

## Mindfulness-Based Intervention to Reduce Stress Levels Among Postgraduate Students

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### ABSTRAK

Mahasiswa pascasarjana menghadapi berbagai tuntutan akademik yang kompleks, seperti penyelesaian tesis atau disertasi, kewajiban publikasi ilmiah, serta standar akademik yang tinggi. Tekanan tersebut sering kali berlangsung bersamaan dengan tanggung jawab profesional dan kehidupan personal sehingga berpotensi meningkatkan stres akademik dan menurunkan kesejahteraan psikologis mahasiswa. Oleh karena itu, diperlukan pendekatan intervensi psikologis yang efektif untuk membantu mahasiswa dalam mengelola tekanan akademik. Penelitian ini bertujuan untuk menganalisis efektivitas *mindfulness-based intervention* (MBI) dalam menurunkan tingkat stres pada mahasiswa pascasarjana melalui pendekatan *literature review*. Metode penelitian dilakukan dengan menelusuri berbagai artikel ilmiah yang dipublikasikan pada periode 2015–2025 melalui basis data Google Scholar, PubMed, Scopus, ScienceDirect, dan SpringerLink menggunakan kata kunci terkait mindfulness, stres akademik, dan kesehatan mental mahasiswa. Literatur yang memenuhi kriteria inklusi dianalisis secara deskriptif dan tematik untuk mengidentifikasi bentuk intervensi, mekanisme psikologis, serta faktor yang memengaruhi efektivitas program mindfulness. Hasil kajian menunjukkan bahwa intervensi berbasis mindfulness, seperti *Mindfulness-Based Stress Reduction* (MBSR) dan *Mindfulness-Based Cognitive Therapy* (MBCT), secara konsisten terbukti efektif dalam menurunkan stres, kecemasan, dan *psychological distress* pada mahasiswa. Efektivitas tersebut berkaitan dengan peningkatan regulasi emosi, kesadaran diri, serta kemampuan *coping* adaptif terhadap tekanan akademik. Temuan ini menunjukkan bahwa program mindfulness berpotensi menjadi strategi intervensi psikologis berbasis bukti yang dapat diterapkan dalam lingkungan pendidikan tinggi untuk mendukung kesehatan mental mahasiswa pascasarjana.

**Kata kunci:** mindfulness-based intervention, stres akademik, mahasiswa pascasarjana, kesehatan mental, literature review.

### ABSTRACT

*Postgraduate students face complex academic demands, including completing theses or dissertations, meeting publication requirements, and maintaining high academic standards. These demands often occur simultaneously with professional responsibilities and personal life obligations, which may increase academic stress and negatively affect students' psychological well-being. Therefore, effective psychological interventions are needed to help students manage academic pressure. This study aims to analyze the effectiveness of mindfulness-based intervention (MBI) in reducing stress among postgraduate students using a literature review approach. The research method involved*



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*searching for scientific articles published between 2015 and 2025 through several academic databases, including Google Scholar, PubMed, Scopus, ScienceDirect, and SpringerLink, using keywords related to mindfulness, academic stress, and student mental health. The selected literature was analyzed using descriptive and thematic approaches to identify the types of interventions, psychological mechanisms, and factors influencing the effectiveness of mindfulness programs. The findings indicate that mindfulness-based interventions, such as Mindfulness-Based Stress Reduction (MBSR) and Mindfulness-Based Cognitive Therapy (MBCT), consistently show positive effects in reducing stress, anxiety, and psychological distress among students. The effectiveness of these interventions is associated with improvements in emotional regulation, self-awareness, and adaptive coping strategies in dealing with academic pressures. These findings suggest that mindfulness programs have the potential to serve as evidence-based psychological interventions that can be implemented in higher education settings to support the mental health and well-being of postgraduate students.*

**Keywords:** *mindfulness-based intervention, academic stress, postgraduate students, mental health, literature review.*

## **INTRODUCTION**

Postgraduate students occupy a unique yet challenging academic position within the higher education system. At this level, students are not only expected to master knowledge in depth but are also required to contribute to scientific advancement through research and academic publications. The demands of completing theses or dissertations within a limited timeframe, fulfilling publication requirements, maintaining high academic standards, and sustaining research productivity often occur simultaneously with professional responsibilities and personal life commitments. This complexity of demands places postgraduate students among groups that are particularly vulnerable to experiencing prolonged academic pressure (Levecque et al., 2017; Evans et al., 2018).

Compared to undergraduate students, postgraduate students face higher expectations of intellectual independence, advanced critical thinking skills, and more intensive academic performance demands. These conditions may generate significant psychological pressure when academic demands are perceived as exceeding an individual's adaptive capacity. Numerous studies have indicated that postgraduate students experience relatively higher levels of stress, anxiety, and depression compared to the general population of the same age group (Evans et al., 2018; Regehr et al., 2013). Moreover, continuous academic pressure can develop into emotional exhaustion, decreased learning motivation, and the emergence of academic burnout among students (Lin & Huang, 2014; Levecque et al., 2017).

The impact of these conditions is not limited to declining academic performance but may also affect overall psychological well-being. Cross-national studies show that the pressures experienced by postgraduate students are associated with an increased risk of mental health problems, including chronic anxiety, emotional exhaustion, and reduced life satisfaction (Evans et al., 2018). Therefore, understanding the factors that contribute to academic stress and identifying effective intervention strategies have become increasingly important in supporting both academic success and the psychological well-being of postgraduate students.

Conceptually, stress is understood as the result of an individual's cognitive evaluation of environmental demands that are perceived to exceed their coping capacity. This perspective aligns with the transactional model of stress proposed by Lazarus and

Folkman (1984), which emphasizes that stress results from an individual's cognitive appraisal of situations perceived as threatening or taxing personal resources. In other words, stress does not arise solely from external stimuli but from the dynamic interaction between environmental demands and an individual's ability to manage those pressures. In the context of higher education, the perception of being unable to manage academic demands becomes one of the primary determinants of persistent stress among students.

A number of international studies indicate that students in advanced levels of education experience relatively higher levels of stress and anxiety compared to the general population of the same age group (Regehr et al., 2013). A systematic review conducted by da Silva et al. (2023) also revealed that academic pressure is correlated with decreased psychological well-being, sleep disturbances, and an increased risk of emotional exhaustion among students. In addition, an experimental study by Sousa et al. (2021) found that high levels of stress among students are closely related to lower emotional regulation abilities and increased cognitive reactivity to academic pressure.

In the Indonesian context, the phenomenon of academic stress among students has also received increasing attention. Several studies report that the pressure of completing final academic projects such as undergraduate theses, master's theses, and dissertations is one of the primary sources of stress among students, in addition to financial difficulties and role conflicts between academic studies, employment, and personal life (Misra & Castillo, 2004). These findings suggest that academic stress among students is multidimensional and influenced by various contextual factors, thus requiring comprehensive and sustainable intervention approaches.

Under such circumstances, the need for evidence-based psychological interventions becomes increasingly urgent. Approaches that focus solely on temporarily reducing stress symptoms are considered insufficient to address the complex and persistent nature of academic pressure. Therefore, interventions are needed that are not only curative but also preventive and promotive, aiming to strengthen self-regulation capacity, enhance psychological flexibility, and develop students' mental resilience in coping with academic demands.

One psychological intervention approach that has developed rapidly in recent decades is mindfulness-based intervention (MBI). Conceptually, mindfulness is defined as a state of full awareness of present-moment experiences with an open and non-judgmental attitude. Mindfulness practice enables individuals to direct their attention consciously to ongoing internal and external experiences, allowing them to observe thoughts, emotions, and bodily sensations more adaptively without becoming trapped in automatic reactive patterns. Through this process, individuals can develop more effective emotional regulation, enhance psychological flexibility, and cultivate an attitude of acceptance toward unpleasant experiences.

In the context of higher education, mindfulness approaches have increasingly gained attention as a potential intervention strategy to address psychological distress experienced by students. Various studies have shown that mindfulness practices can help students reduce rumination tendencies, increase self-awareness, and strengthen adaptive coping abilities in dealing with academic stress. Mechanistically, the effectiveness of mindfulness can be explained through increased metacognitive awareness, reduced emotional reactivity, strengthened self-compassion, and activation of physiological relaxation responses that contribute to the stabilization of the autonomic nervous system (Sperling et al., 2023; Liu et al., 2024).

Empirical evidence indicates that mindfulness-based interventions significantly contribute to reducing stress levels and psychological distress among students. A systematic review conducted by da Silva et al. (2023) found that mindfulness training programs consistently produce positive effects in reducing psychological distress and improving students' mental well-being across various higher education contexts. Similar findings were reported by Deshpande et al. (2023), who demonstrated that the implementation of mindfulness interventions contributed to reduced stress levels, improved emotional regulation, and enhanced subjective well-being among students.

Furthermore, a meta-analysis conducted by Pan et al. (2024) revealed that the Mindfulness-Based Stress Reduction (MBSR) program significantly improves psychological quality of life and reduces distress among students. An experimental study by Sousa et al. (2021) also demonstrated that mindfulness training, even when conducted in a relatively short duration, can reduce psychological stress through increased self-awareness and more adaptive emotional regulation. These findings suggest that mindfulness-based intervention is not only effective as a stress management strategy but also plays a role in strengthening individuals' psychological capacity to cope with academic pressures more resiliently.

Although numerous studies have demonstrated the effectiveness of mindfulness interventions in improving students' psychological well-being, most research has focused on undergraduate students or young adult populations in general. Studies specifically examining the effectiveness of mindfulness interventions among postgraduate students remain relatively limited, particularly in the context of comprehensive literature synthesis. In addition, research integrating the latest empirical findings regarding the implementation of mindfulness-based intervention programs within higher education contexts still requires further strengthening through systematic literature review approaches.

Based on this research gap, a comprehensive review is needed to synthesize empirical findings regarding the effectiveness of mindfulness-based interventions in reducing stress levels among postgraduate students. Although various studies have examined the application of mindfulness-based interventions among student populations in general, research specifically focusing on postgraduate students remains limited. In fact, the characteristics of academic pressure experienced by postgraduate students tend to be more complex and sustained compared to undergraduate students (Evans et al., 2018; Levecque et al., 2017).

Several empirical studies indicate that mindfulness-based interventions have significant potential in reducing stress and improving psychological well-being among students. A systematic review by da Silva et al. (2023) found that mindfulness training programs consistently produce positive effects in reducing psychological distress and enhancing mental well-being among students across different higher education contexts. Other meta-analytic findings also suggest that interventions such as Mindfulness-Based Stress Reduction (MBSR) and Mindfulness-Based Cognitive Therapy (MBCT) are effective in reducing stress, anxiety, and depressive symptoms among young adult populations (Pan et al., 2024; Regehr et al., 2013).

However, most of these studies focus on general student populations or young adults, and research specifically integrating empirical findings on the effectiveness of mindfulness-based interventions among postgraduate students remains limited. Therefore, research using a literature review approach becomes essential to identify,

evaluate, and synthesize existing studies related to the application of mindfulness interventions in the context of academic stress among postgraduate students.

Thus, this study aims to analyze the effectiveness of mindfulness-based interventions in reducing stress levels among postgraduate students through a literature review approach. This review is expected to provide a comprehensive overview of the effectiveness of mindfulness interventions within higher education contexts, as well as identify factors influencing the successful implementation of such interventions. In addition to contributing conceptually to the development of literature on student mental health, the findings of this study are also expected to serve as a practical reference for higher education institutions in developing evidence-based psychological intervention programs to support the mental well-being of postgraduate students.

## **METHODOLOGY**

This study employed a literature review approach to analyze the effectiveness of mindfulness-based interventions (MBI) in reducing stress levels among postgraduate students. This approach was chosen because the objective of the study was to identify, examine, and synthesize various empirical findings from previous studies that discuss the implementation of mindfulness-based interventions in the context of student mental health, particularly those related to academic stress.

The research process began with a literature search across several scientific databases, both international and national, including Google Scholar, PubMed, Scopus, ScienceDirect, and SpringerLink, which contain scholarly journal articles, conference proceedings, and academic publications related to psychology, mental health, and higher education. The literature search focused on articles published within the last ten years (2015–2025) to ensure the recency of findings and their relevance to the development of mindfulness research in higher education contexts.

The keywords used in the search process included combinations of terms such as “*mindfulness-based intervention*,” “*mindfulness*,” “*academic stress*,” “*graduate students*,” “*postgraduate students*,” “*student mental health*,” and “*stress reduction*.” The literature selection process was conducted based on several inclusion criteria: (1) empirical research articles or systematic reviews discussing mindfulness-based interventions, (2) studies involving student populations or young adults within higher education contexts, (3) articles examining variables related to stress, psychological well-being, or student mental health, and (4) articles available in full-text format. Meanwhile, articles that were not relevant to the research topic, had not undergone a peer-review process, or did not provide full access were excluded from the analysis. The selected literature was then analyzed using descriptive and thematic approaches by examining the main findings of each study, including the types of mindfulness interventions used (such as Mindfulness-Based Stress Reduction (MBSR) or Mindfulness-Based Cognitive Therapy (MBCT)), the duration and methods of program implementation, and their impact on reducing stress levels and improving students’ psychological well-being. The analysis also included the identification of psychological mechanisms that explain the effectiveness of mindfulness, such as improvements in emotional regulation, self-awareness, and adaptive coping abilities in dealing with academic pressure.

The results of the analysis were subsequently synthesized narratively to provide a comprehensive overview of the effectiveness of mindfulness-based interventions in reducing stress levels among postgraduate students. In addition to summarizing findings from previous studies, this review also aimed to identify patterns across research findings, factors influencing the success of mindfulness interventions, and research gaps that require further exploration. Thus, this study is expected to provide a deeper understanding of the potential of mindfulness interventions as an evidence-based strategy for supporting the mental health of postgraduate students in higher education environments.

## RESULTS AND DISCUSSION

The literature review findings indicate that mindfulness-based intervention (MBI) is one of the psychological approaches widely studied in efforts to reduce stress and improve students' mental well-being. These interventions are generally developed in the form of structured programs such as Mindfulness-Based Stress Reduction (MBSR) and Mindfulness-Based Cognitive Therapy (MBCT), which focus on cultivating present-moment awareness with a non-judgmental attitude toward one's experiences.

Various empirical studies demonstrate that university students represent a population group with relatively high levels of psychological stress due to academic pressures, performance demands, and uncertainty about the future. These conditions become even more complex among postgraduate students who face additional demands such as research responsibilities, scientific publication requirements, and professional obligations. Therefore, intervention approaches that emphasize strengthening emotional regulation and self-awareness have become increasingly relevant in the context of higher education. Based on the analysis of several research articles published in international and national journals, mindfulness-based interventions consistently show positive effects in reducing academic stress and anxiety while improving students' psychological well-being. In general, the research findings can be classified into three main categories: (1) the effectiveness of mindfulness in reducing student stress, (2) the psychological mechanisms underlying the effectiveness of mindfulness interventions, and (3) factors influencing the successful implementation of these interventions.

### A. The Effectiveness of Mindfulness in Reducing Student Stress

Several experimental studies have demonstrated that mindfulness training has a significant impact on reducing students' stress levels. An experimental study conducted by Sousa et al. (2021) found that short-term mindfulness training was able to reduce stress and anxiety among students while increasing levels of state mindfulness. The results also indicated that increased mindfulness awareness served as a mediator in the reduction of students' psychological stress following participation in the intervention.

These findings are consistent with the results of a meta-analysis conducted by da Silva et al. (2023), which examined multiple studies on mindfulness training among students. The study showed that mindfulness training programs significantly contribute to reducing psychological distress, anxiety, and depression while improving students' mental well-being. Additionally, participation in mindfulness programs was associated with increased empathy, psychological resilience, and students' self-reflection abilities.

Another study conducted by Sperling et al. (2023) through a meta-analysis of mindfulness interventions among medical students also demonstrated that mindfulness practice has a significant effect in reducing academic stress. The study emphasized that medical students constitute a group with particularly high stress levels, making mindfulness-based interventions an effective strategy for enhancing mental well-being and preventing academic burnout.

In addition to experimental research, several literature-based studies also confirm the effectiveness of mindfulness in the context of student mental health. Zuo et al. (2023), through a meta-analysis of various studies, found that mindfulness interventions significantly reduced levels of depression, anxiety, and

stress among university students. The findings also indicated that mindfulness programs produce positive effects on multiple indicators of mental health, including improved sleep quality and psychological well-being. In the national context, research conducted by Luklukaningsih and Uningowati (2024) found that mindfulness-based psychotherapy interventions were able to reduce academic stress levels among students. The study employed a pretest–posttest design and revealed a significant reduction in stress levels after students participated in mindfulness training focused on applying mindful awareness in dealing with academic experiences.

Overall, these studies demonstrate consistent findings that mindfulness-based interventions represent an effective approach for reducing student stress, whether implemented through short-term interventions or structured training programs conducted over several weeks.

## **B. Psychological Mechanisms Underlying the Effectiveness of Mindfulness Interventions**

The effectiveness of mindfulness interventions in reducing stress is closely related to several underlying psychological mechanisms. One primary mechanism is the enhancement of metacognitive awareness of thoughts and emotions. Through mindfulness practice, individuals learn to observe internal experiences objectively without imposing negative judgments on themselves. This process allows individuals to recognize maladaptive thought patterns, such as rumination and excessive worry, which often serve as major triggers of academic stress.

Furthermore, mindfulness also contributes to improved emotional regulation abilities. Individuals with higher levels of mindfulness tend to be more capable of managing emotional responses to stressful situations. As a result, students are able to respond to academic pressure in a more adaptive manner without experiencing excessive emotional reactivity.

Experimental studies indicate that increased mindfulness is also associated with changes in physiological systems related to stress responses. In the study by Sousa et al. (2021), mindfulness training was found not only to reduce subjectively reported stress levels but also to be associated with decreased levels of stress hormones such as **cortisol**. These findings suggest that mindfulness interventions produce both psychological and physiological effects in reducing student stress.

Additionally, mindfulness practice can enhance self-compassion, or an individual's ability to respond to personal difficulties with kindness and understanding. This attitude helps individuals accept unpleasant experiences without excessive self-blame. In the context of higher education, increased self-compassion can help students cope with academic failure more constructively, thereby reducing the risk of chronic stress and burnout.

In practice, mindfulness-based interventions can be implemented in various program formats, either face-to-face or online. One of the most widely used programs in research is Mindfulness-Based Stress Reduction (MBSR), which typically runs for eight weeks and includes meditation practices, self-reflection exercises, and awareness training in daily experiences.

Several recent studies also indicate that online mindfulness interventions demonstrate effectiveness comparable to face-to-face programs. This is

particularly relevant in modern higher education contexts, where digital technology is increasingly integrated into learning and student support services.

Meta-analytic studies on online mindfulness interventions show that such programs significantly reduce psychological distress while improving students' mental well-being. These findings suggest that mindfulness programs can be implemented flexibly across various higher education contexts without necessarily requiring in-person delivery.

Furthermore, the application of mindfulness in academic environments can be integrated with other psychological skill development programs, such as emotional regulation training, stress management programs, and academic resilience development. This integrative approach allows students to acquire a range of adaptive coping strategies that help them manage academic pressure more effectively.

### **C. Factors Influencing the Success of Intervention Implementation**

Although numerous studies indicate that mindfulness-based intervention (MBI) is effective in reducing student stress, several factors are known to influence the success of such interventions. One key factor is the duration and intensity of mindfulness practice. Programs conducted over longer periods and involving consistent meditation practice tend to produce more significant effects in reducing stress and improving psychological well-being.

A meta-analysis conducted by Khoury et al. (2015) examining various mindfulness programs found that higher training intensity was associated with greater improvements in emotional regulation and larger reductions in psychological distress. Similar findings were reported by Galante et al. (2018), who demonstrated that a structured Mindfulness-Based Stress Reduction (MBSR) program implemented over several weeks significantly improved students' mental well-being compared to control groups.

In addition to program duration, the level of participation and individual commitment to mindfulness practice also plays a critical role in determining intervention success. Mindfulness is fundamentally a psychological skill that develops through repeated practice; therefore, consistency in practice is essential for producing sustained psychological changes. An experimental study by Cavanagh et al. (2013) showed that students who actively participated in online mindfulness training over several weeks experienced greater reductions in academic stress and improvements in mental well-being compared to those with lower participation levels.

Another factor influencing intervention effectiveness is the individual characteristics of participants, such as initial stress levels, prior meditation experience, and intrinsic motivation to participate in the mindfulness program. Students with higher baseline stress levels tend to demonstrate greater reductions in stress following mindfulness interventions. This finding is supported by research conducted by Regehr et al. (2013), which found that mindfulness-based stress management interventions produced more significant effects among students with higher initial stress levels.

In addition to individual factors, support from the academic environment also plays an important role in the successful implementation of mindfulness programs in higher education institutions. Campus environments that actively

support student mental health—through counseling services, student well-being programs, and the integration of mindfulness programs into curricula or personal development activities—have been shown to enhance the sustainability of psychological interventions.

Research conducted by Galante et al. (2018) demonstrated that mindfulness programs systematically implemented within university settings not only improve students' psychological well-being but also help them develop more adaptive coping strategies for dealing with academic pressure.

Considering these various factors, it can be concluded that the effectiveness of mindfulness-based interventions in reducing student stress is not determined solely by the intervention method itself. Rather, it is influenced by program duration, participant engagement, individual characteristics, and the level of support within the academic environment. Therefore, the implementation of mindfulness programs in higher education institutions should be designed comprehensively in order to provide optimal benefits for students' mental health.

## **CONCLUSION**

Based on the findings of the literature review, postgraduate students represent a group that is particularly vulnerable to academic stress due to the complex demands of higher education, such as completing theses or dissertations, fulfilling scientific publication requirements, maintaining high academic standards, and balancing professional and personal responsibilities that often occur simultaneously. These pressures may increase the risk of stress, anxiety, emotional exhaustion, and academic burnout (Evans et al., 2018; Levecque et al., 2017).

The analysis of various studies indicates that mindfulness-based intervention (MBI) is an effective psychological approach for reducing student stress. Intervention programs such as Mindfulness-Based Stress Reduction (MBSR) and Mindfulness-Based Cognitive Therapy (MBCT) have been shown to reduce psychological distress, anxiety, and stress while simultaneously improving students' psychological well-being (da Silva et al., 2023; Pan et al., 2024; Zuo et al., 2023). These effects are associated with improvements in emotional regulation, self-awareness, psychological flexibility, and adaptive coping abilities in dealing with academic pressure (Sousa et al., 2021; Sperling et al., 2023).

However, the success of mindfulness intervention implementation is influenced by several factors, including the duration and intensity of practice, the level of individual participation and commitment, participant characteristics, and support from the academic environment (Khoury et al., 2015; Galante et al., 2018). Therefore, the implementation of mindfulness programs in higher education institutions should be designed systematically and sustainably.

Overall, this review demonstrates that mindfulness-based intervention has significant potential as an evidence-based strategy to reduce stress and support the psychological well-being of postgraduate students. These findings also provide practical implications for higher education institutions to develop mindfulness-based psychological intervention programs as part of promotive and preventive efforts to maintain student mental health.

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