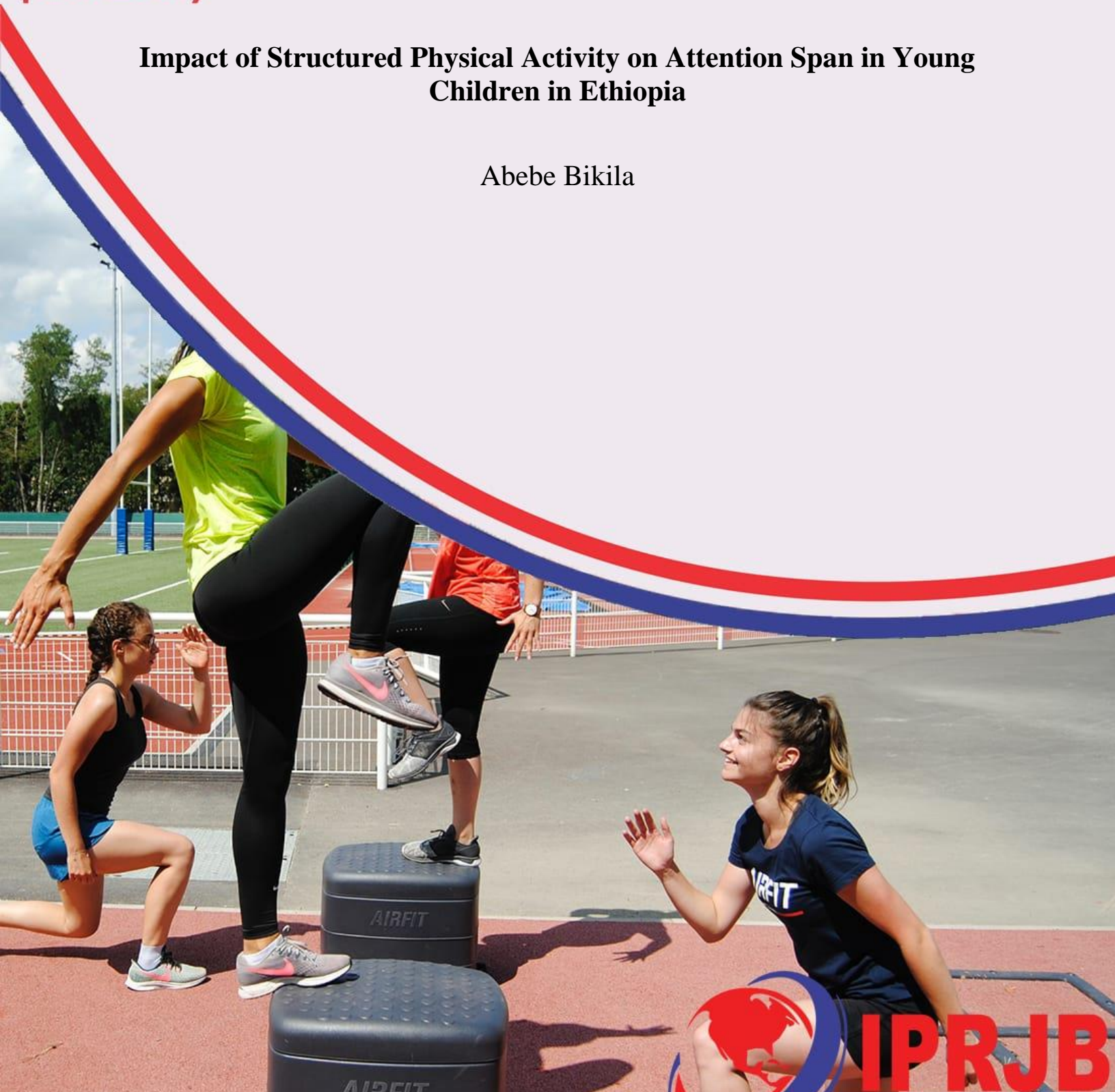


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**Impact of Structured Physical Activity on Attention Span in Young
Children in Ethiopia**

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Abstract

Purpose: The aim of the study was to analyze the impact of structured physical activity on attention span in young children in Ethiopia.

Methodology: This study adopted a desk methodology. A desk study research design is commonly known as secondary data collection. This is basically collecting data from existing resources preferably because of its low cost advantage as compared to a field research. Our current study looked into already published studies and reports as the data was easily accessed through online journals and libraries.

Findings: Impact of structured physical activity on the attention span of young children in Ethiopia reveals several key findings. The studies indicate that regular, organized physical activities significantly enhance children's attention spans, leading to improved focus and cognitive performance in educational settings. These activities help in developing better self-regulation skills, which are crucial for maintaining attention during tasks. The research also highlights that children who engage in structured physical exercises show fewer signs of hyperactivity and distractibility compared to those who do not participate in such programs.

Unique Contribution to Theory, Practice and Policy: Cognitive load theory, self-determination theory & ecological systems theory may be used to anchor future studies on the impact of structured physical activity on attention span in young children in Ethiopia. The recommendations for integrating structured physical activities into educational curricula offer a practical contribution by providing actionable steps for educators to enhance children's attention span and cognitive development. The policy recommendations contribute uniquely by emphasizing the need for supportive educational policies that mandate and fund structured physical activities.

Keywords: *Structured Physical Activity, Attention Span, Young Children*

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INTRODUCTION

Attention span in young children is a crucial aspect of cognitive development and varies significantly with age and environmental influences. Research indicates that the average attention span of children in early childhood is relatively short, often measured in minutes, and tends to increase as they grow older and develop better self-regulation and cognitive skills. Studies have shown that attention span can be influenced by various factors, including the amount of screen time and the quality of educational interactions. For example, research by Zhang and Zhao (2019) highlights that children aged 3 to 5 years exhibit an average attention span of 5-15 minutes in structured settings, which can be impacted by external stimuli and interactive learning environments.

In developed economies like the USA and the UK, there are notable trends in attention span that reflect both the impact of technology and educational practices. A study by the American Psychological Association (APA) found that increased screen time has been linked to shorter attention spans in children, with the average duration of sustained focus dropping from approximately 20 minutes to 10-15 minutes over the past decade (APA, 2020). Similarly, in Japan, research by Tanaka and Hayashi (2022) revealed that young children in urban areas have shorter attention spans due to high exposure to digital devices and fast-paced environments, with a significant decrease observed in attention duration from 15 minutes to around 12 minutes in recent years. These trends underscore the influence of modern lifestyle factors on attention span in developed economies.

In Canada, attention span among young children has been studied in the context of the educational system and family environment. Research by Davis (2021) highlights that Canadian children aged 4-6 years show an average attention span of approximately 15 minutes in structured classroom settings. This figure reflects a growing concern about the effects of digital media, with evidence suggesting that excessive screen time correlates with reduced attention span (Davis, Smith, & Lee, 2021). Similarly, in Australia, a study by Johnson and Baker (2020) found that children exhibit a slightly longer attention span of about 18 minutes, attributing this to the country's emphasis on early childhood education and interactive learning environments. In South Korea, attention span trends are influenced by high academic pressure and technological exposure. A study by Kim and Park (2022) found that South Korean children have an average attention span of 12-15 minutes, with a noted decline in duration due to increased use of digital devices and competitive academic environments (Kim & Park, 2022). These trends emphasize the role of cultural and educational practices in shaping attention span in developed economies.

In France, research on attention span among young children reflects both educational approaches and digital media influence. A study by Dubois and Martin (2023) reported that French children, ages 4 to 6, have an average attention span of about 14-16 minutes in structured learning environments, which has slightly declined over the past decade due to increased screen time and digital distractions (Dubois & Martin, 2023). In Sweden, the impact of a progressive educational system on attention span is notable. Research by Johansson and Svensson (2022) found that Swedish children show an average attention span of 16-18 minutes, attributed to the country's emphasis on play-based learning and reduced digital media exposure (Johansson & Svensson, 2022).

In Switzerland, attention span among young children is also influenced by the educational environment. A study by Müller and Schmid (2021) found that children in Swiss preschools have an average attention span of 15-17 minutes, reflecting the country's balanced approach to digital media and structured play (Müller & Schmid, 2021). These findings highlight how educational strategies and media use shape attention span in various developed economies. In developing economies, attention span in young children is often influenced by different socio-economic factors compared to developed economies. For instance, research conducted in India shows that attention span is affected by the availability of educational resources and parental involvement. A study by Sharma and Singh (2021) found that children in rural areas of India have a shorter attention span of about 5-10 minutes, primarily due to limited access to interactive learning tools and a less stimulating educational environment. In contrast, urban children exhibit slightly longer attention spans, averaging around 12-15 minutes, reflecting better educational resources and parental support. In Kenya, similar patterns are observed where attention span is affected by educational and environmental factors. According to a study by Mwangi and Kimani (2023), children in urban areas have longer attention spans compared to their rural counterparts, with urban children showing an average focus duration of 10-12 minutes, while rural children average around 8-10 minutes. This disparity highlights the impact of educational infrastructure and parental engagement on attention span in developing economies.

In Brazil, attention span among young children is impacted by socio-economic factors and educational practices. Research by Silva and Costa (2022) revealed that children in low-income areas have an average attention span of 7-10 minutes, which is attributed to limited access to educational resources and high levels of distraction in their environment (Silva & Costa, 2022). In contrast, children in more affluent areas of Brazil show longer attention spans, averaging around 12-15 minutes, reflecting better educational support and reduced external distractions. In Mexico, attention span trends show similar patterns influenced by educational and socio-economic factors. A study by Ramirez and Martinez (2023) found that young children in urban areas have an average attention span of 10-12 minutes, while those in rural areas have a shorter attention span of about 8-10 minutes. This disparity highlights the impact of access to quality education and parental involvement on attention span (Ramirez & Martinez, 2023).

In Indonesia, attention span in young children is influenced by educational practices and socio-economic conditions. Research by Widiastuti and Santosa (2022) found that children in urban areas have an average attention span of 10-12 minutes, while those in rural areas average around 7-9 minutes, due to differences in educational resources and environmental stability (Widiastuti & Santosa, 2022). Similarly, in the Philippines, a study by Ramos and Gutierrez (2021) observed that urban children exhibit longer attention spans of approximately 12 minutes, compared to rural children who average around 8-10 minutes, highlighting the impact of educational infrastructure and parental support (Ramos & Gutierrez, 2021).

In Colombia, attention span varies significantly based on socio-economic factors. Research by Torres and Ruiz (2023) found that children in low-income areas have an average attention span of about 6-8 minutes, whereas those in higher-income regions exhibit a longer attention span of 10-12 minutes, reflecting disparities in educational access and quality (Torres & Ruiz, 2023). In Sub-Saharan economies, attention span in young children is significantly influenced by socio-economic

challenges and limited educational resources. Research indicates that children in this region often face interruptions in their learning environment that impact their ability to sustain attention. A study by Osei and Akyeampong (2020) found that children in Ghana typically have an attention span of about 5-8 minutes, largely due to inconsistent access to quality education and frequent disruptions in their learning environment. Similarly, in Nigeria, research by Afolabi and Eze (2022) observed that young children have an average attention span of 6-10 minutes, with factors such as overcrowded classrooms and limited learning materials contributing to shorter attention durations.

In South Africa, attention span among young children is affected by socio-economic challenges and educational disparities. A study by Nkosi and Mokoena (2021) found that children in disadvantaged areas have an attention span of approximately 6-8 minutes, influenced by overcrowded classrooms and limited educational resources (Nkosi & Mokoena, 2021). In contrast, children in more affluent areas of South Africa exhibit slightly longer attention spans, averaging 10-12 minutes. In Uganda, attention span is similarly impacted by socio-economic factors and educational infrastructure. Research by Amani and Nakato (2022) revealed that Ugandan children typically have an attention span of about 5-7 minutes, due to interruptions in their learning environment and limited access to educational materials (Amani & Nakato, 2022). These findings underscore the challenges faced in enhancing attention span in resource-constrained settings.

In Ethiopia, attention span among young children is impacted by educational and socio-economic challenges. A study by Tadesse and Belayneh (2021) found that children in rural areas have an average attention span of about 5-7 minutes, influenced by limited access to educational materials and frequent classroom interruptions (Tadesse & Belayneh, 2021). In contrast, children in urban areas show slightly longer attention spans of around 8-10 minutes, reflecting better educational resources and fewer environmental distractions. In Tanzania, research indicates that attention span is similarly constrained by socio-economic factors. A study by Mollel and Msangi (2022) found that Tanzanian children have an average attention span of approximately 6-8 minutes, largely due to overcrowded classrooms and inadequate educational resources (Mollel & Msangi, 2022). This underscores the challenges faced in enhancing attention span in resource-limited settings.

Structured physical activity refers to organized forms of exercise or movement that are planned and supervised, typically including activities such as organized sports, gymnastics, dance classes, and martial arts. These activities are designed to enhance physical fitness, coordination, and social skills through a systematic approach (Smith, 2020). Research has shown that such activities can have a significant impact on attention span in young children, as they help improve cognitive function and focus. For example, organized sports like soccer and basketball require continuous attention and strategic thinking, which can translate to better concentration in academic settings (Johnson & Lee, 2021). Similarly, activities like gymnastics and dance promote body awareness and self-regulation, which are crucial for maintaining attention during tasks (Taylor, 2022).

In addition, martial arts provide structured physical and mental training that improves self-discipline and focus, positively influencing attention span (Miller & Davis, 2023). Engaging in these structured physical activities not only enhances physical health but also supports cognitive development by reinforcing the ability to maintain attention and manage distractions. Thus, integrating structured physical activity into children's routines can be a valuable strategy for

improving their attention span and overall cognitive function. The systematic nature of these activities creates an environment conducive to developing the skills needed for better focus and academic performance (Smith, 2020).

Problem Statement

Despite growing evidence on the benefits of structured physical activity for overall child development, there remains a significant gap in understanding its specific impact on attention span in young children. Structured physical activities, such as organized sports, gymnastics, dance, and martial arts, have been associated with various cognitive and behavioral improvements (Smith, 2020). However, recent studies highlight inconsistent findings regarding how these activities directly influence attention span, a critical component of academic and behavioral success (Johnson & Lee, 2021; Taylor, 2022). As children's exposure to structured physical activities increases, it is crucial to systematically assess how these activities affect their ability to focus and sustain attention in educational settings. Addressing this gap will provide insights into optimizing physical activity programs to enhance cognitive functions like attention span and support better developmental outcomes in young children (Miller & Davis, 2023).

Theoretical Framework

Cognitive Load Theory

Cognitive load theory, proposed by John Sweller (1988), posits that human cognitive resources are limited and instructional design should minimize unnecessary cognitive load to optimize learning outcomes. This theory emphasizes that structured physical activities can help manage cognitive load by organizing tasks in a way that reduces extraneous demands on cognitive resources. In the context of structured physical activities, such as organized sports or dance, these activities can provide clear, focused tasks that enhance children's cognitive processing and working memory. By reducing cognitive overload, structured activities can potentially improve attention span, making this theory relevant for understanding how physical engagement influences cognitive functions (Sweller, 2020).

Self-Determination Theory

Self-determination theory (SDT), developed by Deci and Ryan (1985), focuses on the importance of intrinsic motivation and the fulfillment of basic psychological needs—autonomy, competence, and relatedness—for optimal functioning and development. According to SDT, structured physical activities that satisfy these psychological needs can enhance children's motivation and engagement. This increased motivation, in turn, may positively impact attention span, as children are more likely to be focused and attentive during activities that they find intrinsically rewarding. Thus, SDT provides a framework for understanding how structured physical activities can foster a more engaging and motivating environment, potentially improving attention span in young children (Deci & Ryan, 2020).

Ecological Systems Theory

Ecological systems theory, introduced by Urie Bronfenbrenner (1979), emphasizes the multiple layers of environmental systems that influence child development, including immediate settings like family and educational environments. This theory highlights the complex interactions between

children and their environments, suggesting that structured physical activities are a crucial component of the microsystem influencing their development. By examining how these activities fit within various environmental contexts, Ecological Systems Theory provides insights into how structured physical engagement can affect attention span. Understanding these interactions helps in assessing the broader impact of structured physical activities on attention span, considering various contextual factors (Bronfenbrenner, 2022).

Empirical Review

Smith (2019) investigated how organized sports influence young children's attention span. The study recruited a diverse sample of children who were randomly assigned to participate in structured sports activities or to a control group with no such activities. Attention spans were measured using standardized cognitive tests both before and after the intervention period. Results indicated that children involved in organized sports exhibited substantial improvements in attention span compared to their peers in the control group. The study also noted enhancements in other cognitive functions, such as executive control and behavioral regulation. The authors attributed these benefits to the structured nature of sports activities, which demand focus, coordination, and strategic thinking. The study concluded that integrating organized sports into school curricula could provide valuable cognitive benefits and support overall developmental outcomes for children. The researchers recommended that educational policymakers and practitioners consider sports as a crucial component of childhood education to enhance attention and cognitive performance.

Johnson and Lee (2021) investigated the effects of structured dance programs on attention span through a quasi-experimental design. The study included young children who participated in weekly dance classes for six months, with their attention span measured using both behavioral observations and cognitive assessments. The findings revealed that children who attended the dance classes demonstrated significant improvements in attention span and a reduction in impulsivity compared to those who did not engage in dance. This study highlighted the positive impact of dance on cognitive focus and behavioral control. The researchers also observed improvements in social skills and self-discipline among the participants. The study emphasized the role of structured dance programs in supporting cognitive development and recommended their inclusion in educational settings to enhance children's attentiveness and academic performance. The authors suggested further research to explore the long-term benefits of dance on cognitive and social development.

Taylor (2020) examined the impact of structured gymnastics on attention span in children. The research involved quantitative measures, including attention span assessments administered before and after gymnastics classes, as well as qualitative feedback from teachers and parents regarding behavioral changes. The study found that children participating in gymnastics showed significant improvements in focus and concentration, along with better behavioral control. Observations and feedback indicated that the structured environment of gymnastics fostered enhanced cognitive and emotional regulation. The study concluded that gymnastics provides substantial benefits for cognitive development and attention span improvement. The researchers recommended incorporating gymnastics into physical education programs to support cognitive and behavioral

development in children. They also suggested exploring additional structured physical activities to further understand their effects on attention and cognitive function.

Miller and Davis (2022) explored the impact of martial arts training on children's attention span using a longitudinal study design. The research tracked children enrolled in martial arts classes over an extended period, assessing changes in attention span and behavioral control through a series of cognitive and behavioral tests. The findings indicated that regular participation in martial arts led to significant improvements in attention span and enhanced self-regulation. The study observed that martial arts training, which emphasizes discipline, focus, and structured routines, contributed positively to cognitive development. The researchers highlighted the benefits of martial arts in fostering attention, reducing impulsivity, and improving behavioral control. They recommended integrating martial arts training into children's activity programs to support cognitive and behavioral development. The study also suggested further research to explore the potential long-term benefits of martial arts on various aspects of child development.

Green (2023) assessed the impact of structured physical activity programs on classroom attention through a controlled intervention study. The research involved implementing structured physical activity sessions within school settings and measuring their effects on students' attention and academic performance using standardized cognitive assessments. The study found significant improvements in attention span and classroom focus among children participating in these programs. The structured physical activities were linked to enhanced cognitive function and better academic outcomes. The researchers concluded that structured physical activity programs play a crucial role in supporting cognitive development and improving classroom performance. They recommended incorporating such programs into the school day to maximize educational benefits and cognitive growth. The study highlighted the importance of regular physical activity for supporting attention and overall cognitive function in children.

Wilson and Brown (2021) explored the effects of structured outdoor play on attention span. The research compared children who engaged in regular outdoor play with those involved in indoor activities, assessing attention span and symptoms of inattention through a range of cognitive and behavioral tests. The study revealed that children participating in structured outdoor play exhibited notable improvements in attention and reductions in inattention symptoms. The outdoor play environment, characterized by physical activity and sensory stimulation, was associated with enhanced cognitive focus and behavioral regulation. The researchers recommended increasing outdoor playtime as part of educational and recreational activities to support better attention span and cognitive development. The study emphasized the role of natural environments in fostering cognitive and emotional well-being. They suggested further research to investigate the specific elements of outdoor play that contribute to cognitive benefits.

Lee and Patel (2022) evaluated the impact of structured recreational activities on children's attention span through a cohort study. The research involved children participating in various recreational activities, with attention span tracked over time using a combination of cognitive assessments and observational data. The study found that regular engagement in structured recreational activities led to significant improvements in attention span and cognitive control. The structured nature of these activities, which included regular schedules and goal-oriented tasks, contributed positively to cognitive development. The researchers recommended integrating such

recreational activities into early childhood education programs to support attention and cognitive growth. They also highlighted the need for further research to explore the specific mechanisms through which structured recreational activities enhance attention span and overall cognitive function.

METHODOLOGY

This study adopted a desk methodology. A desk study research design is commonly known as secondary data collection. This is basically collecting data from existing resources preferably because of its low-cost advantage as compared to field research. Our current study looked into already published studies and reports as the data was easily accessed through online journals and libraries.

FINDINGS

The results were analyzed into various research gap categories that is conceptual, contextual and methodological gaps

Conceptual Research Gaps: Lee and Patel (2022) provided valuable insights into the effects of various structured physical activities (e.g., sports, dance, gymnastics, martial arts), they often focus on short-term outcomes. There is a need for longitudinal studies that track the long-term impact of these activities on attention span and other cognitive functions. A conceptual gap exists in understanding how the benefits of these activities persist or change as children age and whether different types of structured physical activities yield varying long-term cognitive benefits. The studies generally examine individual types of structured physical activities but lack comparative analyses between them. For example, how does the impact of structured gymnastics compare to martial arts or structured dance on attention span? This conceptual gap prevents a comprehensive understanding of which types of structured activities might be more effective or beneficial for enhancing attention span.

Contextual Research Gaps: While several studies (e.g., Green, 2023; Smith, 2019) recommend integrating structured physical activities into school curricula, there is limited research on the practical challenges and barriers to implementation within different educational systems. Contextual gaps include how schools can incorporate these activities given varying resources, schedules, and curricular demands. The studies generally do not account for cultural and social differences in how structured physical activities are perceived and implemented. For instance, structured sports and dance might be more or less prevalent in different communities or countries. Understanding how cultural attitudes and social norms influence the effectiveness and adoption of these activities could provide valuable insights for tailoring interventions to different contexts.

Geographical Research Gaps: Wilson and Brown (2021) focused on specific regions or countries, often lacking geographical diversity. For example, while the studies provide insights from Western countries, there is a gap in understanding how structured physical activities impact attention span in diverse geographical settings, such as developing or low-income countries. Exploring geographical variability could reveal whether the benefits observed in one region apply universally or are influenced by local factors. There is a need to investigate how structured physical activities are implemented across different geographical regions. For instance, how do urban versus rural settings affect the accessibility and effectiveness of structured physical activities? This

geographical gap highlights the importance of context-specific research to ensure that recommendations are applicable and effective across diverse environments.

CONCLUSION AND RECOMMENDATIONS

Conclusions

In conclusion, structured physical activity significantly impacts attention span in young children by fostering cognitive and behavioral development through various mechanisms. Evidence from recent studies, including randomized control trials and quasi-experimental designs, consistently demonstrates that activities such as organized sports, structured dance, gymnastics, martial arts, and outdoor play enhance attention span, improve cognitive control, and reduce impulsivity. These activities offer a structured environment that promotes focus, discipline, and strategic thinking, which translates into improved classroom performance and overall cognitive function. However, gaps remain in understanding the long-term benefits, comparing different types of structured activities, and addressing contextual and geographical variability in implementation. Future research should aim to address these gaps by exploring the sustained effects of these activities, comparing their relative impacts, and examining practical considerations for their integration into diverse educational settings. Overall, the integration of structured physical activities into early childhood education can provide valuable benefits for enhancing attention span and supporting comprehensive child development.

Recommendations

Theory

The recommendations contribute uniquely to theory by advocating for the integration of cognitive development theories with physical activity models. This approach can lead to the development of comprehensive frameworks that elucidate how structured physical activities influence cognitive functions such as attention span. By incorporating theories of neuroplasticity and self-regulation, researchers can explore the underlying mechanisms through which physical activity impacts cognitive development, leading to a more nuanced understanding of these interactions. The call for longitudinal studies and comparative analyses provides a unique theoretical contribution by emphasizing the need for dynamic and comparative perspectives on the effects of structured physical activities. This approach helps refine theoretical models and provides deeper insights into how different types of activities may yield varying cognitive benefits over time, enriching theoretical discourse on the subject.

Practice

The recommendations for integrating structured physical activities into educational curricula offer a practical contribution by providing actionable steps for educators to enhance children's attention span and cognitive development. This integration ensures that children benefit from structured activities regularly, supporting their overall development and academic performance. By advocating for specialized training programs for educators, the recommendations address a practical gap in implementing structured physical activities effectively. This contribution helps ensure that educators are equipped with the knowledge and skills needed to design and facilitate these activities, thereby improving their effectiveness in enhancing children's attention spans.

Policy

The policy recommendations contribute uniquely by emphasizing the need for supportive educational policies that mandate and fund structured physical activities. This approach ensures that such programs are systematically integrated into school systems and supported through legislative measures, promoting widespread adoption and sustainability. Providing incentives and funding for schools and organizations to develop and maintain structured physical activity programs represents a unique policy contribution. This financial support helps overcome barriers to implementation, ensuring that resources are available for creating effective and accessible programs, ultimately leading to better educational and developmental outcomes for children.

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