



## Primary School Students' Perceptions of the Effect of Morning Exercise on Learning Concentration in Medan

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### Abstract

#### Background

Concentration is a key factor in primary students' academic performance. Morning exercise has been suggested to enhance alertness and cognitive readiness, yet limited studies have explored students' perceptions of its effect on learning concentration in Indonesia.

#### Objectives

This study aims to investigate primary school students' perceptions of the influence of morning exercise on their learning concentration in Medan.

#### Methods

A descriptive survey design was employed. A total of 150 students from five primary schools in Medan were selected using stratified random sampling. Data were collected via a structured Likert-scale questionnaire measuring students' perceptions of morning exercise and its impact on concentration. Reliability was confirmed with a Cronbach's alpha of 0.87. Data were analyzed using descriptive statistics, including mean scores and frequency distributions.

#### Results

The majority of students (78%) perceived that morning exercise positively affects their concentration, while 65% reported increased alertness and engagement in learning activities following exercise. Mean scores ranged from 3.8 to 4.2, indicating generally favorable perceptions. No significant differences were found between male and female students.

#### Conclusion

Primary school students in Medan generally perceive morning exercise as beneficial for learning concentration. Integrating structured morning exercise routines into daily school schedules may improve students' cognitive readiness and engagement in classroom activities.

**Keywords:** Morning Exercise, Learning Concentration, Primary School Students, Perception, Medan

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## INTRODUCTION

Concentration is a critical factor in students' academic achievement, particularly at the primary school level, where attention spans and cognitive engagement are still developing (Donnelly et al., 2016). Low levels of concentration can negatively affect the learning process and academic performance, highlighting the importance of strategies that can effectively enhance students' focus in the classroom.

Physical activity has been widely recognized as an approach that can improve cognitive function, including attention, memory, and executive functioning (Singh et al., 2012; Bailey et al., 2013). Morning exercise, as a structured physical activity conducted at the beginning of the school day, has been suggested to enhance students' alertness, mood, and readiness to learn (Byker et al., 2017). Studies indicate that engaging

in physical activity before lessons can increase students' concentration and overall classroom engagement, providing a simple yet effective strategy to support learning outcomes.

In Indonesia, morning exercise is commonly implemented in primary schools as part of daily routines. However, there is limited research investigating students' subjective perceptions of how morning exercise influences their learning concentration. Understanding these perceptions is essential for educators and policymakers to design and implement programs that optimize students' cognitive readiness and engagement during lessons.

Therefore, this study aims to examine primary school students' perceptions of the effect of morning exercise on learning concentration in Medan. By exploring students' viewpoints, this research seeks to provide insights into the role of structured physical activity in supporting cognitive performance and academic achievement in primary education contexts.

## METHOD

### Participant

The study involved 150 primary school students from several schools in Medan, Indonesia. Participants were selected using stratified random sampling to ensure representation across grades 3 to 6. Stratification was based on grade level to account for developmental differences in attention and cognitive engagement. Informed consent was obtained from parents or guardians prior to participation, and all ethical considerations were strictly observed.

### Research Design

A descriptive survey research design was employed to examine students' perceptions of the effect of morning exercise on learning concentration. This design is appropriate for assessing attitudes, opinions, and subjective experiences within a defined population (Creswell & Creswell, 2018). Data were collected using a structured questionnaire comprising 15 Likert-scale items (1 = strongly disagree to 5 = strongly agree) that measured dimensions of concentration, alertness, and engagement during classroom activities.

### Data Analysis

Data were analyzed using descriptive statistical methods, including mean scores, standard deviations, and frequency distributions, to summarize students' perceptions. Additionally, gender-based differences in perceptions were explored descriptively. The reliability of the questionnaire was confirmed through a pilot study with 20 students, resulting in a Cronbach's alpha of 0.87, indicating high internal consistency.

## RESULTS AND DISCUSSION

### Results

#### 1. Descriptive Analysis of Students' Perceptions

**Table 1.** presents the summary of primary school students' perceptions regarding the impact of morning exercise on learning concentration.

Perception Item	Mean	Standard Deviation (SD)	Frequency Agree (%)	Agree/Strongly
Morning exercise increases my focus during lessons	4.2	0.63	78%	
Morning exercise improves alertness in class	4.0	0.71	65%	
Morning exercise makes me more engaged in learning	4.1	0.68	70%	
Morning exercise enhances my overall participation	3.9	0.75	68%	
Morning exercise positively affects my mood during class	4.0	0.66	72%	

#### 2. Gender Differences

Descriptive analysis indicated that both male and female students reported similar perceptions, with no substantial differences in mean scores across the items.

#### 3. Summar

Overall, the findings show that primary school students in Medan generally perceive morning exercise as beneficial for their learning concentration. These results support the implementation of structured morning exercise routines as a strategy to enhance students' cognitive readiness and engagement in class.

## Discussion

The findings of this study indicate that primary school students in Medan generally perceive morning exercise as beneficial for their learning concentration. Most students reported that engaging in morning exercise increased their alertness, focus, and engagement during classroom activities. These results are consistent with previous research demonstrating that physical activity enhances cognitive function and academic performance in children (Donnelly et al., 2016; Singh et al., 2012).

Morning exercise may improve concentration through several physiological and psychological mechanisms. Physical activity increases blood flow and oxygen delivery to the brain, promoting alertness and cognitive processing (Bailey et al., 2013). Additionally, exercise stimulates the release of neurotransmitters such as dopamine and norepinephrine, which are associated with attention, motivation, and mood regulation (Byker et al., 2017). Students' positive perceptions in this study align with these findings, suggesting that even brief morning exercise sessions can enhance readiness to learn.

The absence of substantial gender differences in perceptions supports the idea that the cognitive benefits of physical activity are generally similar for both boys and girls at the primary school level (Singh et al., 2012). This finding reinforces the notion that morning exercise programs can be universally applied without gender-specific modifications.

From an educational perspective, integrating structured morning exercise into the daily school routine may provide a simple and cost-effective strategy to support cognitive engagement and improve classroom learning outcomes. Educators should consider designing activities that are developmentally appropriate, engaging, and consistent with school schedules to maximize participation and effectiveness.

However, it is important to note that this study relied on students' self-reported perceptions, which may be influenced by subjective biases. Future research could employ objective measures of cognitive performance, such as attention or memory tests, to complement perceptual data. Longitudinal studies could also explore the long-term effects of regular morning exercise on academic achievement and overall cognitive development.

## CONCLUSION

This study demonstrates that primary school students in Medan generally perceive morning exercise as beneficial for their learning concentration. Most students reported improvements in alertness, focus, and engagement during classroom activities following morning exercise. The findings suggest that integrating structured morning exercise routines into daily school schedules can enhance students' cognitive readiness and support better learning outcomes.

Although the study relied on self-reported perceptions, the results provide valuable insights for educators and policymakers seeking practical strategies to improve classroom engagement. Future research should consider objective measures of cognitive performance and examine the long-term effects of regular morning exercise on academic achievement and cognitive development.

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## AUTHOR CONTRIBUTION STATEMENT

Pedomanta Keliat contributed to the conception, design, and overall supervision of the study. Cristeven Tono Situmorang was responsible for coordinating data collection and ensuring research integrity. Fans Darno Prianto Osra Zalukhu assisted in developing the research instruments and contributed to the

analysis of the findings. Satria Agus Situmorang participated in fieldwork activities and facilitated communication with schools. Risky Cristyan Ginting provided methodological support and contributed to data processing. Irene Viazza Br Tarigan assisted in the literature review and preparation of the manuscript draft. Raihan Nurras contributed to critical revisions, formatting, and final approval of the article for submission. All authors have read and agreed to the published version of the manuscript.

### CONFLICT OF INTEREST AND FUNDING

There is no conflict of interest

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