Migration Letters

Volume: 20, No: 9, pp. 341-358

ISSN: 1741-8984 (Print) ISSN: 1741-8992 (Online)

www.migrationletters.com

Mindfulness and Academic Performance: A Literature Review

Retno Indriaswuri[1], I Ketut Gading[2], Kadek Suranata[3], Ni Ketut Suarni[4]

Abstract

Mindfulness, a state of mind adopted from Buddhist philosophy, has been widely applied to improve focus and awareness. In education, mindfulness helps students with mental and emotional problems, which results in increased academic achievement. The objective of this literature review is to analyze the influence of mindfulness on academic achievement. This review emphasizes the beneficial impact that mindfulness has on concentration, self-control, and general well-being, ultimately leading to improved academic achievement in students.

Keywords: *mindfulness; academic performance; education.*

Introduction

Mindfulness is a cognitive ability encompassing the processes of focus, consciousness, recall, and discrimination. It highlights the importance of focusing on the current moment and being receptive and accepting without forming judgments. This concept surpasses mere passive awareness and involves actively engaging with one's thoughts, emotions, and surroundings. It fosters a non-judgmental attitude and approaches experiences with curiosity and acceptance (Lau & McMain, 2005; Thompson & Waltz, 2007; Shapiro, 2009; Park et al., 2013; Adair, 2014; López et al., 2016; Navarro-Haro et al., 2017; Baer, 2019; Blanke et al., 2020; Muschalik et al., 2020; Zaidi et al., 2022).

Kabat-Zinn said that mindfulness is consciously and nonjudgmentally focusing on the experience unfolding in the present moment. This definition highlights four important parts: focused attention, being in the present, being aware, and accepting and not judging what is happening (Park et al., 2013; Gunasekara & Zheng, 2019). This description corresponds to the concept that mindfulness entails focusing one's attention on the current moment and embracing a non-evaluative mindset towards one's immediate encounters (Thompson & Waltz, 2007; Shapiro, 2009; Navarro-Haro et al., 2017; Muschalik et al., 2020; Zaidi et al., 2022).

The components of mindfulness, such as focusing on the present moment, accepting without judgment, and being conscious in one's actions, have been shown to have connections with different mental health conditions and normal individual variations (López et al., 2016; Sedighimornani et al., 2019; Gobout et al., 2020; Mahlo & Windsor, 2021). These aspects are crucial for comprehending the connection between mindfulness

[1] Department of Educational Science, Postgraduate Program, Universitas Pendidikan Ganesha, retno.indriaswuri@gmail.com
[2] Department of Guidance and Counseling, Faculty of Educational Science, Universitas Pendidikan Ganesha
[3] Department of Guidance and Counseling, Faculty of Educational Science, Universitas Pendidikan Ganesha
[4] Department of Guidance and Counseling, Faculty of Educational Science, Universitas Pendidikan Ganesha

and rumination, reflection, affective well-being, and work engagement (López et al., 2016; Gunasekara & Zheng, 2019; Blanke et al., 2020; Mahlo & Windsor, 2021).

Mindfulness has been studied in different areas, such as its application in virtual reality for promoting mindfulness practice, its influence on relationship satisfaction among couples, its involvement in programs for adolescents, and its efficacy in university students (Tan, 2015; Navarro-Haro et al., 2017; Chung et al., 2022; D'Alessandro et al., 2022). In addition, mindfulness has been examined in the context of physical activity, stress reduction, depressive symptoms, and self-injury involvement (Cruz, 2015; Kennedy & Resnick, 2015; Carletto et al., 2016; Feliu-Soler et al., 2016; Dash et al., 2022).

Extensive research has been conducted on the influence of mindfulness on academic performance, and the results consistently indicate a good correlation between mindfulness and academic achievement. A research investigation revealed an explicit association between mindfulness and scholastic performance, underscoring the importance of proactive engagement and empathy (Miralles-Armenteros et al., 2021). Caballero et al. (2019) identified a positive correlation between increased levels of mindfulness and enhanced academic achievement in middle school students in their research. The study by Li et al. (2021) further substantiated the notion that mindfulness meditation impacts academic achievement through the illustration of its beneficial impacts on working memory and attention. Additionally, Lekamge et al. (2022) undertook a thorough investigation of the effects of mindfulness-based therapies on academic achievement, underscoring the potential advantages they may provide.

In a recent study conducted by Koncz et al. (2021) and Kloo et al. (2022), the authors emphasized the noteworthy correlation between executive function and academic aptitude. The researchers carried out a comprehensive analysis to explore the cognitive factors that are impacted by mindfulness, thereby providing valuable insights into this significant area of study. Other studies investigated the impact of mindfulness on executive functioning abilities with the aim of gaining a deeper understanding of its influence on academic achievement (Parsons et al., 2020; Koncz et al., 2021). Specifically, Parsons et al. (2020) have demonstrated the beneficial impact of engaging in mindfulness practice on cognitive function. Furthermore, Xu et al. (2022) showed strong evidence that virtual mindfulness therapies can immediately improve academic performance. Menges and Caltabiano (2019), on the other hand, wanted to look into how mindfulness interventions affect academic self-efficacy.

Research proved that mindfulness is related to mental health (Wang, 2022), which then affected students' academic performance (Bóo et al., 2019). Mindfulness also had a positive effect on decreasing depression (Morgan, 2003). It indicates that mental well-being is essential for students' achievement. Furthermore, Luberto et al. (2020) emphasize the potential of mindfulness to enhance emotional well-being as a stress-reducing advantage for students pursuing health professions. Also, Miralles-Armenteros et al. (2021) have highlighted the significance of demonstrating compassion and providing encouragement in relation to students' accomplishments. These studies collectively validate the concept that mindfulness has a beneficial effect on mental well-being, which consequently can indirectly affect academic achievement.

Student motivation, combined with mindfulness, has a significant impact on academic success. The importance of student motivation in influencing academic accomplishment is stressed, highlighting the need to address mental health issues and underperformance in academics resulting from perceived pressure among students (Liu et al., 2022). The need to develop students' critical literacies in makerspaces was also recognized to increase their motivation and learning results (Kumpulainen et al., 2020), and combined with self-control and mindfulness, it would create constructive academic behaviors and motivation (Rusdi, 2017).

The objective of this literature study is to analyze the influence of mindfulness on academic achievement. Multiple studies have investigated the correlation between mindfulness and academic achievement, emphasizing the potential advantages that

mindfulness techniques can provide. Through the practice of mindfulness, students can enhance their focus and cognitive abilities, resulting in enhanced academic achievement.

Theoretical Framework

The theoretical underpinnings of mindfulness

Mindfulness draws upon a range of theoretical frameworks, including Buddhist philosophy and psychology, to provide a foundation for understanding its principles and mechanisms. Hölzel et al.'s (2011) study delves into the conceptual and neurological aspects of mindfulness, providing useful insights into its mechanisms of action. In their publication, Hadash & Bernstein (2019) put forth a well-organized framework for the identification and categorization of various facets of mindfulness. The framework presented here involves the classification of various aspects of mindfulness, such as the objects of mindful awareness and the attitudes towards the present-moment experience. Additionally, the researchers thoroughly examined the neurocognitive mechanisms underlying mindful emotion regulation, offering important insights into the complex cognitive processes at work (Grecucci et al., 2015).

Mindfulness is inspired by the perspectives of Theravada Buddhism. In their work, Lomas (2017) put forth a comprehensive theoretical model of mindfulness that skillfully integrates the ethical and spiritual dimensions of consciousness. The disparities between operational definitions of mindfulness and Buddhist canonical formulations are explored, with an emphasis on the intricacies involved in defining mindfulness (Purser & Milillo, 2014). The text explores the evolution of compassion through mindfulness, specifically delving into the rich Buddhist traditions that refined mindfulness techniques into deliberate exercises for nurturing compassion and benevolence towards oneself and others (Tirch, 2010).

From a cognitive standpoint, mindfulness can be seen as a form of attention training. By directing their attention to the present moment, individuals who practice mindfulness can enhance their concentration and cognitive processing. In their study, Moore & Malinowski (2009) highlighted the potential link between mindfulness training and increased cognitive flexibility. They suggested that participating in mindfulness practices could lead to a greater ability to respond in a deliberate and non-automatic way (Moore & Malinowski, 2009). Furthermore, Zou et al. (2020) proposed that mindfulness training has the potential to improve individuals' capacity to identify and adjust their automatic reactions, enabling them to adaptively and adeptly respond to present situations. The data presented in this study provide further support for the notion that mindfulness has the potential to improve cognitive flexibility, a key element in promoting effective learning and academic success.

In another study, mindfulness was known to have the potential to improve cognitive functions related to academic performance, including attention and information processing (Nien et al., 2020).

Not only is mindfulness improving cognitive function, but it also affects executive attention performance positively. Mindfulness enhances executive attention through the neurological mechanism (Lin et al., 2018). It emphasized the potential impact of mindfulness on cognitive abilities associated with academic success.

In addition, a follow-up study conducted by Bóo et al. (2019) analyzed the perceived impact of mindfulness on the academic achievements of university students. The study reported improvements in attention measurements, both in controlled laboratory settings and in real-life scenarios. This empirical study emphasizes the significance of mindfulness in enhancing attentional capacity, a crucial factor for academic involvement and knowledge acquisition.

Research has shown a strong correlation between engaging in mindfulness activities and experiencing a reduction in stress and anxiety. This has been supported by multiple studies that have investigated the effects of mindfulness-based interventions on various

populations, including individuals with psychiatric disorders, adults exposed to psychological trauma, college students, and teachers facing technostress (Gilley, 2017). These studies have consistently found that mindfulness practices, such as meditation, deep breathing exercises, and body scans, can significantly reduce perceived stress levels and improve overall well-being (Fleischer et al., 2009).

Additionally, implementing mindfulness-based interventions, such as mindfulness-based stress reduction and mindfulness-based cognitive therapy, has been shown to be moderately effective in reducing stress, depression, anxiety, and distress (Chetlen et al., 2019), which then effectively manage chronic illnesses (Niazi & Niazi, 2011). This evidence suggests that mindfulness and meditation interventions have the potential to significantly impact the cognitive and emotional health of adolescents, ultimately influencing their academic success. Moreover, the use of digital mindfulness interventions in the current pandemic could offer new insights into the effectiveness of such programs in reaching and benefiting primary and secondary school students. In addition, exploring the impact of music training on cognitive abilities, particularly working memory, processing speed, and reasoning ability, could further contribute to our understanding of potential interventions to support academic performance in adolescents.

Theoretical models linking mindfulness to academic performance

Theoretical frameworks that connect mindfulness to academic performance encompass multiple dimensions, such as cognitive, emotional, and motivational aspects. According to the theory of mind-set put forth by Dweck (2010) and Sisk et al. (2018), students with growth mindsets demonstrate more adaptable psychological traits and behaviors, which results in higher academic achievement.

Motivation and retention in educational settings are linked through the observation of mind wandering, emphasizing the importance of mindfulness in sustaining attention and concentration. Miralles-Armenteros et al. (2021) found that compassion and engagement are crucial factors in the relationship between mindfulness and academic performance. Lekamge et al. (2022) emphasize the need for accurate dosage and assessment of mindfulness to understand its causal connection with academic achievement.

The concept of paternal mind-mindedness has been suggested to impact children's academic performance by affecting their theory of mind, effortful control, and readiness for school. Kuroda et al. (2022) examined how trait mindfulness can predict academic affect, cognition, and behavior more accurately than motivational factors. Sampl et al. (2017) found that mindfulness-based interventions have a significant effect on reducing stress and test anxiety, improving academic self-efficacy, and overall performance. Caballero et al. (2019) found increased mindfulness to be associated with improved academic performance, attendance, and fewer suspensions.

Mental meditation has been associated with reducing stress, enhancing mindfulness, and enhancing academic achievement. Rusdi (2017) examined the impact of self-control and mindfulness on counterproductive academic behavior, emphasizing the correlation between mindfulness and academic behavior.

These theoretical models offer a thorough comprehension of the complex connection between mindfulness and academic performance, including cognitive, emotional, motivational, and developmental aspects.

Mindfulness Interventions and Academic Performance

Meta-analyses and systematic reviews on the impact of mindfulness on academic performance

Meta-analyses and systematic reviews have been important in examining the impact of mindfulness on academic performance. Dunning et al. (2019) conducted a meta-analysis of 33 randomized controlled trials on the effects of mindfulness-based therapies on cognitive function and mental well-being in children and adolescents. The study, which included 3,666 participants, identified potential benefits of mindfulness therapies on mental health and cognitive performance in young people.

Zenner et al. (2014) and Sisk et al. (2018) conducted meta-analyses to explore the impact of growth mindsets on academic achievement. They found that growth mindsets shape students' responses to failure and overall performance, providing insights into psychological factors influencing academic achievement. Mindfulness-based therapies in educational settings showed improvements in the academic performance, social relationships, stress reduction, and physical health of vulnerable and HIV-positive teenagers. Additionally, a study by Lomas et al. (2017) found a positive correlation between mindfulness and good outcomes in various metrics, including burnout, anxiety, depression, stress, and life satisfaction. These studies provide valuable insights into the cognitive, emotional, and psychological elements that influence students' educational achievements. Further research is needed to understand the exact pathways through which mindfulness therapies can enhance academic performance and well-being.

Examination of the relationship between mindfulness and specific academic outcomes

Research has consistently shown a positive correlation between mindfulness and academic performance. Grossman et al. (2003) conducted a meta-analysis on the impact of mindfulness-based stress reduction on health, finding favorable results in terms of stress reduction and mental well-being. Moore & Malinowski (2009) examined the effects of meditation, mindfulness, and cognitive flexibility, highlighting the potential advantages of mindfulness practices in improving cognitive flexibility and the ability to modify responses. Kuroda et al. (2022) evaluated the advantages of mindfulness in educational environments, highlighting its usefulness in forecasting academic emotions, thoughts, and actions. Li et al. (2021) investigated the correlation between trait mindfulness, attention, and working memory in junior high school students, revealing the beneficial influence of mindfulness on attention and working memory capabilities. Niedermeier et al. (2021) examined the connections between exercise, mindfulness, mental health, and academic accomplishment in prelicensure nursing students, showing a positive correlation between mindfulness and both mental well-being and academic performance. Sampl et al. (2017) investigated the efficacy of a mindfulness stress reduction program in improving cognitive flexibility and early maladaptive schemas.

Mechanisms of Action

Cognitive processes influenced by mindfulness

Research has demonstrated that mindfulness can impact a range of cognitive functions, leading to enhanced cognitive performance and an overall state of well-being. In 2009, Moore & Malinowski conducted a study on meditation, mindfulness, and cognitive flexibility. They emphasized the potential advantages of mindfulness practices in improving cognitive flexibility and the ability to modify responses. Cognitive flexibility is the capacity to adjust cognitive processing procedures in order to confront novel and unforeseen circumstances, and it is inherently connected to attentional processes.

In addition, Leyland et al. (2019) conducted a study to investigate the impact of mindfulness inductions on self-regulation. They specifically focused on the role of attention management in regulating emotions. The study emphasized the significance of attention control in regulating emotions, showcasing the impact of mindfulness on cognitive processes and self-control.

Hawkins et al. (2015) offered valuable insights into the utilization of the model-based cognitive neuroscience framework for investigating mind wandering. This includes examining its effects on attention, decision-making, and cognitive processes. The study elucidated the cognitive mechanisms that underlie mind wandering and its influence on attention and information processing.

Geronimi et al. (2020) examined the correlation between mindfulness and executive function in children, with a focus on the cognitive and metacognitive aspects of the mindfulness experience. The study emphasized the significance of comprehending the cognitive mechanisms that underlie mindfulness, particularly in youthful demographics.

In addition, Felver et al. (2017) established a correlation between mindfulness-based therapies and the regulation of attention, highlighting the influence of mindfulness practices on the brain systems responsible for attention regulation. The study presented empirical evidence supporting the beneficial correlation between mindfulness and attention management, a crucial factor for cognitive functioning and academic achievement.

Meanwhile, Zou et al. (2020) discovered a positive correlation between cognitive flexibility and mindfulness. They also concluded that cognitive flexibility and mindfulness are distinct conceptions that are related to the feeling of flow. The study highlighted the significance of mindfulness in improving cognitive flexibility and cognitive processing. Other studies emphasize the importance of cognitive flexibility and mindfulness. The study offered valuable insights into the correlation between mindfulness and cognitive flexibility, highlighting their influence on cognitive function and the occurrence of flow experiences (Moore, 2013).

These studies collectively demonstrate the impact of mindfulness on cognitive processes, such as the ability to regulate attention, adapt cognitive strategies, and process information. These findings emphasize the potential advantages of mindfulness practices in improving cognitive functioning and overall well-being. More research needs to be done in this area to find out exactly how mindfulness-based treatments might change cognitive processes and to help people come up with effective mindfulness-based interventions that can be used in a variety of settings.

Emotional regulation and its impact on learning and academic success

Research has demonstrated that practicing mindfulness has a substantial influence on the regulation of emotions, which in turn affects learning and academic achievement. In order to investigate the effects of mindfulness-based stress reduction on health, Grossman et al. (2003) conducted a meta-analysis. The findings indicated that this approach yielded favorable results in terms of reducing stress and improving mental well-being. Grecucci et al. (2015) investigated the neurocognitive mechanisms underlying mindfulness and its influence on emotion regulation, highlighting the distinctive elements that mindfulness meditation contributes to the emotion regulation process. These studies offer valuable insights into the possible advantages of mindfulness for enhancing emotional well-being.

Research has shown that the ability to regulate emotions is linked to higher academic accomplishment and productivity in the classroom. It is also connected with better scores in early reading and numeracy assessments (Graziano et al., 2007). In their study, Lee & Jang (2020) explored the correlation between mindfulness, achievement feelings, and academic results. They found that mindfulness is associated with the improvement of students' positive emotions and the reduction of negative emotions, which eventually impacts their academic performance. These findings emphasize the significance of mindfulness in influencing emotional experiences and their influence on academic achievement.

Additionally, Lee & Park (2022) shown that emotion regulation is crucial for linking socio-cognitive mindfulness and empathy among nurses. This highlights the significance of emotion regulation within the framework of mindfulness. The study by Chen & Wu (2021) demonstrated that language educators prioritize the utilization of certain ways to manage their emotions, highlighting the importance of emotion regulation in educational environments.

Mindfulness has been linked to improving self-regulated learning processes and decreasing negative learning emotions, hence positively impacting academic performance (Lee & Jang, 2021). Moreover, research has demonstrated that mindfulness positively impacts kids' academic achievement in schools by enhancing their ability to regulate emotions and improving their degree of mindful awareness. These improvements are useful in enhancing their emotional functioning within their interpersonal interactions on a regular basis (Seo et al., 2022).

Furthermore, research has demonstrated that practicing mindfulness has a beneficial effect on social and emotional skills, which in turn can enhance academic achievement. Mindfulness practice fosters a pleasant and supportive learning environment by boosting self-esteem, mood control, and social skills. This enhances students' engagement in academic material and improves their interactions with classmates and teachers (Wang, 2022).

These studies in turn demonstrate the correlation between mindfulness and the regulation of emotions, as well as its effect on learning and academic achievement. Mindfulness is essential in molding students' emotional experiences and academic outcomes by boosting emotional well-being, improving self-regulation, and creating a good learning environment. Additional investigation in this field is crucial to clarify the precise processes by which mindfulness treatments might impact emotion regulation and to guide the creation of successful mindfulness-based therapies in educational environments.

The role of mindfulness in reducing stress and anxiety related to academic performance

The promise of mindfulness in lowering stress and anxiety, especially in the context of academic achievement, has been acknowledged. Grossman et al. (2003) performed a meta-analysis on mindfulness-based stress reduction and its effects on health, uncovering favorable results in terms of stress reduction and mental well-being. The study yielded useful insights into the potential efficacy of mindfulness-based therapies in mitigating stress and anxiety. Similarly, Zernicke et al. (2013) explored the effects of mindfulness-based stress reduction on irritable bowel syndrome symptoms, demonstrating the efficacy of mindfulness interventions in reducing symptoms of stress and anxiety.

Research has shown that mindfulness-based stress reduction can significantly improve health-related quality of life and emotional well-being. Studies by Rosenzweig et al. (2003), Roth & Robbins (2004), Chiesa & Serretti (2009), Hofmann & Gómez (2017), Dutt et al. (2019), and Lemay et al. (2019) have all found that mindfulness can alleviate stress and anxiety symptoms. These studies highlight the potential benefits of mindfulness for enhancing emotional well-being and mitigating stress and anxiety symptoms. Furthermore, Lemay et al. (2019) found that yoga and meditation interventions can reduce stress and anxiety levels in students. Lastly, Dutt et al. (2019) found that mindfulness programs can alleviate stress, anxiety, and depression symptoms among university students. Overall, these studies demonstrate the effectiveness of mindfulness in reducing stress and anxiety, highlighting its role in enhancing emotional well-being.

Moderating and mediating factors

Individual differences in the relationship between mindfulness and academic performance

The relationship between mindfulness and academic achievement is influenced by individual variations. Studies by Sisk et al. (2018), Caballero et al. (2019), Alzahrani et al. (2020), Lee & Jang (2020), Vorontsova-Wenger et al. (2020), Miralles-Armenteros et al. (2021), Kuroda et al. (2022), and Li et al. (2023) have shown that individual variations significantly influence the relationship between mindfulness and academic achievement. These findings underscore the importance of considering individual variations when assessing the influence of mindfulness on academic performance. Furthermore, research by Kuroda et al. (2022) suggests that trait mindfulness has additional value in predicting academic learning outcomes beyond motivating factors. Caballero et al. (2019) found that the association between mindfulness and academic achievement remained stable regardless of demographic factors. Overall, these findings underscore the need for tailored strategies to foster academic achievement, emphasizing the importance of individual variations in the relationship between mindfulness and academic performance.

Contextual factors influencing the effectiveness of mindfulness interventions in educational settings

Contextual factors have a substantial influence on the impact of mindfulness therapies in educational and professional settings. In their study, Sisk et al. (2018) emphasized the significance of contextual factors in influencing the efficiency of these interventions,

while Adnan et al. (2022) highlighted the significance of contextual variables, such as ethnicity, workload, and work schedules, in influencing the efficacy of treatments for healthcare workers. These findings highlight the importance of contextual factors in influencing the effects of mindfulness therapies in different environments.

Moreover, Ijaz et al. (2021) emphasized the significance of taking into account contextual factors while implementing treatments in order to prevent the exacerbation of health disparities. Van der Elst et al. (2022) showcased the practicability of identifying pertinent contextual variables that could impact the outcomes of an intervention study, underscoring the significance of incorporating contextual aspects in intervention research. These studies collectively demonstrate the impact of contextual factors on the efficacy of interventions in different environments.

In addition, Schubin et al. (2023) highlighted the significance of taking into account contextual factors in certain industries, such as the workplace difficulties faced by senior ICT managers, when assessing the acceptability and effectiveness of interventions. McArthur et al. (2017) emphasized the importance of taking into account contextual variables, such as time, student aptitude, and cultural misunderstandings of mindfulness, in educational environments. These studies underscored the need to take contextual factors into account when determining the impact of mindfulness therapies in educational and professional environments.

Mediating variables that explain the relationship between mindfulness and academic achievement

There are various mediating factors that affect the relationship between mindfulness and academic achievement. Sisk et al. (2018) highlighted the importance of these factors in understanding the connection between mindset and academic results. Creswell (2017) emphasized the need for rigorous, randomized, controlled trials to investigate the efficacy of mindfulness therapies. Hardison & Roll (2016) explored the mediating role of theory of mind, effortful control, and school preparedness in the relationship between paternal mind-mindedness and children's academic performance. Miralles-Armenteros et al. (2021) found compassion to be a partial mediator in the connection between mindfulness and engagement. Kuroda et al. (2022) found trait mindfulness to be more valuable in forecasting academic emotion, cognition, and behavior than motivational factors. Dikmen (2022) found that mindfulness and problem-solving abilities mediate the relationship between perceived stress levels and academic achievement. These findings underscore the importance of considering mediating variables when assessing the effects of mindfulness therapies.

Challenges and limitations

Methodological challenges in studying the impact of mindfulness on academic performance

Examining the influence of mindfulness on academic achievement has various methodological obstacles. Richardson et al. (2012) emphasized the importance of combining concepts and methods in order to better address research topics and effectively evaluate students' academic abilities. Mantzios (2021) identified discrepancies and flawed concepts around mindful eating, which pose comparable methodological difficulties. The existence of these problems highlights the necessity for a precise and uniform definition of mindfulness and its implementation in research. In addition, Datu et al. (2023) emphasized the restricted significance of previous studies in comprehending the function of mindfulness in non-Western settings, underscoring the necessity for culturally responsive research approaches. These problems highlight the significance of taking cultural and contextual factors into account when examining the influence of mindfulness on academic achievement.

The research on the effect of mindfulness on academic performance presents methodological difficulties, such as the inclusion of diverse study populations, variations

in the implementation and exercises, and the utilization of a wide array of instruments, as pointed out by Zenner et al. (2014). The presence of many types necessitates a meticulous and distinct analysis of data, with a focus on the importance of uniform procedures and equipment. Moreover, the difficulty in studying mindfulness stems from its inherent lack of conditions, which makes it less adaptable to established approaches and techniques, as pointed out by Sikh and Spence (2016). This difficulty emphasizes the necessity of inventive and adaptable study approaches to comprehend the complex and diverse aspects of mindfulness and its influence on academic achievement.

Additionally, the research on the influence of mindfulness on academic performance presents methodological difficulties that require thorough and distinct analysis of the data, as pointed out by Zenner et al. (2014). Standardized techniques and equipment are necessary due to the diversity of study samples, the variance in implementation and exercises, and the large range of instruments utilized. Furthermore, the difficulty in studying mindfulness stems from its inherent unconditional nature, which makes it less adaptable to established approaches and methods, as pointed out by Sikh and Spence (2016). This difficulty emphasizes the necessity of inventive and adaptable study approaches to comprehend the complex and diverse aspects of mindfulness and its influence on academic achievement.

Potential adverse effects or limitations of mindfulness interventions in educational contexts

Examining the possible negative consequences or restrictions of mindfulness treatments in school settings is crucial for comprehending the intricacies and difficulties linked to implementing such programs. Although mindfulness interventions have demonstrated potential in several contexts, such as dementia caregiving, nursing education, and special education, it is crucial to be aware of certain factors when applying these interventions in educational settings. A major obstacle lies in the complexity of quantifying mindfulness itself. Mindfulness is a personal perception that can be difficult to measure in an objective manner. Researchers frequently depend on self-reported measures, which might potentially inject biases or mistakes into the data. In order to address this restriction, future research should strive to integrate more objective assessments of mindfulness, such as neuroimaging methodologies.

Another obstacle involves determining causality. Given the correlational nature of several studies examining the relationship between mindfulness and academic performance, it is challenging to ascertain whether mindfulness directly leads to enhancements in academic achievement or if other factors are involved. It is conceivable that people who possess a natural inclination towards mindfulness may also exhibit other characteristics or engage in other activities that enhance their academic achievements. In order to address these methodological obstacles, further studies could integrate longitudinal designs or experimental manipulations. Longitudinal research would enable the investigation of the enduring impacts of mindfulness on academic performance, while experimental manipulations could establish a cause-and-effect connection between mindfulness practice and academic achievement.

Furthermore, the limitation of existing studies is the generalizability of their findings. Numerous studies have concentrated on particular demographics, such as university students or secondary school students, and it remains uncertain if comparable outcomes would be evident in diverse educational environments or age brackets. Subsequent investigations should strive to reproduce discoveries using varied samples in order to verify the strength and relevance of the findings. In addition, researchers should also investigate the potential variations in the impact of mindfulness on academic accomplishment across different pupils. This may involve examining variables such as age, cultural heritage, or educational attainment. Through the analysis of these variations, researchers might gain a more extensive comprehension of how mindfulness might impact academic achievement in diverse settings.

It is also crucial to acknowledge that the influence of mindfulness on academic achievement is not exclusively contingent upon an individual's mindfulness level.

Additional elements, such as drive and tenacity, can also have a significant impact. For instance, a student who possesses a high level of mindfulness may nevertheless experience a lack of motivation or encounter personal difficulties, which might eventually have an impact on their academic achievements. Hence, it is imperative for future studies to investigate the correlation between mindfulness and other determinants that contribute to academic achievement in order to acquire a more intricate comprehension of how mindfulness intersects with other variables to impact academic performance.

A critical appraisal of the existing literature and gaps in knowledge

Examining the influence of mindfulness on academic achievement is an intricate and diverse undertaking, and the current body of research has pinpointed numerous aspects that necessitate additional exploration. One significant area of uncertainty relates to the precise processes through which mindfulness influences academic achievement and the potential factors that may reduce its impact. Although preliminary research has offered some backing for the significance of mindfulness in educational environments, further investigation is required to determine whether mindfulness interventions can enhance student involvement and cognitive functions such as focus, recall, and analytical abilities. Furthermore, there is a need for additional investigation on the effects of mindfulness on the emotional well-being of students and its impact on their academic achievement. Examining the impact of mindfulness practices on students' emotional well-being and their capacity to manage stress and anxiety can yield significant knowledge on the possible advantages of mindfulness interventions for academic achievement.

Furthermore, it is crucial to tackle the obstacles that hinder the successful execution of mindfulness interventions in educational settings. The incorporation of mindfulness into academic curricula might be hindered by persistent issues in the assessment process, such as excessive summative assessment demands and a lack of alignment with learning targets. It is essential to overcome these obstacles and create successful methods for implementing mindfulness interventions in educational environments in order to fully realize the advantages of mindfulness for academic achievement.

Moreover, there is a need for further investigation into the potential correlation between mindfulness and cognitive and affective processes in academic environments. Although preliminary research has offered some backing for the significance of mindfulness in educational environments, further investigation is required to determine whether mindfulness interventions can enhance student involvement and cognitive functions such as attention, memory, and problem-solving abilities. Furthermore, there is a need for additional research to investigate the effects of mindfulness on students' emotional well-being and its impact on their academic performance. Examining the impact of mindfulness practices on students' emotional well-being and their capacity to manage stress and anxiety can yield significant knowledge regarding the possible advantages of mindfulness interventions on academic achievement.

Practical Implications and Recommendations

Implications for educators, policymakers, and practitioners

The limited literature on mindfulness and academic performance implies many consequences for educators, policymakers, and practitioners in the field of education. First and foremost, educators must acknowledge the potential advantages of integrating mindfulness practices into the classroom. Through the practice of fostering mindfulness in students, educators have the potential to enhance students' attention, concentration, and general state of being, ultimately resulting in improved academic achievement. Furthermore, authorities should contemplate the incorporation of mindfulness practices into educational policies and curricula. This entails furnishing teachers with tools and assistance to integrate mindfulness exercises into their classes, along with designating dedicated time for students to participate in mindful activities. Finally, educators should undergo training and get assistance on the proper use of mindfulness interventions in academic environments.

The literature has emphasized the potential advantages of incorporating mindfulness practices into educational settings. This suggests that educators, policymakers, and practitioners should carefully assess the consequences of integrating mindfulness into academic environments. Teachers can have a crucial impact by acknowledging the potential advantages of mindfulness practices and integrating them into the educational setting. By cultivating mindfulness in students, educators have the ability to enhance students' attention, concentration, and overall state of being, which could result in improved academic achievement. It is advisable for policymakers to contemplate the incorporation of mindfulness practices into educational policies and curriculum. This would involve offering resources and assistance to teachers in order to facilitate the inclusion of mindfulness exercises in their classrooms. In addition, authorities might schedule dedicated time for students to participate in mindful activities, acknowledging the potential influence of mindfulness on students' overall well-being and academic achievements. Additionally, it is imperative that educators in the field of education undergo comprehensive training and receive clear instructions on how to proficiently incorporate mindfulness interventions into academic environments. This will guarantee that mindfulness practices are seamlessly integrated in a purposeful and influential manner.

The ramifications of incorporating mindfulness therapies in educational settings are diverse and necessitate meticulous deliberation by educators, policymakers, and practitioners. By acknowledging the potential advantages of mindfulness practices and incorporating them into educational environments, individuals involved can contribute to the comprehensive growth and welfare of students, thereby improving their academic achievements. Collaboration among educators, policymakers, and practitioners is crucial for the effective implementation of mindfulness treatments. This collaboration ensures that students can derive maximum benefits from these practices in an academic atmosphere that is supportive and favorable. It is important for education stakeholders to stay aware and proactive in utilizing mindfulness practices to help students' overall development as research on mindfulness and academic performance progresses.

Recommendations for integrating mindfulness practices into educational settings

In order to successfully incorporate mindfulness practices into educational environments, educators should take into account the following measures: Initially, offer instructors professional development opportunities to acquire knowledge about mindfulness and acquire the skills necessary to integrate it into their instructional practices. Options for acquiring mindfulness skills may encompass workshops, online courses, or partnerships with specialists in the field. By providing instructors with the necessary knowledge and skills to incorporate mindfulness practices, they may effectively assist their pupils in cultivating mindfulness abilities.

Furthermore, establish a nurturing and favorable setting for the cultivation of mindfulness. This entails allocating a serene and cozy area within the classroom where students can partake in mindfulness exercises. In addition, educators have the ability to develop a regular schedule, either on a daily or weekly basis, for integrating mindfulness activities into the classroom. Consistently engaging in this routine can assist pupils in cultivating a propensity for mindfulness, resulting in enduring advantages for their scholastic achievements and overall welfare.

An additional suggestion is to incorporate mindfulness into current academic subjects and lessons. Teachers might integrate mindful breathing exercises or body scans into transition periods or before demanding assignments. In addition, they have the ability to incorporate mindfulness practices into conversations or reflective exercises, enhancing students' comprehension and involvement with the subject matter.

Furthermore, instructors should endeavor to foster an all-encompassing and unbiased atmosphere within the classroom. One way to achieve this is by highlighting the significance of self-compassion and acceptance in the practice of mindfulness. Establishing a secure environment where students feel at ease expressing their experiences and feelings is essential for the efficacy of mindfulness practices in

education. Moreover, it is crucial for educators to regularly analyze and evaluate the influence of mindfulness practices on students' academic achievement. Evaluating progress can be achieved by conducting routine assessments, surveys, and observations to ascertain any advancements in domains such as attentiveness, concentration, self-control, and general scholastic performance.

Future directions for research and practice in the field of mindfulness and academic performance

To conduct a more comprehensive investigation into the influence of mindfulness on academic achievement, forthcoming studies should take into account the following domains: 1. The enduring impacts of engaging in mindfulness practice on academic achievement Conducting longitudinal studies is necessary to investigate the impact of prolonged mindfulness practice on students' academic achievement, well-being, and mental health. 2. The efficacy of various mindfulness approaches in enhancing particular academic abilities, such as focus, retention, critical thinking, and innovation. The task at hand would entail doing a comparative analysis of different mindfulness interventions and practices in order to ascertain the most efficacious strategies for improving academic performance across diverse topic domains. The significance of mindfulness in providing assistance to pupils facing unique learning difficulties, such as ADHD or learning disabilities, Further investigation is necessary to explore the customization or modification of mindfulness practices to cater to the individual requirements of students facing learning difficulties. Additionally, it is important to determine whether mindfulness interventions can enhance their academic achievements and general state of being. 4. The potential influence of mindfulness on diminishing academic stress and anxiety Research should investigate the impact of mindfulness practices on students' ability to cope with stress and anxiety caused by academic pressures and determine if this results in enhanced academic achievement. Furthermore, forthcoming studies should also examine the impact of contextual variables on the efficacy of mindfulness techniques in enhancing academic achievement. These elements may encompass the school atmosphere, teacher support and training, and student involvement in mindfulness practices.

Conclusion

Mindfulness practices have been shown to improve academic performance by improving cognitive abilities like attention, self-regulation, and overall well-being. This leads to improved focus, information retention, and problem-solving. However, more research is needed to understand the long-term effects of mindfulness on academic success and how to help students with different skills and learning difficulties. Mindfulness also has potential to mitigate academic stress and anxiety. Research shows that mindfulness can enhance attention and concentration, which are crucial for optimal learning and academic achievement. It can also help students maintain focus, reduce mind wandering, and remember information more effectively.

The practical implications indicate that the integration of mindfulness practices in educational institutions can have a substantial positive impact on students' academic achievements. Mindfulness enables pupils to approach their scholastic activities with a composed and concentrated mindset by alleviating stress and anxiety. Consequently, this improves their capacity to focus, memorize, and employ analytical reasoning abilities.

Moreover, it is important to acknowledge the significant influence of mindfulness on particular academic abilities, such as concentration and memory. Through the practice of mindfulness, students cultivate the capacity to maintain and refocus their attention as necessary, leading to enhanced concentration and efficiency.

This literature review enhances comprehension of the influence of mindfulness on academic achievement by consolidating information from many studies. The review emphasizes the beneficial impact of mindfulness on concentration, self-control, and general well-being, ultimately leading to improved academic achievement in students.

References

Adair, K. C. (2013). Is mindfulness a non-judgmental stance? (Doctoral dissertation, University of North Carolina at Chapel Hill).

Adnan, N. B. B., Dafny, H. A., Baldwin, C., Jakimowitz, S., Chalmers, D., Moh'd Ahmad Aroury, A., & Chamberlain, D. (2022). What are the solutions for well-being and burnout among healthcare professionals? An umbrella realist review of the learnings of individual-focused interventions for critical care. BMJ open, 12(9), e060973.

D'Alessandro, A. M., Butterfield, K. M., Hanceroglu, L., & Roberts, K. P. (2022). Listen to the children: elementary school students' perspectives on a mindfulness intervention. Journal of child and family studies, 31(8), 2108-2120.

Alzahrani, A. M., Hakami, A., AlHadi, A., Batais, M. A., Alrasheed, A. A., & Almigbal, T. H. (2020). The interplay between mindfulness, depression, stress, and academic performance in medical students: A Saudi perspective. PLoS One, 15(4), e0231088.

Baer, R. (2019). Assessment of mindfulness by self-report. Current opinion in psychology, 28, 42–48.

Bernier, A., Lapolice-Thériault, R., Matte-Gagné, C., & Cyr, C. (2023). Paternal mind-mindedness and children's academic achievement: Investigating developmental processes. Developmental Psychology, 59(4), 758.

Blanke, E. S., Schmidt, M. J., Riediger, M., & Brose, A. (2019). Thinking mindfully: How mindfulness relates to rumination and reflection in daily life Emotion. Advance online publication.

Bóo, S. J., Childs-Fegredo, J., Cooney, S., Datta, B., Dufour, G., Jones, P. B., & Galante, J. (2020). A follow-up study to a randomized control trial to investigate the perceived impact of mindfulness on academic performance in university students. Counselling and Psychotherapy Research, 20(2), 286-301.

Caballero, C., Scherer, E., West, M. R., Mrazek, M. D., Gabrieli, C. F., & Gabrieli, J. D. (2019). Greater mindfulness is associated with better academic achievement in middle school. Mind, Brain, and Education, 13(3), 157–166.

Carletto, S., Borghi, M., Francone, D., Scavelli, F., Bertino, G., Cavallo, M.,... & Ostacoli, L. (2016). The efficacy of a mindfulness-based intervention for depressive symptoms in patients with multiple sclerosis and their caregivers: study protocol for a randomized controlled clinical trial. BMC neurology, 16, 1–8.

Chen, M., & Wu, X. (2021). Attributing academic success to giftedness and its impact on academic achievement: The mediating role of self-regulated learning and negative learning emotions. School Psychology International, 42(2), 170-186.

Chetlen, A. L., Chan, T. L., Ballard, D. H., Frigini, L. A., Hildebrand, A., Kim, S., ... & Ganeshan, D. (2019). Addressing burnout in radiologists. Academic radiology, 26(4), 526-533.

Chiesa, A., & Serretti, A. (2009). Mindfulness-based stress reduction for stress management in healthy people: a review and meta-analysis. The journal of alternative and complementary medicine, 15(5), 593-600

Chung, J., Mundy, M. E., & McKenzie, S. (2022). A Self-Managed Online Mindfulness Program in a University-Wide Learning Management System Orientation Site: A Real-World Ecological Validation Study. Frontiers in Psychology, 13, 869765.

Creswell, J. D. (2017). Mindfulness interventions. Annual review of psychology, 68, 491–516,

Cruz, E. P. (2015). Mindfulness and dyspareunia: a study of how our mind can dissolve sexual pain. MaRBLe, 6.

Dash, S., Bourke, M., Parker, A. G., Trott, E., & Pascoe, M. C. (2022). Mindfulness is associated with reduced barriers to exercise via decreasing psychological distress in help-seeking young adults: a cross-sectional brief report. Early Intervention in Psychiatry, 16(9), 1049–1054.

Datu, J. A. D., Yang, W., & Wai Lau, K. (2023). Does mindfulness matter for cognitive reappraisal and academic engagement? A Cross-Lagged Panel Model Study in Filipino High School Students. The Journal of Early Adolescence, 43(8), 993–1015.

Dikmen, M. (2022). Mindfulness, problem-solving skills, and academic achievement: do perceived stress levels matter? Journal of Theoretical Educational Science, 15(1), 42–63.

Dunning, D. L., Griffiths, K., Kuyken, W., Crane, C., Foulkes, L., Parker, J., & Dalgleish, T. (2019). Research Review: The effects of mindfulness-based interventions on cognition and mental health in children and adolescents: a meta-analysis of randomized controlled trials. Journal of Child Psychology and Psychiatry, 60(3), 244–258.

Dutt, S., Keyte, R., Egan, H., Hussain, M., & Mantzios, M. (2019). Healthy and unhealthy eating amongst stressed students: Considering the influence of mindfulness on eating choices and consumption. Health Psychology Report, 7(2), 113–120.

Dweck, C. S. (2010). Mind-sets. Principal leadership, 10(5), 26–29.

Van der Elst, M., Schoenmakers, B., Dierckx, E., De Donder, L., De Roeck, E., Duppen, D.,... & De Lepeleire, J. (2022). A search for relevant contextual factors in intervention studies: a stepwise approach with online information. Bmj Open, 12(9), e057048.

Feliu-Soler, A., Pascual, J. C., Elices, M., Martín-Blanco, A., Carmona, C., Cebolla, A.,... & Soler, J. (2017). Fostering self-compassion and loving kindness in patients with borderline personality disorder: A randomized pilot study. Clinical psychology and psychotherapy, 24(1), 278–286.

Felver, J. C., Tipsord, J. M., Morris, M. J., Racer, K. H., & Dishion, T. J. (2017). The effects of mindfulness-based intervention on children's attention regulation. Journal of Attention Disorders, 21(10), 872-881.

Fleischer, N. L., Fernald, L. C., & Hubbard, A. E. (2010). Estimating the potential impacts of intervention from observational data: methods for estimating causal attributable risk in a cross-sectional analysis of depressive symptoms in Latin America. Journal of Epidemiology & Community Health, 64(01), 16-21.

Geronimi, E. M., Arellano, B., & Woodruff-Borden, J. (2020). Relating mindfulness and executive function in children. Clinical child psychology and psychiatry, 25(2), 435–445.

Gilley, E. D. (2017). Integrating the Science of Addiction and the Science of Wellbeing. Journal of Alcoholism and Drug Dependence, 5(4), 275-281.

Gobout, N., Morissette Harvey, F., Cyr, G., & Bélanger, C. (2020). Cumulative childhood trauma and couple satisfaction: Examining the mediating role of mindfulness. Mindfulness, 11, 1723–1733.

Graziano, P. A., Reavis, R. D., Keane, S. P., & Calkins, S. D. (2007). The role of emotion regulation in children's early academic success. Journal of School Psychology, 45(1), 3–19.

Grecucci, A., Pappaianni, E., Siugzdaite, R., Theuninck, A., & Job, R. (2015). Mindful emotion regulation: exploring the neurocognitive mechanisms behind mindfulness. BioMed Research International, 2015.

Grossman, P., Niemann, L., Schmidt, S., & Walach, H. (2003). Mindfulness-based stress reduction and health benefits: A meta-analysis. Focus on Alternative and Complementary Therapies, 8(4), 500–500.

Gunasekara, A., & Zheng, C. S. M. (2019). Examining the effect of different facets of mindfulness on work engagement. Employee Relations, 41(1), 193-208.

Hadash, Y., & Bernstein, A. (2019). Behavioral assessment of mindfulness: defining features, organizing framework, and review of emerging methods. Current opinion in psychology, 28, 229–237.

Hardison, M. E., & Roll, S. C. (2016). Mindfulness interventions in physical rehabilitation: A scoping review. The American Journal of Occupational Therapy, 70(3), 7003290030p1-7003290030p9.

Hawkins, G. E., Mittner, M., Boekel, W., Heathcote, A., & Forstmann, B. U. (2015). Toward a model-based cognitive neuroscience of mind wandering. Neuroscience, 310, 290–305.

Hofmann, S. G., & Gómez, A. F. (2017). Mindfulness-based interventions for anxiety and depression. Psychiatric clinics, 40(4), 739–749.

Hölzel, B. K., Lazar, S. W., Gard, T., Schuman-Olivier, Z., Vago, D. R., & Ott, U. (2011). How does mindfulness meditation work? Proposing mechanisms of action from a conceptual and neural perspective. Perspectives on psychological science, 6(6), 537–559.

Ijaz, S., Nobles, J., Johnson, L., Moore, T., Savović, J., & Jago, R. (2021). Preventing childhood obesity in primary schools: A realist review from a UK perspective. International journal of environmental research and public health, 18(24), 13395

Kennedy, A. B., & Resnick, P. B. (2015). Mindfulness and physical activity. American Journal of Lifestyle Medicine, 9(3), 221-223.

Kloo, D., Osterhaus, C., Kristen-Antonow, S., & Sodian, B. (2022). The impact of theory of mind and executive function on math and reading abilities: A longitudinal study. Infant and Child Development, 31(6), e2356.

Koncz, A., Köteles, F., Demetrovics, Z., & Takacs, Z. K. (2021). Benefits of a Mindfulness-Based Intervention upon School Entry: A Pilot Study. International Journal of Environmental Research and Public Health, 18(23), 12630.

Kumpulainen, K., Kajamaa, A., Leskinen, J., Byman, J., & Renlund, J. (2020, June). Mapping digital competence: students' maker literacies in a school's makerspace. Frontiers in Education (Vol. 5, p. 69). Frontiers Media SA.

Kuroda, Y., Yamakawa, O., & Ito, M. (2022). Benefits of mindfulness in academic settings: trait mindfulness has incremental validity over motivational factors in predicting academic affect, cognition, and behavior. BMC psychology, 10(1), 1–14.

Lampe, L., and Müller-Hilke, B. (2021). Mindfulness-based intervention helps preclinical medical students to contain stress, maintain mindfulness, and improve academic success. BMC Medical Education, 21(1), 1-8.

Lau, M., and McMain, S. (2005). Integrating mindfulness meditation with cognitive and behavioral therapies: the challenge of combining acceptance- and change-based strategies. The Canadian Journal of Psychiatry, 50(13), 863–869.

Lee, M. and Jang, K. (2020). Nursing students' meditative and sociocognitive mindfulness, achievement emotions, and academic outcomes. Nurse Educator, 46(3), E39-E44.

Lee, M., and Jang, K. (2021). Mediating effects of emotion regulation between socio-cognitive mindfulness and achievement emotions in nursing students. Healthcare, 9(9), 1238.

Lee, M., and Park, H. (2022). Mediating effects of emotion regulation between socio-cognitive mindfulness and empathy in nurses: a cross-sectional study. BMC Nursing, 21(1), 1-10.

Lekamge, R., Gasevic, D., Karim, M., & Ilic, D. (2022). Mindfulness for academic performance in health professions students: a systematic review. BMJ Evidence-Based Medicine, 28(5), 341-347.

Lemay, V., Hoolahan, J., & Buchanan, A. (2019). Impact of a yoga and meditation intervention on students' stress and anxiety levels. American Journal of Pharmaceutical Education, 83(5), 7001.

Leyland, A., Rowse, G., & Emerson, L. (2019). Experimental effects of mindfulness inductions on self-regulation: systematic review and meta-analysis. Emotion, 19(1), 108–122.

Li, S., Su, J., Zhao, D., Wang, J., & Wang, G. (2023). Future-time perspective and academic procrastination among nursing students: the mediating role of mindfulness. Nursing Open, 10(6), 3737–3743.

Li, Y., Yang, N., Yan, Z., Xu, W., & Cai, L. (2021). The relationship among trait mindfulness, attention, and working memory in junior high school students under different stressful situations. Frontiers in Psychology, 12.

Lin, Y., Fisher, M., & Moser, J. (2018). Clarifying the relationship between mindfulness and executive attention: a combined behavioral and neurophysiological study. Social Cognitive and Affective Neuroscience, 14(2), 205-215.

Liu, Y., Liu, Y., & Wang, C. (2022, January). The Effect of Mindfulness Meditation on the Academic Performance of Students 2021. International Conference on Public Art and Human Development (ICPAHD 2021) (pp. 56–61). Atlantis Press.

Lomas, T. (2017). Recontextualizing mindfulness: Theravada Buddhist perspectives on the ethical and spiritual dimensions of awareness. Psychology of Religion and Spirituality, 9(2), 209.

Lomas, T., Medina, J. C., Ivtzan, I., Rupprecht, S., & Eiroa-Orosa, F. J. (2017). The impact of mindfulness on the wellbeing and performance of educators: A systematic review of the empirical literature. Teaching and Teacher Education, 61, 132-141.

López, A., Sanderman, R., & Schroevers, M. J. (2016). Mindfulness and self-compassion are unique and common predictors of affect in the general population. Mindfulness, 7, 1289–1296.

Lorenz, S. (2009). The mindful brain: reflection and attunement in the cultivation of well-being. Journal of Mental Health, 18(2), 178–179.

Luberto, C. M., Hall, D. L., Park, E. R., Haramati, A., & Cotton, S. (2020). A Perspective on the Similarities and Differences Between Mindfulness and Relaxation. Global advances in health and medicine, 9, 2164956120905597.

Mahlo, L., and Windsor, T. (2021). State mindfulness and affective well-being in the daily lives of middle-aged and older adults. Psychology and Aging, 36(5), 642–659.

Mantzios, M. (2021). (Re)defining mindful eating into mindful eating behavior to advance scientific inquiry. Nutrition and Health, 27(4), 367–371.

McArthur, M., Mansfield, C., Matthew, S., Zaki, S., Brand, C., Andrews, J., & Hazel, S. (2017). Resilience in veterinary students and the predictive role of mindfulness and self-compassion. Journal of Veterinary Medical Education, 44(1), 106–115.

Menges, J., & Caltabiano, M. J. I. J. E. P. C. (2019). The effect of mindfulness on academic self-efficacy: A randomized controlled trial. Int. J. Educ. Psychol. Couns, 4, 170-186.

Miralles-Armenteros, S., Chiva-Gómez, R., Rodríguez-Sánchez, A., & Barghouti, Z. (2021). Mindfulness and academic performance: the role of compassion and engagement. Innovations in Education and Teaching International, 58(1), 3–13.

Moore, A., & Malinowski, P. (2009). Meditation, mindfulness, and cognitive flexibility. Consciousness and cognition, 18(1), 176–186.

Moore, B. (2013). Propensity for experiencing flow: the roles of cognitive flexibility and mindfulness. The Humanistic Psychologist, 41(4), 319–332.

Morgan, D. (2003). Mindfulness-based cognitive therapy for depression: a new approach to preventing relapse. Psychotherapy research: Journal of the Society for Psychotherapy Research, 13(1), 123–125.

Muschalik, C., Crutzen, R., Elfeddali, I., & de Vries, H. (2020). Mindfulness is not associated with dissonant attitudes, but it enhances the ability to cope with them. BMC psychology, 8, 1–17.

Navarro-Haro, M. V., López-del-Hoyo, Y., Campos, D., Linehan, M. M., Hoffman, H. G., García-Palacios, A.,... & García-Campayo, J. (2017). Meditation experts try Virtual Reality Mindfulness: A pilot study evaluation of the feasibility and acceptability of virtual reality to facilitate mindfulness practice in people attending a mindfulness conference. PloS one, 12(11), e0187777.

Niazi, A., and Niazi, S. (2011). Mindfulness-based stress reduction: a non-pharmacological approach for chronic illnesses. North American Journal of Medical Sciences, 3(1), 20.

Niedermeier, J., Mumba, M., Barron, K., Andrabi, M., Martin, R., & McDiarmid, A. (2021). Relationships among exercise, mindfulness, mental health, and academic achievement among prelicensure nursing students. Nurse Educator, 47(3), 184–189.

Nien, J. T., Wu, C. H., Yang, K. T., Cho, Y. M., Chu, C. H., Chang, Y. K., & Zhou, C. (2020). Mindfulness training enhances endurance performance and executive functions in athletes: an event-related potential study. Neural plasticity, 2020.

Park, T., Reilly-Spong, M., & Gross, C. (2013). Mindfulness: a systematic review of instruments to measure an emergent patient-reported outcome (pro). Quality of Life Research, 22(10), 2639–2659.

Parsons, C. E., Nielsen, T. H., Vermillet, A. Q., Lykke Hansen, I., & Mitkidis, P. (2020). The impact of mindfulness training on performance in a group decision-making task: evidence from an experimental study. Quarterly Journal of Experimental Psychology, 73(12), 2236–2245.

Purser, R., and Milillo, J. (2014). Mindfulness revisited. Journal of Management Inquiry, 24(1), 3–24.

Quach, D., Mano, K., & Alexander, K. (2016). A randomized controlled trial examining the effect of mindfulness meditation on working memory capacity in adolescents Journal of Adolescent Health, 58(5), 489–496.

Richardson, M., Abraham, C., & Bond, R. (2012). Psychological correlates of university students' academic performance: a systematic review and meta-analysis Psychological Bulletin, 138(2), 353.

Rosenzweig, S., Reibel, D., Greeson, J., Brainard, G., & Hojat, M. (2003). Mindfulness-based stress reduction lowers psychological distress in medical students. Teaching and Learning in Medicine, 15(2), 88–92.

Roth, B., and Robbins, D. (2004). Mindfulness-based stress reduction and health-related quality of life: findings from a bilingual inner-city patient population. Psychosomatic Medicine, 66(1), 113–123.

Rusdi, Z. (2017). The influence of self-control and mindfulness on counterproductive academic behavior Afebi Management and Business Review, 2(1), 1.

Sampl, J., Maran, T., & Furtner, M. R. (2017). A randomized controlled pilot intervention study of mindfulness-based self-leadership training (MBSLT) on stress and performance. Mindfulness, 8(5), 1393–1407.

Schubin, K., Seinsche, L., Pfaff, H., & Zeike, S. (2023). A workplace mindfulness training program may affect the mindfulness, well-being, health literacy, and work performance of upper-level ICT managers: an exploratory study in times of the COVID-19 pandemic. Frontiers in Psychology, 14, 994959.

Sedighimornani, N., Rimes, K. A., & Verplanken, B. (2019). Exploring the relationships between mindfulness, self-compassion, and shame. Sage Open, 9(3), 2158244019866294.

Seli, P., Wammes, J., Risko, E., & Smilek, D. (2015). On the relation between motivation and retention in educational contexts: the role of intentional and unintentional mind wandering. Psychonomic Bulletin & Review, 23(4), 1280–1287.

Seo, J., Hahm, J., Park, J., & Hwa-Ok, B. (2022). Personality traits and emotional status affect the academic achievements of medical students, testifying to the mediating effect of learning strategies. Korean Journal of Medical Education, 34(4), 299–308.

Shapiro, S. (2009). The integration of mindfulness and psychology Journal of Clinical Psychology, 65(6), 555–561.

Sikh, B., and Spence, D. (2016). Methodology, meditation, and mindfulness. International Journal of Qualitative Methods, 15(1), 160940691664125.

Singer, T., and Lamm, C. (2009). The social neuroscience of empathy. Annals of the New York Academy of Sciences, 1156(1), 81–96.

Sisk, V., Burgoyne, A., Sun, J., Butler, J., & Macnamara, B. (2018). To what extent and under which circumstances are growth mindsets important to academic achievement? two meta-analyses. Psychological Science, 29(4), 549–571.

Tan, L. (2015). A critical review of adolescent mindfulness-based programs. Clinical Child Psychology and Psychiatry, 21(2), 193-207.

Thompson, B. L., & Waltz, J. (2007). Everyday mindfulness and mindfulness meditation: overlaying constructs or not? Personality and Individual Differences, 43(7), 1875–1885.

Tirch, D. (2010). Mindfulness as a context for the cultivation of compassion. InternationalJournal of Cognitive Therapy, 3(2), 113–123.

Tran, U., Cebolla, A., Glück, T., Soler, J., Campayo, J., & Moy, T. (2014). The serenity of the meditating mind: a cross-cultural psychometric study on a two-factor higher-order structure of mindfulness, its effects, and mechanisms related to mental health among experienced meditators. Plos One, 9(10), e110192.

Vago, D. R., & Silbersweig, D. A. (2012). Self-awareness, self-regulation, and self-transcendence (S-ART): a framework for understanding the neurobiological mechanisms of mindfulness. Frontiers in human neuroscience, 6, 296.

Vorontsova-Wenger, O., Ghisletta, P., Ababkov, V., & Barisnikov, K. (2020). Relationship between mindfulness, psychopathological symptoms, and academic performance in university students. Psychological Reports, 124(2), 459–478.

Wang, N. (2022). EFL teachers' mindfulness and emotion regulation in language context. Frontiers in Psychology, 13, 877108.

Xu, J., Jo, H., Noorbhai, L., Patel, A., & Li, A. (2022). Virtual mindfulness interventions to promote well-being in adults: A mixed-methods systematic review. Journal of affective disorders, 300, 571–585.

Zaidi, F. Z., Ming, L. M., & Jumaat, A. (2022, December). Stop running away from stress; practice mindfulness instead. International Conference on Technology and Innovation Management (ICTIM 2022) (pp. 297–306). Atlantis Press.

Zenner, C., Herrnleben-Kurz, S., & Walach, H. (2014). Mindfulness-based interventions in schools—a systematic review and meta-analysis. Frontiers in Psychology, 5, 603.

Zernicke, K. A., Campbell, T. S., Blustein, P. K., Fung, T. S., Johnson, J. A., Bacon, S. L., & Carlson, L. E. (2013). Mindfulness-based stress reduction for the treatment of irritable bowel syndrome symptoms: a randomized, wait-list-controlled trial. International journal of behavioral medicine, 20, 385–396.

Zou, Y., Li, P., Hofmann, S. G., & Liu, X. (2020). The mediating role of non-reactivity in mindfulness training and cognitive flexibility: A randomized controlled trial. Frontiers in Psychology, 11, 1053.