

THE EFFECTIVENESS OF MINDFULNESS-BASED COGNITIVE THERAPY IN REDUCING ANXIETY AMONG MEDICAL STUDENTS

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ARTICLE INFO

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Kata kunci:

Terapi Kognitif Berbasis
Kesadaran
Kecemasan
Mahasiswa Kedokteran
Kesehatan Mental

Keywords:

Mindfulness-Based Cognitive
Therapy
Anxiety
Medical Student
Mental health

Original submission:

May 29, 2025

Accepted:

July 11, 2025

Published:

September 20, 2025

ABSTRAK

Kecemasan merupakan salah satu gejala yang sering dialami oleh mahasiswa kedokteran. Kecemasan ditandai dengan perasaan khawatir terhadap bahaya yang tidak terduga di masa mendatang, dengan keadaan emosi negatif yang ditandai dengan firasat buruk, ketegangan somatik, berkeringat, dan kesulitan bernapas. Kecemasan berdampak pada penyesuaian diri, gangguan kognitif, dan prestasi mahasiswa, yang mempengaruhi kualitas dan kompetensi mahasiswa kedokteran Indonesia di masa mendatang. Penelitian ini menguji secara empiris Mindfulness-Based Cognitive Therapy (MBCT) untuk intervensi kecemasan pada mahasiswa kedokteran. Penelitian eksperimen one group pretest and posttest dilakukan pada delapan mahasiswa kedokteran yang memenuhi kriteria sampel. Intervensi dengan MBCT dilakukan dalam 8 sesi masing-masing selama 90-120 menit dan dinilai menggunakan Hamilton Anxiety Rating Scale (HARS). Hasil penelitian menunjukkan adanya penurunan skor kecemasan yang signifikan ($Z = -2.111^b$, $P = 0.035$) setelah intervensi MBCT. Dapat disimpulkan bahwa MBCT terbukti efektif menurunkan kecemasan pada mahasiswa kedokteran di lingkungan perguruan tinggi.

ABSTRACT

The Effectiveness of Mindfulness-Based Cognitive Therapy in Reducing Anxiety Among Medical Students. Anxiety is a common psychological disorder among medical students, marked by chronic apprehension and physiological manifestations including muscle tension, perspiration, and shortness of breath. These symptoms may hinder cognitive performance, academic achievement, and overall psychological resilience, potentially affecting the future proficiency of medical professionals. This study aimed to evaluate the efficacy of Mindfulness-Based Cognitive Therapy (MBCT) in reducing anxiety symptoms among medical students. An experimental research design was used, utilizing a one-group pretest-posttest approach, involving eight participants who met the established inclusion criteria. The intervention consists of eight weekly MBCT sessions, each lasting 90 to 120 minutes. Anxiety levels were assessed using the Hamilton Anxiety Rating Scale (HARS) before and after the intervention. HARS scores indicated a statistically significant reduction in anxiety level following the MBCT intervention ($Z = -2.111^b$, $p = 0.035$). These findings suggest that MBCT serves as an effective therapeutic approach for reducing anxiety among medical students in higher education settings.

INTRODUCTION

People typically respond to various everyday events with anxiety, which serves as a warning of potential threats and triggers reactions such as fight, flight, or immobility. In contrast, an anxiety disorder involves sudden episodes of anxiety that provoke intense and uncontrollable responses. Medical students experience higher levels of anxiety than the general population due to the demanding and extensive nature of their training. The COVID-19 pandemic, which limited social interaction and physical contact, further increased anxiety levels to a moderate degree. Several studies have shown that anxiety can interfere with self-adjustment, impair cognitive function, and lower academic performance, ultimately reducing the quality and proficiency of Indonesian medical students.^{2,3}

Mindfulness-Based Cognitive Therapy (MBCT) is a simple therapy for anxiety that can be practiced at ease by students. MBCT is a type of cognitive therapy, meditation, and attitude development that focuses on the present event, featuring a non-judgmental awareness known as "attention."⁴ This therapy has been proposed as the most impactful mindfulness-based therapy type and its application has also been studied on patients with opioid use disorders and Post Traumatic Stress Disorder (PTSD).^{5,6,7} However, its efficacy on reducing anxiety levels among medical students has not been evaluated.

This study implemented a mindfulness-based intervention, specifically Mindfulness-Based Cognitive Therapy (MBCT), on Gunadarma University medical students to evaluate its efficacy in reducing anxiety levels amongst medical students. It is expected that MBCT could reduce anxiety levels and consolidate its application for medical students further.

METHOD

Experimental studies were conducted with a one-group pre-test and post-test to evaluate changes after treatment without a control group. *The Hamilton Anxiety Rating Scales* (HARS) questionnaire is used before and after the MBCT intervention. The population of this study was Gunadarma medical students who experienced mild to moderate anxiety based on the HARS score. Using consecutive sampling, the researchers selected eight medical students who met the inclusion criteria. In this technique, the researchers included all eligible subjects who met the study criteria consecutively until they reached the minimum required sample size.

Research permission has been approved by the Head of the Study Program of the Faculty of Medicine, Gunadarma University, to carry out MBCT interventions. The inclusion criteria are students who consent to be study participants, lived or were in the Jabodetabek area, could participate in offline MBCT therapy, were cooperative in the MBCT program intervention, had undergone a swab test with negative results, and had signed a letter of consent (Informed Consent). The eight-session MBCT program focused on three main practices: meditation, mindful action, and self-reflection. Participants attended weekly two-hour sessions, which included mindfulness theory, personal issue discussions, meditation guidance, and practical guidance for daily application.⁸

Table 1. Respondent characteristics based on age

Variable	Mean	SD	Min-Max
Age	20.5	1.41	19-23

Table 2. Respondent characteristics based on gender and academic year

Gender	Frequency	Percentage (%)
Man	4	50
Women	4	50
Total	8	100%

Table 3. Respondent characteristics based on gender and academic year

Academic year	Frequency	Percentage (%)
Second year (2020)	2	25%
Third year (2019)	1	12,5%
Fourth year (2018)	5	62,5%
Total	8	100%

RESULTS

The Hamilton Anxiety Rating Scales questionnaire was collected to evaluate the MBCT intervention. Obtained pre-test and post-test data results as follows:

Table 4. Hamilton Anxiety Rating Scale Result on Pre-test and Post-test

Participant	<i>HARS Pre-test</i>			<i>HARS Pos-test</i>		
	Score	Anxiety Level	Percentage	Score	Anxiety Level	Percentage
P1	24	Moderate	43%	2	None	3%
P2	14	Mild	25%	4	None	7%
P3	15	Mild	27%	24	Moderate	43%
P4	18	Mild	32%	7	None	12%
P5	27	Moderate	48%	6	None	10%
P6	15	Mild	27%	5	None	9%
P7	17	Mild	30%	7	None	12%
P8	18	Mild	32%	19	Mild	34%
Mean	18		33%	9		16%

The results demonstrated a 17% reduction in the mean anxiety level, declining from 33% (mild category) to 16% (no anxiety) following the administration of the Mindfulness-Based Cognitive Therapy (MBCT) intervention. Among the eight participants, 75% (n = 6) exhibited a clinically significant improvement, with post-intervention anxiety scores within the "no anxiety" range. Conversely, 25% of participants (n = 2) continued to report mild anxiety symptoms following the intervention, with one individual exhibiting an increased score sufficient to reclassify their anxiety level as moderate. These findings suggest that MBCT was effective for the majority of participants.

Statistical analysis was conducted using Statistical Product and Service Solutions (SPSS) software, and the data were analyzed using the Wilcoxon test. The following z-score of -2.111b with a p-value of 0.035 shows that the difference was significant.

Table 5. Statistical Outcomes

Pre-test - Post-test	
Z score	-2.111b
Asymp. Sig. (2-tailed)	0.035

DISCUSSION

This study demonstrates that Mindfulness-Based Cognitive Therapy (MBCT) effectively reduces anxiety in medical students. A lower HARS score is thought to be caused by increased behavioural control and cognitive function from higher attention and awareness after the MBCT intervention.⁹ Based on studies conducted by S. Jaiswal et al (2019), MBCT affects a person's anxiety level by changing a person's behaviour, heart rate variability, hemodynamics, genetic biomarkers, neuroendocrine, and immune system.¹⁰ An increase in Heart rate variability (HRV) suggests that mindfulness is also linked to the body's parasympathetic nerve activity.¹¹ Higher levels of awareness also contributed and were shown by other studies by Brown et al. (2012), showing that Individuals with high awareness have a lower stress-related hormone, namely cortisol, than normal individuals by reducing amygdala activity in response to stress.^{12,13} This finding also aligns with prior studies regarding the effectiveness of mindfulness-based therapies in academic settings, such as reducing anxiety among students, especially mathematics-related anxiety.¹⁴

In contrast, the study results indicated that two respondents reported an escalation from mild to moderate anxiety. During the concluding week of the trial, the researcher assessed the participants with moderate anxiety levels. The outcomes indicate that external events, other environmental cues, and their noncompliance in consistently engaging the MBCT therapy could have significantly influenced their anxiety and awareness level. Fundamentally, these results cannot be separated from the influence of several contributing factors. These factors include the intervention module, the therapist providing the intervention, facilities such as audio, visual, and other meditation tools, and respondents' compliance in therapy.

CONCLUSION

Mindfulness-Based Cognitive Therapy (MBCT) has a significant effect on reducing anxiety levels in Gunadarma Medical students. This mindfulness therapy is beneficial for medical students, particularly within the educational framework of the medical field.

LIMITATION

This study has several limitations that should be acknowledged and addressed in future research. The relatively small sample size might limit the statistical significance of the study and decrease the scope of the findings in larger populations. Additionally, uncontrolled extraneous variables—such as participants' diverse daily obligations, exposure to unanticipated stresses, and changing environmental contexts—may have created biases that affected the outcomes, thereby impacting the study's internal validity.

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