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Promoting Mindfulness in Psychotherapists in Training Influences the Treatment Results of Their Patients: A Randomized, Double-Blind, Controlled Study

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Key Words
Psychotherapy, mindfulness · Zen training · Therapeutic results · Training of psychotherapists

Abstract
Background: All therapists direct their attention in some manner during psychotherapy. A special form of directing attention, 'mindfulness', is recommended. This study aimed to examine whether, and to what extent, promoting mindfulness in psychotherapists in training (PiT) influences the treatment results of their patients. ***Methods:*** The therapeutic course and treatment results of 124 inpatients, who were treated for 9 weeks by 18 PiTs, were compared. The PiTs were randomly assigned to 1 of 2 groups: (i) those practicing Zen meditation (MED; n = 9 or (ii) control group, which did not perform meditation (noMED; n = 9). The results of treatment (according to the intent-to-treat principle) were examined using the Session Questionnaire for General and Differential Individual Psychotherapy (STEP), the Questionnaire of Changes in Experience and Behavior (VEV) and the Symptom Checklist (SCL-90-R). ***Results:*** Compared to the noMED group (n = 61), the patients of PiTs from the MED group (n = 63) had significantly higher evaluations (according to the intent-to-treat principle) for individual therapy on 2 STEP scales, clarification and problem-solving perspectives. Their evaluations were also significantly higher for the entire therapeutic result on the VEV. Furthermore, the MED group showed greater symptom reduction than the noMED group on the Global Severity Index and 8 SCL-90-R scales, including Somatization, Insecurity in Social Contact, Obsessiveness, Anxiety, Anger/Hostility, Phobic Anxiety, Paranoid Thinking and Psychoticism. ***Conclusions:*** This study indicates that promoting mindfulness in PiTs could positively influence the therapeutic course and treatment results in their patients.

Introduction

The task of a psychotherapist is highly complex, involving simultaneous perception of the patient's verbal and nonverbal expressions, self-regulation of one's own perceptions and management of countertransference reactions [1, 2]. Thus, all psychotherapists must direct their attention to the best possible advantage during therapy [3, 4].

To the best of our knowledge, only Sigmund Freud [5] and the hypnotherapists Arthur Deikmann, Milton E.

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Erickson und Stephen G. Gilligan [6] have offered insights regarding this common problem. Freud [5] recommended ungrounded attention, unintentionality, apathy without therapeutic ambition, low activation of attention, as well as discarding one's own expectations or tendencies. Deikmann, Erickson and Gilligan investigated outwardly directed interpersonal trace experiences, in which the psychotherapist directs attention to the patient and abandons usual analytical processes of thought and perception [6]. According to Gilligan, an essential element is that the psychotherapist relaxes his own physical and emotional tensions and pays attention to his respiration [6].

A special form of directing attention is Zen Buddhist mindfulness. In this method, attention is directed to the 'present moment' , and is 'on purpose and non-judgmental' [7]. Mindfulness was historically developed in the Buddhist practice of meditation [4], but during the 1980s and 90s it was increasingly integrated into psychotherapeutic treatment approaches [8, 9]. Self-experience and self-regulation are emphasized in psychotherapists' training [6, 10, 11] because of their reciprocally beneficial influence on self-reflection [12] and possible benefits in therapeutic outcomes. However, to our knowledge, the direct influence of promoting mindfulness in psychotherapists on their patients' psychotherapeutic results has not been examined. Most studies evaluating techniques of psychotherapists concentrate exclusively on patient intervention [13–18]. Thus, the aim of this study was to assess whether the promotion of mindfulness, through daily Zen meditation, in psychotherapists in training (PiTs) influences the treatment results of their patients.

Methods

Study Location and Subjects

The study was performed in the Inntalklinik, Simbach am Inn, Germany, which is a licensed training institution for depth-psychology-based psychotherapy and is integrated into a ≥200 bed psychosomatic hospital. This study involved PiTs who had the equivalent of a bachelor's degree in psychology and were in their second year of internship. An internship of at least 3 years following their university studies is a requirement for all psychologists who want to work as psychotherapists in Germany. Essential elements of this training are theory, self-experience and practical therapeutic work, under supervision, and PiTs are usually evaluated by their therapeutic results.

PiTs who were currently taking part in meditation on their own initiative, or who had more than 3 absences from meditation (see 'Study Design'), were to be excluded from the study; however, none of them met the exclusion criteria and all remained in the study. Based on the number of PiTs and our statistics on the average hospital occupancy, we estimated the time necessary for the study duration as 2 phases of 9 weeks (2 months) each. All patients treated by the PiTs at the time of the study were included.

Assessment

The admission diagnoses were qualified by means of Structured Clinical Interviews (SCID I and II) according to ICD-10. The questionnaires included sociodemographic data, the Session Questionnaire for General and Differential Individual Psychotherapy (STEP), the Questionnaire of Changes in Experience and Behavior (VEV) and the Symptom Checklist (SCL-90-R).

The STEP is a German questionnaire that economically records the various, general influencing factors in the psychotherapeutic process and its effects from the perspective of the patients. The 12 items directly relate to the experience of a therapy session in an individual setting and form 3 subscales: clarification, problem solving and relationship perspectives. Directly following a therapy session, the patients use a 7-step answer scale to rate how applicable the respective statements are to their experiences (Cronbach's α between $r = 0.71$ and $r = 0.91$). The scale's raw values are transformed into T values [19].

The VEV is a German questionnaire on quantitative assessment of subjectively perceived changes in experience and behavior between the poles of relaxation, stoicism and optimism on the one hand and tension, insecurity and pessimism on the other. Change is surveyed with respect to differing situations: general mode of experience (more quiet, more cheerful, more open, more at odds with oneself), behavior in social situations (more independent from others, more easygoing in contact with others, more pronounced isolation, more open speech, more difficult to establish contact), and behavior and experience in performance situations (would rather know what one wants to do, difficulties in maintaining composure in conflict situations, less perseverance and quicker to give up, no longer feeling up to the task, no fear of failure). The questionnaire contains 42 questions on change, which record the subject's subjectively perceived conditions in comparative form. A theoretical 0-change, which is virtually identical to the change in an untreated clinical random sample, is present when all the statements on change result, on average, in a sum of 168 points. In validating studies, the variance analysis of the posttest data showed that the differences between the groups were significant on a 0.5% level (multiple validity coefficient $r = 0.72$) [20].

The SCL-90-R measures subjectively perceived impediments through 90 of the person's alleged physical and psychological symptoms during the previous 7 days. Once interpreted, it offers an overview of the person's emotional and symptomatic stress on 9 scales: somatization, obsession/compulsion, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation and psychotism. The Global Severity Index(GSI) is also part of the SCL-90-R and measures basic psychological stress. It can be portrayed on a 5-tiered Likert scale between 'absolutely not' (0) and 'very strong' (4). The transformation of the raw data to T scores, with the sociodemographic factors taken into consideration, makes an oriented classification of the individual case possible. T scores starting at 60 are considered slightly elevated, at 65 obviously, at 70 strongly and at 75 very strongly elevated. In the control group, the internal consistency (Cronbach's α) was between $r = 0.75$ and $r = 0.87$ [21].

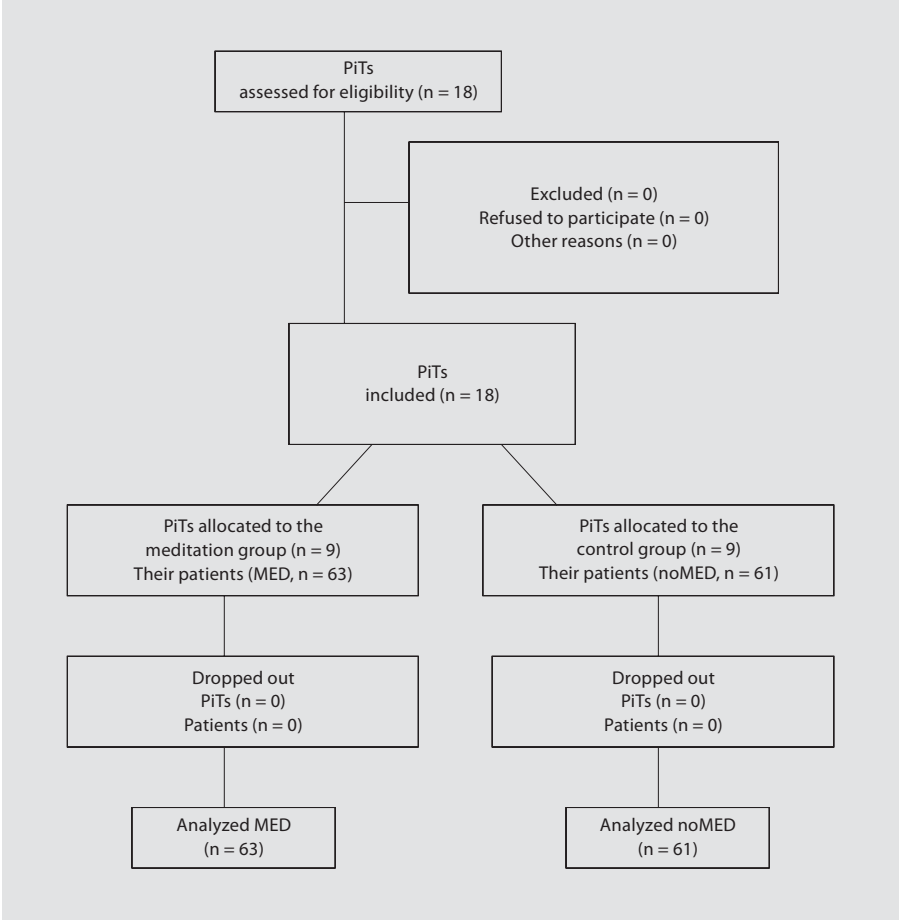

Fig. 1. Summary of PiTs' and patients' progress through the phases of the trial.

Study Design

Eighteen PiTs took part in the study. The PiTs were randomly selected for the Zen meditation group (MED, n = 9) or for the control group, which did not practice meditation before therapy sessions (noMED, n = 9). The patients were likewise randomly assigned to the PiTs using the Excel table random numbers. The PiTs from both groups were women (there were no male PiTs in the training period in question) of comparable age (MED: 29.3 ± 3.2; noMED: 30.4 ± 2.9 years; mean ± standard deviation) who had completed the same course of university studies to qualify as psychologists and who were at the same level of training. The pronounced overrepresentation of female psychotherapists is typical of Germany.

Both the patients and the PiTs were blinded to their conditions in that the patients were not informed of changes in PiT training and both PiT groups participated in meditation; the MED group before therapy sessions and the control group at another point of time. The fact that introducing Zen meditation at the end of the second year of training was not revealed to the patients was ethical and legally proper. In Bavaria, this meditation training is currently only offered at the Inntalklinik hospital. The psychologists are accepted for the training with the basic provision that the training plan is innovative and can be experimentally adjusted for the purposes of researching the optimal content for the training program. The patients are also aware of this. The objective of the data collection during this training period was first revealed to the therapists and patients after completion of the last test. No objections were raised to further use of the data upon disclosure of the objective. Both participating PiTs and patients were fully informed about the study and written permission was obtained to use data related to the therapy.

The study was carried out in 2005 and 2006. A Japanese Zen master domiciled in Germany, who was likewise unaware of the reasons for introducing Zen meditation at that point in time, led the group meditation [22]. The meditation took place daily before the workday began (Monday through Friday) from 7:00 to 8:00.

The patients of both groups were treated according to an inpatient, integrative psychiatric-psychotherapeutic plan. In the context of this treatment, they took part each week in 2 individual psychotherapeutic sessions (50 min each), 5 group therapy sessions (60 min each), 2 group sessions of gestalt therapy (60 min each), 5 sessions of group body psychotherapy based on psychoanalysis (60 min each), 2 sessions of progressive muscle relaxation based on Jacobson (30 min each), and sports and gymnastic groups (totaling 480 min). In addition, where indicated, individual appointments were given for physical therapy, nutritional counseling, co-therapy or social counseling. Following each indi-

Table 1. Sociodemographic data for patients of the MED and noMED PiT groups

	MED (n = 63)	noMED (n = 61)
Age, years	38.9 ± 10.9	39.8 ± 12.3
Life partnership	37 (58.7)	38 (62.3)
Career		
blue-collar	35 (55.5)	32 (52.4)
white-collar	15 (23.8)	14 (22.9)
homemaker	13 (20.6)	15 (24.6)
Treatment within the previous 2 years		
outpatient psychotherapy	20 (31.7)	22 (34.9)
psychopharmacology	49 (77.8)	47 (77.0)
inpatient psychiatry/psychotherapy	6 (9.5)	7 (11.5)

Figures in parentheses are percentages. Age: mean value ± standard deviation. MED = Group treated by therapists practicing Zen meditation; noMED = control group, in which PiTs did not meditate.

Table 2. Most frequently diagnosed psychiatric diseases in MED and noMED patients

	MED (n = 63)	noMED (n = 61)
Reaction to severe stress and adjustment disorders	30 (47.6)	28 (45.9)
Mood disorders	24 (38.1)	25 (40.9)
Specific personality disorders	14 (22.2)	13 (21.3)
Somatoform disorders	11 (17.5)	12 (19.7)
Anxiety disorders	10 (15.9)	9 (14.7)
Substance abuse	4 (6.3)	5 (8.1)
Obsessive-compulsive disorders	2 (3.2)	2 (3.3)

Figures in parentheses are percentages. MED = Group treated by therapists practicing Zen meditation; noMED = control group, in which PiTs did not meditate.

vidual therapy session, the patients filled in the STEP questionnaire, and after completion of their inpatient treatment, they filled in the VEV form once. The SCL-90-R was carried out at admission and prior to discharge.

As indicated in figure 1, no PiTs dropped out in either group. All patients were included regardless of the duration of their inpatient treatment. The study was concluded according to plan.

Source of Funding and Ethical Considerations

The study was planned and performed in accordance with the Declaration of Helsinki and ethics laws pertaining to the medical professions. The design of this trial was approved by the clinic's 'Ethikkommission' (the German equivalent to the Committee on Human Subjects). The study was conducted independently of any institutional influence and was not funded.

Data Analysis

Data from STEP are presented according to the intent-to-treat principle with means, standard deviations and 95% confidence intervals (95% CI). The results are portrayed as the difference in the scores for the scales and p value for the treatment-by-time effect of the linear mixed-effects model.

For the analysis of the response value time course, we set up a regression model to show trends across time and differences due to treatment (MED vs. noMED). In particular, a 2-level linear mixed-effects regression model was used [23, 24]. The model included a treatment-dependent (quadratic) time trend, modeled by fixed time-by-treatment interaction effects. To account for a possible inter-PiT variation, a random (quadratic) time trend (without vertical shift) was included, and for the inter-patient-intra-PiT variation, a random linear trend (with vertical shift, to model the patient-specific baseline score value) was included. These random effects also accounted for the longitudinal structure of the data (and hence their intra-PiT and intrapatient correlation).

Statistics software S-PLUS 6.0 of the Data Analysis Products Division of MathSoft, Seattle, USA, with the 'nlme' library version 3.3.1 for mixed-effects models by Pinheiro and Bates [24], was used.

Table 3. Changes on all 9 scales (T values) and the GSI of the SCL-90-R

	SOM	O-C	I-S	DEP	ANX	HOS	PHOB	PAR	PSY	GSI
Initial MED (n = 63)	69.5 ± 11.7	67.9 ± 14.0	64.6 ± 13.4	72.5 ± 9.0	68.5 ± 12.0	66.8 ± 9.8	65.5 ± 13.0	63.2 ± 12.6	63.1 ± 10.7	72.6 ± 6.8
noMED (n = 61)	59.6 ± 10.3	62.7 ± 9.8	60.4 ± 14.0	65.9 ± 9.7	62.6 ± 11.4	61.2 ± 11.1	61.4 ± 11.2	59.4 ± 11.8	61.4 ± 9.5	65.6 ± 10.4
Final MED (n = 63)	54.1 ± 10.7	49.0 ± 12.1	48.5 ± 10.0	49.3 ± 10.5	52.9 ± 10.5	49.3 ± 10.8	50.6 ± 10.4	51.3 ± 10.7	49.1 ± 10.1	50.7 ± 10.5
noMED (n = 61)	59.3 ± 10.1	58.9 ± 10.9	56.1 ± 12.9	60.5 ± 9.9	58.8 ± 10.8	57.9 ± 8.4	55.5 ± 11.6	55.8 ± 11.9	57.1 ± 9.1	60.1 ± 9.6
DF	14.1	15.1	11.8	17.8	11.8	14.2	14.2	8.3	9.7	16.4
95% CI	9.2–18.9	9.5–20.7	6.2–17.3	13.2–22.5	6.8–16.8	9.1–19.4	0.5–14.2	–0.9–13.7	5.6–13.8	12.0–20.6
p	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.048	0.16	<0.01	<0.01

Values are means ± standard deviation. MED = Group treated by therapists practicing Zen meditation; noMED = control group, in which PiTs did not meditate; DF = difference in change between the 2 groups and its 95% CI; p = probability of error for the treatment by time effect within the linear mixed model; SOM = somatization; O-C = obsessiveness; I-S = insecurity in social contact; DEP = degree of depression; ANX = anxiety; HOS = aggressiveness/hostility; PHO = phobic anxiety; PAR = paranoid thinking; PSY = psychoticism.

Table 4. Changes on all 3 scales (T values) of the STEP

	Clarification perspective	Problem-solving perspective	Relationship perspective
Initial MED (n = 63)	46.7 ± 12.4	44.3 ± 13.4	53.0 ± 18.4
noMED (n = 61)	48.6 ± 7.9	46.4 ± 9.8	54.2 ± 14.7
Final MED (n = 63)	70.8 ± 11.5	70.7 ± 13.0	72.2 ± 14.0
noMED (n = 61)	55.8 ± 10.1	57.0 ± 10.0	66.6 ± 13.2
DF	16.9	15.8	6.8
95% CI	11.2–21.9	10.2–21.2	–0.6 to 12.9
p	<0.01	<0.01	0.091

Values are means ± standard deviation; MED = Group treated by therapists practicing Zen meditation; noMED = control group, in which PiTs did not meditate; DF = difference in change between the 2 groups and its 95% CI; p = probability of error for the treatment by time effect within the linear mixed model.

Results

Patients in the MED and noMED PiT treatment groups consisted of approximately 20% men and 80% women. This prominent overrepresentation of female patients is typical of our hospital. The sociodemographic data from both groups are represented in table 1 and the most frequent psychiatric disorders in table 2. Table 3 shows the comparison of the sociodemographic data, the psychiatric diagnoses and the initial assessments with SCL-90-R, allowing comparison of the 2 groups. The linear mixed-effects model showed a significant ($p < 0.01$) treatment-by-time effect in the 2 STEP scales clarification and problem-solving perspectives (table 4). The MED and noMED groups did not differ in how they assessed the other STEP scale, relationship perspective, both patient groups performed similarly well on this measure [19, 25]. Likewise, significant treatment-by-time interaction effects were identified on the VEV [MED (n = 63): VEV = 224.9 ± 34.9; noMED (n = 61): VEV = 209.3 ± 23.8; $p < 0.01$].

Comparing symptom reduction on the GSI and 8 SCL-90-R scales (somatization, insecurity in social contact, obsessiveness, anxiety, anger/hostility, phobic anxiety, paranoid thinking and psychoticism) showed significantly better results in the MED than in the noMED

group (table 3). On the other hand, the MED group did not differ from the noMED group in their perception of distrust and the feeling of being used (paranoid thinking) [21].

Discussion

Patients treated by PiTs who regularly participated in Zen meditation before therapy sessions scored significantly higher on their assessment of individual therapy (on 2 of 3 STEP scales: clarification and problem-solving perspectives) than patients treated by PiTs that did not meditate before sessions. Immediately following therapy sessions, the MED group subjectively experienced progress in a number of areas. They better understood their own psychodynamics, the structure, phenomenology and characteristics of their difficulties, and the possibilities and goals of their development. They also made better assessments of their subjective progress in overcoming their difficulties and symptoms, their development of new behaviors and implementation in daily life.

Furthermore, the subjectively perceived results of the entire inpatient treatment (VEV) were significantly better for the MED than the noMED patients [20]. The MED group changed significantly more than the noMED on the GSI and 8 SCL-90-R scales.

These results suggest that the promotion of mindfulness in PiTs positively affects the course of therapy and the treatment results in their patients [26, 27]. At any rate, the patients were treated not only with individual psychotherapy but also with numerous other therapeutic tasks [28].

Promoting the use of the 'psychotherapist as an instrument' has long been neglected in favour of psychotherapeutic techniques and in training psychotherapists [29]. Our study using PiTs, who are completing their training program to be licensed as psychotherapists, showed that the directed promotion of mindfulness could positively affect the therapeutic outcome [27–30]. One methodological limitation of the current study is that the Zen training here was not tested against a placebo intervention. Furthermore, whether the potency of the meditation effect would increase with increased meditation time needs to be investigated. Moreover, additional research, in which larger numbers of PiTs and experienced therapists participate, is necessary to test the extent to which our results can be generalized. In all, promoting mindfulness in psychotherapists shows promise as a useful tool for improving the treatment results of their patients and, if further research concords, should be adopted as part of psychotherapeutic training procedures and practices.

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