

EFFECTS OF PHYSICAL ACTIVITY ON THE PSYCHOLOGICAL WELL-BEING, STRESS LEVELS AND SELF-ESTEEM OF PRIMARY SCHOOL CHILDREN IN ENUGU STATE, NIGERIA

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Abstract

This study explored how physical activity levels affect the psychological well-being, stress, and self-esteem of primary school children in Enugu State. A quantitative ex post facto research design was utilized. The sample included 120 children who were randomly and purposefully selected from primary schools in the study area. The Psychological General Well-Being Index (PGWBI) was employed to evaluate psychological well-being, the Perceived Stress Scale (PSS) assessed stress levels, and the Rosenberg Self-Esteem Scale measured self-esteem. Data analysis included descriptive statistics to summarize the characteristics of the participants, while an independent sample t-test was used to identify differences between children with low and high physical activity levels in terms of psychological well-being, stress, and self-esteem. Statistical analyses were performed using the Statistical Package for the Social Sciences (SPSS) at a significance level of 0.05. The findings indicated significant advantages of physical activity, revealing that children who participated in higher levels of physical activity exhibited better psychological well-being, lower stress levels, and higher self-esteem compared to their less active counterparts. Based on these findings, it was suggested that school health programs and educational stakeholders in Enugu State should enhance efforts to encourage physical activity among children through organized play, recreational programmes, and awareness initiatives. Furthermore, teachers and school health officers ought to integrate engaging physical activities into the daily routine to improve children's emotional resilience, alleviate stress, and elevate self-esteem.

Keywords: Effects, Physical Activities, Psychological Well-being, Stress, Self-esteem, Primary School Children.

Introduction

Physical activity (PA) encompasses any movement of the body that engages muscles and requires energy beyond resting levels. According to World Health Organization (WHO) (2024), physical activity is any form of movement generated by the skeletal muscles of the body that

leads to energy expenditure. This includes activities like walking, running, clapping, jumping, dancing, playing footballing, skipping, and cycling among others. Regular participation in physical activity is well-known for its numerous health benefits, especially for children. As observed by Granero-Jiménez et al., (2022) engaging in physical activity can enhance psychological well-being, physical health, and overall life satisfaction of an individual. Considering the importance of physical activity WHO recommended at least one hour of moderate to vigorous physical activity every day for children and adolescents (WHO, 2020; WHO 2022). However, Guthold et al. (2020) report that in line with the guidelines on physical activity and sedentary behaviour released by the WHO indicates that globally, as much as 81 per cent of children and adolescents do not attain the recommended daily levels of physical activity. It is also on record that in China only about 23.8 percent of children and adolescents have been able to achieve the standards of health and fitness by attaining daily activity levels (Liu et al., (2023). Academic performance being one of the most important elements of the educational system, influenced by its dominant examination-focused ideology, brought about physical activity being overlooked and often placed at the bottom of education agenda, resulting to children and adolescents being faced with significant academic pressure (Wunsch et al. 2017). Research consistently shows that physical activity plays a crucial role in developing strong muscles and bones, lowering the risk of obesity, and improving mental health and academic performance among children (Murthy, 2023; Wang et al., 2024; WHO, 2024).

Research reveal that children who regularly engage in PA tend to experience lower stress levels and reduced anxiety, which helps foster a positive self-image and enhances academic achievement (Wanjau et al., 2023; Teuber et al., 2024). Studies indicate that children who participate in daily physical activities are at a lower risk of developing chronic conditions such as obesity, diabetes, and hypertension later in life (Di Cesare et al., 2019; Agbaje et al., 2023). Furthermore, aerobic exercises like running and cycling are particularly effective in improving cardiovascular health and maintaining a healthy weight (Patel et al., 2017).

A sedentary lifestyle has become increasingly prevalent among children due to advancements in technology, resulting in excessive screen time and less outdoor play (Alotaibi et al., 2020; Guthold et al., 2020). There is enough indication that this situation is not limited to urban areas; even children in rural regions are participating less in physical activities, largely because of greater access to electronic devices and a decline in traditional play activities. Consequently, there are growing concerns about the long-term health effects of physical inactivity in children (Mitchell, 2019). In primary schools within Enugu State, Nigeria there has been a palpable rise in childhood obesity, stress-related issues, and low self-esteem among learners (Adeniyi et al., 2019). It is still uncertain whether these problems are directly associated with decreased physical activity. This study, therefore, seeks to evaluate the perceived impact of physical activity on the health and well-being of primary school children in Enugu State.

In a study that examined the influence of physical exercise on the psychological well-being of young adults, Granero et al. (2022) found that physical activity level translates to equal level of psychological well-being. Again, Trajković et al. (2023) in a related but separate study found that physical activity is a crucial predictor of psychological well-being among adults. In the same vain, Robinson and Sega (2025) held that physical exercise can treat mental illnesses as

well as medication. In another study that examined the effect of physical exercise on the stress management of college freshmen, Wilson-Salandy and Nies (2012) found that students with less physical activity level had less stress management ability compared to those with higher physical activity levels.

In a related study that examined physical activity and active stress management Lepping et al. (2022) found that students who meet moderate to vigorous activity guidelines use had better stress management skills compared to those who do not meet the guidelines. Furthermore, Teuber et al. (2024) investigated the effect of physical activity on university students and found that physical activities improved load recovery and management skills among university students. In a related but separate study, Zamani Sani et al. (2016) investigated the relationship between physical exercise and self-esteem among high school students and found that there existed a positive relationship between the two variables. Again Gilani and Dashipour (2017) in a comparative study of the effects of physical activity on self-esteem, found that physical activity enhanced the self-esteem of university students. Similarly, Zhang et al. (2024) investigated the relationship between physical activity, self-esteem, and mental health among adolescents. The result of the study indicates that there existed positive and significant relationship between physical activity and self-esteem among Chinese middle school students. Obviously, there is a paucity of literature on physical activity and well-being as it pertains to children and pupils. It is on this backdrop that this study becomes inevitable.

Objectives

The study evaluated the perceived effect of physical activity on primary school children in Enugu State. Specifically, the study explored the perceived effects of physical activity on:

1. The psychological well-being of primary school children in Enugu State.
2. The stress levels of primary school children in Enugu State.
3. The self-esteem of primary school children in Enugu State.

Hypotheses

The following hypotheses were examined:

1. Physical activity does not significantly affect the psychological well-being of primary school children in Enugu State.
2. Physical activity has no significant effect on stress management among primary school children in Enugu State.
3. Physical activity has no significant influence on the self-esteem of primary school children in Enugu State.

METHODS

Research Design

Ex-post facto research design was utilized in the study to explore the connection between physical activity and psychological well-being, stress levels, and self-esteem of children aged 10–12 years in Enugu State, Nigeria.

Study Area

The study was conducted in Enugu State, Nigeria, which is located in the southeastern region of the Nigeria. Enugu is known for its robust educational and health sectors that contribute to

child development. The state features both urban and rural areas, making it an ideal setting for examining children's physical activity patterns and their effects on psychological well-being, stress, and self-esteem.

Study Sample

The sample consisted of 120 children aged 10–12 years, accounting for about 2% of the target population. Participants were chosen using a two-stage sampling method: initially, simple random sampling was employed to select schools, followed by purposive sampling to identify children who met the inclusion criteria. The sample size was kept to 2% to improve the precision of measuring the relevant variables.

Inclusion Criteria

1. Children aged 10–12 years who are enrolled in primary schools in Enugu State.
2. Children capable of independently participating in physical activity assessments.

Exclusion Criteria

1. Children younger than 10 years or older than 12 years.
2. Children with medical conditions that limit their ability to engage in physical activity.

Procedure for Data Collection

The study utilized standardized instruments to evaluate the variables of interest.

Assessment of Physical Activity

Physical activity levels were assessed using the Godin-Shephard Leisure-Time Physical Activity Questionnaire, a widely used tool for measuring exercise behaviors in children and adolescents (Godin & Shephard, 1985). The instrument has been validated in numerous studies, showing reliability coefficients between 0.64 and 0.98 (Sari & Erdogan, 2016). The questionnaire captures children's self-reported participation in physical activities of varying intensities over a one-week period, with total activity scores calculated accordingly.

Assessment of Self-Esteem

Self-esteem was measured using the Rosenberg Self-Esteem Scale (Rosenberg, 1965). The instrument is a 10-item measuring scale that evaluates children's self-perception and confidence, employing a four-point Likert scale that ranges from "strongly agree" to "strongly disagree." The scale has shown high internal consistency ($\alpha = 0.77-0.90$), confirming its reliability as a measure of self-esteem in children and adolescents (Blascovich & Tomaka, 1993).

Assessment of Psychological Well-Being

Psychological well-being was evaluated using the Psychological General Well-Being Index (PGWBI) (Dupuy, 1984). The index is well-regarded for assessing subjective well-being and has been validated in various studies (Chassany et al., 2004; Wang & Cheung, 2024). The version adapted for children includes six dimensions: anxiety, positive well-being, self-control, general health, vitality, and depression. It comprises 22 items rated on a six-point Likert scale, with scores ranging from 22 (indicating poor psychological well-being) to 132 (indicating high psychological well-being) (Grossi & Compare, 2012).

Assessment of Stress

To measure stress levels among the children, the Perceived Stress Scale (PSS) was utilized (Cohen et al., 1983). The tool evaluates how frequently participants felt stressed or overwhelmed in the past month. The PSS consists of 10 items rated on a five-point scale, where higher scores reflect greater perceived stress. The scale has been extensively used in pediatric research, showing reliability coefficients between 0.67 and 0.80 (Lee et al., 2015).

Method of Data Analysis

Descriptive statistics, including percentage distributions, were employed to summarize the demographic characteristics of the participants. An independent samples t-test was carried out to explore differences in psychological well-being, stress levels, and self-esteem between children with low and high levels of physical activity. Statistical analyses were conducted using the Statistical Package for the Social Sciences (SPSS), with all hypotheses tested at a significance level of 0.05.

Results

The analysis of gender distribution revealed that 51.7% of the participants were boys, while 48.3% were girls. Furthermore, 64.2% of the children reported low levels of physical activity, whereas 35.8% indicated high levels, as measured by the Godin-Shephard Leisure-Time Physical Activity Questionnaire.

Gender	Frequency	Percentage (%)
Male	62	51.7
Female	58	48.3
Total	120	100.0
Fitness Category	Frequency	Percentage (%)
Low PA	77	64.2
High PA	43	35.8
Total	120	100.0

Table 1: The Participants' Demographic Characteristics

Fitness Category	N	Mean	SD	DF	t-value	Sig(2-tailed)
Low PA	77	56.78	12.28	118	4.779	0.001
High PA	43	66.35	6.16			

Table 2: t-test Analysis of Physical Activity and Psychological Well-being

Table 2 shows that, there is a significant difference in psychological wellbeing of high and low physically fit pupils ($t=4.779$, $df=118$, $p=0.001$). Therefore, the hypothesis which stated that, psychological wellbeing will not be a significant prospect of physical activity among children in Enugu State is rejected. It therefore means that, psychological wellbeing is a significant prospect of physical activity among children in Enugu State with the high physically active children having higher psychological wellbeing than the low physically active ones.

Fitness Category	N	Mean	SD	DF	t-value	Sig(2-tailed)
Low PA	77	11.36	6.36	118	2.703	0.008
High PA	43	8.65	2.21			

Table 3: t-test Analysis of Physical Activity and Stress Management

Table 3 shows that, there is a significant difference in stress management of high and low physically fit pupils ($t=2.703$, $df=118$, $p=0.008$). Therefore, the hypothesis which stated that, stress management will not be a significant prospect of physical activity among children in Enugu State is rejected. It therefore, means that, stress management is a significant prospect of physical activity among children in Enugu State with the high physically active children having lower stress levels than the low physically active ones.

Fitness Category	N	Mean	SD	DF	t-value	Sig(2-tailed)
Low PA	77	24.91	9.00	118	7.148	0.001
High PA	43	35.05	3.07			

Table 4: t-test Analysis of physical Activity and Self-esteem

Table 4 shows that, there is a significant difference in self-esteem of high and low physically fit pupils ($t=7.148$, $df=118$, $p=0.008$). Therefore, the hypothesis which stated that, self-esteem will not be a significant prospect of physical activity among children in Enugu State has been rejected. It therefore means that, self-esteem is a significant prospect of physical activity among children in Enugu State with the highly physically active children having higher self-esteem than the low physically active ones.

Discussion of the Findings

The study explored the influence of physical activity levels on the psychological well-being, stress management, and self-esteem of primary school children in Enugu State. The findings of the study clearly show that higher levels of physical activity are linked to better psychological wellbeing, improved stress management, and increased self-esteem.

In terms of psychological wellbeing, children who were more physically active scored significantly higher than their less active counterparts. This aligns with recent study by Granero et al. (2022) and Trajković et al. (2023), which indicates that regular physical exercise positively impacts psychological wellbeing. Additionally, Robinson and Segal (2025) support the idea that physical activity can be an effective mental health intervention, suggesting that incorporating regular exercise could be crucial for improving children's overall psychological health.

When it comes to stress management, the analysis showed that children with higher levels of physical activity had significantly lower stress scores compared to those who were less active. This finding is consistent with the work of Wilson-Salandy and Nies (2012) and Lepping et al. (2022), who found that students who meet moderate to vigorous physical activity guidelines tend to handle stress more effectively. These results emphasize the potential of physical exercise not only to reduce stress but also to foster better coping strategies among young learners.

Lastly, the study revealed that self-esteem is notably higher in physically active children. This observation aligns with research by Zamani Sani et al. (2016), Gilani and Dashipour (2017), and Zhang et al. (2024), all of which found a positive correlation between physical activity and self-esteem. The increased self-esteem seen in more active children highlights the broader psychosocial advantages of regular exercise, suggesting that physical activity may help cultivate a more positive self-image and overall mental health.

The findings of the study highlight that physical activity plays a crucial role in enhancing psychological wellbeing, managing stress, and boosting self-esteem in children from Enugu State. These results emphasize the need to incorporate organized physical activity programs into school curricula to foster both physical and mental health, ultimately supporting a more comprehensive approach to child development in the area.

Based on the findings and discussion of the findings of the study, the researchers recommend that:

1. The Enugu State Ministry of Health should create and roll out awareness campaigns that highlight the mental health advantages of engaging in regular physical activity. These initiatives should utilize local media such as radio jingles, community bulletins, and social media platforms to inform families and promote active lifestyles for children.
2. Educators and community health extension workers should work together to develop and implement focused health education programs in schools and community centers. These programs should emphasize how physical activity can help reduce stress and boost psychological wellbeing and self-esteem. Incorporating fun recreational activities can inspire children to embrace more active habits.
3. The School administrators and parents should collaborate with local community organizations to host regular seminars, workshops, and after-school activities that showcase the benefits of physical exercise. By creating environments that encourage active play and structured physical education, schools and parents can significantly contribute to better stress management and enhanced self-esteem in children.

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