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Theory-Practice Networks for Training in Behavioral Therapy: Training, Self-Discovery and Integration into Treatment Using Mindfulness as an Example

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Keywords
Mindfulness · Psychotherapy training · Cognitive behavior therapy · Component study

Summary
Background: The modules that make up theoretical and practical training in behavioral therapy often bear little relationship to one another. Training, practice intervals, and integration into relevant therapeutic interventions need to be interlinked more closely. This manuscript describes an attempt to address this topic by investigating mindfulness interventions. **Method:** Mindfulness workshops with intervals for self-discovery were facilitated by 27 therapy instructors. Building on this, standardized session-introducing interventions with mindfulness elements were integrated into the training therapy in 36 patients. The program was analyzed in terms of acceptance, feasibility, and effectiveness. Analyses of variance were used to compare the symptom reduction (Beck Depression Inventory (BDI-II), Brief Symptom Inventory (BSI)) achieved between the first session and the 15th session against that of a control group consisting of patients receiving standard treatment. **Results:** Positive experiences of mindfulness were disclosed during qualitative interviews. In general, the acceptance and feasibility of the theory-practice network was rated as high. According to statements made by the therapy instructors, meaningful interfaces were established between theoretical and practical training. In terms of symptom reduction, patients in the mindfulness group and the group receiving standard treatment showed similar results; there were no significant variances in this respect. **Conclusion:** The combination of mindfulness workshops and opening exercises building on these was found to be meaningful, but the effects were not clinically stronger than those achieved by standard treatment. Future research should aim to investigate theory-practice networks in other areas (e.g., Progressive Muscle Relaxation, compassion). Here, clinically relevant effects may be identified in addition to the positive findings on acceptance and feasibility.

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Schlüsselwörter
Achtsamkeit · Psychotherapieausbildung · Kognitive Verhaltenstherapie · Komponentenstudie

Zusammenfassung
Hintergrund: Die Bausteine der theoretischen und praktischen verhaltenstherapeutischen Ausbildung finden selten direkt aufeinander bezogen statt. Die stärkere Vernetzung von Schulung, Übungsintervall und Einsatz in der Therapie von relevanten therapeutischen Interventionen ist wünschenswert. Am Beispiel einer Untersuchung von Achtsamkeitsinterventionen wurde im vorliegenden Manuskript der Versuch unternommen, dieses Thema zu adressieren. **Methodik:** 27 Ausbildungstherapeuten führten Achtsamkeits-Workshops mit Selbsterfahrungsintervallen durch. Darauf aufbauend wurden bei 36 Patienten standardisierte sitzungseinleitende Übungen mit Achtsamkeitselementen direkt in die Ausbildungstherapien integriert. Das Programm wurde auf Akzeptanz, Durchführbarkeit und Effektivität überprüft. Die Symptomreduktion (Beck Depression Inventory (BDI-II), Brief Symptom Inventory (BSI)) von Probatorik zur 15. Therapiesitzung wurde varianzanalytisch mit Patienten der Routineversorgung als Kontrollgruppe verglichen. **Ergebnisse:** In qualitativen Interviews zeigten sich positive Achtsamkeitserfahrungen. Generell waren Akzeptanz und Durchführbarkeit des Theorie-Praxis-Netzwerks hoch. Laut Aussagen der Ausbildungstherapeuten wurden hier sinnvolle Schnittstellen zwischen theoretischer und praktischer Ausbildung realisiert. Bezüglich der Symptomreduktion zeigten sich für Patienten der Achtsamkeitsgruppe und Routineversorgung ähnliche Effektstärken, hier bestanden keine signifikanten Unterschiede. **Schlussfolgerung:** Die Kombination aus Achtsamkeits-Workshops und darauf aufbauenden sitzungseinleitenden Übungen wurde als sinnvoll erlebt, zeigte allerdings keine stärkeren klinischen Effekte als die Routineversorgung. Zukünftige Forschung sollte Theorie-Praxis-Netzwerke in anderen Bereichen (z.B. Progressive Muskelrelaxation, Compassion) untersuchen. Zusätzlich zu positiven Durchführbarkeits- und Akzeptanzbefunden könnten dort auch klinisch relevante Effekte identifizierbar sein.

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Introduction

The modules that make up theoretical and practical training in behavioral therapy often bear little relationship to one another [Willutzki et al., 2015]. Training, practice intervals, and integration into relevant therapeutic interventions need to be interlinked more closely. This manuscript uses the example of an investigation of mindfulness interventions in an attempt to address this topic. A mindfulness-based workshop was integrated directly into the regular training curriculum, with an interval for self-discovery. Brief mindfulness exercises based on these experiences were used in the training therapy.

Investigation of Mindfulness in Therapeutic Training Curricula

Mindfulness is defined as a specific form of attention control that is 1) focused on the here and now, 2) purposeful, and 3) nonjudgmental [Kabat-Zinn, 1990]. It has been studied in the form of Mindfulness-Based Stress Reduction (MBSR) and Mindfulness-Based Cognitive Therapy (MBCT), which are intensively manualized group therapy programs, whose effectiveness has been corroborated by numerous meta-analyses and with effect sizes in the middle range [Hofmann et al., 2010; Khoury et al., 2013; Kuyken et al., 2016]. However, Dimidjian and Segal [2015], using the stage model of the National Institutes of Health [Onken et al., 2014], conclude that there is a large research gap with respect to the effectiveness of mindfulness. In particular, there is hardly any research on mindfulness in individual therapy, and a lack of component studies [Dunn et al., 2013; Grepmair et al., 2007; Kuyken et al., 2016]. Whereas MBCT and MBSR have been well studied in patients, there is a lack of evidence regarding the effectiveness of mindfulness programs on therapists [Ivanovic et al., 2015; Khoury et al., 2013]. Since mindful self-discovery on the part of the therapist is required for active work with this therapeutic approach [Segal et al., 2015], it seems worthwhile to undertake a systematic study of the mindfulness training of therapists before they put the approach into practice [Khoury et al., 2013]. This mindfulness training can be interpreted as empathy training and also the acquisition of intrapersonal skills for self-care [Hemanth and Fisher, 2015].

There is preliminary empirical evidence so far that mindfulness programs have positive effects for therapy instructors: MBCT programs have led to a significant increase in mindfulness, self-compassion, and empathy [Hopkins and Proeve, 2013]. Another study showed pre-post effect strengths (Cohen's d) of d = 0.62 for mindfulness, d = 0.49 for self-compassion, and d = 0.58 for decrease in rumination [Rimes and Wingrove, 2011]. Less structured programs for therapy instructors, with training in short mindfulness exercises, showed scarcely any quantitative effects, but did have positive qualitative effects in terms of increased mindfulness in everyday life [Hemanth and Fisher, 2015; Moore, 2008]. The lack of quantitative effects is understandable, given that the mindfulness exercises were just one part of the daily routine, with its many additional occupational challenges (other workshops and therapeutic activities during training, work in clinics, etc.) [Hemanth and Fisher, 2015]. This did not leave room for intense mindfulness practice, as occurs in structured MBCT programs in which, in addition to 2 h of group sessions per week, there are 45 min of practice per day [Moore, 2008; Segal et al., 2015]. However, the qualitative effects of these 2 studies suggest that the training gave therapy instructors a better understanding of mindfulness and that they became more confident in integrating mindfulness into their own everyday lives and their therapeutic work. Study of mindfulness programs in the German training system, however, remains to be accomplished. It is also still unclear how therapy instructors' experience of mindfulness in such workshops could then be integrated into the training therapy [Mander et al., 2015a].

Mindfulness and Component Studies

While there are currently thousands of randomized controlled psychotherapy trials (RCTs) that have been combined into hundreds of meta-analyses [Hofmann et al., 2012], little is known about the specific mechanisms of therapeutic change [Flückiger et al., 2015; Mander et al., 2015b; McMain et al., 2015]. This may be partly because the RCTs typically evaluate complex therapy manuals that have a large number of individual therapeutic modules. But there are hardly any component studies that can help to identify which interventions from the complex therapy manuals contribute effectively to therapeutic change [Bohus, 2015]. In fact, there are to date only 2 meta-analyses of component studies, which summarize a total of 67 primary studies [Ahn and Wampold, 2001; Bell et al., 2013].

The separate scientific study of individual modules appears to be especially advisable in mindfulness research, since although this approach has been widely used in clinical practice in the last few years, specific components have seldom been studied [Kuyken et al., 2016; Tuschen-Caffier and Hoyer, 2014].

The first component studies of the mindfulness module of Dialectical Behavioral Therapy (DBT, [Linehan, 1993]) were done by Soler et al. [2012]. Here, a complex DBT module with 8 sessions in a group format was studied as a supplement to routine treatment. No component studies exist yet for MBCT and MBSR [Dunn et al., 2013; Kuyken et al., 2016]. This is surprising in that MBCT and MBSR work intensively with standardized exercises, which are optimal for experimental research in component studies [Segal et al., 2015]. For example, the so-called 'breathing space' is the core of MBCT [Segal et al., 2015]. It is a brief, formal mindfulness exercise intended to help the person to experience the here and now. In this 3-min meditation, attention is directed to the metaphor of an hourglass with 1) a wide angle (awareness of current thoughts, feelings, and body sensations), 2) a narrow angle (concentration of attention through focus on the breath), and 3) a wide angle (extending the attention to the whole body). The breathing space exercise is practiced several times a day at set times in the MBCT program. It is also used in difficult situations to focus on the current moment, so that suitable problem-solving strategies can be implemented. The breathing space exercise is appropriate for component studies. There, it could be used as the opening ritual in therapy sessions [Mander et al., 2015a; Segal et al., 2015].

Training, Self-Discovery, and Integration into Treatment

There are key research gaps in the field of therapeutic mindfulness and component studies of training therapies based upon it, which can be addressed optimally in Germany [Bohus, 2015]: The large university institutes allow direct inclusion in the curriculum (theoretical training) of preliminary interventions in the form of workshops. The interventions learned there could be integrated directly, in the standardized experimental control group design, into practical training – i.e., the therapeutic work of outpatient clinics after the trainee's intermediate examination. Such naturalistic research has been suggested several times in recent years [Bohus, 2015; Lutz and Rubel, 2015]. An example of such a mindfulness-based component study in the German training system is the Process Outcome Mindfulness Effects in Trainees (PrOMET) study [Mander et al., 2015a], conducted at the Heidelberg Center for Psychological Psychotherapy (ZPP Heidelberg). It studies the effect on the therapeutic process of session-introducing exercises with elements of mindfulness. The therapy instructors participating in the PrOMET study are first intensively trained in mindfulness and relaxation. Specifically, in the regular curriculum workshops on 1) mindfulness and 2) relaxation, there are 6 weeks of practice intervals during the first year of theoretical training. In the second year of the course, when practical training begins, session-introducing exercises are directly integrated into the training therapies. In the PrOMET study, a standardized session-introducing version of the breathing space exercise, adapted for therapists and patients who are inexperienced in mindfulness and delivered by Audiobox (treatment as usual + mindfulness; TAU + M), is compared with a standardized, session-introducing short version of progressive muscle relaxation (TAU + PMR), and a typical non-standardized behavioral therapy session (TAU). The 3 different session-introducing conditions are randomly assigned to depressed and anxious patients and are performed at the beginning of each therapy session. These are the only components that vary across the 3 conditions; otherwise, a routine training therapy regimen is followed. According to the two-step model of Kristeller and Johnson [2005], such mindfulness practice should lead the therapists to greater self-acceptance and therefore to increased empathy for and acceptance of the patient, qualities which are associated with positive outcomes according to empirical findings [Cogolla and Brown, 2011]. This session-introducing mindfulness practice should lead the patients to greater acceptance in the here and now, which is a key aspect for positive outcome effects of mindfulness according to meta-analyses [Khoury et al., 2013; Kuyken et al., 2016]. Thus, the focus of this study is the course of relationship formation and symptom burden.

Concerns of the Study

As behavioral training becomes increasingly professionalized, it seems highly relevant to create theory-practice networks and to evaluate scientifically whether continuous improvement in training is possible [Fydrich et al., 2015; Willutzki et al., 2015]. Consequently, the present manuscript deals with the interlinking of training, self-discovery, and integration into treatment, using the example of mindfulness in behavioral therapy training. To this end, we present the initial results of the above-mentioned PrOMET study. Acceptance, feasibility, and effectiveness of mindfulness training and the session-introducing exercises built upon them are outlined. The intention is to go a step beyond previous work on mindfulness workshops in training programs, which have not yet dealt with their effects on therapy [Hemanth and Fisher, 2015; Moore, 2008]. Taking off from the findings discussed above, the present study examined the following hypotheses:

1) Mindfulness workshops that were integrated into training lead to a small quantitative increase in mindfulness among the therapists.
2) The mindfulness workshops with intervals for self-discovery lead to positive qualitative effects. They result in a better understanding of the mindfulness principle and stimulate more intensive engagement with mindfulness.
3) The interlinking of training, self-discovery, and integration of mindfulness into treatment is positively evaluated by the therapy instructors.
4) The interlinking of training, self-discovery, and integration of mindfulness into treatment leads to a positive clinical outcome for patients compared to therapies in routine training.

Method

Sample

The average age of the 27 therapists in the study was 30.8 years (standard deviation (SD) = 6.3 years); they had 18.2 months (SD = 7.0 months) of experience in therapy training, 7.6 months (SD = 4.3 months) in outpatient work, with 6.7 training cases (SD = 5.3) summing up to 91.4 h (SD = 58.4 h). 88.9% were female. 74.1% had an average of 3.6 years (SD = 4.7 years) of mindfulness experience through yoga, qigong, body scan, and sitting meditation, with 33.3% practicing regularly (at least weekly). In addition, 77.8% had an average of 3.4 years (SD = 2.0 years) of experience with PMR, with 14.8% practicing regularly (at least weekly).

The mindfulness sample (reference sample data given in parentheses) was as follows: the average age of the 36 (990) patients was 36.31 years, SD = 12.57 years (37.42 years, SD = 13.10 years). 61.1% (61.3%) were female, 55.6% (52.4%) were in a committed partnership, 41.7% (36.8%) had a baccalaureate degree, and 55.6% (54.9%) were employed. 25% (23.7%) had a depressive episode, 36.1% (34.6%) recurrent depression, 8.3% (5.4%) dysthymia, 11.1% (9.0%) panic disorder and agoraphobia, 5.5% (11.7%) social phobia, 2.8% (3.2%) generalized anxiety disorder, 2.8% (1.5%) mixed anxiety and depression, and 8.3% (10.8%) adaptive disorders.

Study Design

The study was conducted at the ZPP Heidelberg. The theory-practice interface consisted of workshop training, a 6-week interval for self-discovery, a debriefing, and subsequent integration of workshop-based mindfulness intervention into the trainees' own therapy. The therapists were interviewed before and after the training about their experiences of mindfulness. For clinical evaluation of the program, the early phase of therapy of the first 15 sessions of the mindfulness group was compared with a reference sample. Questionnaires on symptom burden were completed at the start of therapy and after the 15th session. The reference sample was intended to be as representative as possible, while keeping the setting constant. It consisted of 990 patients with anxiety disorders and depression, in routine treatment at the ZPP Heidelberg. The inclusion criteria for the patients were: age between 18 and 65 years, primary diagnosis of 'depression' or 'anxiety disorder', no comorbid psychotic disorders, no acute

suicidality. The Ethics Committee of the Faculty of Behavioral and Empirical Cultural Sciences of the University of Heidelberg approved the study, in line with the current version of the Helsinki Declaration. A consent form was obtained from all patients and therapists.

The mindfulness workshop was based on the concept of Kabat-Zinn [1990] and used the MBCT [Segal et al., 2015]. Activities both formal (breathing space, body scan, sitting meditation with focus on breath/thoughts) and informal (mindfulness in everyday activities such as showering, eating, or walking) were introduced, and exercises were performed. The theoretical background of mindfulness was discussed, along with the current state of research on the practical integration of mindfulness into cognitive-behavioral therapy. The mindfulness workshops were led by an experienced expert (Thomas Heidenreich). After the workshop there was a 6-week interval for self-discovery. A workshop folder with extensive practice material was provided for reference. It was recommended to combine short daily exercises (informal ones and a short formal exercise, such as the breathing space exercise), and more extensive formal exercises, such as body scans, on particular days.

Following the interval for self-discovery, the therapists were debriefed about their experiences during the 6 weeks. Thoughts, feelings, and body sensations during the exercises, as well as related personal reaction patterns, were reflected by the inquiry technique [Michalak et al., 2012]. Difficulties were addressed, and assistance was provided for further implementation. In order to create a direct interface among training, self-discovery, and therapy, the 'session-introducing exercise with mindfulness elements' was introduced, practiced, and discussed. It condenses all of the components of the workshop into a compact exercise (focus on breath and body sensations in the here and now, with an accepting attitude) and was therefore actively used in the therapy.

After this workshop preparation, the patient and the therapist together performed the opening exercise in the first 5 min of each therapy session. The patient and the therapist were both about 1 m away from an Audiobox (dimensions 5 × 5 × 5 cm), which was used to present the exercise. The text of the intervention exercise was standardized and was spoken by Thomas Heidenreich. After the exercise, the regular therapy started according to the psychotherapy guidelines. After the first exercise was completed, a short inquiry was conducted (Online Supplemental Material, Online Supplemental Video 1–3; *www.karger.com/?DOI=455163*).

Instruments for Intervention and Measurement

Session-introducing exercise with mindfulness elements: The exercise (for the text, see the Online Supplemental Material; *www.karger.com/?DOI=455163*) was developed in an iterative process using feedback from a number of experts, therapists, and patients. It integrates, in condensed form, the core elements of the mindfulness exercises from the workshops (focus on breath and body sensations in the here and now, with an accepting attitude) and presents a version of the breathing space exercise adapted to the setting [Michalak et al., 2012; Segal et al., 2015]. This acceptance of the present should make it possible to integrate problem-solving strategies more effectively [Segal et al., 2015]. In contrast to the wide-angle/narrow-angle/wide-angle conception of the breathing space exercise, the intervention consists, like the sitting meditations in MBSR and MBCT, of only 2 components, the 'narrow angle' (focus on the breath) and the 'wide angle' (extending to the entire body). The reason for this adaptation of the breathing space exercise was the frequent feedback from patients, therapists, and experts, that the initial wide-angle focus is overwhelming for people who are not experienced in mindfulness.

Beck Depression Inventory (BDI-II): The BDI-II [Beck et al., 1996; Hautzinger et al., 2006] was used to measure depressive symptoms. The BDI-II has excellent internal consistency ($\alpha = 0.92$) and excellent retest reliability ($\underline{r} = 0.93$). The convergent validity is in the range of $0.71 \leq \underline{r} \leq 0.89$ [Hautzinger et al., 2006].

Brief Symptom Inventory (BSI): The BSI [Franke, 2000] was used to capture the overall symptom burden. The 53 items were allocated to 9 subscales, and the Global Severity Index (GSI), a global measure of basic psychological stress, was calculated. The BSI has excellent internal consistencies ($0.71 \leq \alpha \leq 0.85$), good retest reliability (0.68 and $\leq \underline{r} \leq 0.91$), high correlations to the original instrument SCL-90-R ($0.92 \leq \underline{r} \leq 0.99$), and good construct validity, with scale-outcome correlations in the range of $0.30 \leq \underline{r} \leq 0.72$ [Franke, 2000].

Kentucky Inventory of Mindfulness Skills (KIMS): The KIMS [Baer et al., 2004; Ströhle et al., 2010] was used to capture the mindfulness experience of the therapists with a psychometrically validated questionnaire. It is based on the mindfulness concept as described in the DBT [Linehan, 1993] and is addressed with 39 items, rated on a 5-point scale (from 0 to 4), with 4 aspects: *observing*, *describing*, *acting with awareness*, *accepting without judgment*. The KIMS has been used successfully in many studies to measure the change in mindfulness of therapists and patients [Kuyken et al., 2016].

Qualitative post-workshop interviews: Here, the therapists were interviewed about their mindfulness experiences. They were asked specifically which of the exercises (short vs. long formal vs. informal) they practiced with what intensity after the workshop. Based on previous studies [Hemanth and Fisher, 2015; Moore, 2008], they were asked about their general understanding of mindfulness, the potential benefits of the training for self-care, and the integration of mindfulness into their day-to-day lives. The feasibility of formal and informal exercises, as well as the benefits of the training for their own therapeutic work, were discussed.

Acceptance and feasibility of the theory-practice interface: Here, participants were asked about their global evaluation and the acceptance and feasibility of the 'training, self-discovery, and integration into treatment' interface. All items are listed in the Online Supplemental Material (*www.karger.com/?DOI=455163*).

Statistical Analyses

First, we conducted quantitative workshop analyses, to evaluate the implementation intensity of the formal and informal mindfulness exercises. Univariate analyses of variance (ANOVAs) for repeated measurements were used to analyze the progressions of mindfulness intensity on the KIMS scales for the 3 time points: pre (before the workshop), post (after the 6-week self-discovery interval), and follow-up (6 months after post). In the qualitative analyses, the authors followed Mayring's [2010] method for the inductive development of categories, using qualitative feedback from the therapists to create content categories that combined responses to specific topics. To check the acceptance and feasibility of the session-introducing exercises with mindfulness elements, mean values were calculated for session-related feedback from the first 5 sessions with 36 study therapies. Repeated measure ANOVAs were calculated to analyze the clinical effectiveness of the overall program: 2 (treatment group: mindfulness intervention, routine care) × 2 (measurement point: first and 15th therapy sessions). The dependent variables (DVs) were the BDI-II total score and the BSI-GSI and BSI subscales 'depression' and 'anxiety'. Clinical effects beyond those of routine care should show up as an interaction between the treatment group and the measurement point. Since the sample sizes were very unequal, we checked the homogeneity of variances using Levene's test [Field, 2013]. In 8 tests (4 outcome measures at 2 measurement points), only the comparison of the BDI-II error variances was significant for the first measurement point ($F(1,979) = 4.91$; $p < 0.05$). Effect strengths (Cohen's d) were calculated for the pre-post symptom changes in the mindfulness group and the reference sample. All analyses were performed with SPSS 22 (IBM, New York, NY, USA).

Results

Quantitative Workshop Data

The 6-week exercise interval after the workshop showed the following: 96.8% of the therapists reported practicing mindfulness in their everyday lives. Of these, 13.3% performed mindfulness exercises daily, 76.7% at least once a week, and 10.0% less than once per week. Formal exercises: 71.4% of the participants regularly practiced formal exercises; of these, a total of 33.3% did so at least once a week and 66.7% less than once per week. 42.9% practiced the

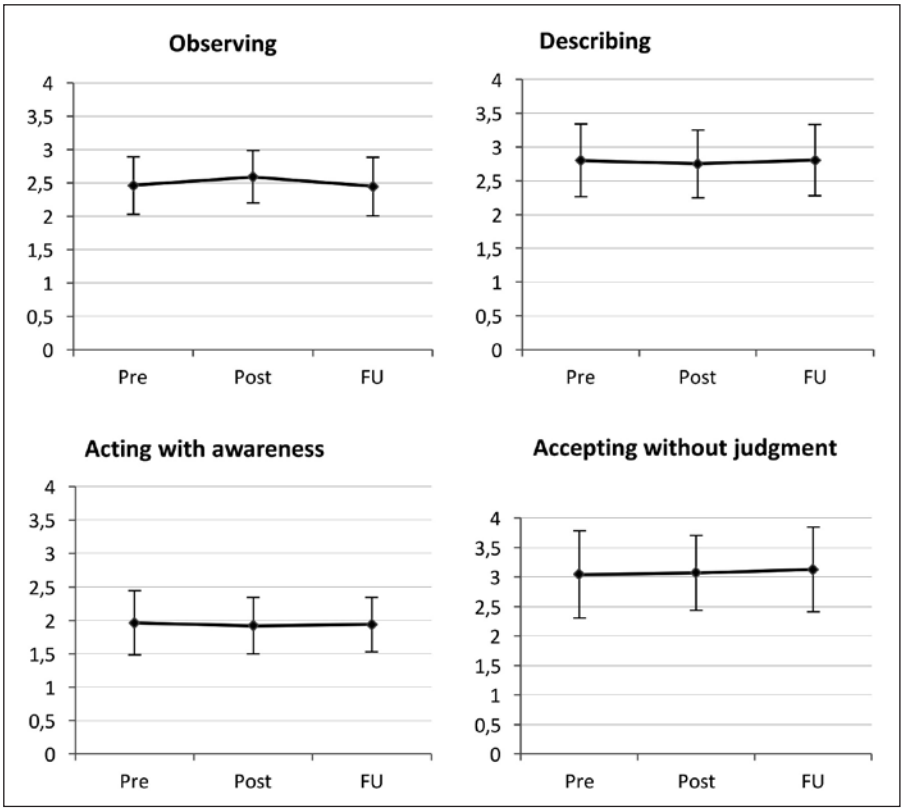

Fig. 1. Means of the 4 subscales of the Kentucky Inventory of Mindfulness Skills (KIMS) at the 3 measurement points for the 27 therapists. Pre = before the workshop; post = after the 6-week self-discovery interval; FU = follow-up, 6 months after the post date.

body scan, 50.0% the sitting meditation, 83.3% the breathing space, and 28.6% the walking meditation. Informal exercises: 85.7% of the participants regularly practiced informal exercises. Of these, 25.0% performed informal mindfulness exercises daily, 66.7% at least once a week, and 8.3% less than once per week. Mindful eating, walking, and cycling were especially popular.

With regard to the KIMS, repeated measure ANOVAs showed significant changes for the scale 'observing' ($F(2.25) = 4.33$; $p \leq 0.05$; $\eta^2 = 0.27$). Post-hoc analyses on the 'observing' scale showed a significant pre-post increase ($t = -2.34$; $p \leq 0.05$; $d = 0.30$), followed by a significant post-follow-up decrease ($t = 2.81$; ≤ 0.01; $d = 0.36$). No significant changes were found on any of the other KIMS scales (all $F(2.25) \leq 0.44$, all $p \geq 0.65$, $\eta^2 \leq 0.02$. Figure 1 shows the curves for the KIMS subscales at the 3 measurement points.

Qualitative Workshop Data

The categories of the qualitative interview data along with examples of the answers are presented in table 1, which shows that the therapists generally benefited from the exercises. Positive effects were noted with regard to better understanding of the mindfulness concept, as well as the integration of mindfulness into one's own daily life. As outlined above in the section on quantitative workshop data, the therapists most frequently performed the informal exercises. Short formal exercises (e.g., breathing space) were also incorporated into everyday life. Long formal exercises (e.g., body scan) were less frequently practiced. Setting aside certain places to do the exercises (e.g., in the bathroom) and certain times (e.g., on the way to work) facilitated the implementation. It was seen as helpful, as a reminder, to place the description of the selected exercise where it is clearly visible (e.g., on the kitchen table or on the refrigerator). Linking to other routines (e.g., after brushing one's teeth) was a further aid in the integration into everyday life.

Evaluation of the Overall Program

The theory-practice network was generally rated positively by the therapists. The combination of training, self-discovery, and the resulting therapy intervention was perceived as meaningful. Acceptance and feasibility of the session-introducing exercise were also assessed positively. Figure 2 shows the mean values of feedback from the first 5 sessions from 36 study therapies.

In the next step, the clinical effectiveness of the program was compared with routine data. Significant main effects of the factor 'measuring point' were found in the 2 × 2 ANOVAs for the BDI-II total score ($F(1,979) = 32.40$; $p < 0.01$; $\mu^2 = 0.03$), the BSI-GSI ($F(1,944) = 8.96$; $p < 0.01$; $\mu^2 = 0.01$), the BSI subscale 'depression' ($F(1,944) = 14.50$; $p < 0.01$; $\mu^2 = 0.02$), and the BSI subscale 'anxiety' ($F(1,944) = 12.92$; $p < 0.01$; $\mu^2 = 0.01$). No major effect could be observed for the factor 'treatment group' (all $F \leq 2.14$, all $p \geq 0.14$, all $\mu^2 \leq 0.01$). Contrary to hypothesis, in none of the 4 outcome measures was the interaction of treatment group and measurement point significant (all $F \leq 1.64$; all $p \geq 0.20$; all $\mu^2 \leq 0.01$). This is reflected in comparable effect sizes for symptom reduction with mindfulness data and routine data (see table 2).

Table 1. Qualitative feedback from the therapists on the mindfulness workshop and the 6-week exercise interval with debriefing

Category	Examples
Global workshop evaluation	'Very positive – gave me the chance to experience the exercises in my own body.' 'Overall rather positive, if sometimes tedious to have to think about "homework".' '... It was also useful that we had a debriefing on the exercises and experiences. That way you could take with you valuable tips and questions for your own debriefing with the patients.'
Understanding the mindfulness principle	'The workshop and the exercise interval helped me to be more "in the moment", as well as to give less credence for the time being to my impressions and thoughts.' 'It helped me understand that it is not just a matter of being in the here and now and engaging in pleasant activities or observing beautiful things, but also of neutral acceptance of what is happening, whether it be rain or pain, …' 'It made me more conscious of how often one operates on autopilot or makes hasty judgments, so that I try more often to be in the here and now, to make what I'm doing conscious and/or to be more accepting of my own emotions.' 'I have come to understand that an accepting approach is also relevant when dealing with unpleasant situations.'
Engagement with mindfulness in everyday life	'I'm trying to focus more on the here and now and to perceive things more consciously. I am currently able to do this mainly with pleasant things.' 'I'm practicing the acceptance approach, also with unpleasant situations if appropriate.' '... I have also integrated mindfulness exercises into my everyday life.'
Formal mindfulness practice	'I have most often done short formal exercises (breathing space, etc.) and was able to get into them, to integrate them into my everyday life, because they don't take that long. I found long exercises, like the body scan, more difficult to integrate into daily life.' 'I've mostly been practicing short formal exercises (breathing space, etc.). It was easy to integrate these into a stressful everyday life, and they helped to slow everything down and to ease the stress.' 'I found the long sitting meditations and body scan difficult and arduous. It was easier for me to get into short here-and-now exercises, such as breathing space and the study exercise.'
Informal mindfulness practice	'I practiced informal exercises every day. This was directly relevant to what I have to do in my daily life anyway, which was particularly appealing.' 'I engaged especially well with the informal exercises, perceiving with all my senses or simply paying attention to my body position during everyday activities. I've done them mainly in the morning, when I get up.' 'I engage with informal exercises especially well, such as mindful teeth-brushing or washing. These are also easier to integrate into the day's activities than long formal exercises.'

Discussion

In the present study, mindfulness workshops with intervals for self-discovery, as well as standardized session-introducing exercises building on these under routine conditions of therapeutic training, were examined for acceptance, feasibility, and clinical effectiveness. Both qualitative and quantitative analyses were performed.

Mindfulness Workshop

The KIMS showed no effects in the quantitative detection of changes in mindfulness. Only the scale 'observing' showed a significant pre-post increase. It is certainly plausible that the therapists showed a significant increase in mindful observing with respect to content. The exercises taught in the workshops (body scan, breathing space, informal exercises) have a primary focus on observing physical and mental sensations. The increase, however, was not sta-

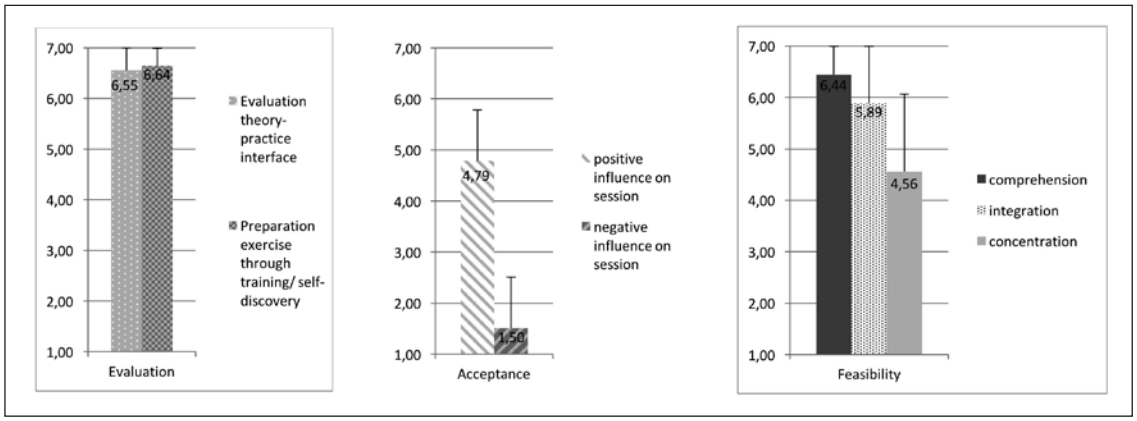

Fig. 2. 'Evaluation' of the overall program: evaluation of the combination 'training, self-discovery, and integration into treatment', as well as evaluation of the preparation of the exercise through training and self-discovery. 'Acceptance' and 'feasibility' of the session-introducing exercise with mindfulness elements. The figure shows the mean values for feedback from the therapists after the first 5 sessions of 36 study therapies.

Table 2. Means and standard deviations of the outcome measures in the first therapy session and after the 15th session; results of repeated measure analysis of variance

Measurement	Routine			Mindfulness			Interaction	
	P0	T15	d	P0	T15	d	F	p
BDI-II	21.72 (12.06)	15.96 (12.16)	0.48	25.17 (9.21)	19.32 (10.26)	0.60	<1	0.96
BSI-GSI	1.12 (0.70)	0.87 (0.68)	0.36	1.07 (0.49)	0.97 (0.56)	0.19	1.64	0.20
BSI-Depr	66.02 (11.65)	61.41 (12.49)	0.38	67.61 (10.69)	64.22 (11, 10)	0.31	<1	0.56
BSI-Anxiety	64.01 (12.50)	59.45 (13.01)	0.36	65.52 (10.31)	61.48 (9.73)	0.40	<1	0.83

P0 = first probational session; d = Cohen's d for pre-post symptom reduction; BDI-II = Beck Depression Inventory II; BSI-GSI = Global Severity Index of the Brief Symptom Inventory (BSI); BSI-Depr = BSI subscale 'depression'; BSI-Anxiety = BSI subscale 'anxiety'.

ble and declined significantly at the 6-month follow-up, to the pre-workshop level. There were no significant effects on the other subscales. Consistent with the above-mentioned research literature on mindfulness programs for therapy instructors [e.g., Hemanth and Fisher, 2015; Hopkins and Proeve, 2013], there was thus no overall quantitative increase in the mindfulness of the therapists under conditions of routine training. The following hypotheses might explain this phenomenon: first of all, it could be that standardized quantitative instruments such as the KIMS are not sensitive enough to identify subtle changes in the mindfulness experience [Moore, 2008]. On the other hand, the mindfulness training was carried out under routine conditions of therapeutic training along with a variety of other tasks (other training workshops and therapeutic activities, etc.). This did not leave room for intense mindfulness practice as in structured MBCT programs (45 min of practice per day), which could have contributed to the lack of quantitative effects [Moore, 2008; Segal et al., 2015]. For future studies, greater intensity of practice, in which the therapists have fixed daily exercise periods and have to fill out daily logs, could be useful.

However, the therapists expressed qualitatively a number of subjectively positive influences of the mindfulness exercises on their daily lives: the workshops helped them to understand the principle of mindfulness better and encouraged them to use mindfulness more in their own everyday lives. Short formal exercises (e.g., breathing space) and informal exercises were implemented more intensively and had a subjectively more positive influence on everyday life. Informal exercises that were coupled with the person's own pleasurable activities (a more mindful walk, lunch break, etc.) were felt to be the most helpful and were most intensively practiced. These findings are similar to those from other studies that have also investigated less standardized mindfulness programs under routine conditions [Hemanth and Fisher, 2015; Moore, 2008]: here too, as described in more detail above, there was no increase in mindfulness, but there were qualitatively positive developments. Thus, one can cautiously state: complex structured programs (MBCT and MBSR) lead to quantitative intensification of mindfulness in the training of therapy instructors [Hopkins and Proeve, 2013; Rimes and Wingrove, 2011], while less standardized mindfulness programs show no stable quantitative effects under conditions of routine education, but do have a qualitatively positive effect on the mindfulness experience of the therapists [Hemanth and Fisher, 2015; Moore, 2008].

From the qualitative surveys on the workshops, we derive the following cautious recommendation: under routine conditions of therapy training, short formal mindfulness exercises by therapy instructors with little mindfulness experience seem to be better accepted than long detailed mindfulness exercises. Informal exercises that can be directly integrated into everyday life are also performed more frequently. It seems to be relevant to couple the informal mindfulness exercises with actions that are subjectively positive assessed. Thus, the following could be cautiously recommended for future work on the direct integration of mindfulness into treatment: informal mindfulness exercises should initially be designed so that the therapist selects a personally positive situation and

makes a point of experiencing it with a mindful perspective. Short daily exercises (e.g., breathing space) might also be helpful. This seems to be a useful way to integrate mindfulness, given the time constraints of routine training.

Session-Introducing Exercise and Effectiveness of the Mindfulness Program

In the next step, the theory-practice interface was tested for acceptance, feasibility, and effectiveness. According to the therapists, the workshop and self-discovery interval afforded suitable preparation for the session-introducing exercise. All relevant modules of the exercise were taught there adequately. The intermediation of mindfulness via training, self-discovery, and integration into treatment was positively evaluated: the use of the standardized session introductions was perceived as a meaningful consequence of the mindfulness training. According to the feedback from the therapists, the workshops thus have an explicit therapeutic focus. They not only serve as a training unit, but also create practical interfaces between theoretical and practical training, by integrating the learned interventions directly into the therapeutic work [Mander et al., 2015a]. The exercise itself was experienced as easy to understand and to integrate into the therapy sessions. Positive effects of the session were perceived. None of the therapists experienced negative effects on the therapy sessions.

To investigate the clinical effectiveness of the theory-practice network, the symptom reduction in an earlier phase of therapy was compared with a large reference sample drawn from routine therapy at the ZPP Heidelberg. A significant decrease in the symptom burden was observed in both groups, which was reflected mostly in mean effect sizes ($0.19 \leq d \leq 0.60$). The lack of interactions between the measurement point and the treatment group demonstrated, however, that this decrease, contrary to our hypothesis, did not differ between the mindfulness group and routine therapy. But the sample for mindfulness therapies was relatively small, and only the pre-post findings of the early phase of therapy were analyzed. More research is required in order to identify potential effects more clearly. A highly granular design with session-based measurement points and larger samples seems appropriate. Overall, the findings suggest the following cautious conclusion: the acceptance and feasibility of theory-practice networks is high, and further study of the interlinking of theoretical and practical behavioral therapy training seems to make sense. The research on the example of mindfulness, however, showed no clinical effects. Thus, in future research, other relevant training modules (such as PMR, compassion, social competence) should also be investigated scientifically in the form of such networks. In addition to positive feasibility and acceptance effects, as in the study described here, it might then be possible to identify clinically relevant effects.

Limitations of the Study

First of all, future studies should investigate the 'training, self-discovery, and integration into treatment' interface by a direct comparison of different intervention methods. Thus, it would be possible to train one group in mindfulness, and the other in PMR or compassion, and to analyze the effects on clinical outcomes. Second, the theory-practice network studied here shows no clinical effects. Perhaps mindfulness training in the course of routine training is insufficient and a much more intensive expert training program is necessary. Future research should examine this more closely, with larger samples. Third, the study was carried out under routine conditions of therapeutic training, along with various other tasks, which makes the standardization of certain components more difficult. For future studies, a more structured approach could be helpful, in which the therapists have fixed exercise intervals with brief mindfulness exercises on a daily basis, and have to fill out daily logs. Fourth, mindfulness is conceived as a 'trait' by some authors, and is thus regarded as not being very sensitive to change [Siegling and Petrides, 2014]. However, it should be pointed out that relevant changes in mindfulness have been found in many clinical trials, including the detection of mindfulness with the KIMS [Kuyken et al., 2016]. Fifth, the KIMS is primarily oriented toward the DBT concept, while MBCT was used as the basis of the present study. Alternative measurement instruments, such as the Mindful Attention and Awareness Scale [Michalak et al., 2008], which focus more on the here-and-now facet of mindfulness in everyday life, might more closely reflect changes. Sixth, only therapy instructors at a university institute were included in the study. Generalization of the findings to other settings needs to be clarified in future research. Seventh, the validity of the detection of mindfulness with standardized questionnaires has been critically questioned [Hemanth and Fisher, 2015; Moore, 2008]. Thus, it was particularly important that the quantitative data of this study was backed up by qualitative interviews.

Conclusion

The objective of this study was to evaluate a theory-practice network in behavioral therapy training. More specifically, we studied the interface among training, self-discovery, and integration into treatment, using the example of mindfulness. The mindfulness program presented here showed positive qualitative experiences of mindfulness, consistent with previous studies. The combination of curricular mindfulness workshops and standardized session-introducing exercises was seen as meaningful, although no clinical effects were shown. Future research should investigate such theory-practice networks in other areas (e.g., PMR, compassion). In addition to positive feasibility and acceptance effects, clinically relevant effects might be identified.

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Ethics Committee Approval

The Ethics Committee of the Faculty of Behavioral and Empirical Cultural Sciences of the University of Heidelberg approved the study, in line with the current version of the Helsinki Declaration. A consent form was obtained from all patients and therapists.

Online Supplemental Material

Online Supplemental Material To access the supplemental text, please refer to *www.karger.com/?DOI=455163*.

Online Supplemental Videos To access the supplemental videos, please refer to *www.karger.com/?DOI=455163*.

Disclosure Statement

The authors state that there is no conflict of interest.

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