

The effectiveness of a mindfulness-based cognitive therapy programme for preventing relapse in patients with depression

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Abstract

Objectives

Mindfulness-based cognitive therapy (MBCT) has rarely been tested in non-Western inpatient services or delivered by nurses. This trial evaluated a culturally adapted, nurse-led group MBCT programme for Thai inpatients.

Method

Ninety-four inpatients with moderate to severe ICD-10 depressive disorder at a Thai psychiatric hospital were randomised 1:1 to MBCT plus routine nursing care or routine care alone. The programme comprised six group sessions of 60–90 minutes over three weeks. Depressive symptoms (9Q), rumination (RRS) and mindfulness (MAS) were assessed before and after the intervention and at three months; readmission within three months of discharge was recorded. Sixteen completers took part in two focus groups (content analysis).

Results

The arms were equivalent at baseline. Time $\times$ Group interactions favoured MBCT on all three outcomes (all $p < .001$; partial $\eta^2 = .13-.40$). Both arms improved, but at three months MBCT showed lower depressive symptoms (mean difference 3.49, 95% CI [2.75, 4.23], $d = 1.93$), lower rumination ($d = 3.34$) and higher mindfulness ($d = 2.16$). Rumination gains were fully maintained after discharge ($p = 1.000$) whereas controls deteriorated; mindfulness eroded partially in both arms. Minimal-symptom status was reached by 51.1% of MBCT participants versus 2.1% of controls ($p < .001$), a number needed to treat of 2.0. Readmission was less frequent under MBCT (2 of 47 versus 7 of 47) but not significantly so (Fisher's exact $p = .158$). Three themes emerged: recognising emotions and automatic thoughts; behavioural change with self-compassion; and stress management for relapse prevention.

Conclusions

Brief, nurse-led, culturally adapted MBCT added clinically meaningful benefit to routine inpatient care, sustained to three months. The trial was underpowered for readmission. Partial erosion of mindfulness gains suggests booster contact may be needed.

Preregistration

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Introduction

Depressive disorder affects mood, cognition, behaviour, and the capacity to work and manage daily life, and in severe cases, it culminates in suicide (Geurts et al., 2020). More than 280 million people live with depression worldwide, and over 700,000 die by suicide each year (World Health Organization, 2023). During the COVID-19 pandemic, there was a 27.6% increase in the occurrence of depressive and anxiety disorders within just one year (COVID-19 Mental Disorders Collaborators, 2021). By 2030, depression is anticipated to be the primary factor contributing to disability-adjusted life years lost (World Health Organization, 2019).

In 2021, Thailand's national data revealed that around 1.5 million individuals aged 15 and above were affected by depressive disorder. Additionally, there were over 53,000 suicide attempts and nearly 4,000 fatalities reported (Department of Mental Health, 2021). At Prasimahabodi Psychiatric Hospital, which serves as the main psychiatric referral center for the lower northeast, outpatient visits for depressive disorder increased from 7,743 in 2022 to 8,441 in 2024. During this period, annual admissions ranged from 313 to 340 (Prasimahabodi Psychiatric Hospital, 2024).

Recurrence is the central clinical problem. When patients cannot sustain self-management after discharge, approximately 38% relapse within six months of remission, and up to 20.4% are readmitted within one month (Citrome et al., 2019). The absence of discharge planning, limited skills for managing mood and stress, and weak family or community support are recognised contributors (Bockting et al., 2015). Preventing relapse is therefore crucial for sustainable care, and the inpatient admission — a period of concentrated therapeutic contact immediately preceding discharge — is a strategically important window in which to intervene.

Cognitive theory suggests that this susceptibility arises from persistent negative perceptions regarding oneself, the world, and the future, along with an inability to break free from repetitive, circular thought patterns (Beck et al., 1979). Conversely, response styles theory posits that rumination itself acts as the factor that extends and intensifies feelings of depression (Nolen-Hoeksema, 1991). Mindfulness-based cognitive therapy (MBCT), created by Segal, Williams, and Teasdale (2002, 2013), tackles this issue by teaching patients to view thoughts as mere mental occurrences rather than truths and to engage with the present moment without opposition.

The evidence base is substantial. Mindfulness-based approaches reduce depressive symptoms and improve quality of life by decreasing preoccupation with negative content and enhancing self-regulation and self-compassion (Pérez-Aranda et al., 2021). A review of 23 mechanism studies concluded that MBCT works not by directly reducing symptoms but through a sequence that begins with increased mindful awareness and proceeds to reduced rumination (van der Velden et al., 2015). In relapse prevention, an individual patient data meta-analysis found MBCT to reduce recurrence risk relative to control conditions (Kuyken et al., 2016), with benefits concentrated among patients with three or more prior episodes (Piet & Hougaard, 2011). Additionally, MBCT combined with pharmacotherapy substantially lowers recurrence risk in convalescent patients (Guo et al., 2022).

Three gaps motivate the present trial. Most efficacy trials have been conducted in Western services with minimal cultural adaptation, even though mindfulness is integral to Thai Buddhist practice and may support engagement. Thailand's specialist psychotherapy workforce is small, so any scalable model must rely on the psychiatric nursing workforce that already delivers most inpatient care. Additionally, prior Thai MBCT research has been conducted largely in outpatient settings and non-randomised designs (Chomphubut et al., 2022; Kenbubpha et al., 2023; Umklin & Kenbubpha, 2024), leaving nurse-led inpatient delivery untested under randomisation.

This trial examined the efficacy of a nurse-led, culturally adapted group MBCT programme delivered alongside routine psychiatric nursing care to inpatients with depressive disorder. Four hypotheses were prespecified: compared to routine care alone, participants receiving the programme would show lower depressive symptom scores, lower rumination scores, and higher mindfulness scores immediately post-intervention and at a three-month follow-up, as well as a lower rate of readmission over the follow-up period. An embedded qualitative component explored how participants themselves accounted for the changes they experienced.

Methods

Design

A mixed-methods embedded design was employed (Creswell & Plano Clark, 2018). The core component was a two-arm, parallel-group randomised controlled trial with measures before the intervention (T0), immediately after it (T1, week 3), and at three-month follow-up after discharge (T2). Focus group discussions with intervention-arm participants were embedded post-intervention. Reporting follows the CONSORT 2010 statement.

Setting and Participants

The trial was conducted in the Depressive Disorder and Private Patient Nursing Unit at Prasimahabodi Psychiatric Hospital, a tertiary psychiatric referral center in Ubon Ratchathani Province, northeastern Thailand, between September 2025 and May 2026.

Eligible participants were inpatients diagnosed by a psychiatrist with depressive disorder (ICD-10 F32.0–F33.9), aged 15 years or older, scoring 7 or above on the 9-item Depression Questionnaire (9Q) at screening, able to communicate in Thai without hearing or visual impairment, and providing voluntary informed consent. Exclusions included a severe comorbid psychiatric condition (psychotic disorder, bipolar disorder, dementia, substance-induced psychotic disorder, or severe suicidal ideation), a psychiatrist-diagnosed severe personality disorder impeding group participation, or concurrent enrolment in another structured therapy programme. Prespecified discontinuation criteria were attendance at fewer than 80% of programme activities, relapse during sessions 1 to 6, and voluntary withdrawal.

The protocol specified a screening range of 7 to 18, but no upper limit was applied in practice and patients scoring above 18 who met all other criteria were enrolled; this deviation is reported per CONSORT item 3b. Baseline scores ranged from 13 to 23, so the sample had moderate to severe rather than mild to moderate symptoms (band distribution in the Results). Participants were aged 15 to 60 years, and 20 (21.3%), ten per arm, were under 18.

Sample Size

The sample size was calculated in G*Power for a comparison of two independent means, with $\alpha = .05$ (two-tailed), power = .80 and an allocation ratio of 1:1, using an effect size of $d = 0.63$ derived from a previous Thai MBCT trial (Umklin & Kenbubpha, 2024). This yielded 40 participants per arm. The figure was inflated by 15% to allow for attrition over the three-month follow-up (Jirawatkul, 2015), giving a target of 47 per arm and a total of 94.

Randomisation and Allocation Concealment

Potentially eligible patients were identified from the ward census with the treating psychiatrists and nursing staff and screened against the eligibility criteria by a research assistant using the medical record. Participants were recruited by systematic random sampling from the eligible pool. A research assistant who was not the participant's treating clinician (P.P.) met each screened patient privately, explained the purpose, procedures, anticipated benefits, potential risks and the right to decline or withdraw at any time without effect on clinical care, and obtained written informed consent.

Following consent, the initial evaluation was conducted. Participants were assigned to groups using blocked randomisation. A third party, uninvolved in recruitment, implementation, or data gathering, prepared sequentially numbered, opaque, sealed envelopes with group assignments ahead of time. Once a participant finished the baseline assessment, a research assistant (T.P.) selected and opened the next envelope in the sequence in front of the participant. Consequently, participants were informed of their group allocation immediately, and due to the behavioural nature of the intervention, it was not possible to blind either the participants or the facilitators.

Measures

Depressive Symptoms

The 9Q (Kongsuk et al., 2018) assesses depressive symptoms over the preceding two weeks, each of nine items scored 0 to 3. The Thai validation reported acceptable reliability and criterion validity against the Hamilton Rating Scale for Depression. Scores below 7 indicate no or minimal symptoms, 7 to 12 mild, 13 to 18 moderates, and 19 or above severe.

Rumination

Rumination was assessed using the Thai Ruminative Response Scale (RRS; Thanoi et al., 2011), which was translated back from the original by Nolen-Hoeksema and Morrow (1991). This scale includes 22 items, each scored from 1 (almost never) to 4 (almost always), leading to a total score range between 22 and 88. Higher scores reflect increased rumination. The Thai version confirmed the three-component structure and demonstrated strong internal consistency ($\alpha = .90$).

Mindfulness: Mindfulness was assessed using the Mindfulness Assessment Scale (MAS; Silpakit, 2015), a 15-item Thai instrument developed from the four foundations of mindfulness (satipaṭṭhāna) in Theravāda Buddhist psychology, alongside Kabat-Zinn's formulation. It comprises three domains: knowing, intention, and automatics. The development study demonstrated internal consistency with α values between .67 and .82. It showed discriminant validity when compared to the Hospital Anxiety and Depression Scale and concurrent validity with the Philadelphia Mindfulness Scale. The items are rated on a scale from 1 (almost never) to 5 (very often), leading to a total score range of 15 to 75.

Readmission

The clinical endpoint was readmission to inpatient care at this hospital for depressive disorder within three months of the participant's discharge date. Cases were identified from the hospital information system and verified against the medical record. Records were extracted by P.P., who did not participate in delivering the programme.

Demographic and Clinical Data

A structured form recorded sex, age, marital status, educational level, occupation, monthly income and number of previous admissions for depressive disorder.

Intervention

The programme was developed within the MBCT framework of Segal et al. (2013) and adapted from the Thai outpatient MBCT programme of Umklin and Kenbubpha (2024). Session titles, procedures, and information-sheet content were revised for the inpatient context, and content validity was assessed by five experts (one psychiatrist, two psychiatric nurses, one psychologist, and one nursing lecturer), resulting in a Content Validity Index of .92.

Six closed-group sessions were held twice weekly over three consecutive weeks in the unit's group activity room. Sessions 1, 4, and 6 lasted 90 minutes, while Sessions 2, 3, and 5 lasted 60 minutes. The sequence progressed from awareness of arising thoughts and the world of thought, through anchoring attention in the breath, to acceptance and letting go, recognizing thoughts as events rather than facts, and finally to self-care, loving-kindness, and planning to maintain practice after discharge. Each session concluded with a three-minute breathing space, a discussion of obstacles to home practice, and daily between-session practice supported by worksheets and information sheets. Because participants were inpatients, home practice was overseen by ward nursing staff, who supported participants in completing

their records at 18:00 during the scheduled rest period. Full session content and adaptations are provided in Supplementary Material S1.

The programme was conducted by the principal investigator, K.W., in collaboration with two co-facilitators, K.K. and P.H. Three registered nurses were responsible for delivering the programme: the principal investigator, K.W. (RN, MNS), and P.H. (RN), both of whom are psychiatric nurses at the study hospital with 20 years of clinical experience, along with K.K. (RN, PhD), a nurse academic specializing in mental health and psychiatric nursing. Prior to the commencement of recruitment, all three facilitators had completed training in the mindfulness-based cognitive therapy programme. The programme was executed across six groups, each consisting of seven or eight participants. To ensure a clear distinction between delivery and assessment, research assistants P.P. and T.P., both psychiatric nurses with at least fifty years of experience, engaged with participants to obtain consent, administered the measures, and managed the allocation process. These assistants were not involved in the delivery of the programme.

Control Condition

Control participants received the standard inpatient nursing care provided to all patients admitted with depressive disorder: assessment of physical and mental state on admission, counselling and advice tailored to presenting problems, participation in the ward's routine therapeutic activity programme, and self-care information before discharge. Pharmacological treatment was prescribed and reviewed by the treating psychiatrist throughout admission in both arms. They did not receive structured psychotherapy during the study period and were offered the MBCT programme, for ethical parity, once the three-month assessment was complete.

In this unit, routine care serves as an active comparator instead of a condition without treatment, and the control group demonstrated significant progress across all three outcomes. Consequently, the estimates presented here indicate the additional advantage of incorporating MBCT into an already successful inpatient care package.

Qualitative Component

Sixteen intervention-arm participants who had completed the programme were purposively sampled for two focus groups of eight, held one to two weeks after the final session. Groups of eight were used because six to ten participants allow each member to contribute in depth without domination by any individual (Krueger & Casey, 2014; Morgan, 1997), and two groups were considered sufficient for saturation given the homogeneity of the sample (Guest et al., 2006, 2017). A semi-structured guide explored perceived changes in thought, mood and feeling; how participants handled negative thoughts and sadness; behavioural change in daily life; techniques used to manage stress; and how early warning signs were recognised and addressed. Discussions were facilitated by P.P. and T.P., neither of whom had delivered the programme, and were audio-recorded with consent and transcribed verbatim in Thai.

Analysis followed a four-stage content analysis: transcripts were read repeatedly alongside field notes to establish familiarity with context and meaning; open coding was applied to passages reflecting experience, cognitive and behavioral change, and stress management; codes with similar meanings were grouped into categories, and their relationships were examined; and categories were distilled into themes, with salient quotations selected to illustrate the quantitative findings. Two researchers coded independently; codes were compared, and differences were resolved through discussion until consensus was reached. Trustworthiness was supported by thick description and triangulation against the quantitative data. Quotations were translated into English by K.W. and checked against the Thai transcripts by K.K.

Ethical Considerations

The hospital's Human Research Ethics Committee granted approval for the protocol (Certificate of Approval No. 015/2568), and the trial complied with the Declaration of Helsinki. Participants were informed that the study was for research purposes, not treatment, and they provided written consent, understanding they could refuse or withdraw at any time without impacting their care. Immediate support was provided at no cost to any participant experiencing psychological distress, including suicidal thoughts, through arrangements with ward staff and the treating psychiatrist. All members agreed to maintain confidentiality during sessions, with data being securely stored, accessible only to the research team, and reported solely in aggregate form.

At the time of enrolment, twenty individuals (21.3%) were younger than 18 years. These individuals provided written assent, while a parent or legal guardian provided written informed consent. Both parties were given identical explanations regarding the study's objectives, procedures, expected benefits, possible risks, and their right to refuse participation or withdraw at any point without affecting their clinical care. They were also allowed to ask questions prior to signing. The enrolment process for participants aged 15 to 17 received specific review and approval from the Human Research Ethics Committee.

Statistical Analysis

Analyses employed a two-tailed significance level of $p < .05$. Descriptive statistics were utilized to encapsulate demographic, clinical, and initial characteristics, while baseline equivalence was assessed using chi-square tests for categorical data and independent-samples t-tests for continuous data. The three continuous outcomes underwent analysis via two-way repeated-measures ANOVA, focusing on the primary effects of time and group, as well as the interaction between Time and Group. Prior to this, normality was checked, and Mauchly's test was used to assess sphericity; since the assumption was breached for all outcomes, the Greenhouse–Geisser correction was consistently applied, with adjusted degrees of freedom provided. Pairwise comparisons were adjusted using Bonferroni, differences between arms at each time point were evaluated with independent-samples t-tests, and readmission rates were compared using chi-square tests. Effect sizes are reported as partial η^2 for ANOVA effects

and Cohen's d for contrasts between arms, along with 95% confidence intervals. Follow-up was comprehensive: data were collected for all 94 randomized participants across all three assessment points, eliminating the need for imputation, and the intention-to-treat and per-protocol groups were identical.

Results

Participant Flow and Baseline Characteristics

Participant flow is summarized in Fig. 1. During the recruitment period, 99 inpatients with depressive disorder were assessed for eligibility; 2 did not meet the eligibility criteria, 1 declined, and 2 were not enrolled for other reasons. The remaining 94 gave written informed consent and were randomized, 47 to each arm. All 94 received their allocated condition, completed all three assessments, and were included in the analysis, with no participant meeting a discontinuation criterion.

Baseline characteristics are presented in Table 1. Both groups were predominantly female (78.7%) and young ($M = 24.68$ years, $SD = 8.25$, MBCT; $M = 24.49$, $SD = 9.07$, control), with most having education below degree level (78.7%), being single (80.9%), and either unemployed or in education. The majority had previously been admitted for depressive disorder. No baseline variable differed significantly between the groups (all $p > .05$). Baseline 9Q scores ranged from 13 to 23: 42 participants (44.7%) scored in the moderate band and 52 (55.3%) in the severe band, with none in the mild band.

Table 1
Baseline demographic and clinical characteristics by arm

Characteristic	MBCT n	%	Control n	%	Statistic	p
Sex					$\chi^2 = 0.00$	1.00
Male	10	21.3	10	21.3		
Female	37	78.7	37	78.7		
Age group					$\chi^2 = 0.05$	0.82
Under 20 years	13	27.7	14	29.8		
20 years and over	34	72.3	33	70.2		
Age, M (SD)	24.68 (8.25)		24.49 (9.07)		$t = -0.11$	0.92
Educational level					$\chi^2 = 0.00$	1.00
Below bachelor's degree	37	78.7	37	78.7		
Bachelor's degree	10	21.3	10	21.3		
Marital status					$\chi^2 = 0.00$	1.00
Single	38	80.9	38	80.9		
Married	9	19.1	9	19.1		
Occupation					$\chi^2 = 0.18$	0.67
Employed	20	42.6	18	38.3		
Unemployed or student	27	57.4	29	61.7		
Monthly income					$\chi^2 = 0.18$	0.67
Has income	20	42.6	18	38.3		
No income	27	57.4	29	61.7		
Previous admissions					$\chi^2 = 0.81$	0.37
First admission	12	25.5	16	34.0		
Two to four admissions	35	74.5	31	66.0		
<i>Note. N = 94 (47 per arm). Chi-square tests for categorical variables; independent-samples t test for age.</i>						

Effects on Depressive Symptoms, Rumination and Mindfulness

Repeated-measures ANOVA results are shown in Table 2, cell means in Table 3 and Bonferroni-adjusted pairwise comparisons in Table 4. Mauchly's test indicated that sphericity was violated for all three outcomes (9Q, $W = 0.559$, $p < .001$, $\epsilon = .694$; RRS, $W = 0.286$, $p < .001$, $\epsilon = .583$; MAS, $W = 0.903$, $p = .010$, $\epsilon = .912$), so Greenhouse–Geisser corrected degrees of freedom are reported. The Time $\times$ Group interaction was significant throughout, indicating that the arms followed different trajectories: depressive symptoms, $F(1.39, 127.64) = 13.86$, $p < .001$, partial $\eta^2 = .13$; rumination, $F(1.17, 107.35) = 49.14$, $p < .001$, partial $\eta^2 = .35$; mindfulness, $F(1.82, 167.77) = 60.14$, $p < .001$, partial $\eta^2 = .40$.

Table 2
Repeated-measures ANOVA for depressive symptoms, rumination and mindfulness

Source	SS	df	MS	F	p	Partial η^2
Depressive symptoms (9Q)						
Time $\times$ Group	94.33	2	47.16	13.86	< .001	.13
Time	7242.92	2	3621.46	1064.31	< .001	.92
Group	464.70	1	464.70	83.15	< .001	.48
Rumination (RRS)						
Time $\times$ Group	2146.50	2	1073.25	49.14	< .001	.35
Time	31649.45	2	15824.72	724.55	< .001	.89
Group	3482.56	1	3482.56	42.39	< .001	.32
Mindfulness (MAS)						
Time $\times$ Group	888.18	2	444.09	60.14	< .001	.40
Time	7194.56	2	3597.28	487.19	< .001	.84
Group	1767.50	1	1767.50	95.62	< .001	.51
<i>Note. N = 94. Sums of squares, mean squares and F ratios are uncorrected; degrees of freedom for within-subjects effects were adjusted by the Greenhouse–Geisser correction because Mauchly's test was significant for all three outcomes (9Q $\epsilon = .694$; RRS $\epsilon = .583$; MAS $\epsilon = .912$). Uncorrected error df = 184 for within-subjects effects and 92 for the between-subjects effect. All effects remain significant at $p < .001$ after correction.</i>						

Table 3
Outcome means by arm and time point, with between-arm comparisons

Outcome and time point	MBCT M (SD)	Control M (SD)	Mean difference [95% CI]	t(92)	p	d
Depressive symptoms (9Q)						
T0 (baseline)	18.30 (2.61)	19.23 (2.46)	0.93 [- 0.11, 1.97]	1.79	.08	0.37
T1 (post-intervention)	5.89 (1.37)	9.17 (1.83)	3.28 [2.62, 3.94]	9.81	< .001	2.03
T2 (three months)	6.83 (1.81)	10.32 (1.84)	3.49 [2.75, 4.23]	9.26	< .001	1.93
Rumination (RRS)						
T0 (baseline)	56.91 (9.88)	56.17 (9.58)	0.74 [- 3.25, 4.73]	-0.37	.71	0.08
T1 (post-intervention)	28.64 (5.16)	38.96 (3.46)	10.32 [8.52, 12.12]	11.38	< .001	2.35
T2 (three months)	28.60 (3.76)	40.11 (3.09)	11.51 [10.10, 12.92]	16.20	< .001	3.34
Mindfulness (MAS)						
T0 (baseline)	31.47 (2.93)	31.40 (3.08)	0.07 [- 1.16, 1.30]	-0.10	.92	0.02
T1 (post-intervention)	47.38 (4.72)	39.15 (2.61)	8.23 [6.67, 9.79]	-10.47	< .001	2.16
T2 (three months)	43.85 (3.80)	37.13 (2.22)	6.72 [5.45, 8.00]	-10.47	< .001	2.16
<i>Note. n = 47 per arm. Higher 9Q and RRS scores indicate greater depressive symptoms and rumination; higher MAS scores indicate greater mindfulness. For 9Q and RRS the mean difference is control minus MBCT; for MAS it is MBCT minus control, so that a positive value favours MBCT throughout. d = Cohen's d.</i>						

Table 4
Bonferroni-adjusted within-arm pairwise comparisons

Outcome and comparison	MBCT diff.	SE	p	Control diff.	SE	p
Depressive symptoms (9Q)						
T0 vs T1	12.404	0.412	< .001	10.064	0.368	< .001
T0 vs T2	11.468	0.454	< .001	8.915	0.450	< .001
T1 vs T2	-0.936	0.300	.009	-1.149	0.254	< .001
Rumination (RRS)						
T0 vs T1	28.277	1.108	< .001	17.213	1.054	< .001
T0 vs T2	28.319	1.163	< .001	16.064	1.196	< .001
T1 vs T2	0.043	0.614	1.000	-1.149	0.279	< .001
Mindfulness (MAS)						
T0 vs T1	-15.915	0.805	< .001	-7.745	0.359	< .001
T0 vs T2	-12.383	0.646	< .001	-5.723	0.392	< .001
T1 vs T2	3.532	0.669	< .001	2.021	0.300	< .001
<i>Note. Values are mean differences between time points within each arm. A positive value for 9Q and RRS indicates a reduction over time; a negative value for MAS indicates an increase.</i>						

Depressive Symptoms The arms were equivalent at baseline ($M = 18.30$, $SD = 2.61$ vs $M = 19.23$, $SD = 2.46$; $t(92) = 1.79$, $p = .08$). Both improved substantially by the end of the intervention: the MBCT mean fell by 12.40 points and the control mean by 10.06 (both $p < .001$), and both arms showed a small but significant rise between T1 and T2 (0.94 and 1.15 points; $p = .009$ and $p < .001$).

The MBCT arm nonetheless scored substantially lower at both post-baseline points: at T1, mean difference 3.28, 95% CI [2.62, 3.94], $d = 2.03$; and at T2, mean difference 3.49, 95% CI [2.75, 4.23], $d = 1.93$ (both $p < .001$). In clinical terms the MBCT arm moved from the moderate band into the no-or-minimal band ($M = 6.83$), while the control arm ended follow-up in the mild band ($M = 10.32$).

Rumination Baseline scores were closely matched ($M = 56.91$, $SD = 9.88$ vs $M = 56.17$, $SD = 9.58$; $t(92) = -0.37$, $p = .71$). The MBCT arm fell by 28.28 points from T0 to T1 against 17.21 points in the control arm (both $p < .001$).

The clearest differential concerned maintenance. Between T1 and T2 the MBCT arm was entirely stable (mean difference 0.04, $p = 1.000$) whereas the control arm deteriorated (1.15 points, $p < .001$), so the

between-arm gap widened from 10.32, 95% CI [8.52, 12.12], $d = 2.35$ at T1 to 11.51, 95% CI [10.10, 12.92], $d = 3.34$ at T2 (both $p < .001$).

Mindfulness Baseline scores were near-identical ($M = 31.47$, $SD = 2.93$ vs $M = 31.40$, $SD = 3.08$; $t(92) = -0.10$, $p = .92$). Mindfulness rose in both arms by the end of the intervention, by 15.92 points under MBCT and 7.75 under routine care (both $p < .001$), giving a between-arm difference at T1 of 8.23, 95% CI [6.67, 9.79], $d = 2.16$.

Unlike rumination, mindfulness gains eroded partially after discharge in both arms, falling by 3.53 points under MBCT and 2.02 under routine care between T1 and T2 (both $p < .001$). The MBCT arm nonetheless remained 12.38 points above its own baseline and 6.72 points above the control arm at T2, 95% CI [5.45, 8.00], $d = 2.16$ (both $p < .001$).

Clinically Significant Change

Because the 9Q has established severity bands, change was also examined categorically (Table 5). At baseline every participant in both arms scored in the moderate or severe range; by the end of the intervention none in either arm remained there, but the distribution across the two lower bands differed markedly.

Table 5
Distribution Across 9Q Severity Bands by Arm and Time Point

Arm and time point	Minimal (< 7)	Mild (7–12)	Moderate (13–18)	Severe (≥ 19)	Total
MBCT – baseline	0	0	25	22	47
MBCT – post-intervention	31	16	0	0	47
MBCT – three months	24	23	0	0	47
Control – baseline	0	0	17	30	47
Control – post-intervention	3	44	0	0	47
Control – three months	1	42	4	0	47
<i>Note. Values are numbers of participants. 9Q severity bands follow Kongsuk et al. (2018): below 7 no or minimal symptoms, 7–12 mild, 13–18 moderate, 19 or above severe.</i>					

Table 6
Readmission within three months of discharge

Arm	Readmitted n (%)	Not readmitted n (%)	Comparison
MBCT (n = 47)	2 (4.26)	45 (95.74)	$\chi^2(1, N = 94) = 3.07, p = .080$; Fisher's exact $p = .158$
Routine care (n = 47)	7 (14.89)	40 (85.11)	Risk difference 10.6 pp, 95% CI [- 1.1, 22.3]
			RR = 0.29, 95% CI [0.06, 1.31]; NNT = 9.4

At post-intervention, 31 of 47 MBCT participants (66.0%) scored in the minimal range (below 7) against 3 of 47 controls (6.4%), $\chi^2(1, N = 94) = 36.13, p < .001$. At three months the figures were 24 of 47 (51.1%) and 1 of 47 (2.1%), $\chi^2(1, N = 94) = 28.83, p < .001$, a risk difference of 48.9 percentage points, 95% CI [34.1, 63.8], and a number needed to treat of 2.0. Four control participants (8.5%) had returned to the moderate band by three months, against none under MBCT.

Readmission at Three Months

Within three months of discharge, 2 of 47 MBCT participants (4.26%) were readmitted for depressive disorder against 7 of 47 controls (14.89%). The difference was not statistically significant, $\chi^2(1, N = 94) = 3.07, p = .080$; because two expected cell counts fell below five, Fisher's exact test was also computed and gave the same conclusion, $p = .158$. The absolute risk difference was 10.6 percentage points, 95% CI [- 1.1, 22.3], with a relative risk of 0.29, 95% CI [0.06, 1.31], and a number needed to treat of 9.4.

Both intervals include the null, and the trial was powered for continuous outcomes rather than for an event of this frequency; nine events across both arms provide very little precision. The direction is consistent with the continuous outcomes, but the result should be considered hypothesis-generating rather than evidence of a relapse-prevention effect.

Adherence, Retention and Safety

Adherence and retention were complete. All 47 MBCT participants attended all six sessions (mean attendance 6.0 of 6). No participant fell below the 80% threshold, relapsed during sessions 1 to 6, or withdrew, and all 94 randomised participants were assessed at both follow-up points. This reflects the inpatient setting: the programme was delivered during admission and completed before discharge, removing the travel, scheduling, and competing-demand barriers that typically reduce attendance at outpatient mindfulness programmes.

Safety was monitored through the routine clinical observation applied to all patients on the unit, supplemented by facilitator observation during and after each session, with immediate referral to ward staff and the treating psychiatrist available for any participant showing distress or suicidal ideation. No adverse events were recorded in either arm during the intervention or over the follow-up period, and no participant required such a referral in connection with the programme.

Qualitative Findings

Sixteen of the 47 MBCT participants took part in two focus groups of eight. Their mean age was 24.25 years (SD = 8.87, range 15 to 58); 12 (75%) were female, 7 (44%) were employed, and 9 (56%) were unemployed or in education. All 16 had attended all six sessions. The subsample, therefore, closely resembled the MBCT arm as a whole (M = 24.68 years, SD = 8.25, range 15 to 58; 78.7% female; 42.6% employed). Content analysis produced three themes.

Theme 1: Recognising Emotions and Automatic Thought Patterns Participants described learning to step back and observe their own thoughts and emotions more quickly, and coming to see negative thoughts as phenomena that arise and pass rather than as a true account of themselves.

"Before, when I started to sink or feel sad, negative thoughts would come in a whole string and I would just drown in them. After practising mindfulness I began to notice – ah, the negative thoughts have come again. I learned just to watch them, without getting caught up in them. It let me get out of the cycle of sadness much faster." (Participant 3, Group 1)

"I used to think the sadness was me. But after practising mindfulness it was as if I stepped back one pace and stood watching the sadness walk past. It made me realise a thought is only a thought – not always the truth." (Participant 10, Group 2)

This theme aligns with the decentring mechanism proposed in MBCT theory and explains the reduction in rumination observed in the MBCT arm.

Theme 2: Behavioural Change and Responding to Problems with Self-Compassion Participants reported replacing habitual, automatic reactions with a deliberate pause, followed by a response chosen with kindness towards themselves rather than self-criticism.

"Before, if I made a mistake at work I would berate myself terribly and then punish myself by lying in bed and not eating. Now, when I notice, I get up and get a cold drink, breathe deeply, and tell myself it is all right, I can start again. It has changed the self-harming behaviour completely." (Participant 2, Group 1)

"Before, when something hurt me I would shut myself away, cry, and blame myself over and over. Now, when I notice tension building, I come back to the breath or get up and do something else mindfully – watering the plants, housework. It stops me doing the things that used to hurt me." (Participant 12, Group 2)

This theme maps onto the continued reduction in depressive symptoms and describes a shift from avoidance and self-criticism towards approach behaviour and self-compassion.

Theme 3: Developing Stress-Management Strategies for Relapse Prevention Participants described the skills acquired as durable tools for future stress, and reported recognising early warning signs and acting on them before symptoms escalated.

"My fear of becoming depressed again has dropped a lot, because now I have an anchor – the breath. When I meet a storm in life or heavy stress, I know how to drop anchor so the boat does not capsize. It is a skill that really works." (Participant 4, Group 1)

"Now I write down my own warning signs. If I start sleeping badly or losing my appetite, I use the mindfulness techniques straight away. It is like having an emergency plan; I can put out the fire before it spreads." (Participant 9, Group 2)

Convergence with the Quantitative Findings

The three themes outline a sequence: increased awareness leads to reduced rumination, which then results in more constructive coping, and ultimately, a sense of preparedness for future stress. This sequence parallels the outcome data, where the largest and most sustained effect was on rumination. These accounts should be viewed as participants' personal explanations of change rather than as independent evidence of mechanism, as they were collected only from those who completed the intervention arm.

Discussion

A brief, nurse-led, culturally adapted MBCT programme delivered to psychiatric inpatients resulted in significantly greater improvement than routine care alone in terms of depressive symptoms, rumination, and mindfulness, sustained up to three months after discharge. In the 9Q's own severity bands, half of the MBCT arm (51.1%) was in the minimal-symptom range at three months, compared to one control participant (2.1%), with a number needed to treat of 2.0. Readmission was less frequent under MBCT, but the trial was not powered for this outcome.

The most important feature of these data is that the control arm also improved substantially: depressive symptoms fell by 10.06 points, rumination by 17.21, and mindfulness rose by 7.75 by the end of the intervention period. Routine inpatient care here – pharmacotherapy, nursing support, psychoeducation, and monitoring within a structured ward environment – is evidently an active condition. The MBCT effect is therefore an increment on top of effective usual care rather than a comparison against no treatment, which makes the between-arm differences more notable, and means within-arm change overstates what the programme itself contributed.

The arms diverged most clearly after discharge. Rumination in the MBCT arm remained unchanged between T1 and T2 ($p = 1.000$), while controls drifted back towards baseline, widening the gap between the arms over follow-up. This aligns with the account that MBCT specifically targets repetitive negative thinking (Nolen-Hoeksema, 1991; van der Velden et al., 2015) rather than directly addressing symptom levels, and it matches participants' descriptions of a lasting ability to disengage from circular thought. However, it should not be interpreted as evidence of mediation: within each arm, the change in rumination was only weakly associated with the change in depressive symptoms (MBCT $r = .26$, $p = .076$; control $r = .16$, $p = .293$) and scarcely associated with the change in mindfulness ($r = .10$, $p = .509$). The

moderate pooled correlations ($r = .39$ and $.35$) reflect the between-arm difference rather than within-person covariation.

Mindfulness showed different behavior. Scores fell significantly between T1 and T2 in both groups, and although the MBCT group remained well above its baseline and above the controls, roughly a fifth of the gain achieved during admission was lost by three months. Practice established on the ward is evidently not fully sustained once patients return home, and booster sessions or structured post-discharge support may be needed. Measured mindfulness and rumination are therefore not simply mirror images of each other.

These results are consistent with Thai research, which has shown that mindfulness-based programs can decrease depressive symptoms and rumination in outpatient groups both immediately after the intervention and at a three-month follow-up (Chomphubut et al., 2022; Umklin & Kenbubpha, 2024). Notably, one MBCT group did not experience any relapse at the three- and six-month marks (Kenbubpha et al., 2023). On a global scale, these findings are in line with meta-analyses supporting MBCT's role in preventing relapse (Kuyken et al., 2016; Piet & Hougaard, 2011), trials that integrate MBCT with medication (Guo et al., 2022), and mechanistic reviews that highlight mindfulness and rumination as beneficial pathways (van der Velden et al., 2015).

The between-arm effect sizes exceed the meta-analytic range for MBCT, which requires comment rather than celebration. Three design features plausibly contribute: the inpatient setting allowed for unusually high therapeutic contact; the narrow baseline range (13 to 23 on a 0 to 27 scale) compressed outcome variance and inflated standardized effects; and outcomes were self-reported by unblinded participants, so expectancy cannot be excluded. Readers should prioritize the mean differences and confidence intervals, expressed in the scales' own units, over the standardized effects; the categorical analysis in Table 5 is less vulnerable, as band membership does not depend on the sample's variance.

MBCT was designed for patients in remission, serving as prophylaxis rather than treatment during an episode (Segal et al., 2013). Delivering it to currently symptomatic inpatients is therefore a departure from the original indication, and this trial suggests that a shortened, six-session adaptation can be tolerated and produce benefits in that phase. Admission provides concentrated contact, allowing practice to be established under supervision, which is difficult to achieve in outpatient care within a system with a small psychotherapy workforce. The sample was also more symptomatic than those typically recruited for MBCT trials, with 55.3% in the severe band at baseline. The fact that a six-session programme produced substantial and durable benefits here suggests that acute severity is a weaker barrier to practice than the original indication implies, at least among inpatients receiving concurrent medication and ward support. However, the erosion of gains after discharge indicates that an inpatient programme initiates a practice requiring continuation rather than serving as a self-contained course of treatment.

Delivery by nurses already working on the unit exemplifies a task-sharing model that could extend access without the need to recruit specialist psychotherapists. Cultural congruence seems to have

supported engagement: most participants were already familiar with Buddhist practice, making present-moment attention and letting go easily understandable. However, this familiarity was not uniformly beneficial. Some participants initially perceived meditation as emptying the mind or eliminating thought, whereas MBCT emphasizes awareness and acceptance of whatever arises, necessitating repeated corrections by facilitators. Thus, cultural familiarity should be regarded as a resource requiring active management rather than an unqualified advantage — a point of practical importance for anyone adapting MBCT in Buddhist-majority settings.

Limitations

The trial was conducted at a single centre with 94 participants and followed up for only three months, which restricts generalisability and precision for a low-frequency outcome such as readmission. Participants and facilitators could not be blinded, allocation was disclosed at assignment, and all continuous outcomes were self-reported, so expectancy effects cannot be excluded. The protocol's screening ceiling of 18 on the 9Q was not applied in practice, resulting in a sample that was more symptomatic than planned, limiting comparison with trials recruiting to the original criterion. A fifth of participants (21.3%) were under 18, and the trial was not designed to test whether the programme works differently for adolescents.

Readmission to a single facility serves as a conservative and incomplete proxy for relapse: participants managed as outpatients or admitted elsewhere would not have been recorded, so true relapse rates are almost certainly higher in both arms. Since ascertainment relied on the same source in both arms, the under-count is unlikely to differ systematically between them, making the comparison probably conservative rather than biased towards the intervention. No symptom-based relapse criterion was applied alongside it, although the categorical analysis offers a partial complement: four control participants (8.5%) had returned to the moderate band by three months, compared to none under MBCT.

The sample was young, predominantly female, and largely composed of patients with previous admissions, limiting its transferability to older adults, outpatients, and first-episode presentations. Adverse events were identified through routine clinical monitoring rather than a formal reporting system, so mild or transient harms may not have been captured. Adherence was complete because the programme finished during admission; attendance in an outpatient format would almost certainly be lower. Finally, the qualitative component drew only on intervention-arm completers, so it describes those who did well rather than those who benefited less.

Implications for Practice and Research

The findings support integrating a brief nurse-delivered MBCT programme into inpatient care, particularly before discharge and as part of continuity-of-care planning. Given the erosion of mindfulness gains, services should add post-discharge practice support — such as guided recordings, printed materials, and scheduled follow-up contact — and build facilitator capacity through training, supervision, and mentoring. Research priorities include follow-up at six and twelve months with survival analysis, multi-

site replication, formal mediation analysis, comparison of delivery formats, extension to adolescents and older adults, and evaluation of booster contact.

Conclusion

A six-session, nurse-led, culturally adapted MBCT programme delivered during psychiatric admission significantly benefited routine inpatient care by reducing depressive symptoms, rumination, and enhancing mindfulness, with effects maintained three months after discharge. While reductions in rumination were fully sustained, gains in mindfulness partially eroded, indicating the need for post-discharge support to consolidate the effects. Readmission was less frequent following MBCT; however, the trial was not designed to test this, and the finding requires confirmation in a larger, longer study. The model appears feasible for delivery by existing psychiatric nursing staff and merits evaluation at scale within Thai mental health services.

Declarations

Author Contribution

The preliminary allocation, subject to team revision, is as follows: KW was responsible for the conceptualization, methodology, and project administration. KK contributed to the conceptualization, methodology, supervision, and initial drafting, as well as the review and editing of the manuscript. PP oversaw the investigation, data curation, and project administration. TP was involved in the investigation, formal analysis, and manuscript review and editing. PH contributed to the investigation, provision of resources, and manuscript review and editing. All authors have read and approved the final manuscript.

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Data Availability

The dataset generated and analysed during the current study is not publicly available because participants did not consent to public deposition of their data, but a de-identified dataset is available from the corresponding author on reasonable request, subject to approval by the Human Research Ethics Committee of Prasrimahabodi Psychiatric Hospital. The qualitative transcripts are not available, as they were collected in Thai and contain contextual detail that could identify individual participants within a single clinical unit. The programme materials — session plans, information sheets and worksheets — are available from the corresponding author on request.

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Figures

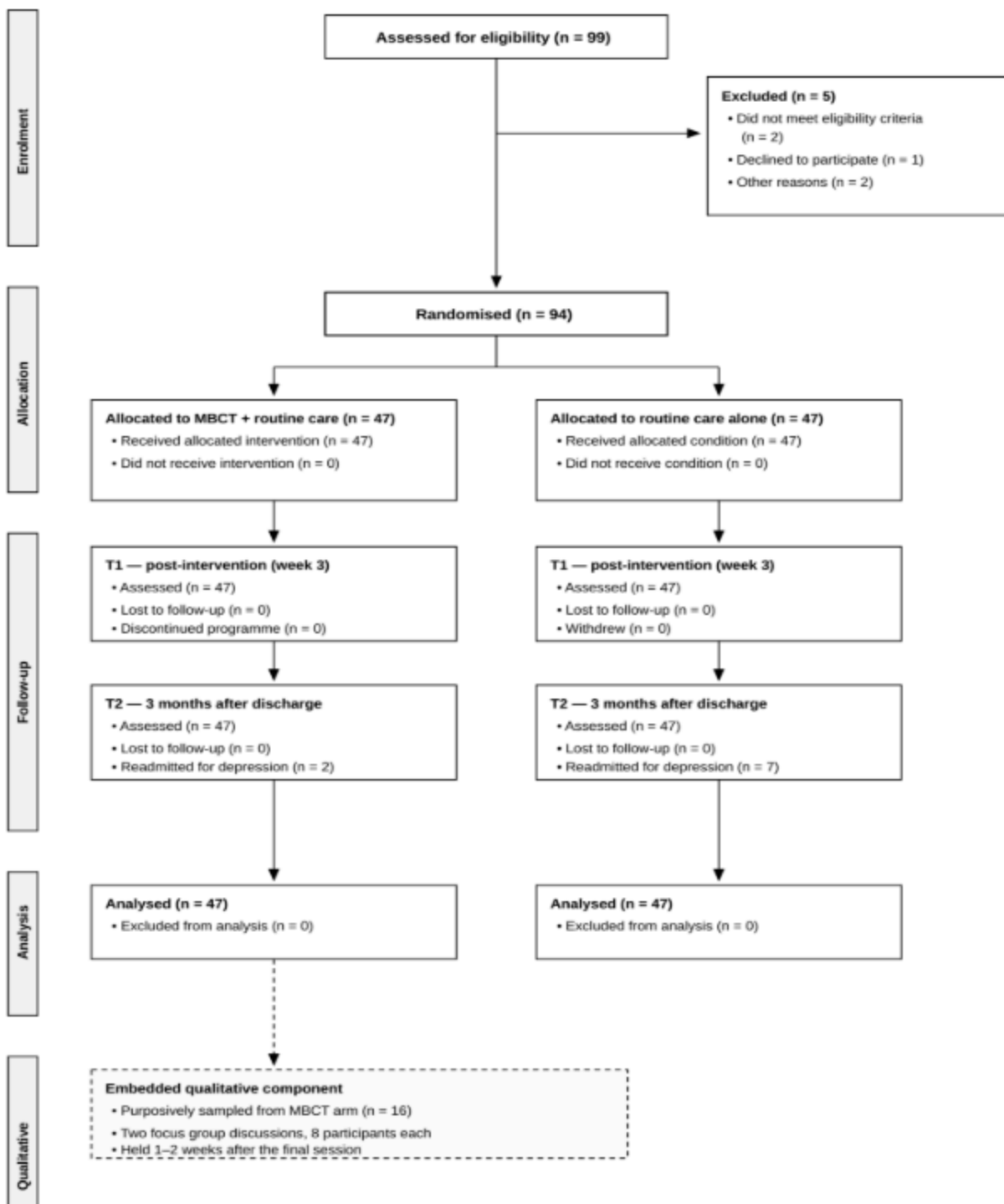


Figure 1

CONSORT flow diagram of participant progress through the trial. Of 99 inpatients with depressive disorder assessed for eligibility, 94 were randomised 1:1 to mindfulness-based cognitive therapy (MBCT) plus routine nursing care or to routine nursing care alone. All participants received their allocated condition and completed assessments at post-intervention (T1) and three-month follow-up (T2), with no

loss to follow-up in either arm. Sixteen MBCT completers were purposively sampled for the embedded qualitative component

Supplementary Files

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