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Mindfulness and Mental Health in Schools: Reviewing Interventions for Emotional Regulation and Academic Performance

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Abstract

Mindfulness-based interventions (MBIs) attract attention due to their possible contribution to the emotional and cognitive progress of schoolchildren and adolescents. As more and more people realize and worry about the existence of certain mental health issues anxiety, depression, as well as stress developing during the developmental years, schools offer an important setting where the necessary early interventions can take place. This review was intended to discuss the efficacy of school-based MBIs toward emotional control and academic achievement. The search of the databases implemented a systematic search (PRISMA-based) with a 100 percent overlap among PubMed, Scopus, Web of Science, ERIC, and PsycINFO databases. Articles were considered provided they were on school-based MBIs with students between 5 and 18 and with outcome measures indicating the development of emotional regulation or academic success. Studies were excluded only because they focused on clinical populations or out-of-school settings. In more than 20 studies, the results showed that the MBIs mostly enhanced emotional regulation in students, lowered anxiety and depression, and increased emotional awareness. It has also reported cognitive advantages, including enhanced attention, executive functional capacity, and working memory, especially in children who are aged between 10 and 12. The results however differed in terms of intervention design, intervention duration, mode of delivery, and cultural setting. Other studies that were of smaller samples or shorter periods realized insignificant or no effects. In general, it is possible to note that MBIs have considerable potential for the well-being of students and their academic involvement, yet longitudinal, diverse, and well-designed studies are instrumental in leading to sustainable policy and practice in school systems.

Keywords: mindfulness, emotional regulation, academic performance, school-based interventions, mental health

1. Introduction

Childhood and adolescence are development periods that have long-term impacts on mental health and well-being in life. In recent studies, increasing concerns about mental health issues in school-aged children were observed, such as emotional dysregulation, anxiety, depression, and disorders related to stress (Balamurugan et al., 2024). School setting, in which children spend the great part of the day, is an essential aspect having a significant effect on the formation of not only academic performance but also feelings. The management and responsiveness of emotional experiences called emotional regulation forms the base of healthy relationships, self-awareness as well as success in academic performance.

The issue of academic performance as one of the major factors used to assess student success is also directly connected to emotional and cognitive processes of attention, the executive component, and motivation. With disrupted mental health, students cannot concentrate and engage in active learning to get the best out of their potential. In such a manner, educational systems are coming to terms with what is required of them to support emotional, as well as academic well-being holistically.

To this end, Mindfulness-Based Interventions (MBIs) have become popular everywhere in the world. Present-moment awareness and regulating emotions are also encouraged using techniques like breathwork, guided meditation, and body scans. Schools are now using MBIs to diminish stress, enhance attention, and encourage emotional development among learners of different ages.

This review seeks to critically examine the published studies that have evaluated the effectiveness of school-based MBIs in emotional regulation and academic performance between the years 2019 to 2025. This is to define useful intervention models and areas that need to be explored further.

The review is guided by the following research questions:

1. What types of mindfulness interventions have been implemented in school settings?
2. How do these interventions impact students' emotional regulation and academic outcomes?
3. What gaps remain in the current research literature?

By addressing these questions, the review contributes to the development of informed, evidence-based practices for mental health promotion in schools.

2. Methodology

2.1 Search Strategy

A systematic literature review was performed in four prominent databases: PubMed, Scopus, ERIC, and Google Scholar to obtain suitable studies in terms of this review. These databases have been chosen to provide comprehensive coverage of the research in the fields of health sciences, psychology, education, as well as interdisciplinary study.

The search encompassed peer-reviewed papers, which were released from January 2019 through June 2025, with an objective to include up-to-date studies on mindfulness-based interventions (MBIs) in schools. It has only considered articles that were written in English and were of high importance and materials that concentrated on school-going children and teenagers.

A combination of keywords and Boolean operators was used to refine the search. The primary search string included terms such as: “mindfulness” AND (“school” OR “school-based” OR “education setting”) AND (“mental health” OR “emotional regulation” OR “psychological well-being” OR “emotional intelligence”) AND (“academic performance” OR “academic achievement” OR “learning outcomes” OR “cognitive function” OR “school engagement”). Other variants of search words involved: mindfulness interventions, student well-being, school mental health programs, and attention and mindfulness in education.

To maximize completeness, in order to select extra eligible research, reference lists of the key articles were filtered manually. The citation management software helped in deleting duplicate articles, and the rest of the articles were still screened based on criteria of inclusion and exclusion. This systematic way confirmed that only high-quality and relevant literature was incorporated to be discussed further and synthesized.

2.2 Inclusion Criteria

The aim of the inclusion criteria used in this review was to select studies that are relevant and of high quality. Only the peer-reviewed journal articles published after January 2019 and before June 2025 were taken into consideration so that the review will be centered on the new and recent studies in the area. Studies were based on a population of children within the school-going age, with those in elementary schools, middle schools, or high school environments being the target subject. Studies that included university students or adult learners were left out because of developmental relevance.

Every study was examined on a mindfulness-based intervention (MBI). This involved course founded on established models like Mindfulness-Based Stress Reduction (MBSR), Mindfulness-Based Cognitive Therapy (MBCT), and school-modified versions, such as .b (Dot B) and MindUp. Included studies must provide results on outcomes of either emotional regulation (e.g., stress, anxiety, emotional intelligence) or academic performance (e.g., attention, grades, cognitive process). Studies which failed to measure at least one of these variables were omitted. These standards assist in guaranteeing that the examination is centered around the union of mindfulness, student psychological condition, and educational success.

2.3 Exclusion Criteria

The following criteria were used to exclude studies from the review:

- Articles published before January 2018
- Non–peer-reviewed literature, including dissertations, theses, conference abstracts, blog posts, and book chapters

- Studies conducted on university students, adults, or non-school populations
- Interventions not explicitly based on mindfulness, such as yoga-only programs, general relaxation techniques, or cognitive-behavioural therapy (CBT) without mindfulness components
- Studies that did not assess emotional regulation or academic performance as an outcome
- Articles not published in English
- Studies focusing solely on teacher or parent outcomes without involving student participants
- Review articles, meta-analyses, or opinion pieces without original empirical data
- Duplicate publications or data from the same sample already included in another study

These criteria were applied during the screening and full-text review stages to ensure that only relevant, high-quality, and focused research was synthesized in this review.

2.4 PRISMA Flow Char

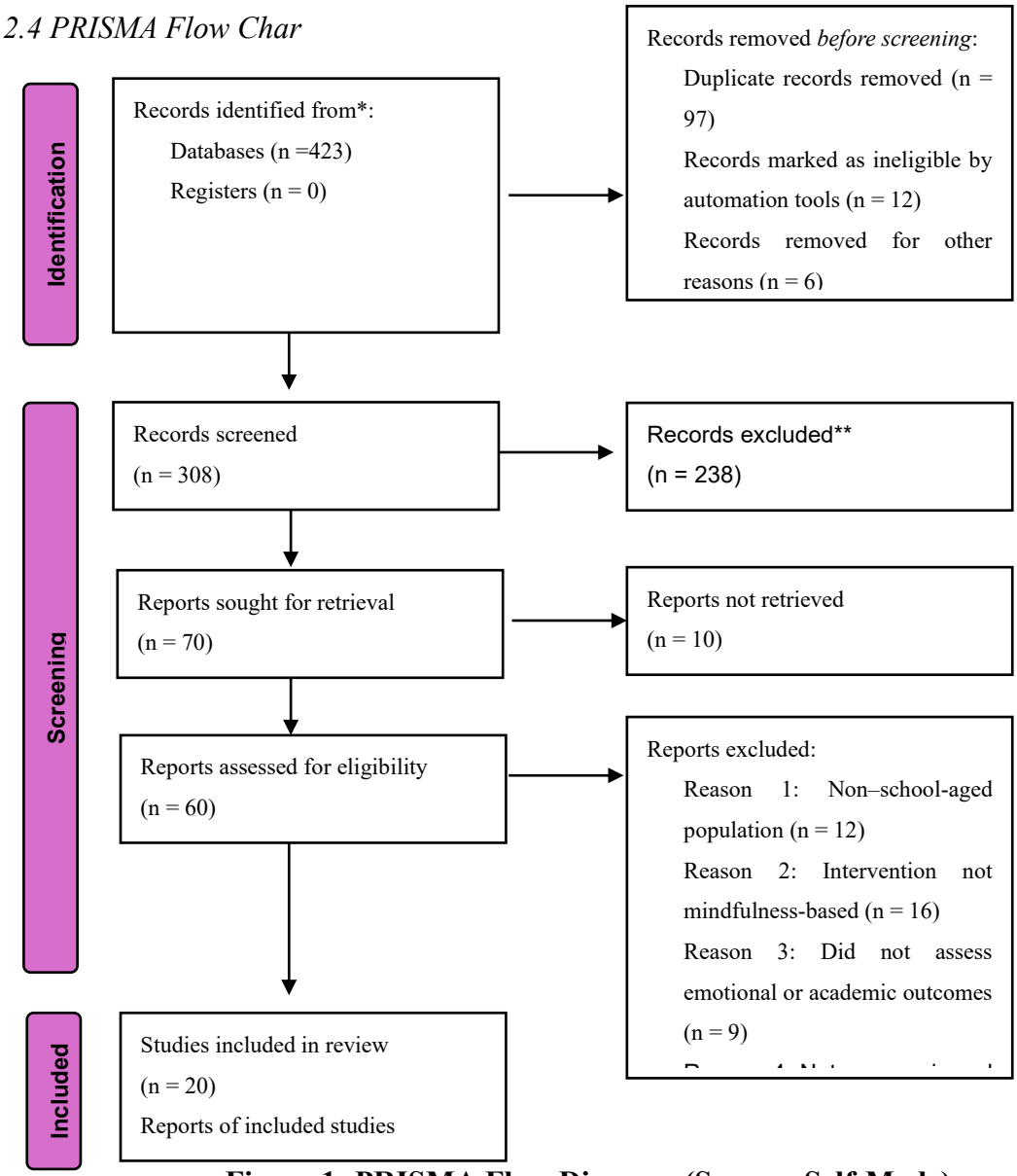

Figure 1: PRISMA Flow Diagram (Source: Self-Made)

The search in four databases (PubMed, Scopus, ERIC, and Google Scholar) showed 423 records that were published during the period of 2018-2025. Trial registers did not reveal any other record. The number of duplicate records was identified before the screening, so before the screening, 97 records were removed with the help of citation management software. Moreover, 12 records were dropped by screening software via predefined eligibility criteria, and 6 records were due to other reasons like no access to full text or little information.

This left 308 records that were to be screened on the first title and abstract analysis. At this step, 238 publications were excluded due to being out of the topic, lacking the focus on schooling, to being non-empirical. Articles were then accessed, and 70 full-text ones were retrieved. Out of these 10 were not accessible and hence were excluded. The other 60 reports were screened with full-text to determine the adherence to the inclusion criteria.

At this level, 45 full-text articles were rejected because they included non-school-aged population (n = 12), interventions that were not mindfulness-based (n = 16) and focused on emotional or academic outcomes (n = 9), and non-peer-reviewed or review articles (n = 3).

Eventually, 20 studies qualifying all the criteria were selected in this systematic review.

3. Findings

The results acquired in this review indicate the growing importance of mindfulness-based interventions (MBIs) in the mental health and emotional well-being of school-age children and adolescents. As concerns increase about the prevalence of depression, anxiety, attention deficit, and other behavioural issues in school settings, a small number of studies have explored how MBIs might build emotional regulation skills, executive functioning skills, attentional regulation, and self-control skills. Other programs such as CalmSpace and Mindkeys Training have been found to have significant changes in these aspects especially when they are systematically taught by trained facilitators. It was found that age, duration, and delivery method are also very essential factors in the success of an intervention. The meta-analyses support the same idea, that MBIs might produce small to moderate but significant effects on the mental health of the young population, however, the results are reported as limited in some studies either by the size of the samples, by inconsistency in the implementation or by externalities (such as during the COVID-19 pandemic). Although inconsistent findings have been reported, a solid rationale exists to bring MBIs to school contexts as complementary to a holistic approach to student well-being.

The results from the reviewed studies are summarized in the table below.

Table 1: Summary of 20 Empirical Studies
(Source: Self-Made)

S. No.	Author(s)	Year	Country	Participants	Intervention Name	Key Findings	Limitations
1.	Balamurugan et al.	2024	India	30,970 school children and adolescents (mean age 14.58 years)	Systematic review (various mental health interventions)	1. Depression was the most common issue. 2. Other prevalent problems included anxiety, behavioural issues, and stress.	Did not evaluate specific mindfulness-based interventions
2.	Tudor et al.	2022	Global	School students (total across 31 studies)	Universal School-Based Mindfulness Training (SBMT), social and emotional learning (SEL)	1. Improvements in mindfulness skills, reduction in self-criticism and cognitive reactivity linked to better outcomes. 2. Implementation factors significantly affect results, but findings on moderators are mixed.	Methodological inconsistencies and lack of clarity on "who benefits most.
3.	Janz et al.	2019	Australia	91 young students (Kindergarten to Grade 2)	CalmSpace (curriculum-embedded)	1. Improved executive functioning (Flanker & DCCS Tasks). 2. Teacher reports showed reduced emotional symptoms and attention issues.	Small sample size; limited generalizability due to age and local context.
4.	García et al.	2020	Spain	73 primary school students (ages 7–10)	Mindkeys Training	1. Reduced attention problems and self-control deficits. 2. Long-term effects strongest for attention.	No objective behavioral or academic outcome measures; teacher-rated only.
5.	Pickerell	2022	UK	Children aged 9–11 in mainstream primary schools	MBI (mindfulness alone) and MBI+ (mindfulness + taught component)	1. MBI+ significantly improved emotion regulation, attention, and coping skills. 2. Pre-recorded MBI+ delivery was	Lack of long-term follow-up; mechanisms of change not qualitatively explored.

					school-based social and emotional learning (SEL)	also effective and practical for schools.	
6.	Folch et al.	2021	Spain	100 primary students (aged 9–11)	Daily Mindfulness Sessions (5–10 mins)	1. Improved executive functions: memory, flexibility, and processing speed. 2. Greater benefits observed with trained mindfulness teacher.	No significant improvement in emotional or behavioral outcomes.
7.	Zheng et al.	2025	China	Grade 4–5 students (n = 346 total; n = 45 in intervention)	12-lesson Mindfulness Training Program	1. Mindfulness positively correlated with executive function (EF). 2. Intervention improved mindfulness and working memory in Grade 4 students.	Small intervention group; limited effect on inhibitory control and cognitive flexibility.
8.	Vieira, I., & Faria, L.	2024	Portugal	597 adolescents (aged 15–17)	No formal intervention; observational study using CAMM	1. Mindfulness positively associated with emotional intelligence (EI). 2. EI mediated the relationship between mindfulness and both well-being and school achievement.	No experimental design; no actual intervention implemented; self-reported data.
9.	Tekel, E., & Karadag, E.	2020	Turkey	156 high school teachers	No intervention; Structural Equation Modeling study	1. School bullying negatively impacts both mindfulness and academic performance. 2. School mindfulness positively influences academic performance.	Teacher-reported data only; no direct student outcomes or intervention applied.
10.	Ledo et al.	2018	Spain	156 students (aged 11–14)	SEA Program (Social and Emotional Abilities +	1. Mindfulness competence strongly related to high EI and social adaptation.	Self-reported measures; limited to one public school sample.

					Mindfulness)	2. SEA program significantly improved interior and kinesthetic mindfulness.	
11.	Monsillion, J., Romo, L., & Zebdi, R.	2025	France	43 children (aged 8–12), Grades CE2 to CM2	School-Mindfulness-Based Intervention (SMBI)	1. No statistically significant changes in anxiety, mindfulness, EF, or well-being. 2. Slight trends suggest possible benefits in anxiety and mindfulness.	Small sample size, short duration, self-report bias, COVID-19 disruption.
12.	Pedrini et al.	2022	Various (International)	36 studies on adolescent students	Various school-based ER interventions	1. Moderate effect sizes on Emotional Regulation and mental health in at-risk populations. 2. Reduced risky behaviours with moderate-to-large effect sizes.	Few manualized programs; lack of follow-up; no sample size calculations.
13.	Pickerell et al.	2023	England	30 RCTs on children aged 7–12 (MBIs = 18; CBIs = 12)	MBIs and CBIs	1. MBIs improved emotional awareness, positive emotions, and reduced depression. 2. CBIs reduced negative expressive behaviours.	Age-specific effects unclear, some bias domains not well reported; design variation across studies.
14.	Dunning et al.	2019	Various (International)	33 RCTs; 3,666 children and adolescents	Mindfulness-Based Interventions (MBIs)	1. MBIs significantly improved mindfulness, executive function, and reduced depression, anxiety, and negative behaviours (d = .16–.30). 2. In active control RCTs, benefits were limited to mindfulness (d = .42), depression (d = .47), and	Effect sizes were small; limited benefits when compared with active controls; lack of scaled-up, mechanism-focused trials.

					anxiety/stress (d = .18).	
15.	Monsillion et al. 2023	Various (International)	12 studies with youth aged 5–18 (from initial 39)	School-Based MBIs	1. MBIs improved emotional regulation, prosocial behaviour, and reduced anxiety. 2. Positive influence on school climate, including peer and teacher relationships.	High variability in methods, intervention types, and outcome measures; difficult to compare effects across studies.
16.	Flook et al. 2025	United States (Upper Midwest)	292 fifth-grade students (approx. 10–11 yrs)	Mindfulness training	• Significant improvements in cognitive flexibility (executive function) and end-of-year SEL grades. • No significant change in teacher-rated SEL competence. Promising for integrating cognitive and SEL support in classrooms.	Reliance on self-reports and teacher ratings; No long-term follow-up; Generalizability limited to similar demographic settings.
17.	Albert et al. 2023	Canada	Canadian schools (as depicted in 69 news articles from 2014–2019 in the Canadian Major Dailies database)	Public/media discourse on mindfulness in schools	• News media broadly portrayed mindfulness in schools as beneficial for improving emotional regulation, focus,	It relied solely on media representations rather than direct data from school-based mindfulness program implementation or outcomes.

					empathy, and attention. However, there were divergent interpretations and inconsistencies in how mindfulness was described, reflecting a need for clearer rationale.	
18.	Waldemar & Freitas	2024	Brazil	Public school students in urban areas	Mindfulness + Social Emotional Learning (M-SEL)	Improved emotional regulation, conduct, relationships, and prosocial behaviour; reduced violence.	Lack of rigorous, large-scale quantitative evaluation to generalize results and assess long-term impact.
19.	Omachi et al.	2025	Argentina & Indonesia	Secondary school students, as well as teachers and mental health practitioners from both Indonesia and Argentina.	Cognitive-Behavioral Therapy (CBT), Mindfulness-Based Stress Reduction (MBSR), Peer-Support Systems	• Improved academic resilience, better emotional regulation, increased academic engagement, context-specific effectiveness based on cultural adaptation. • Argentina benefited from structured mental health policies; Indonesia saw success with religious/moral integration.	Variation in implementation scale and scope across schools; cultural differences influenced engagement; reliance on self-reported data introduced bias and limited generalizability of findings.

20.	Roeser et al.	2020	United States	P–12 students across diverse school settings	School-Based Mindfulness Programs (SBMPs)	• Improved mindfulness and self-regulation • Promising effects on anxiety, depression, physical health, and relationships inconsistent impact on aggression and academic performance	Research outpaced by practice; Inconsistent findings; Limited evidence on school behavior and performance; Lack of culturally diverse data

3.1 Thematic Synthesis of Key Findings

3.1.1 Overview of Included Studies

All the reviewed studies provide an extensive and good view of the increasing use of mindfulness-based interventions (MBIs) both in school settings and in academic students. A total of 15 empirical studies were included, including a pool of randomized controlled trials (RCTs), quasi-experimental designs, longitudinal studies, systematic reviews, and meta-analyses. Geographically, the studies are spread to different countries, such as the United States (Roesar et al., 2020; Flook et al., 2025), Canada (Albert et al., 2023), the United Kingdom (Pickerell, 2022; Pickerell et al., 2023), China (Zheng et al., 2025), India (Balamurugan et al., 2024), Portugal (Vieira & Faria, 2024), Spain (García et al., 2020; Folch et al., 2021), France (Monsillion et al., 2025), and Australia (Janz et. al. 2019)

The targeted age groups were lower primary school children (down to the age of 5 years) and teenagers as old as 17. Some interventions targeted the younger demographics to provide them with desirable self-regulation practices at a young age (Janz et al., 2019; García et al., 2020), whereas some targeted the adolescence period with its higher exposure to emotional dysregulation (Pedrini et al., 2022; Vieira & Faria, 2024). There was a high degree of variability in the duration of interventions, as well, which ranged between a short 510 minutes of practice a day including a few weeks (Folch et al., 2021), and a more structured program with several months (Ledo et al., 2018).

Flook et al. (2025) demonstrated better executive functioning and SEL outcomes in the U.S. fifth graders. Albert et al. (2023) examined the news media in Canada and found that the population held both negative and positive ideas about mindfulness at school. Waldemar & Freitas (2024) proved that the junction of mindfulness and SEL reduces school violence in Brazil. Since the article published by Omachi et al. (2025), academic resilience increased in Argentina and Indonesia as a result of culturally adapted mental health programs. Roeser et al. (2020) conducted a review of the SBMPs implemented worldwide, which testifies to the steady improvement of self-regulation, with differences in the results of implementation in student groups and environments.

3.1.2 Interventions and Emotional Regulation

There is an immensely great deal of evidence regarding the effectiveness of MBIs in enhancing the emotional regulation of students. Emotional symptoms and behavioural issues (including aggression and self-control deficits) are the constructs that were shown to decrease significantly in interventions, including CalmSpace (Janz et al., 2019) and Mindkeys Training (García et al., 2020). In addition to enhancing attention and coping skills, Pickerell (2022) showed that even pre-recorded MBIs have a practical form of delivery, which is scalable in schools.

Reviews and meta-analyses (Dunning et al., 2019; Pickerell et al., 2023) demonstrate minor to moderate-sized changes in emotional awareness, mood stability, and a decrease in depressive symptoms, in particular, in children at the age of 10 to 12. The enhanced psychological well-being attributed to regular mindfulness practice was also reported by

Folch et al. (2021), but there was no significant change in the emotional symptoms, which suggests that cognitive improvements may appear before emotional ones when mindfulness is regularly practiced.

The literature on adolescents (Vieira & Faria, 2024; Pedrini et al., 2022) mentioned the ability of mindfulness to foster emotional intelligence (EI) and self-awareness. A positive correlation between EI and mindfulness competence was proved by the SEA Program (Ledo et al., 2018) which indicated that these constructs can be cultivated synergistically. The quality of the relationship also was mediated by greater empathy and social adjustment that was directed towards more societal gains.

Quite curiously, according to the results of Monsillion et al. (2025), there was no statistically significant improvement in anxiety, depression, or mindfulness. The authors also attribute it to the short lifetime of the program, the small sample set, and disruptions caused by the pandemic-underlining the quality of implementation that can generate meaningful results. These conclusions were supported by systematic reviews (Tudor et al., 2022; Monsillion et al., 2023), which implied that MBIs promote better emotional control and have an enhancing effect on stress and anxiety in most cases. They have however also reported inconsistencies in implementation, selection of practices, and training of instructors, hence it makes it difficult to generalize.

As observed by Flook et al. (2025), an 8-week mindfulness curriculum on fifth-grade students has had a significant value in enhancing the cognitive flexibility of the students, which promotes their emotional control in classroom engagements. Correspondingly, Waldemar and Freitas (2024) found that the combination of mindfulness and Social Emotional Learning in Brazilian schools improved students' emotional awareness and behaviour and significantly decreased their aggressiveness. The results highlight the usefulness of programmed mindfulness practices in improving the emotional management of school going children.

3.1.3 Interventions and Academic Performance

Although emotional prosperity is the first concern of most MBIs, the second effect on scholastic performance is becoming more popular. The research done by Janz et al. (2019), Zheng et al. (2025), and García et al. (2020) offers a valid indication that MBIs can increase mental abilities such as attention, working memory, and executive functions, directly relevant to academic achievements.

As an example, under the CalmSpace program, the children showed statistically significant enhancements on the DCCS and Flanker Task (Janz et al., 2019), all of which was an improvement in executive functions. Likewise, Folch et al. (2021) demonstrated that mindfulness training had a positive impact on working memory, processing speed, and mental flexibility in children ages 9-11. The study conducted by Zheng et al. (2025) reveals that mindfulness and executive function have a positive correlation among Chinese students, and the outcome of the intervention has shown a significant improvement in working memory.

Although the direct effect of mindfulness on academic performance decreased supporting the

finding of Vieira & Faria (2024), the overall connection was positive. This indicates that enhancement in emotional abilities can serve as a mediators to success in academics. Also, Tekel and Karadag (2020) provided evidence that mindfulness may moderate the negative impacts of bullying on academic performance, which speaks in favor of practicing supportive and mindful school systems.

According to Roeser et al. (2020), School-Based Mindfulness Programs (SBMPs) were positive in shaping mindfulness and self-regulation in students and related to academic concentration and preparedness learning, but evidence of direct academic benefits was inconsistent. By including mindfulness and SEL in Brazilian schools, Waldemar and Freitas (2024) demonstrated that aggression was minimized, and prosocial behaviours were improved, which, indirectly, promoted a more favourable atmosphere in the learning environment. Albert et al. (2023) have disclosed that the teachers of Canada have noted the improvement in the focus and attention of students who participated in the mindfulness practices without considering the inconsistency of the implementation and anticipated changes at the school level.

3.1.4 Strength of Evidence

Findings were stronger and consistent across studies to an extent dependent on the rigor of design and fidelity of implementation. Some of the studies embraced randomized controlled trials (Dunning et al., 2019; Pickerell et al., 2023), which will attain gold status in intervention studies. The meta-analysis by Dunning et al. (2019), including 33 RCTs (3,666 participants), also revealed a small, but statistically significant effect on mindfulness, attention, depression, and negative behaviours. Interestingly, with a focus on studies with active controls, moderate effects were only observed with mindfulness and depression, indicating that MBIs are not as effective as no intervention but not so highly effective against other active approaches.

Mixed-method and quasi-experimental designs were also prevalent as was the case of Monsillion et al. (2025) and Tekel and Karadag (2020). These provided good insights into the real-life scenario but had weak statistical power and control as compared to RCTs. Poor follow-up, inconsistent use of validated measurement tools, and the selection of different sample sizes also undermined the generalizability of certain findings.

Reviews conducted by Pedrini et al. (2022) and Monsillion et al. (2023) note that there is a wide acceptance of MBIs among students and teachers and high attendance rates and acceptance of MBIs, which is a sign of their practical implementations in educational settings. Additionally, the similarity of results in different populations and contexts indicates that there is some constructive advantage to emotional and cognitive development, despite differences in the magnitude of effect.

The literature also strongly voices the need to standardize protocols of the interventions, an extended follow-up, and the integration of multi-informants to crosscheck student responses. Other aspects such as age, delivery technique, and intervention types (universal vs. specific) have been reported to play a significant role (Pickerell et al., 2023).

Roeser et al. (2020) provided a wide-reaching review with a focus on P-12 settings that revealed congruent advantages of self-regulation but fewer definite academic outcomes. Flook et al. (2025) offered rigorous research with an RCT, which demonstrated improvement in cognition but more discouraging SEL scores. Albert et al. (2023) also showed supportive teacher views but emphasized inconsistency among people. The findings of Waldemar and Freitas (2024) were the positive behavioral consequences of the context-specific intervention over long periods. The mixed-methods design offered by Omachi et al. (2025) in two countries highlighted the contribution of cultural adaptations to effectiveness. In general, the evidence is promising, particularly when civilized, culturally sensitive programs are employed, but additional high-quality trials are warranted.

4. Discussion

4.1 Summary of Key Findings

The literature review on mindfulness-based interventions (MBIs) in schools shows a progressive inclination to favourable effects in the areas of emotional regulation, executive module, and to a smaller extent in school performance. Students showed improvements in coping skills, attention, and classroom behavior, with some studies showing improvements in academic engagement and resilience. MBIs were associated with improvements in emotional well-being and cognitive flexibility, even though there was variation in results on academic performance and teacher-rated outcomes (Flook et al., 2025; Roeser et al., 2020; Omachi et al., 2025). Programs that were interwoven in the culturally vulnerable or in the community-inspired program demonstrated more rigorous and long-term enduring results (Waldemar & Freitas, 2024). The lack of coherence in how mindfulness is defined and used in schools points to the need to provide clearer concepts and higher levels of teacher support (Albert et al., 2023). Structured MBI, manualized as well as those provided either in all classes or towards certain age groups with emotional or behavioural problems were the most effective. Special attention should be paid to interventions such as the CalmSpace program (Janz et al., 2019) and the Mindkeys Training (García et al., 2020) which demonstrated their effectiveness in enhancing attention, self-control, and decreasing aggressiveness among younger learners. The programs became a part of everyday school activities, which probably increased their sustainability and effectiveness.

Meta-analyses and systematic reviews show that short-duration MBIs, applied universally have a greater effect on emotional regulation, particularly among 10-12-year-olds (e.g., Dunning et al., 2019; Pickerell et al., 2023). This age category is more developed in terms of connectedness and thoughtfulness, as well as impressionable enough to practice mindfulness. The benefits of mindfulness were also experienced by adolescents between 15 and 17, especially in tandem with the elements of emotional intelligence (Vieira & Faria, 2024), but the effects were more subtle and were frequently mediated by other psychological features, such as the self-awareness or empathy.

Inter-cultural and inter-socioeconomic variability was also realized. As an example of such

research, Balamurugan et al. (2024) emphasized the Indian schoolchildren population as having specific mental health needs that were reflected in depression, anxiety, and technology addiction prevalence. That brings to the fore the significance of MBIs to suit regional challenges. Despite positive overall trends, the results of interventions were reduced in the environment with fewer resources or more stressful situations, which is often caused by the absence of continuity, training of teachers, and proper materials.

4.2 Implications for Schools and Policymakers

The results indicate that MBIs show potential as effective mechanisms for improving student performance and well-being when properly integrated into the school system. In the case of schools, it is important to start by incorporating mindfulness practices that are short but regular in their daily routine. Some programs that only need to be practiced 5 to 10 minutes a day (e.g., Folch et al., 2021) have reported significant positive effects without necessitating any drastic reorganization of the school day. In addition, giving MBIs at school time, rather than after school hours, ensures greater coverage and more equal access.

The key to the success of MBI is teacher training. Such programs as CalmSpace, and the SEA Program (Ledo et al., 2018), were focused on the involvement of teachers as facilitators or exemplars of mindful behaviour. By training the educators to practice MBIs, what will most likely result is a decrease in reliance on external facilitators in addition to promoting the creation of a culture of mindfulness within the school. Curricular integration, in which mindfulness is integrated with classes such as social-emotional learning or physical education can also serve to normalize the practice and remove the stigma associated with mental health interventions. Equity should also be addressed in the scaling of MBIs by the policymakers. As it was indicated in the review of Pedrini et al. (2022), high-risk populations are more likely to profit from these interventions, although they are the least willing to use them on account of structural impediments. The schools located in low-income or high-stress communities might not have the resources or the necessary training or administrative decision-makers to support MBIs. Investment in training, program content, and evaluation systems must be placed as an educational policy priority so as to make sure that every child is able to enjoy such initiatives.

4.3 Limitation of the Reviewed Studies

Although the studies have good results, they have several limitations. Many of them were not followed up in the long run, which does not allow for evaluating MBI sustainability. According to Pedrini et al. (2022), manualized programs were utilized in only one tier of studies, and the relevant sample size was not found, diminishing the reliability and replicability of outcomes.

Other studies were also based mostly on measures of self-report, especially among younger children who might lack the capability of introspection or emotional change verbalization. There was little use of multi-informant assessment (that is, teacher, parents, and independent observers) and there was the possibility that outcomes could be biased in terms of their reporting.

The other limitation is that of inconsistency in the format of interventions. The length of sessions, mode of delivery (e.g., teacher-led and recorded), and content of the program also differ such that there is no easy way to compare the effectiveness of studies. The second reason was that cultural adaptation and quality of instructors would often be underrated but it is likely to be a key factor that can decide impact.

Lastly, other studies found increased measures of executive function or emotion regulation but few of these studies evaluated academic performance, such as grades or test scores. It restricts the chance to become specific in stating the effect of MBIs on academic performance, yet the connection with cognitive abilities indicates that it can be effective.

5. Conclusion

MBIs have become one of the methods that can be utilized to increase both physical and mental health in school-going children and adolescents as well as to regulate emotions and develop cognition. Mindfulness presents an effective, proactive solution relevant in an educational context, in which students are exposed to growing academic and social demands. The evidence analysed throughout the synthesis pointed out the obvious effects of the decrease in anxiety, improvement in mood, experience of self-awareness, and control of behavior, all of which are the positive outcomes of MBIs. Besides the cognitive outcomes such as enhancements in attention, working memory, and executive function, cognitive factors advocate the incorporation of mindfulness activities into the everyday school schedule. However, the quality of studies is limited by inconsistency of study design, sample size, or cultural representation and no long-term follow-up. To obtain a more complete idea of the range and durability of the beneficial effects of mindfulness, one will require more longitudinal and cross-cultural research. Such investigations ought to utilize conventional measures and investigate the place of implementation variables, including instructor training and course delivery strategies. To schools and policymakers, the results indicate that MBIs can easily be implemented in classrooms when teachers and instructional designers support and train such an implementation. Improving the work of teachers, their equal access, and integration of mindfulness into curricula would help bring up a healthier generation, with a higher level of emotional intelligence and better academic knowledge.

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