

Original Article

The Impact of Daily Physical Activity on Academic Performance in School level student

Dr. Varsha Narayan Khadke
Sadguru Education Society's
College of physical Education, Jalgaon

Manuscript ID:

JRD -2026-180225

ISSN: 2230-9578

Volume 18

Issue 2

Pp. 130-132

February - 2026

Submitted: 17 Jan. 2026

Revised: 27 Jan. 2026

Accepted: 12 Feb. 2026

Published: 28 Feb. 2026

Abstract

This paper explores the relationship between daily physical activity and academic performance among school and college students. Drawing on existing literature, empirical studies, and theoretical frameworks, it highlights how regular exercise influences cognitive functions, classroom behavior, concentration, memory retention, and academic outcomes. Findings suggest that consistent physical activity positively correlates with improved academic performance, mediated by physiological, psychological, and socio-behavioral mechanisms.

Introduction

Academic performance is a major indicator of student success, influenced by multiple factors including study habits, socio-economic status, nutrition, sleep, and physical health. Among these, **daily physical activity (PA)** has emerged as a significant contributor to cognitive functioning and scholastic achievement. This research investigates how routine physical movement—such as walking, organized sports, or structured exercise—influences learning outcomes

Purpose of the Study

- How daily physical activity affects cognitive functioning.
- The link between **daily physical activity** and academic performance.
- Mechanisms connecting physical activity to learning outcomes.

Defining Physical Activity

Physical activity refers to any movement that expends energy — including sports, exercise, or active play (World Health Organization). Daily PA recommendations for students include at least **60 minutes of moderate-to-vigorous activity**.

Academic Performance Metrics

Academic performance is typically measured through:

- Grades and test scores
- Standardized examination results
- Attention and classroom engagement indicators

Theoretical Framework

- **Cognitive Activation Hypothesis:** **daily physical activity** increases blood flow to the brain, enhancing attention and executive function.
- **Neurotropic Model:** Exercise stimulates brain-derived neurotropic factor (BDNF), which supports memory formation.
- **Behavioral Regulation Theory:** Active students exhibit better self-control and task persistence.



Quick Response Code:



Website:

<https://jrdrv.org/>

DOI:

[10.5281/zenodo.18921944](https://doi.org/10.5281/zenodo.18921944)



Creative Commons (CC BY-NC-SA 4.0)

This is an open access journal, and articles are distributed under the terms of the [Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International](https://creativecommons.org/licenses/by-nc-sa/4.0/) Public License, which allows others to remix, tweak, and build upon the work noncommercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.

Address for correspondence:

Dr. Varsha Narayan Khadke, Sadguru Education Society's College of physical Education, Jalgaon

How to cite this article:

Khadke, V. N. (2026). The Impact of Daily Physical Activity on Academic Performance in School level student. *Journal of Research & Development*, 18(2), 130–132. <https://doi.org/10.5281/zenodo.18921944>

Research Methodology

Research Design

Mixed-methods approach combining quantitative (test scores, PA logs) and qualitative (student self-reports) data.

Sample

- 100 students, ages 12-14, from various multiple schools in Jalgaon city
- Divided into two groups:
- **Group A:** Daily PA ≥ 30 minutes
- **Group B:** PA < 30 minutes

Data Collection

- Academic records from school databases.
- **Daily physical activity** monitoring via fitness trackers and self-reported logs.
- Cognitive tests (e.g., memory recall, attention span assessments).

Analysis's & Results

Variable	Group-A (Active)	Group -B (Active)
Average Grade (%)	83.5	74.2
Attention Span (min)	45	33
Working Memory Score	88	77

Correlation

- Positive correlation between **daily physical activity** duration and academic grades ($r = .47, p < .01$).
- Higher cognitive test scores in physically active students.

Comparative Analysis

Active students demonstrated:

- Better classroom engagement
- Reduced absenteeism
- Higher motivation and self-esteem

Discussion

1. Physiological Factors

Exercise increases oxygen supply to the brain, stimulating neural growth and neurotransmitter activity, which enhances learning capacity

2. Psychological Benefits

Physical activity:

- Reduces stress and anxiety
- Improves mood and self-confidence
- Enhances attention and memory retention

3. Behavioral Outcomes

Students engaging in regular daily physical activity often show better discipline, time management, and reduced disruptive behavior.

4. Implications for Education

Schools should:

- Integrate structured **daily physical activity** into daily schedules
- Promote active breaks and physical education
- Encourage extracurricular sports

Limitations

- Self-reported **daily physical activity** logs may contain bias.
- Only cross-sectional data was collected; long-term impacts require longitudinal research.
- Cultural and environmental differences might influence PA and academic outcomes.

Conclusion

Daily physical activity has a positive impact on academic performance, improving cognitive functions, behavior, and test scores. Both school administrators and parents should prioritize regular PA in children's routines to foster better learning outcomes.



Journal of Research and Development

A Multidisciplinary International Level Referred and Double Blind Peer Reviewed, Open Access

ISSN : [2230-9578](https://doi.org/10.22309/2230-9578) | Website: <https://jrdrvb.org> Volume-18, Issue-2| February - 2026

Recommendations

- Schools should mandate daily exercise periods.
- Further research should explore longitudinal effects.
- Educators should train teachers to integrate kinesthetic learning techniques.

References

1. Hillman, C.H., Erickson, K.I., & Kramer, A.F. (2008). *Be smart, exercise your heart: Exercise effects on brain and cognition*. Nature Reviews Neuroscience.
2. Donnelly, J.E., et al. (2016). *Physical Activity and Academic Achievement across the Curriculum (A + PAAC)*. Preventive Medicine.
3. Centers for Disease Control and Prevention. (2020). *School Health Guidelines*.