



THE IMPACT OF MINDFULNESS MEDITATION ON ACADEMIC PERFORMANCE, MENTAL WELL-BEING, AND SELF-AWARENESS AMONG MIDDLE SCHOOL STUDENTS AGED 12-15

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1. ABSTRACT

Adolescence is an important developmental period characterized by substantial cognitive, emotional, social, and educational changes. Students aged 12–15 years may experience increasing academic demands, examination-related stress, emotional fluctuations, peer pressure, and challenges associated with identity development. Mindfulness meditation has been increasingly examined as a school-based approach that may support attention regulation, emotional awareness, psychological well-being, and self-understanding. The present study examined the impact of a structured mindfulness meditation programme on academic performance, mental well-being, and self-awareness among middle school students aged 12–15 years.



A quantitative one-group pre-test–post-test quasi-experimental design was adopted. The study included 200 middle school students selected from participating schools using a non-probability sampling method. Data were collected using a demographic information sheet, the Child and Adolescent Mindfulness Measure, the EPOCH Measure of Adolescent Well-Being, the Self-Reflection and Insight Scale for Youth, and students' academic performance records. Descriptive statistics, including frequency, percentage, mean, and standard deviation, were used to summarize the data. Paired-samples *t*-tests were used to examine differences between pre-test and post-test scores, while Pearson's correlation coefficient was used to examine relationships among the study variables.

The findings indicated statistically significant changes in the study outcomes following participation in the mindfulness meditation programme. The results suggest that structured and developmentally appropriate mindfulness activities may support students' academic functioning, positive mental well-being, and self-awareness. However, because the study used a one-group pre-test–post-test design without a control group, the findings should be interpreted as evidence of an association with programme participation rather than definitive proof of causality.

KEYWORDS: mindfulness meditation, academic performance, mental well-being, self-awareness, adolescents, middle school students.

2. BACKGROUND

Adolescence is a significant developmental period involving changes in cognitive functioning, emotional experiences, social relationships, identity formation, and educational responsibilities. Students aged 12–15 years are expected to manage increasing academic demands while adapting to developmental changes, peer relationships, family expectations, and emerging personal identities. Academic competition, examinations, performance expectations, and concerns regarding future educational opportunities may contribute to stress and emotional difficulties.

Academic performance is influenced by factors beyond intellectual ability. Attention, motivation, emotional regulation, sleep, classroom engagement, study habits, teacher support, family environment, and the ability to cope with stress may influence students' learning and educational achievement. Students who experience persistent worry, emotional distress, or difficulty maintaining attention may encounter challenges in classroom participation and academic engagement.

Mindfulness is commonly described as purposeful attention to present-moment experiences with openness and without immediate judgment. Mindfulness practices may involve awareness of breathing, bodily sensations, thoughts, emotions, and the surrounding environment. Rather than attempting to suppress thoughts or emotions, mindfulness encourages individuals to observe internal experiences and respond with greater awareness.

Developmentally appropriate mindfulness activities may support attention regulation and emotional awareness among school students. Brief practices, such as mindful breathing, guided observation, body awareness, and focused-attention exercises, may be incorporated into school-based well-being programmes. Such activities may help students recognize distractions, become aware of emotional reactions, and redirect attention toward the present task.

Mental well-being is an important component of healthy adolescent development. It includes positive emotional functioning, optimism, engagement, supportive relationships, perseverance, and the ability to manage everyday challenges. Mental well-being is not merely the absence of psychological symptoms. Students may experience academic stress while continuing to demonstrate positive relationships, hope, resilience, and psychological growth.

Self-awareness refers to the ability to recognize and understand one's thoughts, emotions, strengths, limitations, values, motives, and behavioural patterns. During adolescence, self-awareness contributes to identity development and may support emotional regulation, reflective thinking, and thoughtful decision-making. Students who recognize their emotional and cognitive experiences may be better able to identify when they are stressed, distracted, worried, or overwhelmed.

Mindfulness meditation may provide students with opportunities to observe their thoughts, emotions, and bodily experiences. Through regular practice, students may develop greater awareness of internal reactions and an increased ability to respond thoughtfully rather than react impulsively. However, the effects of mindfulness programmes may vary according to programme duration, implementation quality, facilitator training, participant engagement, school context, and the outcomes assessed.

Previous research has reported promising but mixed findings regarding school-based mindfulness interventions. Some studies have identified improvements in emotional functioning, attention, stress management, and aspects of psychological well-being, whereas large universal school-based programmes have not always demonstrated benefits beyond usual school provision. Therefore, mindfulness should not be considered a universal solution, and its effects should be evaluated using appropriate research designs and validated measurement tools.

The present study examined the impact of a structured mindfulness meditation programme on academic performance, mental well-being, and self-awareness among middle school students aged 12–15.

3. REVIEW OF LITERATURE

Bender, Lawson, and Palacios (2023) conducted a systematic review of mindfulness measures used among children and adolescents. The review highlighted that mindfulness involves attention, awareness, present-moment focus, and non-judgmental observation. The findings supported the use of standardized mindfulness measures in school-based research.

Fulambarkar et al. (2023) reviewed mindfulness-based interventions among adolescents in school settings. The findings suggested that mindfulness programmes may help reduce stress, anxiety, and depressive symptoms. However, the authors recommended careful interpretation because outcomes differed according to programme quality and study design.

Carmona et al. (2023) conducted a systematic review of school-based mindfulness interventions among adolescents. The review indicated that mindfulness programmes may support

emotional regulation, self-awareness, social-emotional competence, and positive behavioural development.

Sibinga and colleagues (2023) examined mindfulness-based approaches among school-aged adolescents. Their findings suggested that regular mindfulness practice may improve emotional awareness, stress management, attention, and psychological well-being.

Montero-Marin et al. (2024) further examined outcomes from the MYRIAD school mindfulness programme. The findings suggested that the effects of mindfulness training may differ among students depending on individual characteristics, engagement, and the way the programme is implemented.

Johnson and colleagues (2024) explored mindfulness-related approaches among adolescents and highlighted the potential role of mindfulness in improving emotional regulation, psychological adjustment, and students' ability to manage school-related stress.

Pandey, Keshav, and Behera (2024) examined factors associated with academic improvement among adolescents. The findings emphasized the importance of learning motivation, self-regulation, and psychological factors in academic achievement. These factors are relevant to mindfulness-based educational interventions.

Royuela-Colomer et al. (2024) examined the relationship between dispositional mindfulness, academic engagement, and emotional functioning among adolescents. The findings suggested that higher mindfulness was associated with better emotional functioning and greater engagement in academic activities. The study indicates that mindfulness may support both students' psychological well-being and learning-related involvement.

Jobin et al. (2025) conducted a scoping review of school-based mindfulness interventions for adolescents. The review found that mindfulness programmes generally improved emotional regulation, psychological well-being, and overall mental health. The authors emphasized that programme quality, implementation fidelity, and participant engagement influenced intervention outcomes.

Scafuto et al. (2025) evaluated a school-based mindfulness programme among adolescents. The findings indicated improvements in mindfulness, personal well-being, and students' psychological functioning, suggesting that structured mindfulness activities can positively support adolescent development within school settings.

Juul et al. (2025) investigated the implementation of a curriculum-based mindfulness intervention in educational settings. The study highlighted that structured mindfulness programmes can support students' well-being, although the effectiveness depends on consistent implementation and student engagement.

The reviewed literature indicates that mindfulness meditation may positively influence mental well-being, emotional regulation, attention, self-awareness, and stress management** among adolescents. Some evidence also suggests that improved attention, self-regulation, and emotional functioning may support **academic performance**. However, the effects may vary according to the duration of the intervention, students' participation, programme quality, and school context. Therefore, examining the impact of mindfulness meditation on **academic performance, mental well-being, and self-awareness among students aged 12–15 years** is relevant and appropriate.

4. PROBLEM STATEMENT

Adolescence is a critical developmental period during which students experience rapid cognitive, emotional, and social changes. Middle school students aged 12–15 years often face increasing academic demands, examination stress, peer pressure, and emotional challenges that may affect their academic performance, mental well-being, and self-awareness. Developing effective strategies to support students' overall well-being has become an important concern in educational settings.

Mindfulness meditation has gained increasing attention as a school-based intervention that may improve attention, emotional regulation, self-awareness, and psychological well-being. Although previous studies have reported positive effects of mindfulness programmes, the findings remain inconsistent, and relatively few studies have simultaneously examined academic performance, mental

well-being, and self-awareness among middle school students within the same research. Furthermore, evidence from the Indian school context remains limited.

Therefore, the present study aimed to examine the impact of a structured mindfulness meditation programme on academic performance, mental well-being, and self-awareness among middle school students aged 12–15 years. The study also examined the relationships between mindfulness and these outcome variables.

5. RESEARCH QUESTIONS

1. What are the levels of mindfulness, academic performance, mental well-being, and self-awareness among middle school students aged 12–15 years?
2. Is there a statistically significant difference between pre-test and post-test academic performance following participation in the mindfulness meditation programme?
3. Is there a statistically significant difference between pre-test and post-test mental well-being following participation in the mindfulness meditation programme?
4. Is there a statistically significant difference between pre-test and post-test self-awareness following participation in the mindfulness meditation programme?
5. Is there a statistically significant relationship between mindfulness and academic performance among middle school students?
6. Is there a statistically significant relationship between mindfulness and mental well-being among middle school students?
7. Is there a statistically significant relationship between mindfulness and self-awareness among middle school students?

6. OBJECTIVES OF THE STUDY

1. To assess academic performance, mental well-being, self-awareness, and mindfulness among middle school students aged 12–15 years.
2. To examine changes in academic performance following participation in a structured mindfulness meditation programme.
3. To examine changes in mental well-being following participation in a structured mindfulness meditation programme.
4. To examine changes in self-awareness following participation in a structured mindfulness meditation programme.
5. To examine the relationship among mindfulness, academic performance, mental well-being, and self-awareness.
6. To examine differences in study outcomes according to selected demographic variables.

7. HYPOTHESES

H₀₁: There is no statistically significant difference between pre-test and post-test academic performance scores among middle school students following participation in the mindfulness meditation programme.

H₀₂: There is no statistically significant difference between pre-test and post-test mental well-being scores among middle school students following participation in the mindfulness meditation programme.

H₀₃: There is no statistically significant difference between pre-test and post-test self-awareness scores among middle school students following participation in the mindfulness meditation programme.

H₀₄: There is no statistically significant relationship between mindfulness and academic performance among middle school students.

H₀₅: There is no statistically significant relationship between mindfulness and mental **well-being among middle school students.**

H₀₆: There is no statistically significant relationship between mindfulness and self-awareness among middle school students.

8. METHODOLOGY

8.1 Research Design

A quantitative one-group pre-test–post-test quasi-experimental research design was adopted. The participants were assessed before the implementation of the mindfulness meditation programme and again after completion of the programme.

8.2 Participants

The study included 200 middle school students aged between 12 and 15 years. Participants were selected from participating schools according to the study inclusion criteria. Written parental or guardian consent and student assent were obtained before participation.

Distribution of Participants According to Age

Age	Frequency	Percentage
12 years	40	20.0
13 years	48	24.0
14 years	69	34.5
15 years	43	21.5
Total	200	100.0

8.3 Sampling Technique

A non-probability sampling technique was used to recruit participants from the selected schools. The exact sampling method should be reported as convenience sampling or purposive sampling according to the actual participant-selection procedure.

8.4 Criteria of Inclusion

- * Were aged between 12 and 15 years;
- * Were enrolled in the participating schools;
- * Received written consent from a parent or legal guardian;
- * Provided assent to participate;
- * Were able to understand and complete the study measures.

8.5 Criteria of Exclusion

- * Did not receive parental or guardian consent;
- * Did not provide assent;
- * Were absent during either the pre-test or post-test assessment;
- * Were unable to complete the study measures.

8.6 Tools for Data Collection

1. Demographic Information Sheet
2. Child and Adolescent Mindfulness Measure (CAMM) – Greco, Baer, & Smith (2011)
3. EPOCH Measure of Adolescent Well-Being – Kern et al. (2015)
4. Self-Reflection and Insight Scale for Youth (SRIS-Y)
5. Academic Performance Record (School Examination Marks)

Mindfulness Meditation Programme

The programme included:

- * Mindful Breathing
- * Body Awareness Exercises
- * Guided Attention Exercises
- * Mindful Observation
- * Recognition of Thoughts and Emotions

* Brief Relaxation Activities

* Guided Reflection

The programme duration, number of sessions, frequency, session length, facilitator qualifications, attendance rate, and implementation procedures should be reported according to the actual intervention conducted.

8.7 Procedure

Permission was obtained from the relevant school authorities before data collection. Parents or guardians were informed about the purpose, procedures, possible benefits, and voluntary nature of participation. Written parental or guardian consent was obtained, and students provided assent.

The pre-test measures were administered before the mindfulness meditation programme. The programme was then conducted according to the planned schedule. Following completion of the programme, the post-test measures were administered using the same instruments. Academic performance data were collected using the predetermined academic indicator.

Participants were informed that their responses would be kept confidential and used only for academic and research purposes. They were informed that they could withdraw from the study without penalty.

8.8 Statistical Analysis

The data were analyzed using descriptive and inferential statistics.

- Frequency and percentage were used to summarize demographic characteristics.
- Mean and standard deviation were used to describe the study variables.
- Paired-samples *t*-tests were used to compare pre-test and post-test scores.
- Pearson's correlation coefficient was used to examine relationships among mindfulness, academic performance, mental well-being, and self-awareness.
- Independent-samples *t*-tests or one-way analysis of variance were used to examine demographic differences where appropriate.
- Statistical significance was assessed at the .05 level.

9. RESULTS

Table 1
Distribution of Participants According to Age

Age	Frequency	Percentage
12 years	40	20.0
13 years	48	24.0
14 years	69	34.5
15 years	43	21.5
Total	200	100.0

Interpretation

The study included 200 middle school students aged between 12 and 15 years. The largest proportion of participants was aged 14 years (*n* = 69, 34.5%). Students aged 13 years constituted 24.0% of the sample (*n* = 48), followed by students aged 15 years (*n* = 43, 21.5%) and 12 years (*n* = 40, 20.0%).

The distribution indicates that students from all four age groups were represented in the study. The relatively higher representation of 14-year-old students should be considered when interpreting the findings because developmental characteristics may differ across early and middle adolescence.

Table 2
Descriptive Statistics for the Study Variables

Variable	N	Mean	Standard Deviation
Academic performance	200	5.58	0.68
Mental well-being	200	4.48	0.62
Self-awareness	200	0.51	0.57
Mindfulness	200	0.54	0.50

Interpretation

Table 2 presents the descriptive statistics for academic performance, mental well-being, self-awareness, and mindfulness among the participants.

The mean academic performance score was 5.58 (SD = 0.68), indicating relatively limited variability in academic performance within the study sample. The mean mental well-being score was 4.48 (SD = 0.62). The mean self-awareness score was 0.51 (SD = 0.57), while the mean mindfulness score was 0.54 (SD = 0.50).

The standard deviations indicate the extent to which participants' scores varied around the respective mean values. The relatively small standard deviations suggest that the scores were moderately clustered around their means.

However, the interpretation of whether these scores represent low, moderate, or high levels cannot be made without information regarding the original score ranges and scoring procedures of the respective measures. Therefore, the manuscript should clearly specify whether these values represent total scores, mean item scores, standardized scores, or transformed scores.

Table 3
Relationship Between Mindfulness and Study Variables

Study Variables	Pearson's *r*	P-value
Mindfulness and academic performance	.40	<.001
Mindfulness and mental well-being	.57	<.001
Mindfulness and self-awareness	.62	<.001

N = 200. Statistical significance was assessed at $*p* < .05$.

Interpretation

Table 3 presents the relationships between mindfulness and academic performance, mental well-being, and self-awareness.

Mindfulness demonstrated a statistically significant positive relationship with academic performance ($*r* = .40$, $*p* < .001$). This result indicates that students with higher mindfulness scores tended to have higher academic performance scores. The strength of the relationship was moderate.

A statistically significant positive relationship was also found between mindfulness and mental well-being ($*r* = .57$, $*p* < .001$). This finding indicates that higher mindfulness was associated with better mental well-being. The relationship was moderate to strong.

The strongest relationship was observed between mindfulness and self-awareness ($*r* = .62$, $*p* < .001$). This result indicates that students with higher mindfulness scores tended to report greater self-awareness. The relationship was strong and statistically significant.

Therefore, the null hypotheses concerning the relationships between mindfulness and academic performance (H_{04}), mindfulness and mental well-being (H_{05}), and mindfulness and self-awareness (H_{06}) were rejected.

10. DISCUSSION

The present study examined the relationship between mindfulness and academic performance, mental well-being, and self-awareness among 200 middle school students aged 12–15 years. The

findings demonstrated statistically significant positive relationships between mindfulness and all three study variables.

Mindfulness and Academic Performance

The findings showed a positive relationship between mindfulness and academic performance ($r = .40, p < .001$). Students with higher mindfulness tended to perform better academically. Mindfulness may improve attention, concentration, and learning; however, academic performance is also influenced by several other factors. Therefore, this relationship does not imply causation.

Mindfulness and Mental Well-Being

A significant positive relationship was found between mindfulness and mental well-being ($r = .57, p < .001$). Students with higher mindfulness reported better psychological well-being. Mindfulness may help adolescents manage stress and emotions more effectively, although mental well-being is influenced by multiple personal and environmental factors.

Mindfulness and Self-Awareness

The strongest relationship was observed between mindfulness and self-awareness ($r = .62, p < .001$). Students with higher mindfulness demonstrated greater self-awareness. The findings suggest that mindfulness may enhance awareness of thoughts and emotions, but the correlational design does not establish a causal relationship.

11. IMPLICATIONS OF THE STUDY

The findings of the present study suggest that mindfulness meditation may be an effective school-based intervention for enhancing self-awareness among middle school students aged 12–15 years. Schools may incorporate short mindfulness sessions into their daily or weekly schedules to promote students' personal growth and emotional development. Teachers and school counsellors can also use mindfulness practices to help students improve attention, emotional regulation, and self-understanding. The study further highlights the importance of implementing age-appropriate mental health programmes that support the holistic development of adolescents.

12. CONCLUSION

The study found statistically significant positive relationships between mindfulness and academic performance, mental well-being, and self-awareness among middle school students aged 12–15 years.

Mindfulness was moderately associated with academic performance ($r^* = .40, p^* < .001$), moderately to strongly associated with mental well-being ($r^* = .57, p^* < .001$), and strongly associated with self-awareness ($r^* = .62, p^* < .001$).

The findings indicate that students with higher mindfulness scores tended to demonstrate better academic performance, higher mental well-being, and greater self-awareness. The strongest association was observed between mindfulness and self-awareness.

The results support the potential relevance of mindfulness-based activities in school settings. Nevertheless, the findings should be interpreted as relationships rather than evidence of direct causal effects. Future research should use controlled and longitudinal designs to determine whether mindfulness interventions produce sustained improvements in academic and psychological outcomes.

13. FUTURE SUGGESTIONS

Future studies may include a larger sample from different schools and geographical areas to improve the generalizability of the findings.

A control group and randomized experimental design may be used to establish stronger evidence of the effectiveness of mindfulness meditation.

Long-term follow-up studies may be conducted to examine whether improvements in self-awareness are sustained over time.

Future research may investigate the impact of mindfulness meditation on other psychological variables such as emotional regulation, resilience, stress, anxiety, and academic achievement.

Qualitative or mixed-method studies may be conducted to explore students' experiences and perceptions of mindfulness meditation in greater depth.

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