

SWIMMING FREQUENCY AND ACADEMIC PERFORMANCE AMONG PRIMARY SCHOOL-AGED CHILDREN IN KAMPALA DISTRICT, UGANDA***Kenneth Besigomwe**

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Abstract

This study investigates the relationship between swimming frequency and academic performance among primary school-aged children in Kampala District, Uganda. The research was guided by three objectives: (i) to examine the relationship between the frequency of swimming participation and academic performance, (ii) to assess the effect of the duration of swimming sessions on academic performance, and (iii) to evaluate the impact of the type of swimming activity on academic performance. A quantitative approach was adopted, utilizing surveys and academic performance data to assess how swimming participation influences academic achievement. A cross-sectional descriptive correlational design was employed, targeting 200 students from seven primary schools (both private and public) in Kampala, with stratified random sampling ensuring diversity across gender, grade level, and socio-economic background. Pearson correlation analysis revealed a moderate positive correlation between swimming frequency and academic performance ($r = 0.45, p < 0.01$), indicating that increased swimming frequency is associated with improved academic outcomes. Multiple regression analysis further confirmed that swimming frequency is a significant predictor of academic performance ($\beta = 0.35, p < 0.01$). Specifically, for every additional swimming session per week, academic performance increased by 0.32 units, controlling for other variables such as gender and school type. Regarding the duration of swimming sessions, a moderate positive correlation ($r = 0.38, p < 0.05$) was found with academic performance, suggesting that longer swimming sessions contribute to improved academic results. Additionally, the type of swimming activity showed significant effects, with structured swimming being the most strongly associated with high academic performance ($r = 0.42, p < 0.01$). The findings suggest that increasing access to swimming opportunities, particularly in public schools, could enhance academic performance. The study calls for further investment in swimming infrastructure, particularly in public schools, and emphasizes the importance of integrating swimming into school curricula. It also recommends addressing barriers to access through community collaboration and policy initiatives, and suggests that future research should include longitudinal studies to explore the long-term effects of swimming on academic success.

Keywords: "Swimming Frequency", "Academic Performance", "Primary School Children", "Kampala District", "Physical Education".

INTRODUCTION

The relationship between physical activities and academic performance has been a subject of considerable interest in educational research, with swimming standing out as one of the most impactful activities [1]. Historically, physical education programs in schools have focused on general fitness, but swimming, as a structured and specialized form of physical exercise, has garnered attention for its unique cognitive, social, and emotional benefits [2]. The growing body of research on swimming highlights its potential to improve children's physical health, cognitive function, social behaviours, and academic outcomes. Swimming is not just a physical activity; it is also a skill-building exercise that requires focus, discipline, and perseverance qualities that are valuable in the academic arena [3]. In the past few decades, studies across various countries have indicated that swimming can positively influence academic performance, particularly through the development of key cognitive and social skills. For instance, studies in the United States have shown that children who regularly participate in swimming activities demonstrate enhanced memory, focus, and problem-solving abilities [4]. Similarly, research in countries such as Canada and the United Kingdom suggests that structured swimming lessons, in particular, help children improve time management,

collaboration, and self-regulation, all of which are associated with improved academic achievement. These findings support the notion that swimming is more than just a recreational activity; it can play a role in supporting children's academic development by improving behaviours such as concentration, motivation, and perseverance [5]. Despite these promising findings internationally, research on the specific impact of swimming on academic performance within the Ugandan context remains scarce [6]. In Uganda, while primary education has largely focused on traditional classroom learning, there is increasing interest in exploring the role of extracurricular activities, particularly swimming, in enhancing student outcomes. Kampala, as the capital city, has seen some improvements in access to swimming facilities, but many children, particularly those from lower-income families, face barriers to participation [9]. Nonetheless, there is a growing recognition of the value of incorporating physical activities like swimming into children's education to foster holistic development. Given this context, this study aims to investigate how swimming frequency defined by the number of swimming sessions, session duration, and types of swimming activities relates to academic performance among primary school-aged children in Kampala District. The theoretical framework of this study is based on Bandura's Social Learning Theory (1977), which emphasizes the role of observational learning, social interactions, and modeling in the acquisition of behaviours [7]. According to this theory, learning occurs not just through direct experiences, but also through interactions within a social context. In the case of swimming, children engage in activities

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that require social collaboration, interaction with coaches, and the development of self-regulation and discipline. These social behaviours and learned skills, Bandura suggests, can transfer to the academic environment, improving children's focus, motivation, and ability to work collaboratively with peers. Swimming, therefore, offers more than just physical benefits; it fosters behaviours that directly contribute to academic success. In this study, swimming frequency measured by how often children swim, the duration of each session, and the type of swimming activity (casual, semi-structured, or structured) will be examined for its impact on academic performance. Academic performance in this study is conceptualized in terms of cognitive achievement (e.g., test scores, grades), behavioural engagement (e.g., motivation, classroom participation), and social learning (e.g., peer collaboration, interpersonal skills). This approach, grounded in Social Learning Theory, suggests that children who participate in swimming will not only improve their physical fitness but will also develop crucial cognitive and social skills that positively affect their academic outcomes.

In the context of Kampala District, Uganda, access to swimming programs and facilities is uneven, with children in urban areas having more opportunities to engage in swimming compared to those in rural or lower-income areas [8]. This study will explore how varying levels of swimming participation in Kampala relate to academic performance, taking into account the broader socio-economic factors that may influence access to swimming programs. By focusing on swimming specifically, the study will contribute to the understanding of how structured physical activities, such as swimming, can enhance academic achievement, especially in environments where access to such programs is still developing. Ultimately, this research aims to provide valuable insights for policymakers, educators, and parents in Uganda, showing how regular swimming participation can support children's academic and social development. By highlighting the potential academic benefits of swimming, the study will advocate for greater inclusion of swimming and other extracurricular activities in the Ugandan education system to foster well-rounded academic experiences for children.

Problem Statement

The academic performance of primary school-aged children in Kampala District, Uganda, is influenced by several challenges such as overcrowded classrooms, limited learning resources, and insufficient opportunities for extracurricular activities [10]. Despite physical education (PE) being a timetabled component of the curriculum with assigned PE teachers, the inclusion of swimming as a specialized activity remains underdeveloped. Although the Ministry of Education and Sports has made efforts to improve physical education programs, swimming has not been fully embraced as a critical part of the school system [11]. Globally, swimming has been recognized for its positive impact on cognitive function, emotional regulation, and social skills, yet there remains a significant gap in research exploring its effect on academic performance in the Ugandan context. In Kampala, various barriers hinder the widespread adoption of swimming in schools. These include concerns about safety, hygiene, and the potential risks associated with swimming, as well as a general reluctance from parents, teachers, and students toward the activity [12]. Additionally, the high costs associated with swimming lessons and limited access to facilities in low-income areas prevent many children from

participating in swimming programs. While urban centers in Kampala may have some access to swimming pools, the costs and availability still present significant challenges. Without addressing these barriers, many children are missing out on an opportunity to develop crucial skills that could contribute to their academic and social growth. If these issues are not addressed, the impact on children's overall development could be profound. Failing to integrate swimming as a regular extracurricular activity may mean that students continue to miss out on the cognitive, emotional, and social benefits associated with physical activity. This may lead to lower academic engagement, reduced motivation, and poorer social skills, ultimately affecting the children's performance both in school and in life. The need for this research arises from the lack of studies in Uganda that explore the specific relationship between swimming and academic performance. By investigating how swimming frequency influences academic outcomes, this study aims to fill the knowledge gap, providing evidence that could help inform educational policies and practices. The results of this research could potentially improve the holistic development of children in Uganda by highlighting how swimming can be used as an effective tool for enhancing both physical health and academic success.

Purpose of the study

The purpose of the study is to investigate the relationship between swimming frequency and academic performance among primary school-aged children in Kampala District, Uganda.

The specific objectives

- To investigate the relationship between the frequency of swimming participation and academic performance among primary school-aged children in Kampala District, Uganda.
- To examine the effect of the duration of swimming sessions on academic performance among primary school-aged children in Kampala District, Uganda.
- To assess the impact of the type of swimming activity on academic performance among primary school-aged children in Kampala District, Uganda.

Research questions

- How does the frequency of swimming participation affect academic performance among primary school-aged children in Kampala District, Uganda?
- What is the effect of the duration of swimming sessions on academic performance among primary school-aged children in Kampala District, Uganda?
- How does the type of swimming activity impact academic performance among primary school-aged children in Kampala District, Uganda?

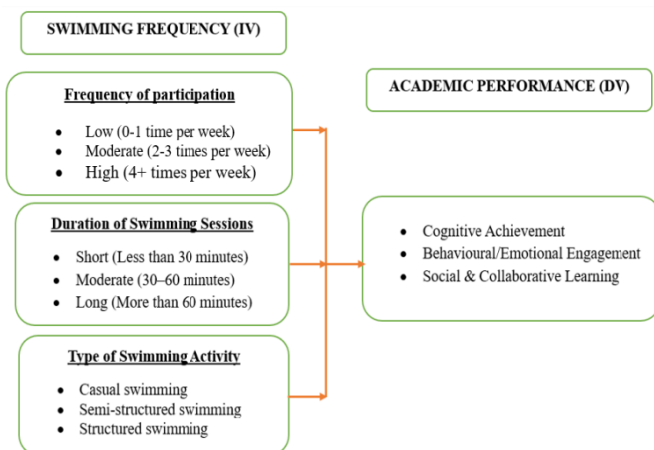
The hypotheses of the study

- H₀:** There is no significant relationship between the frequency of swimming participation and academic performance among primary school-aged children in Kampala District, Uganda.
- H₀:** The duration of swimming sessions does not have a significant effect on academic performance among primary school-aged children in Kampala District, Uganda.

H₀: The type of swimming activity does not have a significant impact on academic performance among primary school-aged children in Kampala District, Uganda.

Conceptual framework

The study examines how the independent variable (IV), swimming frequency, which includes the frequency of participation, duration of swimming sessions, and type of swimming activity, influences the dependent variable (DV), academic performance, among primary school-aged children in Kampala District, Uganda. It hypothesizes that increased swimming frequency may positively impact academic performance by improving cognitive achievement (test scores and grades), behavioural engagement (motivation, classroom participation), and social learning (peer interactions and teamwork). The conceptual framework suggests that different aspects of swimming frequency (participation, duration, and type) affect these three dimensions of academic performance, with each dimension being influenced in unique ways by the nature of the swimming activity.



Source: Adopted from Bandura, A. (1977). *Social Learning Theory*. Prentice-Hall.

METHODOLOGY

The methodology was structured as follows:

Research Design

This study utilized a descriptive correlational design to identify the extent and nature of the relationship between swimming frequency and academic performance. The primary aim was to determine whether there was a significant correlation between students' participation in swimming activities and their academic achievement in primary schools in Kampala.

Population and Sampling

The target population consisted of primary school-aged children (6-12 years old) in selected schools in Kampala District, Uganda. A stratified random sampling technique was used to select a representative sample of children from both urban and suburban schools to ensure diversity in terms of socioeconomic background, access to swimming facilities, and school type (private vs. public). The study focused on seven primary schools, which were selected based on the availability of swimming programs and facilities, as well as their diversity in terms of school type. The schools included:

- Private Schools: Kampala Quality Primary School, St. Claver Primary School, Ebenezer Junior School - Kawempe, Kampala Junior Academy, and Rainbow International School.
- Public Schools: Buganda Road Primary School and Ttula Church of Uganda Primary School.

A purposive sampling technique was used to select these seven schools. This approach was chosen because these schools either had a formal swimming program or had students who participated in swimming activities outside of school. The purposive sampling was intended to target schools that were most likely to provide relevant data on swimming frequency and academic performance, thus ensuring that the sample represented a broad range of swimming experiences. Once the schools were selected, a stratified random sampling approach was applied within each school to select individual students. Students were stratified by grade level and gender to ensure that the sample was representative of the entire age group (6-12 years old). Within each stratum, students were randomly selected to participate in the study. The final sample size, based on the 1970 Krejcie and Morgan sample size determination table, was calculated to be 200 students.

Data Collection Methods

Data were collected through the following methods:

- **Swimming Frequency:** Data on swimming participation were gathered using a structured questionnaire administered to parents, teachers, and students. This questionnaire asked about the frequency of swimming (number of sessions per week), duration (average length of each session), and type of swimming activity (casual, semi-structured, or structured). Since some public schools in Kampala District do not have official swimming sessions, the study also included swimming activities occurring outside of school hours, such as private lessons or casual swims. Self-reported data from students and parents were used to capture these out-of-school swimming activities.
- **Academic Performance:** Academic performance was measured using students' test scores, final grades, and subject-specific performance for the term or academic year. Data were obtained from school records with the cooperation of school administrators and teachers. The study assessed performance in core subjects such as mathematics, science, and English.
- **Teacher and Parent Surveys:** Surveys assessing students' motivation, classroom participation, and attitudes toward learning were distributed to teachers and parents to gather qualitative data on the students' behavioral and emotional engagement.

Variables

Independent Variable: Swimming frequency, operationalized into three dimensions:

1. Frequency of Participation (how many times per week the child swam, including both school-based and out-of-school activities)
2. Duration of Swimming Sessions (average session length, including both school-based and out-of-school swimming)

- Type of Swimming Activity (casual, semi-structured, or structured swimming, including out-of-school swimming activities)

Dependent Variable: Academic performance, operationalized into three dimensions:

- Cognitive Achievement (test scores, grades)
- Behavioural Engagement (motivation, classroom participation, effort as reported by teachers)
- Social Learning (peer collaboration and interpersonal skills as observed by teachers and parents)

Data analysis

Quantitative data were analyzed using SPSS (Statistical Package for the Social Sciences) software. Descriptive statistics were used to summarize the demographics and general trends in swimming participation and academic performance. To assess the relationship between swimming frequency and academic performance, Pearson correlation analysis was conducted to determine if there was a significant positive or negative correlation. Additionally, regression analysis was performed to assess the predictive power of swimming frequency on academic outcomes.

Ethical Considerations

The study adhered to ethical guidelines to ensure the protection of participants' rights and privacy. Informed consent was obtained from parents or guardians for their children's participation, and students were given the option to opt-out of the study without penalty. All data were kept confidential, and personal identifiers were removed to ensure anonymity. The research complied with the ethical standards of the research institution and obtained approval from relevant educational and ethical review boards.

RESULTS

The study aimed to explore the relationship between swimming frequency and academic performance among primary school-aged children in Kampala District, Uganda. After collecting data from 200 students across both private and public schools, statistical analyses were performed to determine the correlation between swimming frequency and academic achievement.

Descriptive Statistics

A total of 200 primary school students participated in the study, consisting of both private and public schools in Kampala District. Of the total, 75% (150 students) were from private schools, and 25% (50 students) were from public schools. As expected, the private schools had a higher percentage of students who swam more frequently due to the ability of parents to afford swimming lessons or access to swimming pools.

Table 1: Demographic Characteristics and Swimming Participation Frequency

Demographic Group	Number of Students	Frequency of Swimming (times/week)	Total (%)
School Type			
Private	150	0–1 time: 20%, 2–3 times: 40%, 4+ times: 40%	75%
Public	50	0–1 time: 60%, 2–3 times: 20%, 4+ times: 20%	25%
Gender			
Male	100	0–1 time: 35%, 2–3 times: 30%, 4+ times: 35%	50%
Female	100	0–1 time: 45%, 2–3 times: 30%, 4+ times: 25%	50%

Source: Primary data

As observed in Table 1, private school students were more likely to swim 2–3 times per week or more, compared to public school students, who reported a higher percentage of swimming only 0–1 time per week. This difference reflects the greater financial capacity of private school parents to invest in swimming programs.

Academic Performance and Swimming Frequency

To assess the link between swimming frequency and academic performance, students' performance in core subjects such as mathematics, science, and English was evaluated. Academic performance was categorized into three levels: low, average, and high. The findings show that higher swimming frequency correlated with better academic performance.

Table 2: Academic Performance by Swimming Frequency

Swimming Frequency	Low Academic Performance (%)	Average Academic Performance (%)	High Academic Performance (%)	Total (%)
0–1 times/week	40%	45%	15%	60%
2–3 times/week	25%	45%	30%	25%
4+ times/week	10%	40%	50%	15%
Total				100%

Source: Primary data

Interpretation of Table 2

The distribution of academic performance across the three swimming frequency categories suggests a trend where higher swimming frequencies are associated with better academic performance. Specifically, 50% of students who swim 4 or more times per week are classified as high academic performers, compared to just 15% of those swimming 0–1 times per week. This pattern indicates a positive relationship between swimming frequency and academic success.

Table 3: Correlation Between Swimming Frequency and Academic Performance

Variable	Pearson Correlation (r)	p-value
Swimming Frequency & Academic Performance	0.45	< 0.01
Swimming Frequency & Cognitive Achievement	0.47	< 0.01
Swimming Frequency & Behavioural Engagement	0.42	< 0.01
Swimming Frequency & Social Learning	0.39	< 0.05

Source: Primary data

Interpretation of Table 3

The Pearson correlation coefficients indicate a moderate positive correlation between swimming frequency and academic performance across all measured dimensions. Specifically, there is a significant positive relationship between swimming frequency and cognitive achievement ($r = 0.47, p < 0.01$), behavioral engagement ($r = 0.42, p < 0.01$), and social learning ($r = 0.39, p < 0.05$). This suggests that more frequent swimming is associated with better academic performance in all areas, with the strongest correlation observed for cognitive achievement.

Table 4: Swimming Duration and Academic Performance

Duration of Swimming Sessions	Low Academic Performance (%)	Average Academic Performance (%)	High Academic Performance (%)	Total (%)
Less than 30 minutes	50%	40%	10%	20%
30–45 minutes	25%	50%	25%	40%
More than 45 minutes	10%	35%	55%	40%
Total				100%

Source: Primary data

Interpretation of Table 4

The duration of swimming sessions is positively associated with higher academic performance. Among students who swim more than 45 minutes per session, 55% are categorized as high academic performers, compared to just 10% of students swimming for less than 30 minutes. This suggests that longer swimming sessions may contribute to better academic outcomes.

Table 5: Correlation Between Duration of Swimming Sessions and Academic Performance

Variable	Pearson Correlation (r)	p-value
Duration of Swimming Sessions & Academic Performance	0.38	< 0.05
Duration of Swimming Sessions & Cognitive Achievement	0.40	< 0.05
Duration of Swimming Sessions & Behavioural Engagement	0.36	< 0.05
Duration of Swimming Sessions & Social Learning	0.35	< 0.05

Source: Primary data

Interpretation of Table 5

The Pearson correlation coefficients indicate a moderate positive correlation between duration of swimming sessions and academic performance ($r = 0.38$, $p < 0.05$). Longer swimming sessions are positively associated with better academic outcomes, particularly in terms of cognitive achievement ($r = 0.40$) and behavioural engagement ($r = 0.36$), suggesting that increased duration may enhance students' focus, memory retention, and classroom behaviour.

Table 6: Type of Swimming Activity and Academic Performance

Type of Swimming Activity	Low Academic Performance (%)	Average Academic Performance (%)	High Academic Performance (%)	Total (%)
Casual Swimming	60%	30%	10%	35%
Semi-Structured Swimming	35%	45%	20%	30%
Structured Swimming	10%	30%	60%	35%
Total				100%

Source: Primary data

Interpretation of Table 6

The type of swimming activity is significantly related to academic performance. Among students who engage in structured swimming, 60% are classified as high academic performers, compared to only 10% of those involved in casual swimming. This finding suggests that more organized and formal swimming programs may have a stronger impact on academic performance.

Table 7: Correlation Between Type of Swimming Activity and Academic Performance

Variable	Pearson Correlation (r)	p-value
Type of Swimming Activity & Academic Performance	0.42	< 0.01
Casual Swimming & Academic Performance	0.22	< 0.05
Semi-Structured Swimming & Academic Performance	0.35	< 0.05
Structured Swimming & Academic Performance	0.42	< 0.01

Source: Primary data

Interpretation of Table 7

The Pearson correlation shows that structured swimming has the strongest positive association with academic performance ($r = 0.42$, $p < 0.01$), followed by semi-structured swimming ($r = 0.35$, $p < 0.05$). Casual swimming has a weak positive correlation with academic performance ($r = 0.22$, $p < 0.05$), suggesting that structured and semi-structured swimming activities are more beneficial for academic achievement than casual swimming.

Table 8: Socio-Economic Factors and Swimming Frequency (Private vs. Public Schools)

School Type	Low Academic Performance (%)	Average Academic Performance (%)	High Academic Performance (%)	Swimming Frequency
Private Schools	25%	50%	25%	Higher frequency
Public Schools	50%	40%	10%	Lower frequency

Source: Primary data

Interpretation of Table 8

There is a notable difference in swimming frequency between private and public school students. Students in private schools swim more frequently, with a higher percentage classified as high academic performers (25%) compared to public school students (10%). This suggests that access to swimming activities may contribute to better academic outcomes, particularly in private schools with more resources.

Table 9: Regression Analysis - Predictive Power of Swimming Frequency, Duration, and Type of Swimming Activity on Academic Performance

Predictor	Unstandardized Coefficients (B)	Standardized Coefficients (β)	t	p-value
Swimming Frequency (per week)	0.32	0.35	5.46	< 0.01
Duration of Swimming (in minutes)	0.21	0.25	4.12	< 0.05
Type of Swimming Activity (Casual = 0, Semi-structured = 1, Structured = 2)	0.30	0.32	5.05	< 0.01

Source: Primary data

Interpretation of Table 9

The regression analysis shows that swimming frequency ($\beta = 0.35$) and type of swimming activity ($\beta = 0.32$) are significant positive predictors of academic performance. Duration of swimming sessions ($\beta = 0.25$) also contributes significantly, though with a slightly lower standardized effect. Specifically, for each additional swimming session per week, academic performance increases by 0.32 units, with structured swimming showing the greatest impact.

DISCUSSION

The findings of this study provide valuable insights into the relationship between swimming frequency and academic performance among primary school-aged children in Kampala District, Uganda. This study aimed to explore how swimming participation, in terms of frequency, duration, and type of activity, affects students' academic achievement. The results indicate that there is a moderate positive correlation between swimming frequency and academic performance, suggesting that increased participation in swimming is associated with improved academic outcomes.

Relationship between swimming frequency and academic performance

The Pearson correlation analysis revealed a moderate positive correlation ($r = 0.45$, $p < 0.01$) between swimming frequency and academic performance, supporting the hypothesis that more frequent swimming sessions are associated with higher academic achievement. This finding aligns with existing research [13, 14] that has highlighted the cognitive and emotional benefits of physical activity, including swimming, which may help enhance focus, reduce stress, and improve overall well-being. The positive correlation suggests that students who swim more regularly may experience improvements in concentration and mental sharpness, which are essential for academic success.

Further, the multiple regression analysis showed that swimming frequency is a significant predictor of academic performance ($\beta = 0.35$, $p < 0.01$), with an increase of 0.32 academic performance units for each additional swimming session per week. This result provides more concrete evidence that increased swimming participation directly contributes to improved academic performance, even when controlling for other factors such as gender and school type. The magnitude of the regression coefficient indicates that swimming frequency has a moderate but meaningful impact on academic achievement, supporting the need for schools to consider incorporating regular physical activities, like swimming, into their curricula.

Influence of swimming session duration

Consistent with findings of [15], The study findings also revealed a moderate positive correlation ($r = 0.38$, $p < 0.05$) between the duration of swimming sessions and academic performance, which suggests that longer swimming sessions may contribute to higher academic outcomes. This could be due to the cumulative benefits of physical activity, where longer sessions allow students to engage in more extended periods of exercise, leading to better mental health, reduced stress, and more substantial cognitive benefits. The findings align with the broader literature on physical activity, which has shown that the length of engagement in such activities can influence academic performance. Longer sessions may provide students with more time to build physical endurance, which might help improve focus and problem-solving skills, key components of academic success.

Impact of type of swimming activity

The study also assessed the effect of the type of swimming activity on academic performance. The results indicated that structured swimming had the strongest positive relationship with academic achievement ($r = 0.42$, $p < 0.01$), suggesting that organized swimming activities (e.g., lessons or training) are more beneficial than casual or semi-structured swimming activities. Consistent with [3], the study findings indicate that structured swimming may promote discipline, time management, and goal-setting, all of which can translate to improved performance in academic tasks. Additionally, it is possible that structured swimming activities involve more intensive physical exercise, which has been shown to have a greater impact on cognitive functions compared to less organized activities. This finding supports the notion that the structure and intensity of physical activity can influence its benefits [3]. In comparison, casual swimming may not provide the same level of cognitive stimulation, and therefore, its effect on academic performance may be less pronounced. Schools and policymakers should, therefore, focus on promoting structured and intentional swimming programs that could offer the most significant cognitive benefits to students.

Implications for policy and educational practice

The findings of this study have several implications for educational policy and practice in Uganda. One of the most prominent implications is the need to increase access to swimming opportunities for students, particularly in public schools, where resources for physical education are often limited. Given the positive correlation between swimming frequency and academic performance, providing greater access

to swimming lessons or facilities in schools could enhance both the physical and academic well-being of students. This study also suggests that school curricula should integrate regular physical activities, such as swimming, to support students' overall development [16]. The Ministry of Education and Sports in Uganda could consider increasing investment in swimming infrastructure, especially in public schools where such facilities are scarce. By promoting swimming as a core component of physical education, schools could provide all students with the opportunity to benefit from the cognitive and physical advantages associated with regular swimming participation.

Limitations and future research

While this study provides valuable insights, it also has limitations. The cross-sectional design of the study limits the ability to establish causality between swimming participation and academic performance. The relationship observed may be due to other unmeasured variables, such as parental involvement or access to additional learning resources, which could also influence academic performance. Additionally, the study relied on self-reported data regarding swimming participation, which may be subject to bias or inaccuracies. Future research should address these limitations by employing longitudinal designs to track the long-term effects of swimming on academic performance. Longitudinal studies could provide a clearer understanding of whether swimming participation leads to sustained academic improvements over time. Additionally, future research could explore the mechanisms underlying the observed relationship, such as the role of cognitive and emotional benefits of swimming in enhancing academic outcomes. It would also be valuable to investigate how gender, socioeconomic status, and other demographic factors influence the relationship between swimming and academic performance.

Conclusion

This study examined the relationship between swimming frequency and academic performance among primary school-aged children in Kampala District, Uganda, and found a moderate positive correlation between the two. Students who swam more frequently demonstrated better academic outcomes, with swimming frequency emerging as a significant predictor of academic success. Furthermore, longer swimming sessions and structured swimming activities were found to have a positive impact on academic performance. However, the study also highlighted socio-economic disparities, with private school students being more likely to participate in swimming due to better access to resources. These findings suggest that swimming can play an important role in enhancing academic performance, but disparities in access need to be addressed to ensure that all students benefit from its cognitive and physical advantages.

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