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Original Article

Mindfulness-based cognitive therapy in the intervention of psychiatric disorders: A review

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ABSTRACT

Mindfulness-based cognitive therapy (MBCT) is frequently used for psychiatric disorders. Despite MBCT's considerable potential for improving psychological health for patients, there is little empirical evidence to support its practical application in Chinese. This review will define meditation and mindfulness, provide an overview of the development of MBCT, identify the evidence for the effectiveness of MBCT, and offer recommendations to medical personnels on how to provide support for patients receiving mindfulness intervention.

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1. Introduction

In recent years, practices and interventions involving mindfulness have become increasingly popular as complementary mindfulness-based interventions (MBIs) for a variety of mental and physical illness [1]. In particular, mindfulness based stress reduction (MBSR) and mindfulness-based cognitive therapy (MBCT) have been studied as clinical interventions and have a strong evidence base documenting their effectiveness [2,3]. Combining elements of MBSR with approaches from cognitive psychology and cognitive-behavioral therapy (CBT) led to the development of MBCT, initially presented as Attentional Control Training, and primarily focused on treating psychiatric

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disorders [4]. This review will define meditation and mindfulness, provide an overview of the development of MBCT, identify the evidence for the effectiveness of MBCT, and offer recommendations to medical personnels on how to provide support for patients receiving mindfulness intervention.

2. Defining meditation, mindfulness

MBCT is derived from the ancient Buddhist and Yoga philosophies by utilizing meditation and mindfulness.

2.1. *Meditation*

Meditation is defined as the intentional self-regulation of attention from moment to moment [5]. It is an intentional and self-regulated focusing of attention for the purpose of relaxing and calming the mind and body. In Latin: "meditari" is to think, to dwell upon, or to exercise the mind, and "mederi" is to heal. The Sanskrit derivation is "medha," which means "wisdom". Physical and psychological health changes such as increased cerebral blood flow, reductions in metabolic activity, heart and respiratory rates, blood pressure, oxygen consumption, and muscle tension, decrease in symptoms of depression and anxiety, have been empirically linked to the practice of meditation [6,7]. Although there are various styles of meditation, including Chakra yoga, Rinzai Zen, Mudra yoga, Sufism, Yoto Zen, and Buddhist insight meditation, two of the more commonly discussed forms of meditation are transcendental meditation (TM) and particularly mindfulness meditation (MM) have been found to be beneficial. During meditation periods, known as Zazen, practitioners sit silently without moving on either a cushion or in a chair [8].

2.2. *Mindfulness*

Mindfulness is style of meditative practice. However, mindfulness more generally means a mental state whereby nonjudgmental awareness is specifically focused on one's moment-by-moment experience [9]. Marlatt and Kristeller defined mind fullness as "bringing one's complete attention to the present experience on a moment-to-moment basis." [10] Mark Williams et al. wrote that mindfulness is "the awareness that arises from paying attention on purpose, in the present moment, nonjudgementally, to things as they are [11]. Mindfulness meditation can be thought of as a framework used to develop the state of mindfulness [12]. During mindfulness meditation, attention is specifically focused on the internal cognitive and emotional workings of the mind [13]. During mindfulness one becomes an observer of one's own stream of consciousness.

3. Developing MBCT

MBSR and MBCT are secular, clinically based group therapy methods using manuals and standardized techniques. MBSR includes education about stress as well as training on coping strategies and assertiveness. The mindfulness component includes sitting meditation, a body scan—a reflective assessment of one's own body state, and Hatha Yoga [14]. MBSR involves the cultivation of several attitudes, including becoming an impartial witness to one's own experience and acceptance of things as they actually are in the present moment [14]. MBCT is based on MBSR and combines the principles and practice of cognitive therapy with those of mindfulness framework [4]. It has been developed with the aim of reducing relapse in persons with recurrent depression and anxiety, and those vulnerable to episodes of depression and anxiety. Based on the work of Jon Kabat Zinn, MBCT includes simple breathing meditations and yoga stretches to aid individuals in becoming more aware of the present moment, including getting in touch with moment to moment changes in the mind and body. MBCT also includes psycho education on depression and anxiety and a number of exercises from cognitive therapy that demonstrate the association between thinking patterns/styles, feelings and behavior, and ways individuals can look after themselves when they feel overwhelmed by low mood or anxious thoughts [15].

4. Practice and evidence

4.1. *Brief review of practice*

Meditation is a traditional Buddhist approach to mindfulness [8], while, in contrast, MBSR and MBCT are secular, clinically based group therapy methods that utilize manuals and standardized techniques [14]. However, it is important to note that meditation can be practiced as a secular means to achieve mindfulness [16]. MBCT is an 8-session course delivered to groups of participants, selection of cognitive therapy elements is based on understanding that at times of lowered mood, people who have experienced multiple depressive episodes undergo reactivation of 'modes' of being in which thoughts, emotions and bodily reactions interact [17]. The MBCT program specifically teaches recognition of deteriorating mood with the aim of disengaging from self-perpetuating patterns of ruminative, negative thoughts that contribute to relapse [18]. It is specifically designed to bring mindfulness into our everyday lives, particularly at the tipping points when our

Table 1 – haracteristics of the practices of Meditation, MBSR and MBCT.

Characteristics	Meditation	MBSR	MBCT
Sitting meditation	Yes	Yes	Yes
Group therapy format	It occurs in a group format, but not considered "group therapy"	Yes	Yes
Body scan	No	Yes	Yes
Hatha yoga	No	Yes	Yes
Cognitive therapy	No	No	Yes
Duration of intervention	Unlimited	Limited, often provided as an 8-session intervention.	Limited, often provided as an 8-session intervention.

Table 2 – Areas of symptom improvement associated with MBCT.

Areas of symptom	Reference	Inclusion criteria	Sample	Intervention	Measures	Results
Unipolar depression relapse prevention	Segal ZV et al. [3]	(1) Diagnosis of MDD according to DSM-IV criteria, (2) a score of 16 or higher on the HRSD, (3) 2 or more previous episodes of MDD (to ensure that those randomized would have a minimum of 3 past episodes), (4) age between 18 and 65 years, (5) English speaking and the ability to provide informed consent.	N = 160.160 received 2-step antidepressant monotherapy, 84 achieved remission (52.5%) and were assigned to 1 of the 3 study conditions.	Patients in remission discontinued their antidepressants and attended 8 weekly group sessions of MBCT.	(1) The Structured Clinical Interview for DSM-IV, (2) Hamilton Rating Scale for Depression (HRSD)	MBCT offers protection against relapse on a par with that of maintenance antidepressant pharmacotherapy.
	Bondolfi G et al. [20]	(1) History of recurrent major depression according to DSM-IV, assessed with the Structured Clinical Interview for DSM-IV, (2) at least three past depressive episodes, remission for at least 3 months at time of enrollment.	N = 60.MBCT + Treatment As Usual (TAU) group, N = 31,TAU group, N = 29.	The observation period was 60 weeks for all patients,In the MBCT + TAU group, the patients with a regular practice (at least once per week) is presented for each type of practice across 3 periods of time (during group sessions, first 6 months and last 6 months of follow-up).	(1) The Structured Clinical Interview for DSM-IV, (2) Montgomery-Asberg Depression Scale (MADRS), (3) Beck Depression Inventory II (BDI-II).	MBCT significantly delayed time to relapse in recurrently depressed patients in remission.
Unipolar depression relapse prevention and Acute unipolar depression	Mathew KL et al. [21]	Participants had to have met DSM-IV criteria for MDD, Bipolar Affective Disorder (BPAD) depressed phase, or Dysthymia	N = 39. An observational clinical audit of 39 participants explored the long-term effects of MBCT using standardized measures of depression (BDI-II), rumination (RSS), and mindfulness (MAAS)	Participants attended 8 weekly sessions that were 2.5 h in length and were instructed to carry out approximately 45 minutes per day of homework, based on skills acquired in each session. At the conclusion of the course there was an individual post-course interview and the offer of four MBCT 2-h booster class sessions per year.	(1) Beck Depression Inventory II (BDI-II), (2) Rumination on Sadness Scale (RSS), (3) The Mindful Attention Awareness Scale (MAAS).	This results demonstrated the effectiveness of MBCT as a treatment for recurrent depression.Importantly, this study adds to the literature by suggesting that MBCT's lasting effects do continue up to at least 2 years after an MBCT intervention.
	van Aalderen JR et al. [22]	(1) Patients with three or more previous depressive episodes according to DSM-IV criteria, (2) Patients using antidepressant medication were required to be on a stable	N = 219.MBCT group, N = 102, TAU group, N = 103.	Training consisted of 8 weekly sessions of 2.5 h and a silent day of 6 h meditation. In addition to the group sessions, participants were instructed to practise 6 days per week for	(1) HRSD, (2) Beck Depression Inventory, (3) Rumination on Sadness Scale (Dutch translation), (4) Penn State Worry Questionnaire,	The study findings suggest that MBCT is as effective for patients with recurrent depression who are currently depressed as for patients who are in remission.

		dose for at least 6 weeks and were asked to maintain this dosage for the study period.		approximately 45 min per day. Compliance was assessed by attendance and weekly homework diaries.	(5) Kentucky Inventory of Mindfulness (KIMS), (6) The World Health Organization Quality of Life, self-report questionnaire (WHOQOL-Bref).	
Treatment-resistant unipolar depression	Kenny MA et al. [25]	(1) Participants had to meet DSM IV criteria for MDD, Bipolar Affective Disorder (BPAD), Depressed phase, or Dysthymia, (2) Where participants had major depression, they also had to have had either 3 or more episodes of depression or have had a chronic course of greater than 1 year following a major depressive episode that appeared, at clinical interview, to be related to the presence of ruminative thought patterns.	$N = 50$. Pre and post questionnaires were completed by 46 of the completers.	Eight 2-h classes were held, up to an hour of which is spent in meditation practices. Each class had up to 14 participants. Participation in class discussion was voluntary. Homework involved around 1 h per day of meditation or yoga, and other related formal and informal practices for the 8 weeks.	Beck Depression Inventory (BDI)	MBCT is an acceptable treatment for patients who have only had a partial response to antidepressant medication and/or standard individual CBT. Further, for many patients it appears to be effective in significantly reducing levels of depression, even in those who start with a more severe pattern including suicidal depression.
lBipolar disorder	Perich T et al. [26]	(1) Lifetime DSM-IV diagnosis of bipolar I or II disorder, (2) maintained on a mood stabilizing medication for the duration of study treatment, (3) at least 18 years of age, (4) secondary school education, (5) able to provide informed consen, (6) fluent in written and spoken English, (7) currently under the care of a psychiatrist, (8) at least one bipolar disorder episode over the previous 18 months, (9)	$N = 95$.MBCT group, $N = 48$, TAU group, $N = 47$.	Training consisted of 8 weekly group sessions of MBCT. The MBCT program consists of weekly mindfulness meditation practice and cognitive therapy regarding depression including psycho-education. The MBSR program CD set, 'Guided Mindfulness Meditation', was provided to each participant.	(1) Structured Clinical Interview for DSM-IV-TR Disorders (SCID-I), (2) Young Mania Rating Scale (YMRS), (3) Montgomery-Asberg Depression Rating Scale (MADRS), (4) Composite International Diagnostic Interview (CIDI), (5) Depression Anxiety Stress Scales (DASS), (6) the State Trait Anxiety Inventory (STAI), (7) Dysfunctional Attitudes Scale 24 (DAS-24), (8) Response Style Questionnaire (RSQ), (9) Mindful Attention Awareness Scale (MAAS).	MBCT significantly improved state anxiety for those diagnosed with bipolar disorder over a 12-month follow-up period.

(*continued on next page*)

Table 2 – (*continued*)

Areas of symptom	Reference	Inclusion criteria	Sample	Intervention	Measures	Results
		a lifetime incidence of at least three bipolar episodes.				
	Perich T et al. [27]	(1) Met criteria for a lifetime DSM-IV diagnosis of bipolar I or II disorder, (2) were able to be maintained on a mood stabilizing medication for the duration of treatment, (3) were currently under the care of a GP or psychiatrist who would review medication as necessary, (4) experienced at least one bipolar disorder episode over the past 18 months, (5) had a lifetime incidence of at least 3 bipolar episodes, (6) at least 18 years of age, (7) at least secondary school education, (8) able to provide informed consent, (9) fluent in written and spoken English, (10) currently under the care of a GP or psychiatrist who would review medication as necessary.	$N = 48.34$ (70.8%) participants completed the MBCT program and 23 (67%) provided information regarding homework completion during the 8-week trial period.22 participants in the MBCT condition completed the 12-month follow-up assessment	MBCT groups were conducted over an 8-week period with each session conducted weekly, each group comprised 4 to 8 participants.	(1) Young Mania Rating Scale (YMRS), (2) Montgomery-Åsberg Depression Rating Scale (MADRS), (3) Composite International Diagnostic Interview (CIDI), (4) Structured Clinical Interview for DSM-IV-TR Disorders (SCID-I), (5) Depression Anxiety Stress Scales (DASS), (6) State/Trait Anxiety Inventory (STAI), (7) Mindful Attention Awareness Scale (MAAS), (8) Toronto Mindfulness Scale (TMS).	A greater number of days meditated during the 8-week MBCT program was related to lower depression scores at 12-month follow-up, and there was evidence to suggest that mindfulness meditation practice was associated with improvements in depression and anxiety symptoms if a certain minimum amount was practiced weekly throughout the 8-week MBCT program.
Anxiety	Samuel YS Wong et al. [28]	(1) Age between 21 and 65 years, (2) having, at baseline assessment, a DSM-IV TR principal diagnosis of generalized anxiety disorder on SCID and a score of 19 or above using the Chinese version of the Beck Anxiety Inventory, (3) can understand Cantonese, (4) if patient was on medication for his/her condition, he or she should be on stable doses of medication for 3 months before starting treatment.	$N = 228.228$ participants was randomly allocated to the MBCT program plus usual care, psycho-education program plus usual care or the usual care group	The MBCT group and the Psycho-Education Group was conducted 8 weeks with 2 h group training sessions respectively.	(1) Penn State Worry Questionnaire (the Chinese version of PSWQ), (2) Beck Anxiety Inventory (the Chinese version of BAI), (3) the Centre for Epidemiological Studies-Depression Scale (the Chinese version of CES-D), (4) Medical Outcomes Study Short-Form Health Survey (the Chinese version of SF-12), (5) the Five Facet Mindfulness Questionnaire.	These findings demonstrated the effectiveness of MBCT as a treatment for Generalized anxiety disorder.

Borah Kim et al. [29]	(1) 20–60 years old meeting the DSM-IV criteria for panic disorder (PD) with or without agoraphobia, (2) Stabilized and not changed in clinical global impression after pharmacotherapy for at least two months, (3) Without remission (Ballenger's criteria).	$N = 80$ Allocated to intervention ($N = 65$), Received the 8 week MBCT program for PD ($N = 65$)	The duration of the weekly MBCT program was about 90 minutes, and a total of eight sessions was conducted. At the end of each session, the participants received homework and an audio CD that the authors recorded in Korean.	(1) The Panic Disorder Severity Scale, (2) Hamilton Anxiety Rating Scale, (3) HRSD, (4) Anxiety Sensitivity Inventory-Revised.	The result indicated that anxiety sensitivity (AS) improvement after an eight week MBCT program was a statistically significant factor associated with treatment response. AS improvement after MBCT showed significant association with PD remission after MBCT.

mood is beginning to go down [19]. The three MPs described above have several similarities and differences that clinicians need to be aware of. Key characteristics are summarized in Table 1.

4.2. *Evidence for MBCT*

MBCT was developed by Dr. Jon Kabat-Zinn at the University of Massachusetts Medical Center as a secular method of utilizing Buddhist mindfulness in mainstream psychology and medicine [4]. Dr. Jon Kabat-Zinn and colleagues have treated 10,000 people with a range of physical and psychological conditions. They showed that most participants experienced not only long-lasting physical and psychological symptom reduction but also deep positive changes in attitude, behavior, and perception of self, others, and the world. Studies have indicated that MBCT is effective for a variety of different conditions of psychiatric conditions, including depression relapse prevention [3,20], depression relapse prevention [21], acute depression [22,23], residual depression [24], treatment-resistant depression [25], bipolar disorder [26,27], generalized anxiety disorder [28], and panic disorder [29]. Additionally, Chiesa and Serretti [24] found that MBCT alone showed effectiveness for relapse prevention after 1 year and was similar to antidepressant treatment alone. Furthermore, combined treatment could be useful for reducing residual depressive symptoms. A subsequent study [3] provided compelling evidence confirming that, for depressed patients, MBCT offers protection against relapse equal to that of maintenance antidepressant pharmacotherapy. In 2010, the American Psychiatric Association included MBCT as a group intervention in the Practice Guideline for the Treatment of Patients with Major Depressive Disorder [30]. For a summary of the areas of symptom improvement associated with MBCT, please refer to Table 2.

Adjunctive use of MBCT can also be considered for the treatment of acute and residual unipolar depressive and anxiety symptoms. In the studies reviewed, many elements of the 8-session framework were flexibly modified according to the particular disorder being treated. Promising examples are MBCT for children [31,32]; mindfulness-based relapse prevention for substance abuse [32,33]; MBCT for pregnant women at risk for depression [34]; MBCT for hypochondirasis [35], chronic fatigue syndrome [36], social phobia [37], and MBCT for cancer patients [38]. More generally, MBCT has been shown to increase positive and reduce negative emotions [39], and to help in the clarification of life goals [40]. Furthermore, the Oxford Mindfulness Centre offers a two year Master of Studies degree in MBCT through the Continuing Education Department of Oxford University, the aim is to foster a community of practitioners with the expertise to deliver high quality MBCT to patients, and to contribute to the development and dissemination of this innovative approach to mental and physical healthcare [41].

5. Conclusion

Despite the limitations of this systematic review, we have found a positive effect of MBCT in reducing various kinds of

psychiatric disorders. The improvement in overall mental health in health people following MBCT could arise from a variety of benefits associated with the training. Therefore, MBCT can be recommended to depression and anxiety patients as an option as part of their rehabilitation to help maintain a better quality of life in the longer term.

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Conflict of interest statement

The authors declare that they have no competing interests.

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