

PERCEIVED IMPACT OF MINDFULNESS-BASED INTERVENTIONS ON STUDENTS' STRESS REDUCTION AND ACADEMIC PERFORMANCE

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Abstract

The study investigated the perceived impact of mindfulness-based interventions on students' stress reduction and academic performance. The study adopted a descriptive survey research design. The population of the study comprised 296 undergraduate students selected from the Faculty of Education, University of Nigeria, Nsukka. The population size was manageable and therefore, there was no sampling. The instrument for data collection was Mindfulness-Based Interventions on Students' Stress Reduction Academic Performance Questionnaire (MISSRAPQ) developed by the researcher. A reliability coefficient of 0.82 was obtained using Cronbach Alpha method and the instrument was judged reliable. Mean and standard deviation were used to answer the research questions. The findings of the study revealed that students who participated in mindfulness programmes experienced a notable decrease in their stress levels. This reduction in stress, however, can be demonstrated through self-reported measures, physiological indicators, and participants' personal accounts. The findings of the study revealed that students who engaged in mindfulness practices may perhaps exhibit enhanced focus, concentration, and effective management of academic tasks, leading to higher grades and overall academic achievement. These findings contribute to the existing body of knowledge on the benefits of mindfulness-based interventions in educational settings, emphasizing their potential to enhance students' well-being and academic success. Based on the findings, it was recommended among others that by implementing mindfulness programmes and providing access to mindfulness resources, Nigerian universities can create a supportive environment that promotes students' mental health, resilience, and academic success.

Keywords: Mindfulness-based interventions, students' stress reduction, academic performance, Stress

Introduction

Stress is a pervasive issue affecting individuals in various domains of life, including educational settings. Students, in particular, experience high levels of stress due to academic pressures, social expectations, and personal challenges (Jones, 2018). The negative consequences of stress on students' well-being and academic performance have prompted researchers, psychologists, and educators such as Lupien, McEwen, Gunnar and Heim (2009) and McEwen (2012) to explore effective interventions to address this issue. However, in recent years, mindfulness-based interventions (MBIs) have gained considerable attention as a potential approach to reducing stress and promoting well-being in various contexts. Mindfulness-Based Interventions (MBIs) are evidence-based approaches that have gained recognition for their efficacy in promoting stress reduction and overall well-being. These interventions draw upon ancient contemplative practices, primarily rooted in Buddhist traditions, which emphasize the cultivation of present-moment awareness and non-judgmental acceptance of one's experiences. The modern application of MBIs began with the pioneering work of Jon Kabat-Zinn (Kabat-Zinn, 1982), who developed the Mindfulness-Based Stress Reduction (MBSR) programme. Since then, various adaptations of MBIs have been developed, including Mindfulness-Based Cognitive Therapy (MBCT) which was adapted and applied in clinical and non-clinical contexts, including educational settings (Segal et al., 2002) and Mindfulness-Based Interventions for Youth (MBI-Y) by Burke (2010). These interventions typically involve structured mindfulness training sessions, including guided meditation practices, body awareness exercises, and mindful movement activities.

Mindfulness refers to the intentional cultivation of present-moment awareness and non-judgmental acceptance of one's experiences (Kabat-Zinn, 2003). The practice of mindfulness involves directing one's attention to the present moment, noticing thoughts and sensations without judgment, and fostering an attitude of openness and acceptance. The core principles of MBIs are derived from traditional mindfulness practices and have been tailored for secular settings. These principles include

intentionally paying attention to the present moment, adopting an attitude of non-judgment and acceptance, cultivating self-compassion, and integrating mindfulness into daily life activities. Hence, by practicing these principles, students can develop a heightened sense of self-awareness, emotional regulation, and a more compassionate relationship with themselves and others (Shapiro et al., 2006). Research on MBIs has demonstrated their effectiveness in various populations, including students. Study by Dunning et al. (2019) has shown that MBIs can lead to reduced stress, anxiety, and depressive symptoms, improved well-being, and enhanced cognitive functioning. Furthermore, MBIs have been associated with improved attention, emotion regulation, and academic performance among students (Quach et al., 2016). Importantly, MBIs, with their roots in ancient contemplative practices, have been adapted for modern therapeutic and educational contexts. Guided by principles of present-moment awareness and non-judgmental acceptance, these interventions offer promising avenues for promoting stress reduction, enhancing overall well-being, and supporting students' academic success. The empirical evidence supports the effectiveness of MBIs, underscoring their potential as valuable tools for individuals seeking to cultivate mindfulness and improve their quality of life.

Mindfulness has gained popularity in various fields, including psychology, medicine, workplace well-being, and education. Hölzel, Lazar, Gard, Schuman-Olivier, Vago, and Ott (2011) conducted a study demonstrating the positive effects of mindfulness training on stress reduction, emotional regulation, attention control, and overall well-being. This evidence has led to the integration of mindfulness into evidence-based interventions in different settings, including education. Given the challenges faced by undergraduate students, investigating the impact of mindfulness on stress reduction and academic performance is important. Zenner et al. (2014) examined the effects of mindfulness-based interventions on students' well-being, including stress reduction, emotional regulation, self-esteem, and resilience. Emerging evidence suggests that mindfulness practices may also positively impact students' cognitive abilities, attention, and academic performance (Schonert-Reichl et al., 2019). This study aims to contribute to our understanding of how mindfulness-based interventions can support students' holistic development and promote academic performance in the university context.

The occurrence of stress among students is a well-documented concern, with significant implications for their academic performance. Stress can arise from various sources, including academic pressure, high workload, social expectations, financial difficulties, and personal challenges. Ibrahim et al. (2013) conducted a systematic review of depression occurrence among university students, finding that stress-related symptoms were highly prevalent. Hamaideh (2011) also examined stressors and reactions to stressors among university students, revealing that a significant proportion of students experience elevated stress levels. Research consistently shows that high levels of stress can adversely affect students' cognitive functioning, concentration, memory, and information processing capabilities (Beiter et al., 2015). Additionally, stress can impair students' time management, motivation, and academic achievement (El Ansari & Stock, 2010). Eisenberg et al. (2007) found that depression, anxiety, and stress were associated with lower academic performance and higher rates of academic disengagement among students. Furthermore, chronic or severe stress can have long-term consequences for students' academic trajectory, including increased dropout rates, delayed graduation, and decreased overall educational attainment (Hill & Wigfield, 2014). Persistent stress can also contribute to the development of mental health problems, such as anxiety and depression, further impacting students' academic performance (Beiter et al., 2015). The relationship between stress and academic performance is bidirectional, as academic stress leads to increased levels of stress, creating a cycle where stress negatively affects academic performance, generating more stress. The pressure to perform well academically, combined with a competitive environment, intensifies stress levels among students, becoming a significant barrier to their success. The high prevalence of stress among students, coupled with its detrimental effects on cognitive functioning and academic outcomes, emphasizes the need for effective strategies to mitigate stress and support students' well-being. By addressing stress and fostering a positive learning environment, educational institutions can promote better academic performance and enhance students' overall educational experience.

Several popular Mindfulness-Based Interventions (MBIs) have been widely implemented in educational settings. One example is the Mindfulness-Based Stress Reduction (MBSR) programme developed by Jon Kabat-Zinn (Kabat-Zinn, 1982), which incorporates various mindfulness practices over an 8-week period, effectively reducing stress and promoting overall well-being. Another MBI is Mindfulness-Based Cognitive Therapy (MBCT), adapted for educational settings to help students with depression develop non-judgmental attitudes towards thoughts and emotions, enhancing emotional well-being (Segal et al., 2002). The Mindful Schools Programme, developed by experts such as Semple, Lee, Rosa, and Miller (2005), offers mindfulness training to teachers and age-appropriate

lessons to students, improving overall well-being and the learning environment (Hobbs et al., 2013). These popular MBIs have shown to be effective in reducing stress, enhancing emotional well-being, and improving cognitive functioning among students, offering valuable tools for academic challenges and overall growth. The relationship between stress and academic performance has been extensively studied, revealing a negative association between stress and academic achievement (Regehr et al., 2013). Stress can adversely affect cognitive abilities, impairing attention, memory, and information processing, making it challenging for students to concentrate and perform well academically (McEwen, 2012). Additionally, stress can lead to emotional disturbances like anxiety and depression, further hindering students' academic engagement and success. Overall, evidence suggests that stress has a detrimental impact on students' cognitive abilities and academic performance.

Educational institutions must prioritize stress management and support students in effectively managing stress levels for optimal academic achievement. According to Brown et al. (2007), several factors can hinder the effectiveness of mindfulness-based interventions for stress reduction and academic performance in universities. Lack of commitment and practice is crucial, as consistent engagement in mindfulness exercises is necessary for positive outcomes. Unrealistic expectations, as observed by Shapiro et al. (2008), can lead to disappointment and reduced willingness to engage in mindfulness practices. Inadequate training and guidance from qualified instructors, as highlighted by Kabat-Zinn (2011), may limit the intervention's impact. Resistance to change, identified by Hölzel et al. (2011), can hinder student engagement. Individual differences among students, as discussed by Hofmann et al. (2010), should be considered for effective tailoring of interventions. Environmental factors, including the learning environment and external stressors (Roeser et al., 2013), influence effectiveness. The duration and frequency of interventions matter, with long-term and regular approaches being more effective (Crane et al., 2014). Lack of support beyond intervention sessions can limit impact (Zenner et al., 2014). Addressing these factors can enhance mindfulness-based interventions for stress reduction and academic improvement among students. Despite challenges, mindfulness interventions have shown positive effects in various studies, emphasizing their potential for student well-being and academic success.

The effects of mindfulness interventions on stress reduction among university students, according to Keng, Smoski and Robins (2011) indicated that MBIs led to significant reductions in perceived stress and improvements in psychological well-being of students. Similarly, a meta-analysis conducted by Zhang and colleagues (2019) involving various mindfulness programmes in educational settings revealed significant reductions in stress and anxiety levels among students. Moreover, the effectiveness of MBIs in stress reduction can be attributed to several mechanisms inherent in mindfulness practices. First, mindfulness cultivates present-moment awareness, allowing individuals to observe their thoughts, emotions, and bodily sensations without judgment or reactivity. This non-judgmental awareness helps students develop a more accepting and compassionate stance toward their stressors, reducing their psychological reactivity and enhancing their ability to cope with stress (Shapiro et al., 2006). Second, mindfulness practices promote self-regulation and emotion regulation skills. By enhancing students' ability to recognize and regulate their emotions, mindfulness empowers them to respond to stressors in a more adaptive and less emotionally reactive manner. This increased emotional resilience helps students better manage stress and maintain a sense of well-being (Zenner et al., 2014). Third, mindfulness-based interventions foster a shift in attentional focus. Students learn to direct their attention intentionally to the present moment, shifting away from rumination about past events or worries about the future. This redirection of attention helps reduce cognitive overload and worry, promoting a state of calmness and relaxation (Hölzel et al., 2011). Moreover, mindfulness practices promote self-care and self-compassion. Students learn to prioritize self-care and engage in self-compassionate actions, such as taking breaks, engaging in healthy coping strategies, and practicing self-kindness. These practices enhance students' ability to nurture their well-being, self-regulate stress, and cultivate a positive relationship with themselves (Birnie et al., 2010). On the whole, MBIs have shown promising results in reducing stress among students. By cultivating present-moment awareness, enhancing emotion regulation, redirecting attention, and fostering self-compassion, mindfulness practices provide students with effective tools for managing stress and promoting well-being.

Research studies have examined the relationship between Mindfulness-Based Interventions (MBIs) and academic performance, highlighting the potential benefits of mindfulness in enhancing cognitive abilities and promoting academic success. A study conducted by Schonert-Reichl and Lawlor (2010) explored the impact of a mindfulness-based social-emotional learning program on academic performance among elementary school students. The findings indicated that students who participated in the programme demonstrated improved attention skills, better emotion regulation, and higher

academic achievement compared to their counterparts. Moreover, a study by Flook and colleagues (2013) investigated the effects of a mindfulness program on cognitive performance among middle school students. The results revealed that students who received mindfulness training showed improvements in working memory, attention, and cognitive flexibility, which are critical cognitive abilities associated with academic success. One potential way in which mindfulness can enhance cognitive abilities and academic performance is through its impact on attentional control. Mindfulness practices involve training individuals to sustain attention on the present moment while cultivating an attitude of non-judgmental awareness. This heightened attentional control helps students better focus their attention on academic tasks, reducing distractions and improving their ability to absorb and process information effectively (Zelazo & Lyons, 2012).

Mindfulness also contributes to improved executive functioning, which encompasses higher-order cognitive processes such as planning, organization, and self-regulation. By enhancing executive functioning skills, mindfulness enables students to set goals, manage time efficiently, and regulate their behavior and emotions, all of which are crucial for academic success (Diamond & Lee, 2011). Furthermore, mindfulness practices foster metacognitive awareness, allowing students to develop a deeper understanding of their own learning processes. By cultivating a non-judgmental and reflective stance, students can gain insight into their strengths, weaknesses, and learning strategies, enabling them to make more informed decisions about their studying approaches and optimize their learning experiences (Meiklejohn et al., 2012). Overall, research suggests that mindfulness-based interventions have the potential to positively impact cognitive abilities and academic performance. By improving attentional control, enhancing executive functioning, and fostering metacognitive awareness, mindfulness practices provide students with valuable skills and strategies that can support their academic success.

The knowledge gap in the literature on mindfulness-based interventions (MBIs) and their impact on students' stress reduction and academic performance pertains to areas that have not been thoroughly explored or sufficiently addressed. These gaps include limited research on specific student populations, such as students with diverse backgrounds or learning disabilities, a need for more investigation into the long-term effects and sustainability of MBIs, and a lack of understanding regarding the underlying mechanisms that connect mindfulness, stress reduction, and academic performance. Further research is needed to address these gaps and enhance our understanding of the effectiveness and implementation of MBIs in educational settings.

Statement of the Problem

The present study aims to investigate the impact of mindfulness-based interventions on students' stress reduction and academic performance. The problem at hand is the prevalence of stress among students, which negatively affects their overall well-being and academic achievements. High levels of stress can lead to reduced cognitive functioning, poor concentration, decreased motivation, and impaired academic performance. The problem is compounded by the fact that stress has become increasingly prevalent among students in various educational settings. Thus, there is a need to explore effective interventions, such as mindfulness-based approaches, to address this issue and promote students' well-being and academic success. The research focus on examining the effectiveness of mindfulness-based interventions in reducing students' stress levels and evaluating their impact on enhancing academic performance. By addressing this problem, the study aims to contribute to the development of evidence-based strategies to support students' holistic development and create a conducive learning environment.

Purpose of the Study

The general purpose of the study was to investigate the perceived impact of mindfulness-based interventions on students' stress reduction and academic performance. Specifically, the study sought to:

1. examine the perceived impact of mindfulness-based interventions in reducing stress levels among students.
1. identify the factors that hinder mindfulness-based interventions on stress reduction and academic performance among students.
2. Determine strategies for integrating mindfulness-based interventions into educational settings to support students' stress reduction and enhance academic performance.

Research Questions

The following research questions guided the study:

1. What is the effectiveness of mindfulness-based interventions in reducing stress levels among students?
2. What are the factors that hinder mindfulness-based interventions on stress reduction and academic performance among students?
3. What are the strategies for integrating mindfulness-based interventions into educational settings to support students' stress reduction and enhance academic performance?

Methodology

The study adopted a descriptive survey research design. The population of the study comprised 296 undergraduate students selected from the Faculty of Education, University of Nigeria, Nsukka. The population size was manageable and therefore, there was no sampling. The instrument for data collection was structured questionnaire developed by the researcher title: Mindfulness-Based Interventions on Students' Stress Reduction Academic Performance Questionnaire (MISSRAPQ). The instrument was face validated by three experts, two from Educational Psychology Unit, Department of Educational Foundations, and one from Measurement and Evaluation Unit, Department of Science Education, all in the Faculty of Education, University of Nigeria, Nsukka. The reliability of the instrument was established using Cronbach Alpha method. A reliability coefficient of 0.82 was obtained and the instrument was judged reliable. Mean and standard deviation were used to answer the research questions. The scales used for the questionnaire was Strongly Agree (SA), Agree (A), Disagree (D) and Strongly Disagree with values of 4, 3, 2 and 1 respectively. These responses were based on positively worded items, while the reverse was true for negatively worded items. The average score from coded data ($4+3+2+1=10/4$) was 2.50.

Results

Research Question One: What is the effectiveness of mindfulness-based interventions in reducing stress levels among students?

Table 1: Mean ratings and standard deviation of responses on the effectiveness of mindfulness-based interventions in reducing stress levels among students

S/N	Item Statement	M	SD	Decision
1	Mindfulness-based interventions are highly effective in reducing stress levels among students.	2.77	0.09	A
2	Students who engage in mindfulness-based interventions experience a significant decrease in perceived stress.	2.65	0.10	A
3	Mindfulness practices provide students with practical techniques to manage with stress effectively.	2.54	0.11	A
4	Implementation of mindfulness-based interventions results reduced stress symptoms among students.	2.91	0.07	A
5	Implementation of mindfulness-based interventions results in improved well-being among students.	2.78	0.09	A
6	Consistent practice of mindfulness techniques leads to long-term stress reduction in students.	2.67	0.10	A
7	Mindfulness-based interventions offer sustainable approach for students to mitigate stress and promote overall well-being.	2.88	0.08	A
Overall Mean Score		2.74	0.09	A

Table 1 above show the mean ratings and standard deviation of responses on the effectiveness of mindfulness-based interventions in reducing stress levels among students. Item 1 – 7 met the criterion mean score of 2.50 and above which indicate acceptance by respondents. Based on the findings of the analysis, the overall mean score of 2.74 and standard deviation of 0.09 was used to finalize the research on table 1.

Research question two: What are the factors that hinder mindfulness-based interventions on stress reduction and academic performance among students?

Table 2: Mean ratings and standard deviation of responses on the factors that hinder mindfulness-based interventions on stress reduction and academic performance among students

S/N	Item Statement	M	SD	Decision
8	Lack of motivation and active involvement from participants	2.66	0.10	A
9	Limited availability of resources and support	2.81	0.08	A
10	Inadequate training and expertise of mindfulness instructors	2.72	0.09	A
11	Resistance towards mindfulness practices	2.52	0.11	A
12	Lack of effective programme implementation	2.50	0.11	A
13	High levels of stress and external pressures	2.77	0.09	A
14	Lack of integration with existing educational practices	2.67	0.10	A
15	Cultural barriers to adopting mindfulness	2.60	0.10	A
Overall Mean score		2.66	0.10	A

Result in Table 2 revealed the mean ratings and standard deviation of responses on the factors that hinder mindfulness-based interventions on stress reduction and academic performance. The above listed items were rated above the standard mean score of 2.50 which shows acceptance by respondents. Based on the findings of the study, the overall mean score of 2.66 and 0.10 standard deviation correspondingly.

Research Question Three: What are the strategies for integrating mindfulness-based interventions into educational settings to support students' stress reduction and enhance academic performance?

Table 3: Mean ratings and standard deviation of responses on the strategies for integrating mindfulness-based interventions into educational settings to support students' stress reduction and enhance academic performance

S/N	Item Statement	M	SD	Decision
16	Providing mindfulness training for educators and staff	3.01	0.06	A
17	Incorporating mindfulness practices into the school curriculum	3.12	0.03	A
18	Creating a supportive school environment	3.04	0.05	A
19	Offering mindfulness programmes as part of student support services	3.00	0.06	A
20	Collaborating with community organizations to promote mindfulness initiatives	2.50	0.11	A
21	Engaging caregivers in mindfulness practices and education	2.75	0.09	A
22	Providing ongoing training and professional development for educators	2.87	0.08	A
23	Evaluating and monitoring the effectiveness of mindfulness interventions	2.95	0.07	A
24	Establishing partnerships with mindfulness experts and practitioners	3.11	0.03	A
Overall Mean score		2.93	0.06	A

Table 3 above highlights the mean rating and standard deviation of responses on the strategies for integrating mindfulness-based interventions into educational settings to support students' stress reduction and enhance academic performance in Nigerian university. Item 16 – 24 was rated above the benchmark mean score of 2.50 which indicate acceptance by respondents. The above was rated with an overall mean score of 2.93 and standard deviation of 0.06 respectively.

Discussion

The findings of the study revealed the effectiveness of mindfulness-based interventions in reducing stress levels among students which include: Mindfulness-based interventions are highly effective in reducing stress levels among students; Students who engage in mindfulness-based interventions experience a significant decrease in perceived stress; Mindfulness practices provide students with practical techniques to manage and cope with stress effectively; The consistent practice of mindfulness techniques leads to long-term stress reduction and increased resilience in students; and Mindfulness-based interventions offer an accessible and sustainable approach for students to mitigate stress and promote overall well-being. The findings of the study are in line with the finding of Hölzel, Lazar, Gard, Schuman-Olivier, Vago and Ott (2011) who demonstrated that regular engagement in mindfulness training can lead to improvements in stress reduction, emotional regulation, attentional control, and overall well-being of students. The authors further posited that as a result, mindfulness has gained recognition as a potentially valuable tool for enhancing mental health and resilience of the study in the society at large. The finding of the study is also in agreement with the finding of Eisenberg et al. (2007) who found that depression, anxiety, and stress were associated with lower academic performance and higher rates of academic disengagement among university students.

The findings of the study revealed the factors that hinder mindfulness-based interventions on stress reduction and academic performance which include: lack of motivation and active involvement from participants; limited availability of resources and support; inadequate training and expertise of mindfulness instructors; resistance or skepticism towards mindfulness practices; challenges in implementing and following the program effectively; high levels of stress and external pressures; lack of integration with existing educational practices; and cultural or contextual barriers to adopting mindfulness. The findings of the study are in line with the findings Brown et al. (2007) who posited that lack of commitment and practice has been highlighted as a crucial factor; therefore, mindfulness interventions require consistent engagement and integration of mindfulness exercises into daily routines to yield positive results especially when students fail to commit to regular practice, the effectiveness of the intervention may be compromised. The findings of the study are also in agreement with the findings of Shapiro et al (2008) who posited that unrealistic expectations are another factors that hinder mindfulness-based interventions on stress reduction and academic performance of students especially when some students may approach mindfulness-based interventions with overly high expectations, anticipating immediate and dramatic results. Hence, when these expectations are not met, they may become disheartened or disillusioned, leading to a decreased willingness to engage in mindfulness practices and hindering the intervention's effectiveness.

The findings of the study revealed the effective strategies for integrating mindfulness-based interventions into educational settings to support students' stress reduction and enhance academic performance which include: Providing mindfulness training and resources for educators and staff; Incorporating mindfulness practices into the school curriculum; Creating a supportive and mindful school environment; Offering mindfulness programs as part of student support services; Collaborating with community organizations to promote mindfulness initiatives; Engaging parents and caregivers in mindfulness practices and education; Providing ongoing training and professional development for educators; and Evaluating and monitoring the effectiveness of mindfulness interventions among others. The findings of the study are in consonance with the findings of Shapiro et al. (2006) who posited that mindfulness into educational settings cultivates the present-moment awareness, allowing students to observe their thoughts, emotions, and bodily sensations without judgment or reactivity. This non-judgmental awareness helps students develop a more accepting and compassionate stance toward their stressors, reducing their psychological reactivity and enhancing their ability to cope with stress. The findings of the study are also in agreement with the findings of Zenner et al. (2014) who posited that mindfulness practices promote self-regulation and emotion regulation skills of students and as well enhance students' ability to recognize and regulate their emotions; mindfulness empowers them to respond to stressors in a more adaptive and less emotionally reactive manner. The findings of the study also in line with the findings of Flook, Goldberg, Pinger, Bonus and Davidson (2013) who posited that students who received mindfulness training showed improvements in working memory, attention, and cognitive flexibility, which are critical cognitive abilities associated with academic success.

Conclusion

This study has examined the impact of mindfulness-based interventions (MBIs) on students' stress reduction and academic performance. The literature review highlighted the prevalence of stress among students and its negative consequences on academic success. The study explored the relationship between MBIs, stress reduction, and academic performance, with a focus on the effectiveness of mindfulness in alleviating stress and enhancing cognitive abilities. The findings suggest that MBIs have shown promising results in reducing stress among students. Mindfulness practices, such as cultivating present-moment awareness, enhancing emotion regulation, and redirecting attention, contribute to stress reduction and improved well-being. Additionally, mindfulness interventions have been found to enhance cognitive abilities and academic performance by improving attentional control, executive functioning skills, and meta-cognitive awareness. These findings contribute to the existing knowledge by emphasizing the importance of implementing mindfulness interventions in educational settings. By addressing stress and promoting mindfulness, educators can create a supportive learning environment that fosters students' emotional well-being and academic success.

Contribution to Knowledge

This study significantly contributes to the knowledge on mindfulness-based interventions (MBIs) for students' stress reduction and academic performance. Firstly, it provides empirical evidence of the positive outcomes of MBIs, supporting their effectiveness in educational settings.

Secondly, the study highlights the relationship between stress, academic performance, and mindfulness, emphasizing the need to address stress in educational environments. Lastly, it explores the mechanisms by which mindfulness practices enhance cognitive abilities and promote academic success. These insights can guide the implementation of targeted interventions and programs to support students' well-being and academic achievement, expanding our understanding of the benefits of MBIs in education.

Recommendations

Based on the findings, the following recommendations guided the study:

1. Mindfulness practices should be integrated into educational curricula to provide students with effective tools for stress reduction and overall well-being.
2. Teachers should receive mindfulness training to effectively implement mindfulness practices in the classroom and support students' emotional well-being.
3. Tailored mindfulness programs should be developed and offered to meet the diverse needs and preferences of students, considering factors such as age, cultural background, and learning styles.
4. Long-term follow-up studies should be conducted to assess the sustained effects of mindfulness-based interventions on students' stress reduction and academic performance.
5. Collaboration among educators, parents, and mental health professionals should be encouraged to create a comprehensive support system for students, ensuring consistent guidance and resources for managing stress and promoting academic success.

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