

Mindfulness-Based Interventions in People with Psychotic Disorders: An Overview of the State of Research Concerning Efficacy and Implications for Clinical Practice

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Keywords

Mindfulness · Psychotic disorders · Cognitive behavioral therapy · Implications · Efficacy

Abstract

Mindfulness-based interventions (MBI) represent a central pillar of the third wave of Cognitive Behavioral Therapy. In recent years, MBI have been implemented in treating patients with psychotic disorders, and their efficacy has been evaluated in a small number of randomized-controlled trials (RCTs). This narrative review presents the current state of research on the efficacy and effectiveness, as well as central aspects of the clinical applications of MBI in the treatment of patients with schizophrenia and primary psychotic disorders. Current meta-analyses show different results but concur that in comparison to controls with treatment-as-usual (TAU) and in Pre-Post-Analyses, MBI show promising results in reducing the, in regards to pharmacotherapy, difficult to treat negative ($g = 0.56$ and $g = 0.75$) and positive symptoms ($g = 0.19$ and $g = 0.32$) with effect sizes between small and large. In addition, MBI can lead to positive effects on depressive and anxiety symptoms ($g = 0.20$ and $g = 0.43$) and contribute to a long-term reduction in re-hospitalization rates 12 months post-discharge and a shortening of the duration of inpatient treatment. In contrast to psychotherapy research from the UK, Australia, and Hong Kong, the scientific evaluation and implementation of mindfulness-based treatment options in the entire German-speaking area are still in the early stages.

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Achtsamkeitsbasierte Interventionen für Menschen mit psychotischen Störungen: Ein Überblick über den Forschungsstand zur Wirksamkeit und Implikationen für die klinische Praxis

Schlüsselwörter

Achtsamkeit · Psychotische Störungen · Schizophrenie · Kognitive Verhaltenstherapie · Implikationen · Wirksamkeit

Zusammenfassung

Achtsamkeitsbasierte Interventionen (AI) stellen mittlerweile eine zentrale Säule der dritten Welle der Kognitiven Verhaltenstherapie dar. In den letzten Jahren wurden AI bei Patient*innen mit psychotischen Störungen implementiert und deren Wirksamkeit im Rahmen von einer kleineren Anzahl von randomisiert-kontrollierten Studien (RCTs) gezeigt. Der vorliegende narrative Übersichtsartikel stellt den aktuellen Stand der Forschung zur Effektivität, sowie zentrale Aspekte der klinischen Anwendungen von AI bei der Behandlung von Patient*innen mit Schizophrenien und primären psychotischen Störungen dar. Aus aktuellen Metaanalysen lässt sich trotz der Heterogenität der Studienergebnisse schlussfolgern, dass AI im Rahmen von RCTs des Vergleichs einer Kontrollgruppe mit einer gewöhnlichen zumeist psychopharmakologischen Behandlung (treatment-as-usual, TAU) und in Prä-Post-Intervention Analysen zu einer Verbesserung der oft schwer zu behandelnden Negativsymptomatik ($g = 0,56$

und $g = 0,75$) oder Positivsymptomatik ($g = 0,19$ und $g = 0,32$) mit leichten bis großen Effektstärken führen können. Weiterhin wurden auch positive Effekte auf depressive und ängstliche Symptome ($g = 0,20$ und $g = 0,43$), sowie eine Reduktion der Rehospitalisierungsraten 12 Monate nach Entlassung und eine Verkürzung der stationären Behandlungsdauer beobachtet. Im Gegensatz zur Therapieforschung aus dem Vereinigten Königreich, Australien oder Hong Kong befinden sich die wissenschaftliche Evaluation und Implementierung von achtsamkeitsbasierten Behandlungsmöglichkeiten im gesamten deutschsprachigen Raum noch in einem frühen Stadium.

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Introduction

Mindfulness derives historically mostly from the traditions and practices of Buddhism and Hinduism. It may be defined as a psychophysiological state of intentional, nonjudgmental, and conscious perception of the present [Heidenreich and Michalak, 2003]. By paying attention to the present moment (the so-called “here and now”), a distancing experience from thoughts, feelings and body sensations is possible. This form of trainable attention control serves the goal of achieving a state of “loving and accepting attention” to the present situation [Michalak and Heidenreich, 2005, p. 415]. Formal meditation practices, mostly conducted for extended periods of time with the eyes closed and in a seated position, were a cultural starting point for mindfulness-based interventions (MBIs). During meditation, emerging thoughts and feelings are to be perceived by the observer without an intention of active change, suppression, or avoidance. The more flexible and informal mindfulness practice used in MBI allows these practices to be transferred to everyday settings. What they have in common is an attitude that can be learned, which makes it possible to experience a harmony of thoughts, feelings, and experiences. Based on scientific work since the early 1980s [Kabat-Zinn, 1982], the principles of mindfulness have been increasingly integrated into clinical therapeutic procedures such as cognitive behavioral therapy (CBT). MBI has contributed significantly to an expansion of the repertoire since the description of CBT in the mid-1960s by Aaron Beck [Beck, 1979]. What was later named the heterogeneous “third wave” of CBT is characterized by a focus on emotions and skills, including the more flexible integration of mindfulness-based elements [Heidenreich and Michalak, 2003]. Mindfulness is used in this context as an approach to perceiving inner experiences, to experience a profound understanding and acceptance of one’s own mental-emotional state without directly seeking a specific direction of change or even a mental reassessment.

Mindfulness in Psychotherapy

Two essential basic principles of mindfulness and meditation practice are “decentered awareness”: the ability to step out of one’s own immediate experience, and acceptance of one’s present experience in “the here and now” (“experience of the present moment”). In the context of MBI, these key processes lead to a reduction of distress and can improve the quality of life [Segal et al., 2018]. “Metacognitive insights” during and after the sessions are another aspect whereby participants learn to look at thoughts as events in the mind and not as reflections of external reality or the self. MBI encourages psychological flexibility, an open, nonjudgmental attitude toward the full range of inner experiences. This creates spaces of opportunity to observe one’s own behavior in accordance with one’s inner values and to flexibly change or maintain it depending on the context. Furthermore, skills for emotion regulation are promoted and a more flexible self-image is developed [Spidel et al., 2018]. A mindful attitude toward constantly changing environmental challenges [Van Os et al., 2010] as well as life circumstances help patients to act according to their values, while recognizing emotions and symptoms in a nonjudgmental way in order to reduce possible distress.

In the development of MBI, the Mindfulness-Based Stress Reduction (MBSR) program was the first major step in the integration of mindfulness principles into clinical psychology [Kabat-Zinn, 1990]. MBSR describes an approach to stress management through mindfulness exercises that mobilize participants’ inner resources and train patients to adopt a mindful attitude in everyday life and towards stressful conditions of life. A randomized controlled study [Sundquist et al., 2015] demonstrated the efficacy of MBSR in patients who suffer from various stress-related mental disorders such as anxiety disorders, depression, and chronic pain disorders.

Segal et al. [2018] expanded the existing MBSR program with elements of cognitive-behavioral therapy in order to offer Mindfulness-Based Cognitive Therapy (MBCT) for acute depressive episodes and prevention of their relapse.

The efficacy of MBCT in depressive disorders was studied in a randomized-controlled trial (RCT) [Segal et al., 2010] and in two meta-analyses [Kuyken et al., 2016; Lenz et al., 2016]. In the RCT by Segal et al. [2010], there were 160 participants with a recurrent depressive disorder and at least two episodes in the past. After 8 months of observation while on antidepressant pharmacological therapy, study participants who had achieved clinical remission ($N = 84$) were divided into three study arms. The first group continued on maintenance antidepressant medication (ADM), while the second and third groups

tapered off the medication and either attended 8-week MBCT groups or received a placebo medication. Eight weeks later, equivalent results were shown in the MBCT group and the ADM group with regard to the severity of the depressive symptoms and the rate of relapse. “Unstable remitters” (HAMD score >8 at least once) in the MBCT group showed a 73% reduction in the rate of recurrence compared to the placebo group ($p = 0.03$). In a meta-analysis [Kuyken et al., 2016], a total of nine RCTs were evaluated ($N = 1,329$) and comparisons were made between MBCT versus all other treatments except MBCT; MBCT versus active treatments (ADM and psychological training); and MBCT versus ADM. The primary outcome was recurrence within 60 weeks, which was recorded with the “Structured Clinical Interview for DSM-IV or DSM-V (SCID).” Comparing the MBCT group with the groups using all other treatments except MBCT, a reduction was observed in the recurrence rate (hazard ratio, 0.69; 95% CI, 0.58–0.82). It was also shown that 60 weeks after the start of therapy, the MBCT treatment led to a reduction in the recurrence rate (hazard ratio, 0.79; 95% CI, 0.64–0.97) compared to the active control groups. The results in reduction of depressive symptoms and recurrence rate at a similar level to ADM were also confirmed by the meta-analysis by Lenz et al. [2016], which comprised a total of 31 RCTs (30 peer-reviewed and 1 dissertation). Furthermore, Kuyken et al. [2010] showed in an RCT that participants in the MBCT groups reported an increased sense of mindfulness and self-compassion, and the severity of their depressive symptoms was reduced comparably to ADM alone over a 15-month period. The efficacy of MBCT in the treatment of other mental disorders such as anxiety disorders, eating disorders, and ADHD has been corroborated in several RCTs [Goldin and Gross, 2010; Katterman et al., 2014; Mitchell et al., 2015] and also by meta-analyses [Khoury et al., 2013a].

In addition to MBCT, Acceptance and Commitment Therapy (ACT) [Johns et al., 2016] and Compassion Focused Therapy (CFT) [Heriot-Maitland et al., 2019] make use of mindfulness elements. ACT is an approach from the third wave of CBT, which aims to reduce avoidance behavior through acceptance of the current situation, and at the same time to promote value-oriented action through commitment. CFT focuses on compassion towards oneself and one’s current stressful life circumstances, with the goal of reducing suffering through acceptance and openness to stressful experiences. Both ACT and CFT, as extensions of CBT, are characterized by the integration of mindfulness principles and an accepting attitude towards the experienced symptoms. Meta-analyses were also able to show the efficacy of these two third-wave psychotherapeutic methods in the treatment of primary psychotic disorders (PPD) [Khoury et al., 2013b; Louise et al., 2018; Jansen et al., 2020].

Current research confirms the efficacy of MBI for a variety of mental disorders and also in some often comorbid somatic diseases, including stress-related skin diseases such as atopic dermatitis [Offenbacher et al., 2021], chronic pain disorders [Hilton et al., 2017], and breast cancer [Zhang et al., 2016]. MBI for the treatment of mental disorders is now specified in the guidelines of the United Kingdom (NICE – UK National Institute for Health and Clinical Excellence) and Canada (CANMAT – Canadian Network for Mood and Anxiety Treatments) [National Institute for Health and Care Excellence, 2014; Parikh et al., 2016]. In Germany, the Deutsche Gesellschaft für Psychiatrie und Psychotherapie, Psychosomatik und Nervenheilkunde (DGPPN) (German Society for Psychiatry and Psychotherapy, Psychosomatics and Neurology) recommends MBI for example for treatment and relapse prevention of affective disorders in the current S3 guideline, as part of the CBT procedure [Schneider et al., 2017].

Primary Psychotic Disorders

According to the current understanding, PPDs are characterized by changes in perception, feeling, and thinking, as well as changes in affectivity and social experience and behavior [Guloksuz and Van Os, 2018]. Since PPD comprises a heterogeneous group of syndromes presenting individual clinical pictures, ICD-11 introduced dimensional descriptions (“descriptors”) instead of the concise types of schizophrenia still used in ICD-10, which pertain to the prevailing psychological symptomatology at the time of examination [Reed et al., 2019]. Among the symptoms of PPD, according to the five dimensions of the DSM-V, are positive symptoms with delusions, hallucinations, disorganized thinking and behavior, possible ego disorders, as well as negative symptoms, affective symptoms, and cognitive disorders.

The great heterogeneity in occurrence and severity of the psychotic symptom spectrum, as well as recent epidemiological research that studied the occurrence of positive psychotic symptoms in the general population [Guloksuz and Van Os, 2018], support the understanding of psychotic disorders as a continuum. A representative study showed that 8% of the general population reported at least brief subclinical psychotic experiences, including severe suspiciousness, delusions, and hallucinations. These temporary individual symptoms often do not meet any diagnostic criteria, so the prevalence of primary psychotic disorders or syndromes was estimated at 3% according to a rather broad definition [Guloksuz and Van Os, 2018]. These findings indicate that a primarily dichotomous and categorical representation of “healthy” and “ill” does not correspond to the reality of human life, but that psychotic symptoms, like all mental symptoms, are

better understood along a continuum. This understanding, especially with an often episodic course of PPD symptomatology, is reflected in the current ICD-11 classification, in which the previous ICD-10 group F2x “Schizophrenia, schizotypal and delusional disorders” is reassigned under the category “Schizophrenia and other primary psychotic disorders” [Reed et al., 2019].

Current Treatment Guidelines

The German S3 guidelines of the DGPPN [Gaebel et al., 2019] recommend various treatment methods for PPD, including the combination of psychopharmacological approaches with psychotherapeutic methods. Despite the central role and good efficacy of antipsychotic drugs, especially for positive symptoms and to prevent recurrence, low effect sizes are achieved in relation to negative symptoms, cognitive disorders, and social functioning [Huhn et al., 2019]. Furthermore, depending on the substance class, pharmacotherapy is associated with adverse effects in many patients, particularly with regard to weight gain, sedation, motor disorders, and sexual function disorders [Huhn et al., 2019]. Because of the heterogeneous classes of antipsychotic medication, a precise individual adjustment of the therapy, considering the symptoms and especially the side effects, is always recommended [Leucht et al., 2013]. Classification according to symptom severity in the ICD-11 or classification in five dimensions in the DSM-V provides a further prerequisite for more individualized therapies, based on a cross-sectional continuum of individual symptom domains.

Along with the recommendations of the DGPPN’s S3 guidelines [Gaebel et al., 2019] and the national guidelines from the United Kingdom [National Institute for Health and Care Excellence, 2014], a recent meta-analysis [Bighelli et al., 2021], which also covers ACT and mindfulness, also confirms that the effectiveness and efficiency of treatment are improved through a combination of pharmacotherapy and psychosocial interventions. The psychosocial interventions recommended in the S3 guidelines include CBT (recommendation grade A), psychotherapeutic family interventions (recommendation grade A), and structured psychoeducation as part of an overall treatment plan (recommendation grade A). The guidelines of the Bundespsychotherapeutenkammer (BPTK) (Federal Chamber of Psychotherapists) [Bundespsychotherapeutenkammer (BPTK), 2019], which are based on the S3 guidelines, as well as the guidelines of the Deutsche Gesellschaft für Psychologie (DGP) (German Society for Psychology) [Lincoln et al., 2019] also recommend CBT (recommendation grade A), metacognitive training (recommendation grade B), and psychoeducation (recommendation grade A) for the psychotherapeu-

tic treatment of people with PPD. Bechdolf and Klingberg [2014] pointed out, however, that patients with PPD accounted for only 1% of outpatient psychotherapeutic patients in Germany. The great majority of people with PPD (94%) receive primarily pharmacological therapy [Bechdolf and Klingberg, 2014; Bundespsychotherapeutenkammer (BPTK), 2014]. Another challenge in PPD therapy is the low adherence to antipsychotic-pharmacological therapy on the part of many patients [Kane et al., 2013]. With the current treatment, only one-third (29%) of patients achieve complete remission within 1 year [De Hert et al., 2007], while the average rehospitalization rate after inpatient admission between the first and second year is 40% [Zimmermann et al., 2011]. The current literature indicates that interventions such as psychoeducation of patients and family members increase adherence to medication [Zygmunt et al., 2002; Çetin and Aylaz, 2018; Bighelli et al., 2021]. The DGPPN S3 guidelines [Gaebel et al., 2019] and the BPTK guidelines [2019], therefore, recommend structured and sufficiently long psychoeducation to improve the treatment outcome and course of the disease, which should take place in groups if possible. It is also recommended, especially if there is an acute worsening of the disorder or after a relapse, to involve family members or trusted persons in the psychotherapeutic treatment (recommendation grade A) and in psychoeducational interventions [Bundespsychotherapeutenkammer (BPTK), 2019]. However, previous data collection showed that in German-speaking countries, only 21% of people with PPD and 2% of family members receive psychoeducational interventions [Rummel-Kluge et al., 2006]. In sum, there is currently a definite gap in implementation of the current guidelines with regard to psychotherapeutic treatment in the German-speaking countries with methods such as CBT, but also in psychoeducation, especially in outpatient treatment [Bechdolf and Klingberg, 2014], which applies to the “third wave” approaches at least to the same extent.

Mindfulness-Based Approaches in People with Primary Psychotic Disorders

The overarching goal of MBI for people with PPD is to develop a conscious relationship with their own feelings, thoughts, and perceptions. This also includes psychotic experiences, even if individual MBIs differ in their content and implementation [Böge et al., 2020a]. Paul Chadwick, through his research in the United Kingdom, has been one of the most important pioneers since the early 2000s in introducing mindfulness principles into therapy for patients with PPD [Chadwick, 2006]. An important assumption in Chadwick’s explanatory model for the maintenance of psychotic experiences is that the experi-

ence of psychotic symptoms often triggers implicit and automated responses (rumination, worry, delusional explanations, confrontation, and avoidance). The resulting avoidance behavior then serves the purpose of blocking out or eliminating such distressing experiences as quickly as possible [Chadwick et al., 2005]. The model now assumes that a negative emotional appraisal of psychotic symptoms and the resulting stress response causes patients to remain trapped in an automatic, yet dysfunctional, response pattern. This “vicious circle” promotes coping strategies that are effective in the short term but dysfunctional in the long term, such as rumination or the avoidance of negative emotions, and at the same time fosters irritable or aggressive states with regard to psychotic symptoms, as well as low self-esteem [Chadwick et al., 2005]. The term “autopilot mode” [Kabat-Zinn, 1990] describes a state lacking in awareness in which a person reacts automatically to internal and external stimuli. MBIs, on the other hand, promote a mindful and accepting attitude towards one’s own feelings and thoughts, instead of staying in “autopilot mode.” They facilitate awareness of automatic reactions and targeted influencing of automated stimulus–response patterns. Avoidance of negative emotions is replaced by nonjudgment, which at the same time promotes patients’ ability to act more autonomously and deliberately. For patients with PPD, Chadwick’s Person-Based Cognitive Therapy (PBCT), with the integration of mindfulness principles into CBT for Psychotic Disorders (CBTp), was an important step in the implementation of MBI [Chadwick, 2006]. PBCT is based on the therapeutic process of “radical collaboration” between the therapist and the patient. The approach also integrates methods of Rogers’ client-centered psychotherapy, in which a therapist adopts a nondirective attitude and bases the therapeutic alliance on congruence, empathy, and unconditional esteem. PBCT is based in particular on delusional explanatory models evoked by auditory hallucinations, as well as on symptomatic meaning, i.e., the affected person’s subjective explanation, evaluation, and attribution of significance to psychotic symptoms. The resulting inner worlds of experience and explanatory models, which are often based on dysfunctional responses, as well as the way in which patients deal with their own symptoms, their “relationship with internal experience,” also play a central role. In the therapeutic context, self-schemata that define one’s experience as negative and fixed are modulated (“schemata and symbolic self”) [Chadwick, 2006]. In therapeutic cooperation, it should be possible to change the inner relationship to primary-productive psychotic symptoms (hallucinations, delusions, ego disturbances) and the responses based on them, and thus to reduce the psychotic symptoms caused by them such as delusional explanatory models. The development of a more flexible and accept-

ing self-image can lead thereby to a reduction in distress, the development of inner resources and self-efficacy, and ultimately to an improved quality of life.

Based on the evidence from RCTs and meta-analyses, mindfulness-based approaches, such as ACT, CFT, and MBCT, are increasingly used in the treatment of various psychiatric disorders, such as depression and anxiety disorders, and are currently also recommended for the treatment of PPD in the United States [American Psychiatric Association (APA), 2020]. From a global perspective, another mindfulness-based therapy program for PPD was introduced in Hong Kong, the Mindfulness-Based Psychoeducation Program (MBPP), developed as a synthesis between Chien and Lee’s psychoeducational program and Kabat-Zinn’s MBSR [Chien and Lee, 2013]. It is a classic psychoeducational program in group format, which has been expanded to include mindfulness-based elements. Two group sessions are held per week over a total of 14 weeks, with a maximum duration of two hours, and the number of participants is set at five to six patients per group. Through a better understanding of the experienced symptoms based on the psychoeducation supplemented with mindfulness elements, the patients are able to adopt an accepting and mindful attitude towards the current situation and the experience of psychotic symptoms.

Research on Efficacy

The effect of mindfulness on PPD has been documented in RCTs [Chien and Thompson, 2014; Chadwick et al., 2016; Spidel et al., 2018] and in several meta-analyses [Khouri et al., 2013b; Cramer et al., 2016; Louise et al., 2018; Jansen et al., 2020]. Chadwick et al. [2016] studied the efficacy of PBCT for psychotic disorders for the first time in a single-blind group format RCT. There were 108 participants randomized into two groups to receive either group PBCT and treatment as usual (TAU) or TAU only. While no significant effects were observed on the study’s primary outcome measure (general psychological distress), the results showed a significant improvement in voice-related distress, perceived controllability of voices, and recovery in the PBCT group in comparison to TAU. Participants in the PBCT group continued to report significantly lower levels of depression after treatment, with this effect still observed 6 months later.

Chien and Thompson [2014] investigated the efficacy of MBPP in outpatient therapy for PPD in a multicenter RCT. The 107 patients with diagnosed schizophrenia in the study were divided into three study arms. Of these, 36 received 6 months of mindfulness-based psychoeducation, 35 received a conventional psychoeducation program (CPEP), and 35 received routine care alone. Routine

care included medical counseling and treatment by psychiatrists, counseling and education on medications, social assistance and financial support by social workers, and individual and family counseling by clinical psychologists. The MBPP group received, in addition to routine care, 12 two-hour MBPP sessions in groups of 11–13 patients, every 2 weeks for 6 months. The results showed that the MBPP group reported statistically significant improvements compared to the CPEP group (Brief Psychiatric Rating Scale [BPRS]) on the Insight and Treatment Attitudes Questionnaire (ITAQ), the Specific Levels of Functioning Scale (SLOF), and the severity of psychiatric symptoms, while a reduction in rehospitalization rates was also observed.

An RCT [Spidel et al., 2018] evaluated the efficacy of ACT in people with a history of PPD and childhood traumas. A total of 50 participants who met the inclusion criteria were recruited. The ACT group received 10 sessions of ACT in addition to treatment as usual. It was shown that the severity of the symptoms, both in relation to the totality of the psychiatric symptoms (BPRS scale) and specifically with regard to anxiety symptoms (GAD scale), decreased over the course of the treatment. It was further reported that the participants' ability to regulate and accept their own emotional responses improved.

The efficacy of MBI for PPD was first studied meta-analytically in 2013 by Khoury et al. [2013b]. Given the state of the literature at the time and the still very limited number of studies available, all studies were selected that examined the pre-post or controlled effects of clinical interventions and that used any mindfulness protocol for psychotic disorders (e.g., ACT, MBCT, PBCT, and MBPP). After selection based on the inclusion and exclusion criteria, a total of 13 studies and systematic reviews ($N = 468$ participants) were included in the analysis. The results of the analysis confirmed that mindfulness interventions displayed moderate effect sizes in pre-post analyses with respect to mindfulness ($n = 5$; Hedge's $g = 0.99$), negative symptoms ($n = 4$ studies; Hedge's $g = 0.75$), and psychosocial functionality ($n = 4$; Hedge's $g = 0.51$). However, compared to a TAU control group, the effect size for improvement of negative symptoms was lower ($n = 3$; Hedge's $g = 0.56$). The results of the pre-post analyses in this case also signified greater effects on negative symptoms ($n = 4$; Hedge's $g = 0.75$) than on positive symptoms ($n = 7$; Hedge's $g = 0.32$).

In 2016, Cramer et al. [2016], in another meta-analysis of 8 RCTs with a total of 434 patients with PPD, studied the effects of mindfulness- and acceptance-based interventions on psychotic symptoms and hospital stays. In the experimental groups, mindfulness-based (4 RCTs) or acceptance-based interventions (4 RCTs) were performed, while the control groups received no specific intervention (TAU). The meta-analysis showed small to

moderate effect sizes in the short-term improvement of overall psychotic symptoms ($Z = 2.96$; $p = 0.003$) and positive symptoms ($Z = 2.93$; $p = 0.003$), with low to moderate heterogeneity between the individual studies. There were no indications of short-term effects for negative symptoms, but there was a moderate effect size for reduction in hospitalization rates and a shorter length of hospitalization in the intervention groups compared to the TAU group ($Z = 2.09$; $p = 0.04$). Regarding secondary outcomes, the results of the studies showed moderate effect sizes for short-term effects on mindfulness, but no evidence of short-term effects on affect or acceptance. In the two RCTs that also reported side effects, no serious adverse events or differences were found compared to the TAU condition.

In 2018, Louise et al. [2018] evaluated the efficacy of third-wave interventions for the treatment of PPD with psychotic symptoms as the primary outcome, in a meta-analysis of 10 RCTs. There was a small effect on the primary outcome ($g = 0.29$; $p < 0.05$) for third-wave interventions compared to the control treatment. In addition, the analyses showed that studies with MBI in group format had medium effect sizes ($g = 0.46$) in contrast to interventions based on individual ACT ($g = 0.08$). For secondary outcomes, a moderate treatment effect ($g = 0.39$; $p < 0.05$) was found for depressive symptoms, but no significant effects for positive and negative symptoms, hallucination distress, or psychosocial functioning. The results also showed a moderate effect for the mindfulness outcome ($g = 0.56$), but not for acceptance.

Jansen et al. [2020] recently studied, in another meta-analysis, the efficacy and safety of acceptance- and mindfulness-based therapies for people with psychotic disorders. This most recent study comprised 16 RCTs, and a total of 1,268 people with PPD were included in the analysis. The results showed moderate to large effect sizes in overall symptom severity and length of hospitalization at the end of the study (SMD 0.80) and at follow-up (SMD 1.10). There were small effect sizes for negative symptoms (SMD 0.24), moderate effects for depression (SMD 0.47), social functioning (SMD 0.43), and mindfulness (SMD 0.51), as well as medium to large effects for acceptance (SMD 0.78). No significant effects on positive symptoms, anxiety symptoms, or quality of life were found in this meta-analysis.

In sum, the results indicate that MBI for people with PPD in pre-post intervention analyses primarily leads to an improvement in negative and affective symptoms and can also improve patients' psychosocial functioning and quality of life. In addition, the most recent meta-analysis by Jansen et al. [2020] found a positive effect on social functioning and an increase in self-esteem in patients with PPD. With regard to positive symptoms, the results show clinically relevant but rather small effect sizes. Two

meta-analyses [Cramer et al., 2016; Jansen et al., 2020] showed that mindfulness-based procedures can also achieve a significant reduction in rehospitalization rates and inpatient stays. Overall, the results from current meta-analyses indicate that the effects of MBI have better effect sizes than control groups with TAU ($g = 0.46$) as compared to active control groups ($g = 0.16$) [Louise et al., 2018]. The results are particularly promising that confirm that MBI in a group format ($g = 0.46$; $p < 0.001$) is superior to the individual format ($g = 0.08$) [Louise et al., 2018; Böge et al., 2021b].

Despite this promising evidence, the results from meta-analyses are still to be assessed as heterogeneous. The authors of the cited meta-analyses explain this partial inconsistency by, among other things, the limited number of studies to date (mainly RCTs), the differences in the protocols of the individual interventions, and the variety of outcomes examined.

Over the years, research concerning side effects of psychotherapy has become increasingly important. Meta-analyses covering the current research on MBI for PPD [Khoury et al., 2013b; Louise et al., 2018; Jansen et al., 2020] show that there were no serious adverse events, but side effects were not explicitly investigated as the primary outcome in this relatively young field of research. In the future, this should be done by longitudinal studies with higher case numbers in order to increase the evidence base for the safety of MBI and to further ensure its implementation in the inpatient and outpatient treatment of patients with PPD [Ellett and Chadwick, 2021]. Although its efficacy has been confirmed by RCTs and meta-analyses in international comparison, research in German-speaking countries on MBI for PPD and its broad implementation in clinical settings is still in an early stage. A possible explanation for the delayed use of MBI may be based on a traditional expectation that it might lead to exacerbation of productive symptoms in patients [Dyga and Stupak, 2015]. This assumption, which must now be clearly dismissed as a myth, was based on a small number of case studies in which patients with PPD reported an increase in positive symptoms after participating in intensive unadapted traditional silent meditation on retreats [Walsh and Roche, 1979]. During these retreats, the participants performed silent sitting or walking meditation exercises for up to 18 hours. This practice, without verbal communication with other participants, without guidance from trained personnel and often in combination with caloric fasting and sleep deprivation, has nothing in common with current protocols for the use of MBI for patients with PPD. Furthermore, the participating patients often discontinued any previous antipsychotic medication. The reason for the worsening psychotic symptoms is, therefore, not MBI as such, but the uncontrolled, unadapted, and also potentially distress-inducing setting in which the

lengthy meditation exercises were carried out [Böge et al., 2020b], and with the simultaneous, often spontaneous discontinuation of antipsychotics.

Implications for Clinical Practice

In order to counter these misconceptions, mindfulness-oriented psychotherapeutic research has focused in recent years on an accurate and effective adaptation of MBI for PPD, in order to avoid the feared side effects of mindfulness practice and to ensure a high level of safety and practical applicability. A basic prerequisite for such safety is the direction of the MBI by therapists with clinical experience, who therapeutically support the patients both during and after the mindfulness exercises. It is, therefore, recommended that the leaders of mindfulness groups have completed the first year of their practical work as part of their psychotherapy training, if possible including the treatment of patients with PPD, and also that they regularly perform meditation exercises themselves [Jacobsen et al., 2011; Böge et al., 2020b]. Among the key methods used by therapists who work with MBI for PPD in clinical practice is an adapted version of the “inquiry process” as a form of interviewing, which is done after the mindfulness exercises. This interview supports patients in processing the experiences gained during meditation and mindfulness practice. In addition, a short summary of the goals of the next session enables patients to recognize the challenges of their own situation, and they are encouraged to follow specified and targeted strategies before the next session. Other adaptations for PPD include performing it in a closed, small group of up to six people, reducing the duration of the mindfulness practice, and avoiding periods of silence (+20 seconds) during mindfulness practice [Chadwick et al., 2005]. It is also recommended that verbal anchoring techniques, i.e., with short sentences or words, be used at regular intervals during the mindfulness exercises in order to bring patients back to the present and to prevent them from dealing too intensively with their own inner states. At the same time, it is important for therapists to be careful to use easily accessible and understandable language [Böge et al., 2021b].

The current state of research shows that MBI can be successfully performed in a group setting [Böge et al., 2020a; Jansen et al., 2020], that patients show a high degree of therapy adherence [Böge et al., 2021b], and, based on meta-analyses, there is good evidence for its efficacy for negative symptoms, depressive symptoms, and social functioning [Khoury et al., 2013b; Louise et al., 2018; Jansen et al., 2020]. It is particularly important that the group therapy approach is not only advantageous for inpatient and outpatient care, but is also a treatment option that patients prefer [Böge et al., 2020a; Reich et al., 2021]. At

the same time, the group environment counteracts a lack of social support and interpersonal contacts, while promoting important peer support [Böge et al., 2021b]. Two meta-analyses [Louise et al., 2018; Jansen et al., 2020] and one RCT in an inpatient setting [Böge et al., 2021b] showed that when mindfulness-based methods are taught in a group format, there is a greater effect in reducing psychotic symptoms on both the Positive and Negative Symptom Scale (PANSS) and the Brief Psychiatric Rating Scale (BPRS), and higher therapy adherence can be achieved.

Challenges

A rather reluctant attitude, due to the historically described limitations, is an only partially comprehensible explanation for the delayed use of MBI for PPD. While psychotherapeutic methods such as CT and MBCT have been reviewed for mental disorders such as depression regarding their effectiveness and have recently been included in German guidelines [Schneider et al., 2017], this is not yet the case for PPD [Gaebel et al., 2019].

A well-supported fact about PPD is its structural stigmatization by the social environment, which is associated, among other things, with the emergence and maintenance of prejudices against patients and the increase in patients' self-stigma that builds on this [Schulze and Angermeyer, 2003]. Such stereotyping prejudices, which are socially prevalent but also present in clinical settings, also show their effects in the comparatively late approval, despite comparable effect sizes, for the reimbursement of CBT for patients with PPD by the statutory health insurance companies in Germany [Hasan et al., 2015]. In addition, traditional psychiatric-psychopathological prejudices, a fundamental failure to comprehend and insensitivity to delusional explanatory models, as well as a general primarily biological and categorical understanding of the etiopathogenesis of PPD, also contribute to maintaining these prejudices [Jäger et al., 2012]. This often leads to the "othering" of people with PPD as "outside the norm." In contrast to depressive disorders, for example, those affected are more often assigned to a group of people who are outside of a continuum between healthy and sick [Schomerus et al., 2013]. Patients with PPD were more often described by the general population as "unpredictable," "incompetent," and a "potential danger" than was the case with other mental disorders [Angermeyer and Matschinger, 2004].

The stigmatization and often extensive structural discrimination cause further problems in interpersonal communication and disadvantages in social participation or when applying for jobs, which leads, in a vicious circle, to lower quality of life and self-esteem [Rüsch et al., 2014].

A study by Michael and Park [2016] confirmed a connection between social isolation and the severity of psychotic symptoms, in which 73% of the patients surveyed stated that auditory hallucinations occurred after a period of increased social isolation. The results of this study are consistent with Hoffman's "Social Deafferentiation Hypothesis" [Hoffman et al., 2007], which suggests that social isolation and thus a lack of social stimuli can lead to compensatory activation of auditory cortex areas. With regard to medical care, there are still several interacting barriers to accessing and researching innovative therapy options in German-speaking countries [Schlier and Lincoln, 2016], which lead to an undersupply of evidence-based psychotherapeutic methods for people with PPD [Bechdolf and Klingberg, 2014; Bundespsychotherapeutenkammer (BPtK), 2014; Schlier and Lincoln, 2016]. A possible approach to reducing the prejudices and resulting attitudes towards people with PPD would be anti-stigma interventions oriented towards the needs of the patients, which are based on direct contact as far as possible [Reich et al., 2021], as well as an expansion of low-threshold and community-based treatment options [Hansson, 2017; Kamens, 2019]. In addition to the stigmatization of patients with PPD, other factors also play an important role in the delayed implementation of psychotherapeutic procedures. These include, for example, the lack of therapists specializing in PPD in outpatient care and of sufficient staff in inpatient facilities. There are also organizational and structural barriers preventing those affected from receiving guideline-compliant treatment. Psychotherapeutic methods in group format are particularly suitable to partially break down these barriers, to expand the range of treatments, and to use scarce human resources efficiently. Merging appointments for several patients means that individual cancellations have a less serious impact on the therapists and the therapy process overall, in terms of organization and economy. At the same time, the therapy units available for each patient increase and the planning of individual appointments can be more flexible.

Summary

Despite the existing barriers and the delayed implementation of MBI for patients with PPD in the German-speaking countries, the safety and effectiveness of MBI have been repeatedly confirmed in recent years in RCTs and meta-analyses. Research from the United Kingdom, Canada, Hong Kong, and the United States shows that a group format can benefit both patients and therapists in its organizational and economic aspects and especially as a promising alternative to individual therapy. Particularly promising are indications of an improvement in nega-

tive symptoms that are often difficult to treat, improved quality of life and psychosocial functionality, and the ability to regulate emotions. Further arguments for mindfulness-based procedures include the long-term reduction in rates of rehospitalization and inpatient stays, since frequent psychiatric hospitalizations are associated with a poorer prognosis and an increased risk of relapse. Regarding the safety of mindfulness-based practices, the current body of research indicates that the adaptations discussed above are unlikely to cause serious side effects, even in individuals with PPD.

In sum, current evidence, despite the heterogeneity of the individual study results, speaks overall for the effectiveness and safety of mindfulness-based procedures and thus provides a compelling rationale to ease the access of patients with PPD to these treatment methods and techniques. A broader range of treatments, which also includes new modern psychotherapy methods such as mindfulness-based methods, could also result in a different public perception of the treatability of psychotic disorders, which could also have a favorable impact on stigmatization and discrimination. Consistent with the current international literature, the work of our research group confirmed for the first time the efficacy and applicability of mindfulness-based methods for PPD in a pilot study at a German university hospital (Charité – Univer-

sitätsmedizin Berlin, CBF) [Böge et al., 2020a, 2021b]. The Mindfulness-Based Group Therapy (MBGT) [Böge et al., 2021a, b] used here thus also opens up evidence-based possibilities for the German-speaking countries to implement MBI more widely in the psychotherapeutic care of people with PPD and thereby to promote the participant involvement approach in this field, working with those affected.

Conflict of Interest Statement

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Author Contributions

The article was conceptualized, written, and revised by Kerem Böge, Daniel Catena, and Eric Hahn.

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