Original Article

The Effects of Mindfulness and Self-Compassion-Based Group Therapy for Major Depressive Disorder: A Randomized Controlled Trial

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Objective: To find the influences of mindfulness and self-compassion-based group therapy and compare them with standard treatment outcomes.

Materials and Methods: Prospective randomized control trial was conducted on two intervention groups (n=23 for mindfulness and self-compassion group, n=11 for the control group) for seven weeks. Depression-related parameters consisted of the Montgomery-Åsberg Depression Rating Scale (MADRS) Thai version, Self-Compassion scale-Thai version (Thai-SCS), Pittsburgh Sleep Quality Index-Thai version (Thai-PSQI), Hospital Anxiety and Depression Scale-Thai version (Thai-HADS), Thai-Perceived Stress Scale-10 (T-PSS-10), Rosenberg self-esteem Thai version, and the World Health Organization Quality of Life (WHOQOL) Thai version, were collected and compared before and after both treatments.

Results: Mindfulness and self-compassion had statistically significant improvement of better depressive rating scale, anxiety, mindfulness & self-compassion, perceived stress scale, self-esteem, and quality of life (p<0.001, 0.001, 0.002, <0.001, 0.005 and <0.001, respectively). Depressive level, anxiety level, mindfulness, and self-compassion, perceived stress scale, self-esteem, and quality of life in both groups were also improved. Nonetheless, there were no significant differences when compared to the mean differences between both groups.

Conclusion: Mindfulness and self-compassion intervention improved depression, anxiety, stress, self-esteem, and quality of life.

Keywords: Mindfulness and self-compassion therapy, Group psychotherapy, Depression, Thai-MADRS, Thai-SCS, Thai-PSQI, Thai-HADS, T-PSS-10, Thai- WHOQOL, Thai-Rosenberg self-esteem, Thai-SCS

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Depression is known as a leading cause of disability in the world and is a significant contributor to the overall burden of disease. More than 300 million people of all ages suffer from depression[1]. The Department of Mental Health, Ministry of Public Health of Thailand (2017), reported that major depressive disorder (MDD) was the third most common psychiatric disorder in Thailand, and the suicidal rate was 6.05 per 100,000 population[2,3]. Approximately 20% to 30% of patients who committed suicide suffered from MDD[4].

Although MDD has a good prognosis and effective response to psychological and pharmacological treatment, nevertheless, the possibility of relapsing after successful treatment can happen. Because of the lower incidence of adverse effects and perceived effectiveness, complementary and alternative medicine have been investigated and significantly grown[5].

In the past two decades, Buddhism's stem

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psychology, which is mindfulness and self-compassion (MSC), has been investigated as a form of clinical intervention in the Western mental health context.

Mindfulness elements compose of awareness and non-judgmental acceptance of one's present experience. Self-compassion is simply compassion directed inward and referred to as recognizing that all humans are imperfect[6-8]. Mindfulness in the context of self-compassion involves being aware of one's painful experiences in a balanced way that neither ignores nor ruminates on disliked aspects of oneself or one's life[8].

The previous studies showed that applying MSC can improve psychological distress such as rumination, anxiety, worry, fear, anger, and depression and enhance wellbeing and quality of life[6,8].

In Thailand, there are limited studies about the MSC program in depression. As a result, the present study was aimed to compare the effect of MSC on group psychotherapy of MDD both before and after treatment group programs and compare its effectiveness with standard treatment.

Materials and Methods

Study design

The study was a prospective randomized control trial conducted between May 2018 and January 2019. Subjects were recruited through an advertisement posted at Ramathibodi Hospital and on social media. Inclusion criteria were age 18 to 60 years and diagnosis of MDD by the criteria of Diagnostic and Statistical Manual (DSM-V). The subjects with psychiatric disorders, cognitive impairment, substance abuse, electroconvulsive therapy (ECT) treatment, or changing of treatment during group therapy were excluded from the study. All the participants underwent two assessments before the enrollment. The first one was a telephone screening for eligibility. The second assessment was a visit for a definite diagnosis of MDD. At this process, the applicants with exclusion criteria were ruled out. The computer generated block randomization (block of two), which was utilized to generate the two treatment groups, i.e., mindfulness and self-compassion-based therapy (experimental group) and standard psychotherapy group (control group), with 8 to 11 subjects for each group[9]. The duration for group therapy was 1.5 hours per session per week[10], lasting for seven consecutive weeks. If a subject was absent for more than two sessions, it was counted as "discontinue," as shown in Figure 1. The ethical approval for the study was obtained from the Ethics Committee, Faculty of Medicine, Ramathibodi Hospital, Mahidol University (IRB ID 01-60-66).

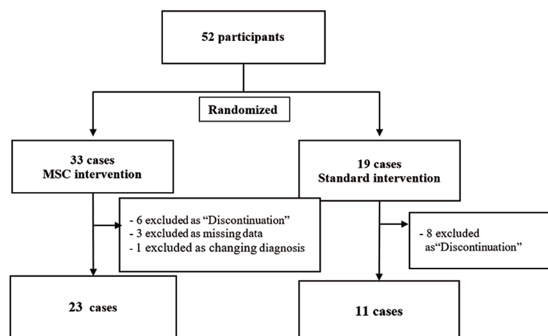

Figure 1. Flow of study.

Outcome and assessments

Self-assessment questionnaires were administered before and after the seven-week program in both groups of participants. The three domains, including demographic data, depressive data, and collateral data, were collected. Demographic data consisted of age, gender, status, graduation, job, the income of fewer than 10,000 Baht per month, and duration of treatment for depression. The depressive profile was described by sadness, inner tension, sleep disturbance, reduced appetite, concentration difficulty, lassitude, inability to feel, pessimistic thought, and suicidal thought. The collateral data included sleep quality, stress level, anxiety level, self-esteem level, and quality of life.

The primary outcome was derived from the Montgomery-Åsberg Depression Rating Scale (MADRS), a questionnaire translated by Kongsakon et al[11]. It was composed of a 10-item clinician-rated scale assessing the symptoms of depression that were selected to be responsive to treatment[12]. The sad mood was assessed by two items that captured the observers' perspective and reported subjective experience. The other eight items assessed tension, sleep, appetite, concentration, lassitude (activity), inability to feel (anhedonia), pessimism, and suicidal thoughts. Each item was rated on a 7-point (0 to 6) ordinal scale. A total score was computed as the sum of the 10-items and could range from 0 to 60. Higher scores reflected more severe depression. The score interval of 0 to 6 was considered normal[12] or symptom absent, 7 to 19 was considered as mild depression[12,13], 20 to 34 was considered moderate depression[12], and score above 34 was considered as severe depression. Thai-MADRS was declared to have internal consistency reliability (Cronbach's

alpha coefficient) of 0.95 and test-retest reliability (intraclass correlation coefficient) of 0.80[14]. The present study also used the clinician-rating severity of depression in MADRS to evaluate how well the subject's depression was. The scoring was based on a scale of 0 to 6, whereby 6 reflected the poorest depression.

The questionnaires for the secondary outcome were derived from the Self-Compassion Scale-Thai version (Thai-SCS), Pittsburgh Sleep Quality Index-Thai version (Thai-PSQI), Hospital Anxiety and Depression Scale-Thai version (Thai HADS), Thai-Perceived Stress Scale-10 (T-PSS-10), Rosenberg self-esteem, and the World Health Organization Quality of Life (WHOQOL).

The Self-Compassion Scale (SCS), created by Neff(14), measures the degree to which individuals display self-kindness against self-judgment, common humanity versus isolation, and mindfulness versus over-identification. The long version of the SCS consists of 26 items. This includes 6-subscales consist of self-kindness, self-judgment, common humanity, isolation, mindfulness, and over-identification. Neff recommends this scale for ages 14 and up with a minimum 8th-grade reading level[14]. Presented on a Likert scale, ranging from 1 (almost no self-compassion) to 5 (constant self-compassion), those completing the SCS can gain insight on how they respond to themselves during a struggle or challenging time. The SCS has been translated into Thai languages by Attasaranya et al Thai-SCS studied was declared to have the internal consistency reliability (Cronbach's alpha co-efficiency) of 0.88 for self-compassion and mindfulness[15].

Thai-PSQI, a questionnaire translated by Sitasuwan et al[16], was composed of nineteen self-rated questions in seven factors, namely sleep quality, sleep latency, sleep duration, habitual sleep efficiency, sleep disturbance, use of sleep medication, and daytime functioning. The score was calculated by summarizing scaled points in each factor. A subject was labeled as "poor sleep quality" if its score was higher than 5[16].

Thai-PSQI was declared to have internal consistency reliability (Cronbach's alpha co-efficiency) of 0.84 and test-retest reliability (intraclass correlation coefficient) of 0.89[17]. The present study also used self-rated sleep quality in PSQI to evaluate how well the subject's sleep quality was. The scoring was based on a scale of 0 to 3, whereby 3 reflected the poorest sleep.

Thai HADS, translated by Nilchaikovit et al[18], was used for evaluating mood symptoms in each subject. It contained two domains, HAD-D for depressive symptoms, and HAD-A for anxiety symptoms, seven items for each section. Each section had a full 21 score range and a cut-off point was above 11[18]. Thai HADS studied was declared to have the internal consistency reliability (Cronbach's alpha co-efficiency) of 0.86 for anxiety and 0.83 depression section[19]. All these data were collected by trained staff s who did not know about each group's assignment.

T-PSS-10 translated by Wongpakaran et al[20], was used for evaluating the perception of stress in each subject[21]. This 10-item questionnaire had a scale rating for each item, from 0 (never) to 4 (very often). T-PSS-10 studied was declared to have internal consistency reliability (Cronbach's alpha co-efficiency) of 0.80 for the perception of stress[20].

Rosenberg's self-esteem scale Thai version was translated by Wongpakaran et al[22]. The questions consisted of a 10-item scale that measures global self-worth by measuring both positive and negative feelings about the self. The scale was believed to be unidimensional. All items were answered using a 4-point Likert scale format ranging from strongly agree to strongly disagree[23]. The Thai version of the Rosenberg self-esteem Scale studied was declared to have the internal consistency reliability (Cronbach's alpha co-efficiency) of 0.85 for self-esteem level, and the Pearson's correlation between it and the self-esteem visual analog scale was 0.62[22].

WHOQOL-BREF-THAI translated by Mahatnirunkul et al[24], the WHOQOL-BREF consisted of twenty-six items including twenty-four items for four domains (physical, psychological, social, and environmental), one item for general quality of life, and one item for Health-Related Quality of Life (HRQOL)[24]. There were seven items in the physical domain, six items in the psychological domain, three items in the social domain, and eight items in the environmental domain. The WHOQOL-BREF-THAI contained the twenty-six original items[24]. The patients were required to rate their HRQOL in the past two weeks. The item scores ranged from 1 to 5, with a higher score indicating a better HRQOL. Because the numbers of items were different for each domain, the domain scores were calculated by multiplying the average of the scores of all items in the domain by 4. Thus, the domain scores would have the same range, from 4 to 20. WHOQOL-BREF-THAI 26

Table 1. Demographic characteristics between MSC group and control group

	MSC group n (%)	Control group n (%)	p-value
Age (years); mean±SD	35.65±10.28	43.91±14.26	0.06
Female	20 (86.96)	10 (90.91)	0.07
Single	17 (73.91)	8 (72.73)	0.99
Equal or higher Bachelor degree	21 (95.45)	11 (100)	0.47
Unemployed	6 (26.09)	5 (45.45)	0.60
Income (<10,000 Baht/month)	7 (30.43)	5 (45.45)	0.22
MDD treatment duration (years); median (range)	1 (0.25, 14)	3 (0.5, 40)	0.13

MSC=mindfulness and self-compassion; MDD=major depressive disorder; SD=standard deviation

studied was declared to have the internal consistency reliability (Cronbach's alpha co-efficiency) of 0.84 for quality of life[25].

Statistical analysis

The interesting variables with normal distributions were determined using the Shapiro-Wilk test for normality. They were reported as mean (standard deviation) if normally distributed data and reported in the median and ranges if data were non-normal distribution. The baseline demographic and depressive features were compared across the groups, between before and after the intervention, using a t-test. Variables with non-normal distributions were reported as median (interquartile range). The analysis of differences after the treatment was processed by paired t-test. Differences were considered significant at a p-value of less than 0.05. Intention to treat principle was used for analyses in the present study. All statistical analysis was performed by Stata Statistical Software, version 15 (StataCorp LLC, College Station, TX, USA).

Results

The number of interested participants from advertised media was 65, 52 of which were selected for an in-person assessment. Thirty-three patients were in the mindfulness and self-compassion-based group, and 23 patients completed the entire seven-week schedule (69.7%). Nine patients were excluded because of discontinuation (n=6) and missing data (n=3). Nineteen patients were in the control group, but eight participants were excluded because of their discontinuation thus, 11 completed the entire seven-week schedule (57.89%). Therefore, 44 participants were included in the present study.

For both groups, the reasons for discontinuation include lacking time, workload, personal issues, and no desire for treatment. The major reason was lacking time. Finally, twenty-three patients in the MSC group, and eleven patients in the control group were analyzed.

The demographic data is shown in Table 1. Despite the discontinuation rate slightly higher in control group, the mean age, gender, marital status, education level, employment status, income, and duration of MDD treatment showed no significant difference between the two groups. Women and high levels of education were predominant in both groups. The mean scores of MADRS, PSQI, HAD-A, HAD-D, T-PSS-10, WHOQOL, Rosenberg self-esteem, Mindfulness, and self-compassion and its sub-scale showed no significant difference between the two groups at baseline, as shown in Table 2.

The results of comparisons between before and after mindfulness and self-compassion-based group therapy are shown in Table 3. After interventions, MADRS, with a statistical significance, was decreased by 8.49 ($p<0.001$). HAD-D, HAD-A, T-PSS score, WHOQOL, Rosenberg self-esteem and Self-compassion and mindfulness with a statistical significance, were decreased by 3.22 points ($p<0.001$), 6.23 points ($p<0.001$), 7.05 points ($p=0.001$), 13.48 points ($p<0.001$), 4.05 points ($p=0.005$), and 0.48 points ($p=0.002$), respectively.

Self-judgement, humanity, isolation, mindfulness, over identity, which are sub-scales of self-compassion and mindfulness scale, were improved significantly, –0.57 points ($p<0.001$), +0.47 points ($p=0.001$), –0.62 points ($p<0.001$), +3.57 points ($p=0.006$), +0.57 points ($p<0.001$), respectively in the mindfulness and self-compassion-based group but not in the standard intervention group.

Mean Thai-PSQI score and self-kindness,

Table 2. Depressive and collateral data between the intervention group (MSC) and the control group

	MSC Mean±SD	Control Mean±SD	p-value
MADRS	19.13±7.16	22±10.47	0.35
PSQI	10.91±4.00	11.82±4.81	0.57
HAD-depression	9.95±4.51	8.36±4.03	0.33
HAD-anxiety	11.45±3.23	13.36±5.08	0.20
T-PSS-10	24.73±6.14	22.55±7.58	0.37
WHO-QOL	75.26±15.59	73.64±15.88	0.78
Rosenberg self esteem	23.30±5.63	25.27±5.98	0.36
Self-compassion and mindfulness	2.61±0.60	2.67±0.65	0.80
Self-kindness	2.94±0.80	2.74±0.67	0.51
Self-judgement	3.49±0.81	3.08±0.93	0.21
Humanity	2.99±0.95	2.6±0.76	0.26
Isolation	3.87±0.85	3.63±1.13	0.50
Mindfulness	2.97±0.74	3.07±0.70	0.70
Over identify	3.92±0.65	3.77±0.81	0.58

MSC=mindfulness and self-compassion; MADRS=Montgomery-Åsberg Depression Rating Scale; PSQI=Pittsburgh Sleep Quality Index; HAD=Hospital Anxiety and Depression Scale; T-PSS-10=Thai-Perceived Stress Scale-10; WHO-QOL=World Health Organization Quality of Life; SD=standard deviation

p=0.237 and 0.469, respectively, were improved but their differences were not statistically significant. In control group, there were significant improvements in Thai-MADRS (p=0.003), HAD-D (p<0.005), HAD-A (p<0.001), T-PSS score (p=0.001), WHOQOL (p=0.003), Rosenberg self-esteem score (p=0.029), and self-compassion and mindfulness scale (p=0.049). The Thai-PSQI was decreased by 1.18, which was not statistically significant. Self-kindness, self-judgment, humanity, isolation, mindfulness, over identity, were sub-scales of self-compassion and mindfulness scale. They were improved but their differences were not statistically significant as shown in Table 3.

When the study finished, the authors compare score differences (mean, SD, or medians) between MSC group and the control group (Table 4). The result of score differences did not found a significant difference between the two groups in each parameter (p>0.05), as seen in Table 4.

Discussion

The present study found that MSC participants' depressive symptoms improved from moderate depression to mild depression with statistical significance after the program finished. Moreover, the study also found that MSC participants had less anxiety, less stress, a better quality of life, more self-esteem, less stress, and felt more compassionate toward themselves.

The MSC program are primarily emphasized on MSC[8], so self-compassion, mindfulness, and most of its subscales scores were significant. According to the finding of a former meta-analysis, it found correlation between mindfulness, compassion, and psychopathology, demonstrating that higher levels of mindfulness and compassion were associated with lower levels of psychopathology including depression, anxiety and stress. Similar results were found in the present study moving the results in the same direction[26].

MSC had better compliance with another group in which the MSC dropout rate was lower 18.18% compared to the control group, which was 42.11%. The subjects responded positively with the assigned activities and had good motivation within the MSC groups. It can imply that the participants gained benefits from the interventions that input into the group. The authors hypothesize that one of the factors that responded to better compliance in the intervention group was because the MSC technique is based on Buddhist stem psychology[6], which help the participants to understand easier. These differences of compliance or adherence to the different interventions between mindfulness and self-compassion-based intervention and standard intervention (control) should be researched further to prove their veracity.

Table 3. MSC group and control group results compared between before and after MSC vs. standard treatment

	MSC; mean±SD			Control; mean±SD		
	Before	After	p-value	Before	After	p-value
MADRS	19.13±7.16	10.64±3.13	<0.001*	22±10.47	17.27±8.26	0.003*
PSQI	10.91±4.00	9.96±3.25	0.237	11.82±4.81	10.64±4.25	0.469
HAD-depression	9.95±4.51	6.73±4.33	<0.001*	8.36±4.03	4.27±3.47	0.005*
HAD-anxiety	11.45±3.23	17.68±6.68	<0.001*	13.36±5.08	7.45±4.87	<0.001*
T-PSS-10	24.73±6.14	17.68±6.48	<0.001*	22.55±7.58	16.64±6.52	0.001*
WHO-QOL	75.26±15.59	88.74±14.02	<0.001*	73.64±15.88	87.09(16.24	0.003*
Rosenberg self esteem	23.30±5.63	27.35±3.99	0.005*	25.27±5.98	29.47±4.47	0.029*
Self-compassion and mindfulness	2.61±0.60	3.09±0.45	0.002*	2.67±0.65	3.17±0.44	0.049*
Self-kindness	2.94±0.8	3.18±0.47	0.054	2.74±0.67	3.24±0.67	0.114
Self-judgement	3.49±0.81	2.92±0.86	<0.001*	3.08±0.93	2.72±0.83	0.373
Humanity	2.99±0.95	3.46±0.61	0.001*	2.6±0.76	3.27±0.59	0.652
Isolation	3.87±0.85	3.25±0.93	<0.001*	3.63±1.13	2.92±0.76	0.121
Over identify	3.92±0.65	3.35±0.76	<0.001*	3.77±0.81	3.40±0.74	0.294
Mindfulness	2.97±0.74	3.52±0.59	0.006*	3.07±0.70	3.50±0.72	0.196

MSC=mindfulness and self-compassion; MADRS=Montgomery-Åsberg Depression Rating Scale; PSQI=Pittsburgh Sleep Quality Index; HAD=Hospital Anxiety and Depression Scale; T-PSS-10=Thai-Perceived Stress Scale-10; WHO-QOL=World Health Organization Quality of Life; SD=standard deviation

Table 4. Comparison of results between score differences between MSC and control group after intervention

	MSC Delta (SD)	Control Delta (SD)	p-value
MADRS[a]	−8.52 (8.16)	−4.73 (4.03)	0.156
PSQI[a]	−0.96 (3.77)	−1.18 (5.21)	0.887
HAD-depression[a]	−3.23 (3.58)	−4.09 (3.75)	0.525
HAD-anxiety[a]	−3.45 (2.86)	−5.91 (4.08)	0.053
T-PSS-10[a]	−7.04 (5.61)	−5.91 (4.08)	0.563
WHO-QOL[a]	13.48 (13.77)	13.4 (11.33)	0.996
Rosenberg self esteem[a]	4.04 (6.19)	3.73 (4.86)	0.883
Mindfulness scale[b]	0.25 (−1, 2.75)	0.5 (−0.75, 2)	0.906
Total self-compassion[b]	0.39 (−0.69, 2.19)	0.50 (−0.39, 1.93)	0.922

MSC=mindfulness and self-compassion; MADRS=Montgomery-Åsberg Depression Rating Scale; PSQI=Pittsburgh Sleep Quality Index; HAD=Hospital Anxiety and Depression Scale; T-PSS-10=Thai-Perceived Stress Scale-10; WHO-QOL=World Health Organization Quality of Life; SD=standard deviation

[a] Mean differences were used to compare, [b] Medians were used to compare depending on the distribution of data

The authors observed that participants in the MSC group had better relationships and reactions between the members than those in the control group. It means the MSC activity induces good relationships and promote bonding between members. These all lead to a motivation to carry out all activities from the beginning to the end of the program[26].

The strength of the present study is the activities in the MSC group, such as MSC intervention. The activities promote the participants to have three quality of mind, 1) the presence of self-kindness in the absence of self-judgment, 2) a sense of shared common humanity as opposed to a sense of isolation, and 3) mindfulness as opposed to over-identification. They also inspired the participants to improve a healthy attitude towards oneself during times of struggle. This, in turn, resulted in a better quality of mind and accept their humanness, decreasing internal

conflict, relieving stress, and ultimately decrease depression.

A limitation of the present study is the relatively small group of samples. It could not distinguish the differences in many parameters, which seemed to improve. Evaluation after treatment should be continuing to determine the long-term effect of the interventions. Studied samples were mainly female, so the results would be varied by other properties such as hormones, menstrual cycles, which were not mentioned in the present study. However, the ratio between female to male was not affected since the prevalence in females is higher than that in males in MDD patients[1].

Conclusion

Mindfulness and self-compassion-based group therapy showed benefits for treating patients with MDD, especially in decreasing the severity of depression, stress level, promoting better sleep quality, better quality of life, better quality of mind, and more compassion toward themselves. It is also easy to apply in Thailand because of cultural beliefs, which could be influenced by effectively treating the psychiatric symptoms. The outcomes from the mindfulness and self-compassion-based and standard treatment were both positive.

What is already known on this topic?

Previous studies conducted outside Thailand shows MSC group therapy gives positive results in countering depression. Its effectiveness is close to that of standard treatment (group psychotherapy). Therefore, the authors intended to conduct a comparison between both conventions in Thailand and see whether the MSC group therapy approach is as practical as standard treatment.

What this study adds?

This study, the first in Thailand, compares the effectiveness of mindfulness and self-compassion-based group therapy with the standard group psychotherapy for major depressive disorder. The results show both treatments produce an improvement in the severity of depressive symptoms, stress level, quality of life, level of self-esteem, mindfulness, and self-compassion. It also shows that both promote an improvement in depression profiles, quality of mind, and daily-life function impact. However, mindfulness and self-compassion-based group therapy seemed to have more favorable results in the level of mindfulness and self-compassion. The differences between both approaches are not statistically significant, but the duration of the treatments can be explored further for a longer period.

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Conflicts of interest

The authors declare no conflict of interest.

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