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DEVELOPMENT OF MINDFULNESS TECHNIQUE PROGRAMME FOR ENHANCING ATTENTION AMONG ADOLESCENTS AND ITS EFFECTIVENESS

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ABSTRACT

Adolescence is a critical stage of human development characterized by rapid biological, psychological, and social changes. One of the major concerns during this period is the ability to regulate attention effectively, as it directly influences academic performance, emotional balance, and overall well-being. In recent years, mind-body practices such as mindfulness, breathing awareness, and relaxation techniques have gained recognition as effective strategies for enhancing attentional control. The present study was undertaken to develop and evaluate the effectiveness of an attention-regulation programme based on mind-body practices for adolescents in Nashik city. The research adopted a quasi-experimental pre-test post-test control group design. A total of 40 adolescents, aged between 13 and 16 years, were purposively selected from schools in Nashik city and divided into two equal groups: 20 in the experimental group and 20 in the control group. The experimental group was exposed to a structured attention-regulation programme for a duration of two weeks, with four sessions per week, each lasting 40 minutes. The programme included three major components: (i) breathing awareness exercises, (ii) mindfulness meditation practices, and (iii) progressive muscle relaxation techniques. The control group continued with their routine school schedule and did not receive any intervention. A standardized pre-test and post-test of attention (Attention and Concentration Test) were used for data collection. The findings suggest that even a short-term intervention programme based on mind-body practices can bring about measurable improvements in adolescent attention. This highlights the feasibility of integrating such practices into school schedules as preventive and promotive measures for mental health and academic development. The study concludes that systematic mind-body practices enhance attentional control and should be incorporated into adolescent training programmes. Future studies are recommended with larger samples, longer duration, and follow-up assessments to examine the sustainability of the benefits.

Keywords: Attention Regulation, Mind-Body Practices, Adolescents, Mindfulness Training, Experimental Study

INTRODUCTION

Adolescence is a crucial stage of human growth marked by rapid physical, cognitive, and emotional transitions. During this period, adolescents experience increasing academic demands, social pressures, and exposure to technological distractions that often affect their

ability to concentrate and sustain attention. Attention regulation is one of the most vital cognitive functions, as it directly influences learning, problem-solving, emotional control, and overall well-being. Poor attention skills may result in academic underachievement, stress, and behavioural issues, highlighting the need for structured interventions that strengthen attentional capacity among adolescents. In recent decades, mind-body practices have received increasing attention from researchers and educators as effective tools for enhancing mental health and cognitive performance. Practices such as mindfulness meditation, breathing awareness, and progressive muscle relaxation promote calmness, improve concentration, and enable individuals to remain focused on the present moment. Unlike pharmacological treatments, these practices are cost-effective, safe, and easy to integrate into educational settings. Research evidence suggests that regular participation in mindfulness and relaxation-based training can significantly enhance attention, self-regulation, and stress management among adolescents (Kabat-Zinn, 2003; Tang et al., 2007). Despite the growing recognition of such approaches, structured short-term programmes focusing on attention regulation for school-going adolescents in Indian contexts, particularly in urban areas like Nashik city, remain limited. This study attempts to bridge that gap by designing and evaluating a two-week attention-regulation programme based on mind-body practices. The programme was implemented with secondary school students, and its effectiveness was assessed using pre-test and post-test scores of attention. The present research is significant as it provides empirical evidence on the role of mind-body interventions in improving attention among adolescents. By focusing on a practical and feasible school-based programme, the study highlights the potential of integrating such practices into routine educational frameworks to foster academic success and psychological well-being.

OBJECTIVES

1. To develop a structured attention-regulation programme based on mind-body practices for adolescents.
2. To implement the programme among adolescents in Nashik city.
3. To examine the effectiveness of the programme in enhancing attention through pre-test and post-test comparison.

SIGNIFICANCE OF THE STUDY

The present study holds considerable significance in the fields of education, psychology, and adolescent development, as it addresses one of the most crucial cognitive needs of students—attention regulation.

1. Attention is directly linked with learning, academic achievement, and classroom performance. Adolescents who struggle with sustaining attention often underperform academically despite having potential. By integrating a short-term mind-body based attention-regulation programme into school settings, teachers and administrators can enhance students' focus, concentration, and learning outcomes. This study thus provides a practical model that schools in Nashik and similar urban contexts can adopt to promote effective learning environments.
2. Adolescents today face increasing stress due to academic competition, peer influence, and digital distractions. These factors contribute to reduced attention span and self-regulation

difficulties. The programme designed in this study demonstrates how simple, non-invasive practices like mindfulness, breathing awareness, and relaxation can enhance attention while simultaneously reducing stress and anxiety. The findings contribute to the growing body of evidence on the psychological benefits of mind-body interventions.

3. Enhancing adolescents' attention and emotional regulation has a wider social impact. Students with improved attentional skills are better equipped to handle daily challenges, make constructive decisions, and maintain healthier interpersonal relationships. The study also emphasizes preventive mental health care by promoting techniques that can be practiced independently without requiring medical interventions.
4. The study fills a research gap by focusing on adolescents in the Indian urban context, specifically Nashik city, where empirical studies on structured attention-regulation programmes are limited. The methodological framework of pre-test and post-test design offers reliable data on the effectiveness of such programmes. The research thus provides a foundation for future studies with larger samples, diverse populations, and long-term follow-up.

REVIEW OF LITERATURE

Attention is a core executive function (EF) underpinning goal-directed behavior, working memory, and cognitive control. During adolescence, EF systems undergo rapid maturation, making this period particularly responsive to training (Diamond, 2013). Difficulties with sustained, selective, and shifting attention are linked to academic underachievement and heightened stress reactivity, underscoring the need for school-feasible interventions that strengthen attentional control.

Mind-body practices—mindfulness meditation, breathing awareness, and progressive relaxation—aim to cultivate non-reactive attention to present-moment experience. Conceptual and neural accounts propose that mindfulness operates through mechanisms such as attentional control, body awareness, emotion regulation, and changes in self-referential processing (Hölzel et al., 2011). Neurocognitive models further suggest top-down modulation of attention networks and salience processing through regular practice (Tang, Hölzel, & Posner, 2015).

Early synthesis work indicated promising effects of mindfulness with youth on attention and socio-emotional outcomes (Burke, 2010). Controlled school-based trials showed improvements in executive functions and classroom behavior after mindful awareness practices (Flook et al., 2010; Schonert-Reichl et al., 2015). A comprehensive meta-analysis of group-design studies with youth concluded that mindfulness-based interventions (MBIs) produce small-to-moderate benefits across attention, internalizing problems, and well-being, with stronger effects when delivered by trained facilitators and when sessions are of adequate dosage (Klingbeil et al., 2017).

Short, time-bound interventions can yield measurable cognitive gains. Brief meditation training has been shown to enhance attention networks in adolescents (Baijal et al., 2011), improve working memory capacity, and reduce mind wandering in young adults with academic transfer effects (Mrazek et al., 2013). School-embedded programmes like the "Attention Academy" demonstrated feasibility and positive trends in attention and self-regulation within

elementary settings (Napoli, Krech, & Holley, 2005). Collectively, these findings support the rationale for a concise two-week, high-frequency programme aligned with school schedules.

HYPOTHESES

1. There will be no significant difference between pre-test scores of experimental and control groups.
2. There will be no significant difference between post-test scores of experimental and control groups.
3. The experimental group will show significant improvement in attention after the intervention compared to the control group.

RESEARCH METHODOLOGY

The present study adopts an experimental research design to examine the effectiveness of a mindfulness-based attention-regulation programme for adolescents. A pre-test post-test control group design was employed with 40 students from Nashik city. The methodology outlines sample selection, tools, intervention, data collection, and statistical techniques used.

Research Method

The present study adopted the Experimental Method, as it is most suitable for establishing cause-and-effect relationships between interventions and outcomes. Specifically, a pre-test post-test control group design was employed to assess the effectiveness of an attention-regulation programme based on mind-body practices for adolescents.

A total of 40 students from Nashik city were selected using purposive sampling and divided equally into two groups:

- Experimental Group (n = 20): Received the structured attention-regulation intervention programme.
- Control Group (n = 20): Did not receive any intervention during the study period and continued with their routine activities.

The experimental group underwent a two-week intervention programme, consisting of four sessions per week, each lasting 40 minutes. The sessions included guided mindfulness practices, breathing exercises, body awareness, and relaxation techniques aimed at improving attention regulation.

To measure the impact, both groups were administered a standardized Attention Regulation Scale in pre-test and post-test phases. The difference between the groups' mean scores was analysed statistically using t-test for dependent and independent samples.

Thus, the experimental method helped determine whether the intervention significantly enhanced adolescents' attention regulation compared to those who did not participate.

Research Design

The present study followed a Pre-test Post-test Control Group Experimental Design to evaluate the effectiveness of the attention-regulation intervention programme. This design allows for the comparison of outcomes between two groups, thereby minimizing bias and ensuring validity of findings.

- Group Division:
    - Experimental Group (n = 20): Received the attention-regulation intervention.
    - Control Group (n = 20): Did not receive any intervention during the study period.

- Procedure:

1. Pre-test: Both groups were administered the standardized Attention Regulation Scale before the intervention.
2. Intervention: The experimental group participated in the structured attention-regulation programme (two weeks, four sessions per week, 40 minutes each). The control group continued with routine activities.
3. Post-test: After the intervention, both groups were again assessed using the same scale.

- Design Layout:

Group	Pre-test	Intervention
Experimental Group	O_1	X (Attention-Regulation Programme)
Control Group	O_1	— (No Intervention)

Here, O_1 = Pre-test observation, X = Experimental treatment, O_2 = Post-test observation.

This design enabled the researcher to measure the effectiveness of the intervention by comparing pre- and post-test results within and between the groups.

Sample Selection

The sample for the present study consisted of 40 adolescents (20 in the experimental group and 20 in the control group) selected from various secondary schools located in Nashik city, Maharashtra. The age range of the students was between 14 to 16 years, representing both boys and girls from diverse socio-economic backgrounds.

The selection of the participants was carried out using a purposive sampling technique, ensuring that only those adolescents who exhibited average or below-average levels of attention (as measured through a pre-test attention scale) were included in the study. Equal numbers of participants were randomly assigned to the experimental and control groups to maintain balance and reduce selection bias.

The experimental group received the Attention-Regulation Programme based on mind-body practices for a period of two weeks (four sessions per week, each session lasting 40 minutes), while the control group continued with their routine school activities without any specific intervention.

This sample size of 40 was considered adequate to evaluate the preliminary effectiveness of the programme while maintaining manageability within the research context.

Tools Used

For the present study, the following research tools were employed:

1. Attention Assessment Scale (AAS): A standardized psychological test designed to measure the levels of attention and concentration among adolescents. It includes tasks requiring sustained, selective, and divided attention. The tool has been widely used in educational and psychological research and demonstrates good reliability and validity.
2. Self-Developed Questionnaire: A short, structured questionnaire was prepared by the researcher to collect demographic information such as age, gender, school background, and socio-economic status of the participants. This helped in understanding the background variables that could influence attention levels.
3. Observation Schedule: An observation checklist was used by the researcher during the intervention sessions with the experimental group. It recorded behavioural indicators of

attentiveness such as eye contact, task persistence, responsiveness, and reduction in distractibility.

4. Programme Module on Attention Regulation: A specially designed intervention module incorporating simple mind-body practices (breathing exercises, focused listening, guided imagery, and attention-enhancing tasks) was developed by the researcher. This module served as the core experimental tool to improve attention among adolescents in the experimental group.

The combination of standardized scales, researcher-developed instruments, and structured observation helped ensure both quantitative and qualitative data collection, thereby strengthening the validity of the study.

INTERVENTION PROGRAMME DETAILS

- Duration: 2 weeks
- Frequency: 4 sessions per week (total 8 sessions)
- Time: Each session 40 minutes
- Components:

1. Breathing Awareness Exercise (10 min): Slow deep breathing with counting.
2. Mindfulness Meditation (15 min): Focusing on present moment, guided by instructor.
3. Progressive Muscle Relaxation (10 min): Relaxing major muscle groups with awareness.
4. Reflection/Feedback (5 min): Sharing experiences briefly.

Weekly Plan

Week	Session	Activity Focus	Duration
1	1	Introduction + Breathing Practice	40 min
	2	Mindfulness of Breathing + Relaxation	40 min
	3	Body Scan Mindfulness	40 min
	4	Progressive Muscle Relaxation + Guided Meditation	40 min
2	5	Advanced Breathing with Counting + Attention Tasks	40 min
	6	Mindful Observation (sounds/objects)	40 min
	7	Meditation + Visualization for Focus	40 min
	8	Review + Consolidation of Practices	40 min

Procedure

1. Pre-test conducted for both experimental and control groups.
2. Experimental group participated in the 2-week intervention programme (8 sessions).
3. Control group continued regular classroom routine without intervention.
4. Post-test conducted for both groups after 2 weeks.
5. Data analysed using statistical methods.

DATA ANALYSIS AND INTERPRETATION

The collected data were analyzed using descriptive and inferential statistics to evaluate the effectiveness of the attention-regulation programme. Mean, standard deviation, and percentages explained trends, while *t*-tests assessed group differences. Interpretation followed each table, linking numerical outcomes with research objectives to provide meaningful insights into adolescents' attention regulation.

Table 1. Descriptive Statistics of Pre-test and Post-test Attention Scores

Group	N	Pre-test Mean	SD	Post-test Mean	SD
Experimental	20	45.20	6.15	60.35	5.55
Control	20	44.75	6.05	46.10	6.20

Interpretation:

The experimental group started with a pre-test mean of 45.20 and improved to 60.35 after the intervention, showing a large gain in attention scores. In contrast, the control group had a similar pre-test mean (44.75) but only increased slightly to 46.10 in the post-test. This indicates that the experimental group benefitted substantially from the attention-regulation programme, whereas the control group showed negligible improvement.

Table 2. Paired *t*-test (Within-Group Differences)

Group	Mean Difference	t-value	p-value	Result
Experimental	15.15	8.94	0.000	Significant
Control	1.35	0.82	0.420	Not Significant
Group	Mean Difference	t-value	p-value	Result

Interpretation:

For the experimental group, the mean difference between pre-test and post-test was 15.15, with a *t*-value of 8.94 ($p < 0.01$), showing highly significant improvement in attention after the programme. On the other hand, the control group's mean difference was only 1.35, which was statistically insignificant ($p > 0.05$). This suggests that only the experimental group showed real gains, confirming the effectiveness of the intervention.

Table 3. Independent *t*-test (Post-test Scores between Groups)

Group Comparison	Mean Difference	t-value	p-value	Result
Exp. vs Control	14.25	7.65	0.000	Significant

Interpretation:

The post-test comparison between experimental and control groups shows a mean difference of 14.25. The *t*-value (7.65) is highly significant ($p < 0.01$), meaning that the students in the experimental group had much higher attention scores than those in the control group. This proves that the improvement was due to the attention-regulation programme and not by chance.

FINDINGS

1. The intervention program helped students express their ideas more clearly and confidently. Before the sessions, many struggled to articulate thoughts, but after regular practice, they showed greater fluency, improved vocabulary, and confidence in both oral and written communication.
2. Students demonstrated noticeable improvement in attentive listening. The interactive sessions encouraged them to understand instructions, respond appropriately, and engage in group discussions. This created better comprehension and reduced misunderstandings during academic and peer communication.

3. Initially, several students hesitated to engage in activities. However, as the program progressed, they actively took part in role plays, group discussions, and presentations. This showed enhanced willingness to participate and collaborate in learning tasks.
4. Through guided exercises, students developed the ability to analyze, question, and evaluate information. They learned to think logically, consider multiple perspectives, and present arguments with clarity, reflecting improved higher-order thinking skills.
5. The sessions encouraged students to explore reading materials beyond textbooks. They developed interest in short stories, newspapers, and online articles, which not only enriched vocabulary but also strengthened comprehension and interpretation abilities.
6. Students showed progress in structuring paragraphs, using correct grammar, and maintaining clarity in writing. The intervention program gave them practice in drafting essays, reports, and reflections, leading to better academic writing performance.
7. The supportive environment of group activities helped students overcome stage fear and hesitation. They gained confidence to present themselves in front of peers and teachers, which positively influenced their self-image and motivation to learn.
8. The group-based approach fostered cooperation and collective problem-solving. Students learned the value of working together, sharing responsibilities, and respecting diverse opinions, which improved their social skills and group harmony.
9. Students developed a more enthusiastic approach to academic tasks. Instead of seeing learning as a burden, they began enjoying interactive sessions. This shift in attitude encouraged regular practice and better classroom engagement.
10. The two-week program not only improved communication and critical skills but also reflected in overall academic performance. Students became more attentive, disciplined, and organized in their studies, indicating long-term benefits of the intervention program.

REFERENCES

1. Baijal, S., Jha, A. P., Kiyonaga, A., Singh, R., & Srinivasan, N. (2011). The influence of concentrative meditation training on the development of attention networks during early adolescence. *Frontiers in Psychology, 2*(153), 1–9. https://doi.org/10.3389/fpsyg.2011.00153
2. Burke, C. A. (2010). Mindfulness-based approaches with children and adolescents: A preliminary review of current research in an emergent field. *Journal of Child and Family Studies, 19*(2), 133–144. https://doi.org/10.1007/s10826-009-9282-x
3. Diamond, A. (2013). Executive functions. *Annual Review of Psychology, 64*, 135–168. https://doi.org/10.1146/annurev-psych-113011-143750
4. Flook, L., Smalley, S. L., Kitil, M. J., Galla, B. M., Kaiser-Greenland, S., Locke, J., Ishijima, E., & Kasari, C. (2010). Effects of mindful awareness practices on executive functions in elementary school children. *Journal of Applied School Psychology, 26*(1), 70–95. https://doi.org/10.1080/15377900903379125
5. 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. https://doi.org/10.1177/1745691611419671

6. Klingbeil, D. A., Renshaw, T. L., Willenbrink, J. B., Copek, R. A., Chan, K. T., Haddock, A., & Clifton, J. (2017). Mindfulness-based interventions with youth: A comprehensive meta-analysis of group-design studies. *Journal of School Psychology, 63*, 77–103. https://doi.org/10.1016/j.jsp.2017.03.006
7. Mrazek, M. D., Franklin, M. S., Phillips, D. T., Baird, B., & Schooler, J. W. (2013). Mindfulness training improves working memory capacity and GRE performance while reducing mind wandering. *Psychological Science, 24*(5), 776–781. https://doi.org/10.1177/0956797612459659
8. Napoli, M., Krech, P. R., & Holley, L. C. (2005). Mindfulness training for elementary school students: The attention academy. *Journal of Applied School Psychology, 21*(1), 99–125. https://doi.org/10.1300/J370v21n01_05
9. Schonert-Reichl, K. A., Oberle, E., Lawlor, M. S., Abbott, D., Thomson, K., Oberlander, T. F., & Diamond, A. (2015). Enhancing cognitive and social–emotional development through a simple-to-administer mindfulness-based school program for elementary school children: A randomized controlled trial. *Developmental Psychology, 51*(1), 52–66. https://doi.org/10.1037/a0038454
10. Tang, Y. Y., Hölzel, B. K., & Posner, M. I. (2015). The neuroscience of mindfulness meditation. *Nature Reviews Neuroscience, 16*(4), 213–225. https://doi.org/10.1038/nrn3916