

The impact of socio-ecological model variables affecting the promotion and implementation of school-based physical activity and health among early adolescents in Ethiopia

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Abstract

Background: Lack of school-based physical activity has led to increased risk factors in Ethiopia and globally. As a result, the study investigated the challenges faced by stakeholders in implementing school-based physical activity participation in the southern part of Ethiopia.

Methods: The current study utilized a mixed-methods. Purposively a total of 20 participants from in and out of primary schools, with an average mean age of 39 ± 7.780 SD from the Gamo Zone, the southern part of Ethiopia. Interviews with a semi-structured approach were carried out to collect data. After assessing the relevant literature on the current inquiry, five interview questions were developed for stakeholders. Thematic analysis with the help of MAXQDA 24 software was employed to analyze the obtained data.

Results: The findings of the study confirmed that there were several issues influencing early adolescents' involvement in physical activity. Such as a lack of awareness, a low level of attention to the physical education curriculum, a shortage of qualified physical education teachers, and a lack of facilities affecting the students' participation in school settings.

Conclusion: Based on the respondents' information, this study found that the implementation of physical activity in schools is limited by many influencing factors in school settings. However, the study highlighted the significance of physical activity in enhancing the health, academic performance, and overall well-being of school-aged early adolescents. Therefore, the present research indicates that encouraging physical activity attendance in Ethiopian primary schools requires cooperation between stakeholders and the school community. Additionally, more research is required.

Keywords: physical activity, early adolescents, socio-ecological models, elementary schools, stakeholders

Introduction

Involving in physical activity is a crucial component of good health that has multiple beneficial impacts on the growth and well-being of kids and teenagers (Oja & Paksööt, 2022; Warburton, 2006). Globally, there is significant evidence indicating that a lack of physical activity elevates the likelihood of developing hypokinetic diseases (Booth et al., 2012; Katzmarzyk et al., 2022; Lee et al., 2021). On the other hand, regular physical activity is essential for enhancing an individual's general well-being (Guthold et al., 2020; Katzmarzyk et al., 2022; Warburton, 2006). The World Health Organization member countries have established a target of achieving a 10% decrease in physical inactivity by the year 2025 (Li et al., 2021). Encouraging sports and physical activity is a crucial component of the global 2030 agenda for sustainable development, which aims to protect everyone's health and well-being (Namburar et al., 2020). However, low levels of physical activity are a major barrier to the growth of the sports industry and health sectors in my nation.

Starting from 2020, Ethiopia has paid little attention to the government's commitment to developing "sport for all" and reforming sports policy (Federal Democratic Republic of Ethiopia, 2021) (Tadesse et al., 2020). The government has shown limited commitment to promoting community-based health

programs in some parts of Ethiopia(Chalchisa Abdeta, 2022; Haileamlak, 2013; Miller et al., 2021). However, school-based health programs are still in question(Shinde et al., 2023).

Furthermore, physical education is a subject that should be studied in a school context to have a healthy body and healthy mind(Uddin et al., 2020). Students should be able to get active in schools, which are supposed to offer extensive physical education and health initiatives(Haileamlak, 2013). Ethiopian primary schools teach physical education, but there is a lack of a suitable framework for effective implementation. (Shinde et al., 2023). Classes, which include both theory and practical components, often meet once or twice a week for forty minutes each(Johnson et al., 2023; Mavilidi et al., 2019; Vale et al., 2011). Likewise, it only focuses on theoretical sessions with more attention to sports competitions rather than emphasizing physical activities. In addition, in most primary schools, there are only two physical education teachers assigned on duty and one of them might be not enough qualified to teach the subject matter(Daniel et al., 2022; Huberty et al., 2012). A limited understanding of physical education and physical activity in primary schools is a result of all these problems.

Therefore, now is the perfect time to conduct this scientific inquiry on factors influencing physical activity participation in primary schools to reduce physical inactivity(Namburur et al., 2020), the likelihood of non-communicable illnesses(Katzmarzyk et al., 2022), obesity(Bogataj et al., 2021), promote health opportunities in schools(Murillo Pardo et al., 2020) and create a wealthy society overall(LUBANS et al., 2018; Qi et al., 2019) among early adolescents. Thus, this study investigates the influence of stakeholders on early adolescents' physical activity levels in a primary school setting. The inquiry focused on the research questions; What obstacles are preventing the Gamo Zone, in southern Ethiopia, from implementing school-based physical activity? What strategies and actions are employed, in the eyes of stakeholders, to encourage teenagers to participate in physical activity in school settings?

Research purpose

The study aimed to explore stakeholders' perspectives on physical activity obstacles, intending to provide insights for policymakers, curriculum developers, and physical education instructors.

Research design

The study employed a mixed-methods design to investigate the variables impacting engagement in physical activity at school. This qualitative approach aimed to understand participants' thoughts, feelings, and emotions, particularly in promoting physical activity in primary schools. The collected data was then analyzed using thematic analysis.

Study participants

Participants in this study included parents, experts, administrators, school board managers, physical education instructors, and government representatives. Using a purposive sampling technique, the sample was chosen on purpose. Consequently, a total of twenty respondents were chosen from elementary schools in the Gamo Zone, southern Ethiopia, with a mean age of 39 ± 7.780 S.D. Six teachers, three principals, one school board manager, four specialists, two parents, two administrators from sports offices, and two representatives of regional government were among the sample.

Data gathering tools and procedures

The interview process involved face-to-face conversations between the interviewer and the interviewee, focusing on their roles and views. The interview approach can take various forms, including unstructured, semi-structured, and structured interviews, depending on the study objectives and questions(Fatma Betul Senol, 2021; Johnson et al., 2023). However, the study employed semi-structured interviews for the data collection process, giving participants a chance to express their opinions to get detailed information(Fatma Betul Senol, 2021; Johnson et al., 2023; Nazia Saeed et al., 2023).

First, a review of the literature was done from a variety of sources, and five semi-structured open-ended interviews were done to investigate the variables of health promotion and physical activity in elementary schools. To obtain the required data, the researcher went to offices and schools in person. Interviews with a range of stakeholders were then undertaken, including physical education instructors, specialists,

administrators from sports offices, school principals, board managers, parents, and representatives of the federal government.

Ethical considerations

The investigation was undertaken with ethical issues in consideration. Participants were given informed consent before the interview, ensuring they understood the study's goals and kept their personal information private from the public and the research paper. The participants' real names were not used; instead, coded data from L1 to L20 were used.

Data analysis

For the interview method, the study mostly used a thematic analysis. The process of thematic analysis entails thoroughly examining the data to detect recurring themes, and then condensing the results (Braun & Clarke, 2012). The primary stage of theme analysis is encoding data, categorizing similar information inside diverse concepts and topics, and determining themes based on codes (Leung, 2015). Interviews were used for data analysis, with themes found and a subject classification system created to organize the data (Nazia Saeed et al., 2023; H. Wang et al., 2022)

In addition, MAXQDA 24 software was used to transcribe a portion of the data (English version) (Kuckartz & Rädiker, 2019). The respondents' demographic data was analyzed using descriptive statistical measures using SPSS Ver. 26. Subsequently, the topic analysis revealed five major themes that affect elementary school teens' participation in physical activity. The study was completed with the results of the current investigation.

Stakeholders demographic information

The stakeholder's sex and educational level demographics are covered in this section.

Table 1: Stakeholders' demographic information

Variables	Category	Number of respondents	Percent
Sex	F	7	35.0
	M	13	65.0
Educational level	Diploma and below	3	15.0
	Bachelor Degree	9	45.5
	Master of Science/Art/Education Degree	5	25.0
	PhD and above	3	15.0

The respondents' sex and educational attainment are displayed in Table 1. There were twenty participants in this investigation. Thirteen (65.0%) males and seven (35.0%) females were present. It implies that a greater number of men than women participated in this research. In addition, of 20 stakeholders, 3 (15.0%) owned a diploma or less 9 (45.5%) had a bachelor's degree, 5 (25.0%) had a master's degree in science, art, or education, and 3 (15.0%) had doctorate degrees or above. This shows that the majority of participants received a bachelor's degree. Furthermore, most of the respondents were graduates of sports science and primary school teachers, as well as professionals, principals, and government officials.

Table 2: Stakeholders' Age Range

Descriptive Statistics					
Age of Respondent	N	Minimum	Maximum	Mean	Std. Deviation
Age	20	31	65	39.00	7.780

The age range of the respondents is shown in Table 2. The study subjects were stakeholders with an average mean age of 39, 7.780 SD, and a range of ages from 31 to 66.

Table 3: Stakeholders' work experience

Descriptive Statistics					
Work experience	N	Minimum	Maximum	Mean	Std. Deviation
Service year	20	4	40	14.15	7.714
N	20				

The employment experience of the individuals who responded is displayed in Table 3. With an average work experience of 14.5 years and a standard deviation of 7.714, the study's participants had a minimum of 4 years and a maximum of 66 years of service. Based on these results, it can be concluded that most research participants had worked for about 14 years.

Research findings and discussions

The inquiry identified five main themes influencing physical activity in primary schools: 1) lack of motivation, 2) social support, 3) physical education curriculum, 4) lack of resources, and 5) school community. These themes were related to socioecological model factors, particularly, the individual, interpersonal, and school factors.

1) The influence of intrapersonalfactors

L13 (*Professional expert*) responded, "I believe that early adolescents are unaware of the importance of physical activity. Less motivation and interest result from this. Thus, educators of physical education and other relevant organizations need to raise awareness". **L5** (*Physical education teacher*) also said "They are not interested in participating. But a lot of obstacles are preventing them from taking part. For instance, they are too busy and indolent to be active because of their athletic attire, the time allotted for physical education classes, and their homework". Also, **L1** (*Physical education teacher*) stated "Students in elementary school lack the motivation to participate in class activities. Their attitudes toward physical activity in the school setting are negative, and they have low self-efficacy. Some of them would prefer to browse social media than engage in physical activities".

Generally, an early adolescent's healthy lifestyle can be maintained in large part by physical activity, which also helps them perform better academically in terms of their mental, physical, and cognitive abilities(Xiong et al., 2023). However, the study's participants outlined the difficulties in encouraging physical activity in educational environments and offered solutions. Several stakeholders voiced their thoughts regarding physical activity and how personal circumstances influence it.

As a result, according to the respondents' interview results, this indicated that motivation and knowledge have a stronger impact on school-based physical activity participation than other individual-related elements.

2) The influence ofinterpersonalfactors

Considering this matter, a few of the participants said that; **L9** (*parent*) said "I make an effort to encourage my child to participate in physical education classes. However, my kid begged me to purchase some sporting goods. I'm afraid I'm not able to accomplish it. I make very little money. This, I believe, encourages my youngster to be active" " Furthermore, **L10** (*physical education teacher*)said; "As educators of physical education, we have been addressing some of the difficulties. Major aspects include peer pressure, cultural norms, parental influence, and social support. But we also lack the resources needed to create a welcoming environment for physical activity". In line with this, **L18** (*regional sports administrator*) said, "On the whole, there are no formal policies in Ethiopia, particularly in the south, to encourage physical activity in schools. Our financial situation, ignorance, and the support of our families, schools, and communities may all have an impact on this. We also have a significant issue. While we are working on professional competitive sports, early physical activity involvement is not our main priority". Also, **L15** (*family*) said, " I don't enjoy having lengthy conversations. However, I forbid my child from engaging in any physical activity. This is forbidden by our linked disciples, cultural values, and religious procedure. I want her to study, not work out".

As a result, physical activity is indeed a complex behaviour influenced by a variety of factors, including peer, family, societal, and environmental effects (Morton et al., 2016; Woods et al., 2021).

Therefore, Results from respondents suggest that aspects of interpersonal or social support have a direct and indirect impact on school-based physical activity (Huberty et al., 2012; Kiyani et al., 2021; Ren et al., 2020). As a result, Early adolescents who received social support from their parents and classmates were far more likely to engage in higher amounts of physical activity (de Camargo et al., 2023).

3) The influence of physical education curriculum

L7 (The official of government) responded, "In our capacity as government employees, we are presently engaged in promoting extracurricular athletics, football, and volleyball. However, school-based health and physical activity initiatives receive little importance. Perhaps we don't implement things well enough. The curriculum for physical education also has to be changed. On this, a few qualified specialists are working. Nonetheless, this study inspired us to begin organizing and supporting school-based athletic programs as a government".

L2 (a professional expert) said, "I think the Ethiopian physical education curriculum needs to be modified. There is insufficient time allotted for physical education instruction in elementary schools to cover both theoretical and practical subjects. Given the importance of physical activity in maintaining their health and averting non-communicable diseases, Exercise must therefore take precedence. That is all there is to it".

In addition, *L19 (physical education instructor)* responded "We have a lot of challenges ahead of us. I am aware that physical education is taught in Ethiopian primary schools. Still, this is not reliable. The current curriculum system precludes the effectiveness of basic physical education. The forty-minute physical education courses, which typically occur once or twice a week, are split into theoretical and practical sections. It's challenging for us to promote. In a similar vein, we place more emphasis on theoretical sessions than on physical ones and give more attention to football and athletics tournaments. But let's fight to encourage physical activity in educational environments". In addition, *L12 (school Principal)* said, "In my capacity as the school's director, I attempt to oversee and coordinate all school-related activities. I oversee and organize educational programs and provide a fun learning environment for pupils. However, several obstacles at our school make this difficult. For instance, there aren't enough physical education teachers to teach the curriculum's requirements. There are 17 sections for grades 5 through 8. However, we only have two physical education teachers. They can't cover every one of these classes. Therefore, I propose that to address these issues, relevant parties should work with us".

It indicates that Promoting school-based physical activity is greatly aided by physical education (Moral-Garcia et al., 2021). Numerous investigations backed up this theory as well. However, many elements in educational contexts have an impact on this reality (Garmamo, 2018; Jenkinson & Benson, 2010; Polet et al., 2019). Therefore, The answers above indicate that primary schools encounter difficulties encouraging pupils to be physically active, such as a shortage of teachers and a lack of time for physical education lessons (Chang & Liu, 2022; Garmamo, 2018; Johnson et al., 2023; Y. Wang & Chen, 2020).

4) The influence of school facilities

L11 (physical education teacher) replied, "Ethiopian schools, including our own, typically lack the facilities, resources, and equipment needed to provide modern education to their students. This seems like a rather big issue to me. This is a national problem. To me, it is impossible to attain the desired level of education. Students desire to have a good time. There is a chance that early teenage involvement in school-based physical activity will decline". *L3 (a school principal)* stated "Our school does not have enough facilities. For instance, we lack a basketball court, volleyball court, gym, and football playground. In general, there aren't enough indoor and outdoor facilities. This is a factor that is, in my opinion, quite important in determining how much physical activity early adolescents participate in at school. I had this experience". In addition, *L8 (professional expert)* said "Insufficient resources for schools is a major problem in our nation. Government regulations, political concerns, revenue streams, and socio-ecological elements, however, are undermining this. Perhaps working with relevant organizations and doing scientific study will be the tactics. Children in school must have a safe environment. Unless it's

challenging to make the most of our field of study in a classroom environment". Therefore, One of the biggest obstacles to increasing physical activity in school contexts is the lack of facilities and resources (Abera et al., 2021; Miller et al., 2021). However, some of the participants offered their recommendations on the subject. Generally speaking, the responses offered proof that school resources and physical education are connected and have a big impact (Johnson et al., 2023; Macdonald et al., 2021; Nazia Saeed et al., 2023).

5) **The influence of school-community**

L6 (*Gamo Zone Sports Department*) responded "We don't work well with principals of schools. We tried to promote physical education in the educational setting. As a result, a few school coordinators have not yet accepted. As a Gamo Zone sports department, we generally observed that principals of schools were not aware of this. To address the current issues, the best course of action would be to provide training, host conferences on programs that promote physical activity, and collaborate with the family and the government. We also intend to carry out this".

L20 (*the school Principal*) said "My observations indicate that the school community does not cooperate well to encourage physical activity. There are just three teachers of physical education here. All we have is a playground for football. The football field will serve as the venue for all sporting events. It's also not a comfortable or safe place to play, learn, or have fun. This explains why there aren't many students here. They wish to enroll in this school but in a somewhat better one. But we need to treat this matter more seriously". Similarly, **L4** (*a professional expert*) stated "A teenager's physical activity is indeed influenced by elements relating to school. I am aware that the school community is essential. However, we are both asleep right now. I apologize for saying this. As a scholar, I have more work to do. Together, we must fight this".

L17 (*the physical education teacher*) said "The physical education teacher is the most important responsible person. We don't push our pupils to engage in daily physical activity. We didn't ask the national government or the school board coordinator to handle the issues relating to the school's inadequate infrastructure. I have no desire to refresh myself. My employees as well. We have to use it in real life. This is how to encourage physical activity in educational environments".

L14 (*a government official*) responded "Throughout Ethiopia, getting active is a major problem. The promotion of physical activity in the classroom will have a big impact on students' healthy lifestyle choices. I am aware of a variety of factors. Organizational, personal, familial, and community influences, for instance. We also have issues with finances, facilities, and human resources that affect the entire school community. As a government, we recognize that the physical education curriculum's current rules and practices do not serve students' interests. As a result, we have an assignment to complete, and professionals need to take these concerns carefully. Work with the schools is necessary. therefore the resolution will be apparent shortly".

L16 (*Schools Board Director*) said, "In our capacity as school board administrators, we cooperate and work with the Gamo Zone-based national government, school principals, physical education instructors, and student representatives. I am aware that exercise is crucial for students and us as well. But as a government, we don't have enough resources and infrastructure in each school. Furthermore, there are not enough physical education teachers in each school, and there is also a lack of collaboration throughout schools. I will arrange a meeting for all parties involved as a manager. I'll bring up this matter so that we can take the greatest action. I can assure you that practically all schools will start implementing morning physical education programs. I acknowledge and value this research".

Therefore, the study emphasizes how the school community works together to provide a secure atmosphere for physical education, which in turn promotes student involvement in classroom settings (Hu et al., 2021).

Generally, according to the information provided by the stakeholders, the current study indicates that physical activity is essential for children of school age. However, a variety of factors influence it.

Conclusion

The current research explored stakeholders' perspectives in promoting school-based physical activity among early adolescents in the Gamo Zone, southern Ethiopia.

As a result, the study found that the selected schools lack the implementation and promotion of physical activity and health programs due to many challenges forwarded from stakeholders. Particularly, a lack of motivation, social support, curriculum, resources, and school-community factors. According to earlier research, multiple obstacles restrict teenagers from engaging in physical activity in school environments.

Furthermore, Stakeholders identified three key challenges in promoting early adolescents' physical activity participation in schools: insufficient time for instruction, lack of teachers, and curriculum inconsistencies. However, physical education is crucial to enhance school-aged youngsters' lives in the future. Moreover, Peer and family pressure, along with learning environment-specific factors, also influenced the quantity of physical activity in school environments. In addition, this study obtained relevant information from the respondents. Especially, primary school physical education is impacted by a variety of factors. However, school physical education is a medicine for teenagers to combat the increased level of physical inactivity, which is considered to be one of the primary factors contributing to early death and is linked to the onset of other long-term conditions, including cancer and cardiovascular diseases.

Overall, based on the respondent's data, the study's findings demonstrated that primary schools are unable to provide appropriate physical activity programs due to the influence of the physical education curriculum, and physical education teachers and access to resources all have an impact on early adolescents' engagement in physical activity.

Future directions

Based on the findings, primary school physical activity is restricted by social support, government policy, physical education curriculum, individual variables, and school-related factors. It shows that because of connected variables and a lack of cooperation from stakeholders, physical education is not given adequate attention in primary schools.

Therefore, the study recommended collaboration of stakeholders is needed to promote physical activity in schools. Implementing physical activity participation in Ethiopian primary schools requires cooperation amongst several stakeholders, including physical education instructors, principals, parents, regional administrators, education officials, and sports offices is essential. Furthermore, additional study on socio-ecological model factors is required to forward the critical strategies for school-based health programs in Ethiopia.

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