supported treatments such as mindfulness-based therapies. Online-based training modalities have been proposed as effective and scalable methods to train clinicians in empirically supported treatments. In the present study, we conducted a pilot RCT to assess the preliminary feasibility and effectiveness of training clinicians to use a core strategy of mindfulness-based cognitive therapy, the 3-Minute Breathing Space. Licensed clinicians were randomized to an online-based 3-Minute Breathing Space program, or the 3-Minute Breathing Space text based control. Although data collection is ongoing, preliminary results indicate that clinicians are more satisfied with the online-based program as compared to the text condition and demonstrate significantly greater increases in the self-reported mindfulness skill of non-reactivity. Although other predicted group differences in outcome were not statistically significant, descriptive patterns indicate strong overall interest in learning the 3-Minute Breathing Space, positive engagement with the training, regular home practice, positive evaluation of program usability and credibility, and strong mastery of program content at post-training. Findings are discussed with respect to study limitations and important directions for future research.

Keywords: mindfulness, dissemination, online training, Mindful-Based Cognitive Therapy

The Dissemination of Mindfulness-based Therapies: A Pilot Study Training Clinicians to

use the 3-Minute Breathing Space Practice

In recent years, the field has witnessed a marked increase in research examining

the clinical application of mindfulness-based therapies (Williams & Kabat Zinn, 2011).

Among these, mindfulness-based cognitive therapy (MBCT; Segal, Teasdale, Williams,

& Gemar, 2002) has been widely studied with meta-analytic studies supporting its

efficacy across a range of clinical problems and populations (Chiesa & Serretti, 2011);

however, very little attention has been devoted to the question of how to disseminate

MBCT or other mindfulness-based therapies. Although MBCT faces challenges to

dissemination shared by other empirically supported psychotherapies, it also has unique

requirements for clinician competency that may provide additional barriers to

dissemination. Recent studies of psychotherapy dissemination have utilized online-based

formats for delivery of clinician training. This pilot study examines the feasibility and

preliminary training outcomes associated with delivering training in a core component of

MBCT, the 3-Minute Breathing Space practice, using an online-based format.

MBCT has a strong evidence base in the treatment of multiple disorders,

especially depression. The first study suggested that MBCT significantly reduced the risk

of relapse for individuals with more than two previous episodes of major depression

(Teasdale et al., 2000); these results were replicated and extended in later trials (Kuyken

et al., 2008; Ma & Teasdale, 2004). Although the majority of studies on MBCT have

focused on its application to depression, there is some initial evidence that suggests

MBCT can be used for anxiety disorders, including a meta-analysis of 39 studies, which

suggested that MBCT improves symptoms of anxiety and depression across a relatively

wide range of severity, even when symptoms are related to medical conditions (Hoffman et al., 2010).

Despite such clinical promise, there are barriers to disseminating MBCT that make it challenging to bridge the gap between research and clinical practice. In general, there exists a marked discrepancy between the number of individuals in need of mental health care and the number of mental health professionals providing treatment. For example, in the United States there are roughly 538,000 mental health professionals (Robiner, 2006); however, an estimated 26.2 percent or 57.7 million Americans ages 18 and suffer from a diagnosable mental disorder in a given year (Kessler, 2005). The National Comorbidity Survey revealed that only 41 percent of adults in the United States received treatment for a mental health problem (Wang, et al., 2004) Thus, the majority of individuals with mental disorders are not receiving treatment (Kazdin & Blase, 2011). Individuals from minority groups have even less access to mental health services than general public estimates (Wells, Klap, Koike, & Sherbourne, 2001). This is likely due to barriers that involve health care policy, legislation, limits of insurance and third party payment, competing interests of different stakeholders in health care, and politics (Kazdin & Blase, 2011). Even with the healthcare reform, many individuals struggle to get access to the services they need.

Although there are undoubtedly multiple barriers to accessible care, lack of quality training for clinicians in empirically supported treatments like MBCT is an important one to consider. A study that surveyed the fields of psychology, psychiatry, and social work found a notable lack of attention to training clinicians in evidence-based practices (Weissman et al., 2006). In fact, in this study, more than half of the psychiatry

program directors identified lack of trainee interest and approximately one third identified difficulty teaching EBT and lack of qualified faculty as obstacles (Weissman, 2006). The provision of professional training in empirically supported treatments and searching for alternative training formats have been proposed as ways to overcome this gap. Until the programs in the major disciplines increase training in evidence based practices, the gap between research evidence and clinical practice will remain (Bennett-Levy & Perry 2009). The two types of training can be classified as passive or active learning. Current training methods typically rely on passively delivered didactic lectures or information (e.g., the format of a continuing education workshop, or reading a treatment manual). In contrast, active learning involves an interactive process that uses action and reflection as core ingredients. Passive learning has been shown to have a limited effect on behavior change (El-Tannir, 2002). Active learning, an alternative to passive learning, has been proposed as relevant for learning skills that must be employed within the clinical realm (Cross, Matthieu, Cerel, & Knox, 2007).

Online training program have the potential to be an effective alternative to traditional manual based learning and workshops. Developing interactive multimedia online-based training programs may be an important direction for the mental health field given potential benefits such as: standardized training quality, convenience, self-pacing, flexibility in pedagogical style, and cost as well as the ability to pause a presentation, absorb or take notes, and go back and replay material (Fairburn & Cooper, 2011). Collaboration between instructional design and technology professionals and clinical researchers can increase the creation of user friendly, instructionally sound online applications that incorporate video role-plays, audio narration, graphics, animation, and

dynamic, interactive content (Weingardt, 2004). Preliminary data suggest that online-based training has promise. In an evaluation of the efficacy of three methods of training delivery (written treatment manual, an interactive multimedia online training (OLT) and a two day instructor led workshop (ILT)), researchers found that OLT outperformed ILT and manual in treatment knowledge (Dimeff et al., 2009).

Teaching clinicians mindfulness based interventions, in particular, may have beneficial effects that extend beyond increased capacity to provide the specific empirically supported intervention. Experts studying mindfulness-based practices suggest that the quality of mindfulness practice is strongly correlated with the instructor's skills and understanding of the content. This in turn can be traced back to the depth and scope of one's own mindfulness experiences (Kabat-Zinn, 2011; Campbell & Christopher, 2012). There is evidence to suggest that learning and teaching mindfulness-based practices may have beneficial psychological effects on clinicians. For example, Campbell and Christopher (2012) found that counselors who taught mindfulness skills to their clients reported increased awareness and acceptance of self and others (Campbell & Christopher, 2012). Another example comes from a study of the effects of mindfulness-based stress reduction (MBSR) on health care professionals, with results suggesting that MBSR may be effective for reducing stress and increasing quality of life and self-compassion in health care professionals (Shapiro et al., 2005). Mindfulness training has also been shown to significantly improve aspects of psychotherapists' emotional regulation and cognition such as measures of trait anger and attentional control (Rodriguez Vega et al., 2013). Such effects may confer indirect benefits on clients. Although not using a sample of clinicians, an informative finding comes from a study

reporting an increase in the wellbeing among individuals with profound multiple

disabilities when their caregivers had mindfulness training (Singh et. al, 2004). Thus,

mindfulness training has the potential to have a vicarious effect when taught to clinicians.

The current study examines the use of an online-based training program for

teaching clinicians a selected mindfulness intervention: the 3-Minute Breathing Space.

The 3-Minute Breathing Space is a core component of MBCT. It represents a bridge

between formal and informal mindfulness practice. It is introduced in session 3 of the 8-

session curriculum and is assigned as daily practice for multiple weeks of the course. The

3-Minute Breathing Space exercise is grounded in three essential concepts: awareness,

gathering, and expanding (Segal, Williams, & Teasdale, 2012, p.184). The first "step" of

"awareness" focuses on recognizing and acknowledging current experience, including

thoughts, emotions, and sensations. The second "step" of "gathering" focuses attention on

the direct and immediate sensations of breathing, typically at the belly. Finally, the third

"step" including expanding awareness to the body as a whole, using the sensations of

breathing as an anchor, "while opening up to the range of experiences that are present"

(Segal, Williams, & Teasdale, 2012, p. 384).

The online-based program teaches the 3-Minute Breathing Space using a four

sessions structure and specific instruction, lessons, and interactive exercises. The goal of

the program is to teach clinicians to use the 3-Minute Breathing Space practice in their

own lives (sessions 1 and 2) and to teach them how to teach the practice to clients

(sessions 3 and 4). The 3-Minute Breathing space was chosen because it is a core element

of MBCT and because it provides a concrete, discrete test case for online-based

mindfulness training. The online-based program was developed by NogginLabs and study team members Sona Dimidjian, Ph.D. and Zindel Segal, Ph.D.

In the present study, we tested the feasibility and preliminary effectiveness of the 3-Minute Breathing Space program for professional clinicians. We addressed four specific aims in the context of a randomized controlled trial (RCT) comparing the online-based training program with a text-based control. First, we examined the feasibility of the online-based program by descriptively comparing rates of program completion and usage between the conditions and by examining differences by condition in creditability and usability ratings, hypothesizing that clinicians assigned to the online-based training format would demonstrate higher ratings of credibility and usability compared to clinicians receiving the text-based format. Second, we evaluated clinician knowledge acquisition about the 3-Minute Breathing Space, hypothesizing that clinicians assigned to the online-based training format would demonstrate superior knowledge acquisition compared to clinicians receiving the text-based format. Third, we evaluated clinician satisfaction with the training experience, hypothesizing that satisfaction ratings would be higher for clinicians receiving the online-based training compared to clinicians receiving the text-based training. Lastly, we examined changes in clinicians' own self-reported mindfulness and decentering skills, both conceptualized as core mechanisms of clinical benefit in MBCT. We hypothesized that clinicians assigned the online-based condition would report greater increases mindfulness and decentering.

Method

Participants

A total of 49 participants contacted the study team for information; of these, 22 participants were enrolled and randomized to condition. Participant flow is illustrated in Figure 1. All participants identified as non-Hispanic, White adults and were primarily from the United States (82%). Participants were, on average, 50.19 years old ($SD =$ 10.09) and had been in clinical practice 16.11 years (SD=11.95). All participants had completed at least a master's degree in their field, and the majority of participants (82%) reported earning a PhD or professional degree, were female (73%), reported working full time (>30 hours per week; 77%), having an income of $60,000 or more per year (72%), and being employed in a private practice setting (68%). The most frequently reported therapeutic orientation was cognitive behavioral (41%).

Procedure

All study procedures were approved by the University of Colorado Boulder Institutional Review Board. Participants were recruited using postings to email listerves. Clinicians who expressed interest via phone or email were then contacted to set up a phone screen to evaluate eligibility and to provide information about study participation. Exclusion criteria included: 1) less than 20 hours of face-to-face therapy with clients, 2) unlicensed status, 3) unfamiliar with how to operate a computer or access the internet, or 4) lack of access to the internet or computer. After the phone screen, participants were emailed a link to the study informed consent and the baseline survey. Participants were required to complete the consent form before they were granted access to the baseline surveys. Once participants completed the baseline survey, they were randomized to the online-based or the text-based training format using a random number generator program. The study coordinator contacted participants by phone to provide the condition

assignment and to orient to beginning the training. Text-based training materials were

sent via mail and included weekly study material and home practice forms. Online-based

format participants were sent a username and password to access the program.

Participants were asked to submit completed home practice records each week to the

study coordinator.

All participants also were sent client recruitment materials and were asked to

share these with clients whom they thought might benefit from learning the 3-Minute

Breathing Space practice. These data are not the focus of the current report.

After the 4-week training period, participants were asked to complete a follow up

survey and exit interview. All participants also were offered the alternative condition

materials they were not originally assigned at the time of study completion. No incentives

were provided.

Sample Size and Power

Sample size calculations were selected to permit analysis of study aims 1-4. Study

aims 1 and 3 hypothesize that there will be between group differences on single

continuous dependent variables (i.e., system usability and therapist satisfaction with

training respectively). Thus, independent samples *t* tests will be used to analyze the data

for aims 1 and 3. Power analysis was conducted using G*Power 3.0.3 (Erdfelder, Faul, &

Buchner, 1996) and revealed that for an independent samples *t* test, assuming a two tailed

alpha of .05, a power level of .80, and an estimated medium effect size $d = 0.5$, the total

sample size required to be fully powered to detect between group differences would be

128 participants, or 64 participants per condition.

In addition to testing for between group differences on system usability and satisfaction (measured at follow-up only), study aim 1 also proposes to test for between group differences at follow-up on a single, continuous, outcome variable (i.e., perceived creditability of the 3-Minute Breathing Space practice), controlling for scores on the construct at baseline. Study aims 2 and 4 also propose to test for between group differences on single, continuous outcome variables (i.e., knowledge acquisition and self-reported mindfulness and decentering skills), controlling for scores on those constructs at baseline. Thus, one-way analysis of covariance (ANCOVA) tests will be used to analyze the data for aims 1, 2, and 4. Power analysis was conducted using G*Power 3.0.3 (Erdfelder et al., 1996) and revealed that for a one-way ANCOVA with a two-level between group factor, assuming a two tailed alpha of .05, a power level of .80, and an estimated medium effect size $f = 0.25$, the total sample size required to be fully powered to detect between group differences would also be 128 participants, or 64 participants per condition.

Measures

  Frequency of practice. This questionnaire is designed to assess frequency of 3-Minute Breathing Space practice. This scale includes questions regarding average frequency of personal 3-Minute Breathing Space practice during the 4 week of the study training period as well as average frequency of teaching (the 3-Minute Breathing Space) during the study training period. This measure was administered on the follow-up survey only.

  Program feasibility. Two measures were used to assess program: the System Usability Scale and the Credibility/Expectancy Questionnaire.

System Usability Scale (SUS). The SUS questionnaire (Brooke, 1996) includes 10 statements that are scored on a 5-point scale of strength of agreement ranging from "strongly agree" to "strongly disagree." It also includes two short answer questions that allow the participant to elaborate on their experience: "What was the most significant benefit of this program for you?" and "If you could change anything about this program, what would it be?". Responses to these items were examined qualitatively. This scale was administered to participants in both conditions and the term "3-Minute Breathing Space training program" was used instead of the term "system." In the present study, scores on the SUS ranged from 1 to 5, with higher scores indicating better usability. The SUS also includes two qualitative questions about the participants experience with using the 3-Minute Breathing Space. Also the SUS statements where shown to have good reliability ($\alpha = 0.80$). The SUS was only administered during the follow-up survey.

Credibility/Expectancy Questionnaire (CEQ). The original CEQ is a 6-item questionnaire that was originally designed as an easy-to-administer scale for measuring treatment expectancy and rationale credibility for use in clinical outcome research (Devilly & Borkovec, 2000). For the purposes of this study, this scale was modified by replacing "therapy" and "treatment" with "the 3-Minute Breathing Space" and "training program." In addition the last two of the original six questions were not administered given low relevance for clinician training. The CEQ consists of 3 items on a Likert scale (ranging from 1-9) and one question that asks for percent of expected improvement. The CEQ asks participants to rate questions such as "how useful do you think the 3-Minute Breathing Space will be in helping your clients?" and "how logical does the 3-Minute Breathing Space practice seem to you?" on a Likert scale. Higher scores equate to a

higher creditability rating. The CEQ also includes one qualitative question about the participants learning experience with the 3-Minute Breathing Space. Overall the CEQ was found to possess moderate reliability at baseline, $\alpha=.76$, and follow-up, $\alpha=.76$. The CEQ was administered at both baseline and the follow-up in order to assess for changes in participant credibility perceptions and expectations concerning the 3-Minute Breathing Space practice from pre- to post-training.

Clinician knowledge. The Knowledge Check Questionnaire is a 20-item questionnaire developed by the study team to test the participant's knowledge of the 3-Minute Breathing Space. All questions for the knowledge check were creating using material contained in both conditions. The Knowledge Check Questionnaire uses a multiple-choice format with one correct answer per item. Scores on the Knowledge Check can range from 1 to 20, with higher scores indicating greater knowledge. The Knowledge Check demonstrated modest reliability both baseline, $\alpha=.65$, and follow-up, $\alpha=.61$. The questionnaire was administered at both time points in order to assess for changes in participant knowledge about the 3-Minute Breathing Space from pre- to post-training.

Program satisfaction. Program satisfaction in this study was measured using the 8-item Therapist satisfaction Questionnaire (TSQ-8). The study team developed the TSQ-8 by modifying a validated measure of client satisfaction with treatment, the Client Satisfaction Questionnaire (CSQ-8; Attkisson & Greenfield, 1995) is an 8-item instrument used to test satisfaction with a treatment or program. Scores range from 8 to 32 where higher scores indicate higher satisfaction. The CSQ-8 name was modified to TSQ-8 to help differentiate client and therapist satisfaction surveys. The TSQ-8 includes

the same questions as the CSQ-8. Like the CSQ-8, the TSQ-8 has one qualitative

question that asks about any comments, concerns, or suggestions about the program.

Responses to this question were examined qualitatively. The TSQ-8 demonstrated good

reliability, α =.97. The TSQ-8 was only administered during the follow-up survey.

   Clinician self-reported decentering and mindfulness. Two measures were used

to assess the extent to which participants endorsed agreement with decentering and

mindfulness qualities. Both measures were assessed at baseline and follow-up in order to

assess for changes in decentering and mindfulness from pre- to post-training.

   Experiences Questionnaire (EQ). The Experiences Questionnaire (EQ) is a 20-

item self-report questionnaire designed to measure a decentering or dis-identification

with the content of negative thought processes (Fresco et al., 2007). The Questionnaire

has two factors: Decentering and Rumination. The questions associated with the

rumination factor were shown to have poor loadings and were therefore not reported

(Fresco et al., 2007). The EQ uses a Likert scale ranging from one to five (1= *never*, 5 =

all the time), with scores on the decentering subscale ranging from 11 to 55, with higher

scores indicating greater decentering. People with high decentering have the ability to

observe feelings without being drawn into them. These individuals might endorse more

highly questions such as "I am better able to accept myself as I am" and "I can observe

unpleasant feelings without being drawn into them." In prior work, the EQ has been

shown to possess good reliability (Fresco et al., 2007). In the present study the EQ

decentering subscale was shown to possess good reliability at baseline, α =.88, and

follow-up, α =.73.

Five Facet Mindfulness Questionnaire (FFMQ). The Five Facet Mindfulness Questionnaire is a 39 item questionnaire based on a factor analytic study by Baer et al. that found their to be five factors present in mindfulness (Baer et al., 2006). All items are on a Likert scale that ranges from "1 never or very rarely true" to "5 very often or always true". To score the FFMQ, questions are summed that correspond to one of the five factors: Observing, Describing, Acting with Awareness, Non-judging of inner experience, and Non-reactivity to inner experience. Each question in the FFMQ corresponds to one of the five factors. For example, individuals who rate questions such as "When I'm walking, I deliberately notice the sensations of my body moving" with higher ratings scored higher on the "observing" factor while individuals rating questions such as "I'm good at finding words to describe my feelings" with higher rating scored higher on the "describing" factor. Consistent with Baer et al., (2006), all five factors possessed good reliability in the present study: FFMQ observe (α= .87), FFMQ Describe (α=.90), FFMQ Aware (α= .87), FFMQ Non-Judge (α=.92), FFMQ Non-React (α=.86). Overall the FFMQ demonstrated good reliability at baseline, α =.94, and follow-up, α =.93.

Interventions. Participants were randomly assigned to one of two study conditions; an interactive online-based condition, or a text-based control condition.

Online-based 3-Minute Breathing Space training program. The online-based intervention is an online program that employs various multimedia and interactive material, including video demonstrations and 3-Minute Breathing Space practice materials. The program is designed to let the learner advance through the 4 modules at their own pace as well as go back to previous modules (see Figure 2). The online

program provides homework materials through downloadable PDF files. Also, the

program offers a resource page that provides additional reading material to learners as a

supplement.

Text-based 3-Minute Breathing Space training program. The text-based

program is adapted from sections of *Mindfulness-Based Cognitive Therapy for*

Depression a book designed to train clinicians in the practice of Mindfulness-Based

Cognitive Therapy. The text program includes readings and handouts from the book as

well as a reading guide. It was designed to match the online condition in the content and

structure of training across the four weeks of the study, with parallel home practice

assignments. The reading guide breaks down the required reading for each week and

provides directions for filling out the homework. Homework is sent to the client via

postal mail or email.

Results

Preliminary results addressing study hypotheses are reported here with the interim

sample as data collection is ongoing. Examination of baseline characteristics was

conducted using chi-square and *t* tests for baseline demographics (Table 1) and training

measures (Table 2); there was no evidence of between group differences at baseline.

Frequency of Practice

Overall, participants reported engaging in 3MBS practice in their own lives and

teaching it to clients. Descriptively, during the first two weeks, in which the emphasis of

the training in both conditions was on clinician personal practice, clinicians reported

practicing on average 3.16 times. During the second two weeks, the clinician personal

practice reports were reduced slightly in the online group. There was little evidence of

teaching the 3MBS to clients during the first two weeks of the training, and clinicians

increased in the online condition during the second two weeks, consistent with the targets

of training during that time. The text control pattern was relatively consistent over time.

With respect to comparisons between groups, the text based group reported more

personal practice at each week and more patient teaching during the first two weeks,

although the differences between groups were not significantly different. Specifically, a

series of t tests were run to assess between group differences. Results revealed no

significant differences between groups on average frequency of 3-Minute Breathing

Space personal practice during all 4 weeks of the training period. Week 1, $t(6) = 1.00$, $p =$

.36; week 2, $t(6) = -.63$, $p = .55$; week 3, $t(6) = 1.25$, $p = .26$; week 4, $t(6) = 1.21$, $p = .27$.

Additionally, no between group differences were observed for frequency of teaching the

3-Minute Breathing Space practice to clients during 4-week study training period. Week

1, $t(3) = 1.00$, $p = .39$; week 2, $t(6) = -.66$, $p = .54$; week 3, $t(6) = .34$, $p = .74$; week 4,

$t(6) = .78$, $p = .46$. A table displaying average frequency of practice and frequency of

times teaching the 3-Minute Breathing Space to clients is displayed in Table 3.

Program Feasibility

An independent samples t test was run to assess between group differences on

ratings of the usability and credibility associated with each condition. Average SUS

scores at follow-up were not significantly different between the online ($M = 3.90$, $SD =$

.22) and control ($M = 3.40$, $SD = .95$) groups, $t(3.30) = 1.02$, $p = 38$. Between group

differences on the follow-up CEQ measure, controlling for participant's scores on the

CEQ at baseline, were evaluated using analysis of covariance (ANCOVA), suggesting no

significant effect of condition on follow-up CEQ scores, $F(1, 5) = .32$, $p = .60$.

Program Knowledge

ANCOVA was used to assess for between group differences on the Knowledge Check Questionnaire at follow-up controlling for participant's scores on the Knowledge Check Questionnaire at baseline. Results indicated no significant difference between groups at post-test, controlling for baseline scores, on knowledge, $F(1, 5) = .03$, $p = .87$, with both groups achieving between 80-90% of items correct.

Program Satisfaction

Between group differences on the TSQ-8 were assessed using independent samples t test. A significant between groups difference was observed such that average satisfaction with the training program and materials at follow-up was significantly higher among participants enrolled in the online condition ($M = 3.63$, $SD = .10$) than among participants enrolled in the control condition ($M = 1.97$, $SD = .49$), $t(6) = 6.57$, $p = .001$, $d = 4.65$. A summary of participant responses to the open ended items is presented thematically in Table 5.

Clinician Mindfulness & Decentering

Between group differences on the five follow-up FFM subscales and follow-up FFM total scale, controlling for baseline scores, were evaluated using ANCOVA tests. Results revealed no significant differences between groups at follow up on the observe subscale, $F(1, 5) = .159$, $p = .706$, the describe subscale, $F(1, 5) = 1.11$, $p = .339$, the awareness subscale, $F(1, 5) = 2.71$, $p = .161$, or total score, $F(1, 5) = 2.71$, $p = .161$. There was evidence of a difference between groups on the non-reactivity subscale, $F(1, 5) = 6.59$, $p = .05$, partial $\eta^2 = .568$, with significantly higher follow-up scores among participants in the online training condition than the text control. Between group

differences on the follow-up EQ, controlling for participant's scores on the baseline EQ, were assessed using ACOVA and suggested no significant effect of condition on follow-up EQ scores $F(1, 5) = .598$, $p = .474$.

Discussion

In the present study we conducted a pilot RCT to assess the preliminary feasibility and effectiveness of a core intervention of mindfulness-based cognitive therapy: the 3-Minute Breathing Space. Although preliminary given the interim analyses with program completers to date, the results support the feasibility of the program and suggest that additional investigation is warranted to evaluate the effectiveness of the 3-Minute Breathing Space program in training clinicians.

Overall, the results of this study indicate a strong interest in learning the 3-Minute Breathing Space. Participants who started training in each condition completed the training at rates of approximately 80% and reported regular home practice each week. In addition, ratings of usability indicated that participants experienced generally positive reactions to the usability of the training in both conditions. With respect to credibility, participants in both groups found the training to be credible, reporting that the training was between "somewhat" and "very" with respect to its logic, use, and appropriateness to recommend with confidence to clients. Clinicians demonstrated good understanding of the program content at post-training, as indicated by the percent correct of the Knowledge Test; however, there was no indication of benefit associated with the online training. In contrast, levels of satisfaction with the 3-Minute Breathing Space training were significantly higher among participants using the online-based format. There were also indications that participants who received the online format performed significantly better

on the nonreactive mindfulness factor compared to those of the text format, although these results should be considered in the context of the preliminary nature of the findings and the lack of significant differences between groups on the other mindfulness subscales or decentering measure.

This pilot study offers one of the first initial empirical tests of an online training program designed to teach clinicians how to practice and disseminate a mindfulness exercise. The pilot nature of the data collection to date precludes drawing definitive conclusions about the training intervention but helps inform modifications needed in a larger study of training clinicians in this practice. To this end, qualitative feedback from participants was particularly instructive (see Table 5). In general, clinicians gave positive feedback about the usefulness and quality of the online training, although there were several important suggestions, including allow more time and flexibility in pacing to complete the training (rather than requiring clinicians to complete the four sessions in four weeks). Many of the clinicians in the text condition found the materials "too brief" or not a helpful way to learn the 3-Minute Breathing Space. Although anecdotal, the qualitative data suggests that continuing with larger study is indicated.

A number of important limitations should be noted. First, it is important to underscore the preliminary nature of these analyses, given the small sample. The study is underpowered at this point to test primary predictions. Although initial study recruitment proceeded according to projected estimates, we did not anticipate the varying length participants would require for completing enrollment, training, and follow-up measurement. Although we requested that they complete the study within four weeks, the actual duration was longer for some participants, which reduced the sample size available

for analysis at this time. In the future, it will be important to include longer follow-up intervals to maximize power, to respond to the ways in which clinicians may be most likely to use such program, and to assess the durability of any program benefits. In addition, it will be important for future studies to examine results, particularly with respect to practice frequency, longitudinally. Second, the majority of participants were recruited from mindfulness related listervs (e.g. MBCT, ABCT), and some of the participants entered the study with prior mindfulness training. Thus it is hard to estimate to what degree these findings generalize to larger samples of practicing clinicians who are more diverse with respect to theoretical orientation and naïve with respect to mindfulness training. Third, study participants were not given clear instruction to fill out the knowledge check from memory so some participants may have referenced material during the survey while others did not. Fourth, although the text-based condition was designed to parallel the online condition in content and home practice requirements, it is clearly not matched in either time or attention dimensions. Quantitative ratings on measures were in line with the online condition, but qualitative responses to open ended items suggested that some participants found it to be lacking in detailed guidance. Finally, these results do not inform the degree to which clinician training impact clinician behavior with clients or client outcomes. It will be important for future studies to include observation of clinician competence in teaching the 3-Minute Breathing Space practice and impact on client outcomes.

Disseminating online evidence based practices, like the 3-Minute Breathing Space, can make access to services more manageable. The majority of people suffering from a mental illness are not seeking treatment and instead are attempting manage their

own treatment (Beljouw et al., 2010). The technology industry is growing, which creates opportunities for researches to study ways in which evidence based training can be delivered. Initial research on the dissemination of online evidence based training programs has shown promise (Hubley, Woodcock, Dimeff, & Dimidjian, 2014). Today, there is a marked dearth of resources available to disseminate empirically supported treatments to individuals in need. The dire need to train clinicians in empirically supported treatments so they are able to disseminate these practices to their clients is clear. Future studies on online-based approaches such as the 3-Minute Breathing Space will be important to evaluate the degree to which such models can help to bridge the gap between science and practice and make empirically supported treatments more available to patients in need.

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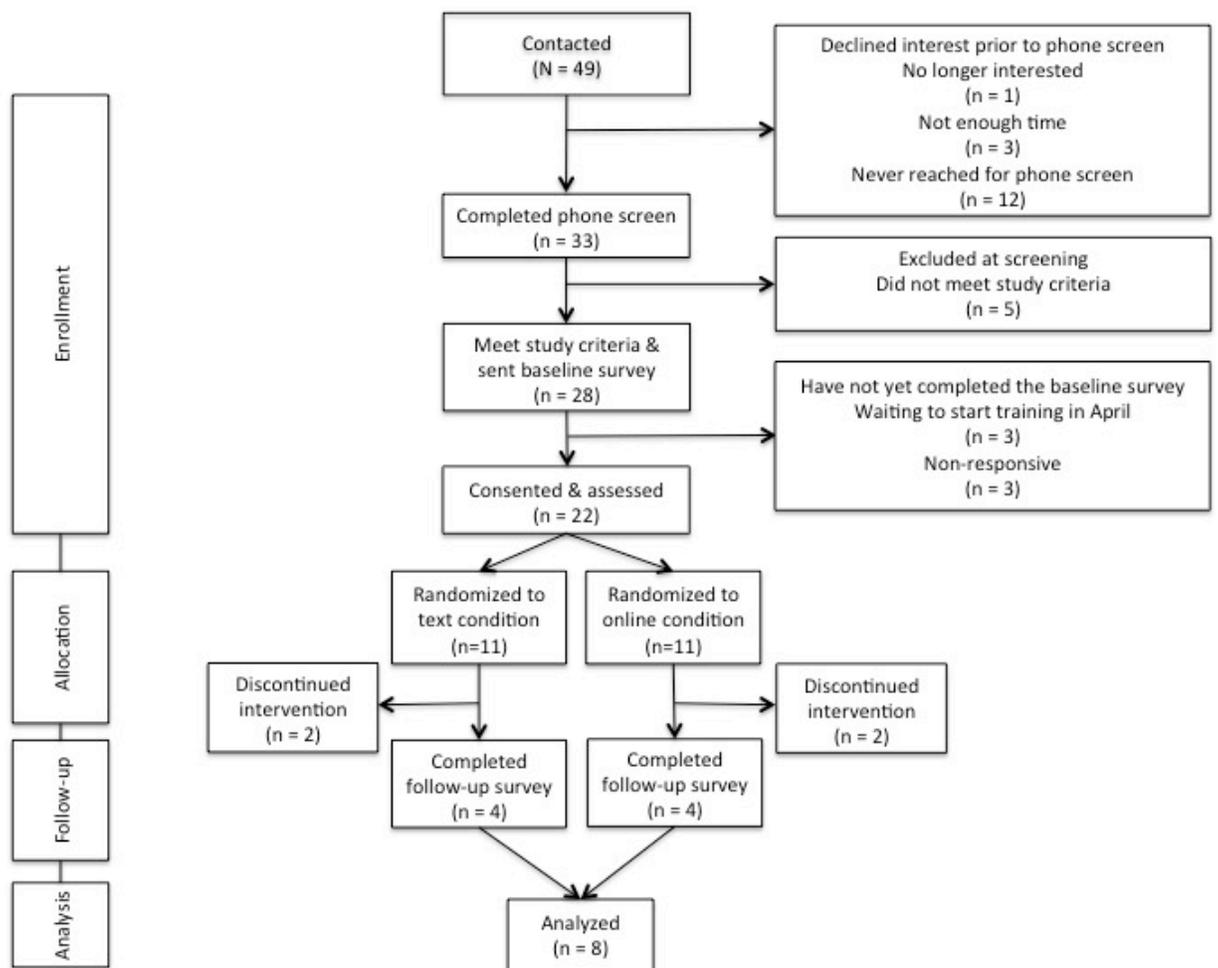
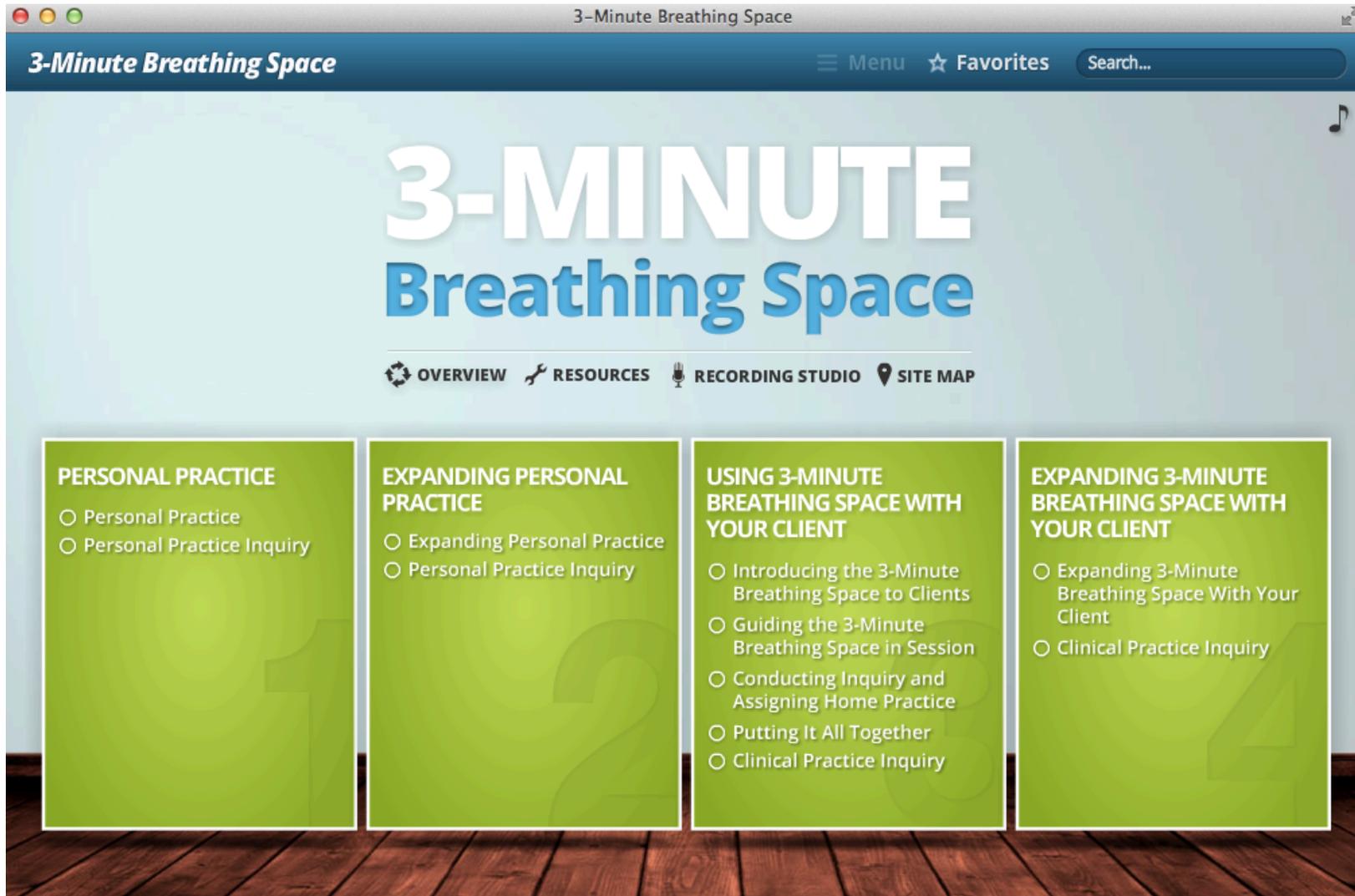*Figure 1.* 3-Minute Breathing Space Study Participant Flow.

Figure 2. 3-Minute Breathing Space interactive online condition program menu.

Table 1

Between group differences on sample demographic constructs

Characteristic		M		test statistic	p
		Online	Text Control		
n		11	11		
Age		50.64 (SD = 9.77)	49.73 (SD = 12.40)	$t(20)$ = .191	.85
Year(s) in practice		15.36 (SD = 10.62)	16.86 (SD = 13.63)	$t(20)$ = -.29	.77
Household Income				$\chi^2(4, N = 22)$ = 6.00	.20
	$20,000 – 29,999	9%	0%		
	$30,000 – 39,999	0%	18%		
	$40,000 – 49,999	0%	9%		
	$50,000 – 59,999	18%	0%		
	> $ 60,000	72%	72%		
Country of origin				$\chi^2(4, N = 22)$ = 4.00	.41
	USA	82%	82%		
	Canada	9%	0%		
	South Africa	9%	0%		
	Switzerland	0%	9%		
	Russia	0%	9%		
Region within the U.S.				$\chi^2(4, N =22)$ = *6.13*	.41
	New England	9%	0%		
	Mid-Atlantic	18%	54%		
	East North Central	36%	9%		
	West North Central	9%	9%		
	South Atlantic region Pacific Region	0%	9%		
		18%	9%		
Gender				$\chi^2(1, N = 22)$ = 0.00	1.0
	Female	73%	73%		

	Male	27%	27%	
	Other	0%	0%	
Education				$\chi^2(1, N = 22) = 0.00$ 1.0
	Master's degree	18%	18%	
	PhD/Professional degree	82%	82%	
Licensure				$\chi^2(2\ N =22) = 1.06$ .59
	Psychology	82%	73%	
	Social Work	18%	18%	
	Counseling	0%	9%	
	Other	0%	0%	
Therapeutic Orientation				$\chi^2(5, N = 22) = 3.59$ .61
	Cognitive Behavioral	36%	46%	
	Cognitive	0%	9%	
	Behavioral	9%	0%	
	Psychodynamic	9%	0%	
	Eclectic	27%	36%	
	Other	18%	9%	
Work Setting				$\chi^2(4, N = 22) = 2.4$ .66
	Private Practice	72%	64%	
	Outpatient Community Mental Health Center	18%	9%	
	Residential Treatment Facility	0%	9%	
	University Outpatient Clinic	9%	9%	
	University Hospital	0%	9&	

Note. SD = standard deviation.

Table 2

Between group differences on baseline measures

Measure	Group						95% CI for Mean Difference	
	Online			Text Control				
	n	*M*	*SD*	*n*	*M*	*SD*		*p*
FFM Observe Scale§	11	3.51	0.4	11	3.42	0.79	-0.46, 0.65	0.74
FFM Describe Scale§	11	3.68	0.58	11	3.97	0.69	-0.85, 0.28	0.31
FFM Awareness Scale§	11	3.44	0.55	11	3.56	0.6	-0.62, 0.40	0.65
FFM Non-Judgmental Scale§	11	4.18	0.67	11	3.96	0.6	-0.35, 0.78	0.44
FFM Non-Reactive Scale§	11	3.48	0.33	11	3.27	0.79	-0.35, 0.76	0.43
FFM Total Scale§	11	3.66	0.4	11	3.64	0.48	-0.37, 0.41	0.90
Experiences Decentering Scale (EQ) §	11	3.68	0.45	11	3.36	0.73	-0.22, 0.86	0.23
Knowledge Check Questionnaire †	11	13.73	3.20	10	14.9	2.69	-3.88, 1.54	0.38
Credibility and Expectancy Scale (CEQ) ‡	11	7.48	1.54	10	7.2	1.27	-1.01, 1.58	0.65
Expected Client Improvement	11	5	1.84	10	3.8	1.48	-0.34, 2.74	0.19

Note. n = number of participants in each group *M* = Mean; *SD* = Standard Deviation; 95% CI = 95% confidence interval; FFM = Five Facet Mindfulness; ‡ Scored on a Likert scale with high scores representing higher levels of the construct; †Out of 20 possible points with each correct answer equal to one point; § scored on a 1-5 scaled with higher scores representing higher levels of the construct.

Table 3

Number of times the 3-Minute Breathing Space was practiced and taught per week of training

Training Week	Practiced		Taught	
	Online	Text Control	Online	Text Control
Week 1	$M = 2.63$	$M = 4.0$	$M = 0.00$	$M = .25$
	$SD = .48$	$SD = 2.71$	$SD = 0.00$	$SD = .50$
Week 2	M = 2.50	$M = 3.5$	$M = .25$	$M = .50$
	$SD = 0.58$	$SD = 3.11$	$SD = 0.5$	$SD = .58$
Week 3	$M = 1.88$	$M = 3.75$	$M = 1.13$	$M = .88$
	$SD = .25$	$SD = 2.99$	$SD = 1.32$	$SD = .63$
Week 4	$M = 1.88$	$M = 3.75$	$M = 1.38$	$M = .88$
	$SD = .85$	$SD = 2.99$	$SD = 1.09$	$SD = .66$

Note. M =Mean; *SD* = Standard Deviation.

Table 4

Analysis of covariance for measures assessed at both baseline and follow-up time points

		M(SE)	
Measures		Online	Text Control
	n	4	4
Creditability/Expectancy‡			
		5.85 (0.76)	5.86 (0.89)
		95%CI [3.74 – 7.97]	95%CI [3.38 – 8.35]
Knowledge†			
		16.54 (1.42)	17.28 (1.65)
		95%CI [12.6 – 20.48]	95%CI [12.71 – 21.85]
Experiences§			
		3.95 (0.14)	3.80 (0.14)
		95%CI [3.60 – 4.30]	95%CI [3.45 – 4.15]
FFM			
		3.794 (0.21)	3.67 (0.21)
Observe§		95%CI [3.25 – 4.34]	95%CI [3.13 – 4.22]
		4.08 (0.21)	4.42 (0.21)
Describe§		95%CI [3.53 – 4.62]	95%CI 3.88 – 4.97
		3.61 (0.15)	3.98 (0.15)
Awareness§		95%CI [3.2 – 4.01]	95%CI [3.59 – 4.37]
		4.34 (0.14)	4.60 (0.14)
Non-Judgmental§		95%CI [3.99 – 4.69]	95%CI [4.25 – 4.95]
		3.82 (0.12)$_a$	3.39 (0.12)$_b$
Non-Reactive§		95%CI [3.52 – 4.13]	95%CI [3.09 – 3.70]

	3.926 (0.14)	4.02 (0.14)
Total§	95%CI [3.57 – 4.23]	95%CI [3.67 – 4.37]

Note. *M* = Mean; *SE* = Standard Error; n = number of participants in each group; 95%CI = 95% confidence interval; FFM = Five Facet Mindfulness; *p < .05; ‡ Scored on a Likert scale with high scores representing higher levels of the construct [‡†] Scored on a multiple choice format with higher scores representing higher levels of the construct; § scored on a 1-5 scaled with higher scores representing higher levels of the construct; means within the same row followed by different subscripts (i.e., a, b) are significantly different, p < .05.

Table 5

Participant qualitative feedback

Condition	Survey Question	Participant Feedback
	What was the most significant benefit of this program for you?	
Online Condition		Theme: Useful
		"Learning and practicing a succinct strategy to introduce clients to mindfulness practice" Having online so that I could go to it repeatedly and at any time was much appreciated Actively learning about using a relatively brief mindfulness exercise that is designed and taught to use both everyday and in response to more stressful situations".
Text Condition		Theme: Positive Impact
		"My own practice helped me focus and reduce stress I acquired a very useful tool to use in my clinical practice".
		Theme: Neutral Impact
		"I did not really benefit, I already was familiar with the 3MBS and confident in guiding it and motivating clients to use it".
	If you could change anything about this program, what would it be?	
Online Condition		Theme: Clarity
		"More clear in online training that recorded guided 3mbs meditation was in the resources (or perhaps have a direct link to it".
		Theme: More Time
		"More clear in online training that recorded guided 3mbs meditation was

in the resources"

"I felt a little rushed to do this all in the time frame. I wanted to linger a little longer at several places but needed to move on".

Text Condition

Theme: Video Demonstrations

"I would like online video demonstrations".

Theme: Lacking material

"The materials I received were so brief that I'd recommend a re-write which is at least ten times longer with multiple examples".

"The instructions for the text condition were lacking important information".

Do you have any comments, concerns, or suggestions you would like to share with the research team?

Online

Theme: Good Program

"This program was extremely well done. Thanks".

"Overall, the video/online portal was excellent in quality".

"I do see myself and my mind in a different and more adaptive way than I did in the past".

Text Condition

Theme: Materials Not Enough

"The materials were much too brief".

"I found the materials somewhat disjointed and felt like it was almost as if "just enough" information was presented".

Theme: Not Helpful

"I was left to learn on my own and could have easily done this by reading the book by myself".

"It may just be that I did not have anything more to learn -- I had

	already been using the 3MBS and have had a personal practice for over a decade".
Please comment on your experience learning and practicing the 3-Minute Breathing space.	
Online Condition	Theme: Helpful
	"Very helpful in slowing down several times a day It has the potential to be quite helpful".
Text Condition	Theme: Didn't Help
	"If I was naive to MBSR / MBCT I likely would have benefitted from even the text alone condition".
	"Since I didn't feel I learned it well enough from the materials I didn't feel comfortable trying to teach it on to my clients Theme: Not user-friendly I did not find the materials that "user friendly"

Note. Summary of participant qualitative feedback from follow up survey. 3MBS = 3-Minute Breathing Space; MBRS = Mindful-Based Stress Reduction; MBCT = Mindful Based Cognitive Therapy.