



(RESEARCH ARTICLE)



## Investigating the socio-ecological model factors influencing physical activity and health promotion among early adolescents in the southern parts of Ethiopia

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### Abstract

**Background:** Currently the increased level of physical inactivity and lack of attention to health initiatives in educational settings is a hot issue in Ethiopia and worldwide. Therefore, the present study aimed to investigate socio-ecological model factors hindering the promotion of school physical activity programs among early adolescents in the Gamo Zone primary schools, in the southern part of Ethiopia.

**Methods:** The study conducted a mixed-method design to explore the roles and perspectives of stakeholders, using semi-structured interviews. Then, Thematic analysis and IBM SPSS (ver. 26) were used to analyze the data.

**Participants:** The study purposely involved 20 respondents, aged  $40.60 \pm 7.90$  SD with a work experience year of  $14.5 \pm 7.714$  SD from in and out of schools.

**Results:** The study found that physical activity is crucial medicine to prevent non-communicable diseases, and enhance overall health opportunities, and academic performance in school-aged early adolescents. However, issues such as inadequate physical education curriculum, lack of qualified teachers, and lack of facilities hindered the implementation of physical activity programs in the Gamo zone primary schools.

**Recommendation:** The study put forward that collaboration of stakeholders and the school community should be a key strategy to boost physical activity in school settings. Also, further research is needed on different research methods to examine obstacles to school health initiatives.

**Keywords:** Physical Activity; Physical Education; Stakeholders; Early Adolescents; Primary School

### 1. Introduction

Physical activity is a key health factor connected with an extensive variety of positive impacts on children and adolescents' health development(1,2). Establishing good physical activity and health initiative programs in a school environment is a crucial approach to combat sedentary lifestyles and physical inactivity among early adolescents (3,4). According to the findings by Worku et al., 2021, sedentary behaviour and poor physical activity levels (i.e., not adhering to WHO standards) are linked to chronic conditions like diabetes, hypertension, cardiovascular disease, and a variety of cancers(5). Physical activity is a complex issue influenced by a wide range of factors. In addition, According to the findings of Guthold et al., 2018, the World Health Organization study groups discovered that over 80% of school-age children and adolescents globally do not meet the recently recommended standard of engaging in at least an hour per day. More precisely, they discovered that 78% of boys and 85% of girls failed to reach the goal(6).

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Furthermore, physical inactivity ranks as the fourth most common cause of mortality worldwide, according to the World Health Organization(6,7). This evidence shows that a sedentary lifestyle raises the risk of obesity(8), lowers life expectancy, and increases the risk of non-communicable diseases (NCDs) such as Type 2 diabetes, coronary artery disease (CAD), and cancer of the breast and colon(9).

To deal with this complicated issue, the socio-ecological model, developed by McLeroy(10) was analyzed to target multiple aspects influencing early adolescents' levels of physical activity programs in educational environments(11). According to Lee & Park's (2021) study findings, the socio-ecological framework significantly advances practical and theoretical knowledge about what and how to engage in physical activity regarding individual, family, school, and public policy factors that affect early adolescents' status of physical activity(12).

Schools are expected to prioritize physical activity since it is crucial for promoting overall well-being and health, particularly during early adolescence(13); due to it's a critical time to develop physical and cognitive health(14). However, early adolescents are experiencing declining levels of physical activity(15,16), leading to increased risks of obesity(17), cardiovascular diseases(17,18), and other health-related problems(18). As a result, promoting school-based physical activity is essential to solve the existing factors(19).

However, school-based physical activity is still below ideal levels in the southern region of Ethiopia, particularly in the Gamo zone(20)(8,21). Participation in physical activity in this area faces unique challenges such as limited resources, inadequate infrastructure, gender disparities, cultural norms, a lack of trained teachers in physical education, the curriculum of physical education, and further relevant issues limiting the implementation of successful school-based physical education and health initiatives(22). Research has been undertaken, but few studies have explored the subject from the perceptions of the stakeholders(23,24). Therefore, The current study's goal was to look into the roles and viewpoints of stakeholders(principals, school board managers, professional experts, parents, physical education teachers, regional sports administrators, and government officials) regarding factors challenging the quality of participation in physical activity among early adolescents in the Gamo Zone, southern Ethiopian primary school settings.

### **1.1. Research Questions**

What strategies are implemented to enhance school-based participation in physical activity from the perspectives of stakeholders?

What is the significance of school-based physical activity programs?

### **1.2. Research Hypothesis**

Stakeholders' initiatives and school-based health programs are the best ways and significantly influence to promotion of physical activity participation in the educational settings.

There are significant benefits to school-based participation in physical activity.

#### *1.2.1. Research purpose*

The goal of the current study was to find out the stakeholders' thoughts on socio-ecological model variables that affect physical activity and to implement strategies for school-based health and physical activity initiatives in the Gamo Zone, southern Ethiopia.

#### *1.2.2. Research Design*

The study utilized a mixed-methods design, focusing on qualitative research, to explore factors influencing school-based physical activity participation. The qualitative approach targeted stakeholders' thoughts, feelings, and emotions, focusing on the promotion of physical activity in primary schools.

#### *1.2.3. Study Participants*

This study recruited stakeholders including physical education teachers, principals, school board managers, experts, government officials, and parents. Therefore, purposely 20 respondents (13 males and 7 girls) were selected with a mean age of  $40.60 \pm 7.90$  SD from primary schools in the Gamo Zone, southern Ethiopia, including six teachers, three principals, one school board manager, four professional experts, two parents, two sports office administrators, and two regional government officials.

### 1.3. Data Collection Tools

According to the desired aim of this study, the study employed a qualitative inquiry method, more specifically an interview process was implemented to obtain the relevant information regarding school physical activity initiatives. Therefore, face-to-face discussions with the interviewee were used to perform the semi-structured interview technique, which focused on the roles and viewpoints of stakeholders(25,26).

#### 1.3.1. Data collection tool and procedures

at first, information was acquired through the formulation of five interview questions and the collection of literature from various sources. logically structured interview questions In particular, semi-structured interviews with open-ended questions were designed to investigate the variables associated with physical activity and health programs in primary schools. To get the necessary data, the researcher personally visited the offices and schools. 1) What are the primary determinants that significantly impact the participation of early adolescents in physical activity within a school setting?, 2) How do these challenges relate to socio-ecological models, such as individual, community, and school factors?, 3) What are the current policies and practices in the primary school physical education curriculum?, 4) What are the potential benefits and risks of school-based physical activity among early adolescents?, and 5) What are your strategic suggestions in promoting school-based physical activity participation in the Gamo Zone, the southern part of Ethiopia?

- As a result, based on these interview questions, the basic steps of the interview process were formulated as follows;
- Determined the interviewee and presented the interview questions.
- Created the interview schedule and provided uniformity for the execution procedure.
- Prepared an outline for the interview and concentrated on the research questions.
- Performed official interviews and had effective questioning and listening skills.
- Summarized the interview data and analyzed of interview results.
- In addition, the data was secured by codes ranging from K1 to k20 instead of using the participants' actual names.

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## 2. Methods of data analysis

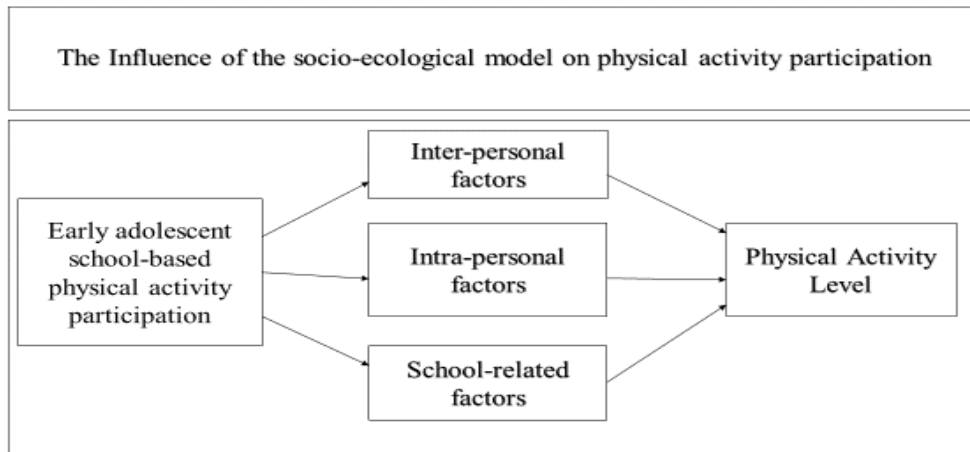
The current inquiry of findings was collected by interview method. As a result, a thematic analysis process was employed. Initially, MAXQDA 24 software was used to transcribe some of the data (English version) after the participants were interviewed(27,28). In addition, IBM SPSS (ver. 26) was also utilized to analyze the descriptive statistical measures to analyze the respondent's demographic information.

Furthermore, the data were carefully examined and any errors were corrected. Only the data provided by the participants were analyzed. However, four respondents were contacted again for small modifications in their opinion.

### 2.1. Conceptual model on study variables

This investigation was focused on the perspectives of stakeholders concerning the obstacles to implementing school physical activity. Then, to provide the strategic approaches to policymakers, curriculum developers, and physical education instructors. Therefore, understanding the variables linked to the socio-ecological model components is essential for this study to increase the participation of early adolescents in school-based physical activity(11).

These influencing variables are related to intrapersonal (individual-related factors), interpersonal (family, peer, physical education teachers) and school-related (access to facilities school policy, physical education curriculum) factors. Therefore, the theoretical framework for the socio-ecological model variables is shown as follows in **Figure 1**:

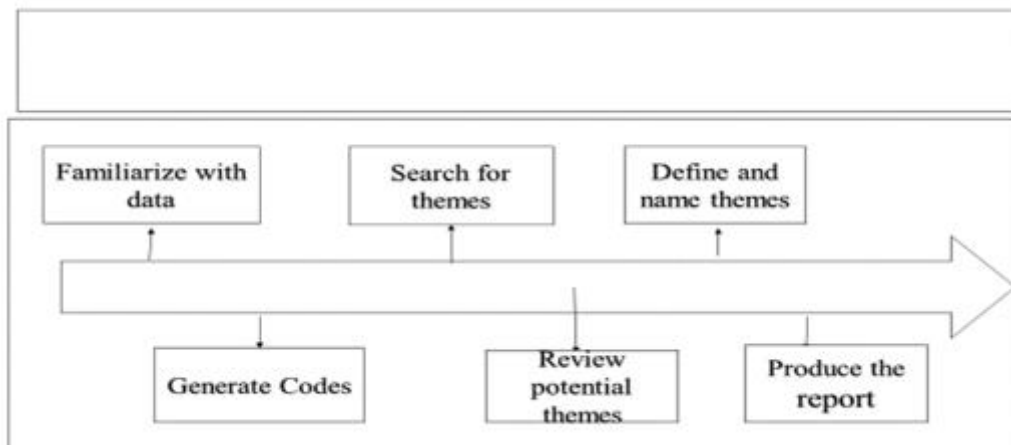


Source: (11)

**Figure 1** Socio-ecological model of study variables

**2.2. Procedures for Thematic Analysis**

As demonstrated in **Figure 2**, the process of thematic analysis entails thoroughly examining the data to detect common themes, and then summarizing the results(29). The primary phase of theme analysis involves classifying similar information within various ideas and subjects and identifying themes based on codes gathered from the initial data(30). Then, the data was analyzed using categorized information.



Source: (modified from Braun & Clarke, 2012)

**Figure 2** Thematic analytical process for interview data

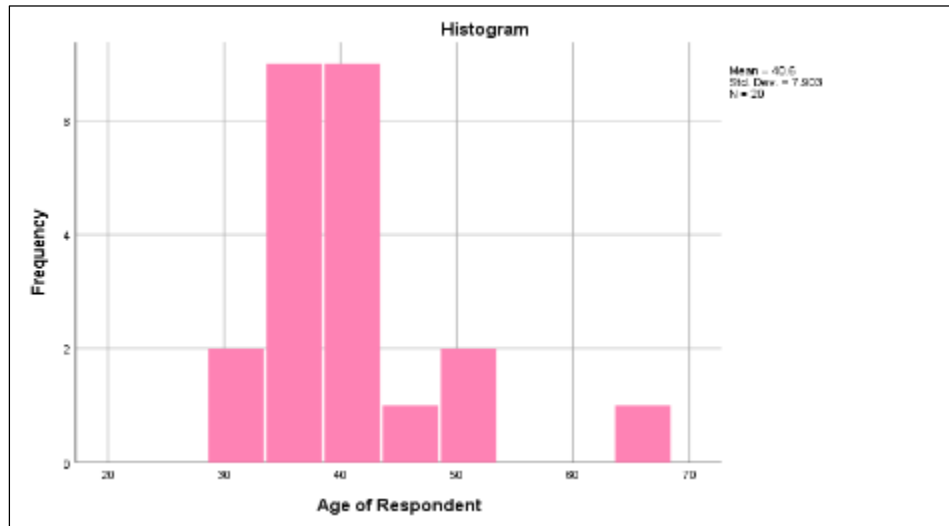
**2.3. Stakeholder's demographic information**

The demographics of the stakeholders, including their gender and educational level, are presented in the following section.

**Table 1** Sex of stakeholders

Sex category					
Sex		Freq.	%	Valid %	Cum. %
	Male	13	65.0	65.0	65.0
	Female	7	35.0	35.0	100.0
	Total	20	100.0	100.0	100.00

**Table 1** shows the sex of respondents. Therefore, 20 stakeholders participated in this study. From these respondents, there were 13 (65.0%) males and 7 (35.0%) females. It suggests that more men than women took part in this study.



**Figure 3** Age range of stakeholders

**Figure 3** indicates the age range of respondents. Therefore, Stakeholders with the lowest age of 31 and maximum age of 65, with an average mean age of  $40.60 \pm 7.90$  SD, were selected as study subjects.



**Figure 4** Stakeholders' field of study

**Figure 4** shows the stakeholder's field of specialization. Regarding their field of expertise, 8 individuals (40.0%) were experts in sports science, 4 (20.0%) were management experts, 4 (20.0%) were professional scholars, and 4 (20.0%) were experts in other specializations or may have graduated in another field of study. Among the 20 participants in the study, the majority of respondents specialized in sports science and most of them were employed as teachers in physical education in primary schools. The remaining participants consisted of professional experts, school principals, school board managers, parents, sports office administrators, and regional government officials. Hence, the present investigation has obtained sufficient data for this study.

**Table 2** indicates the work experience of respondents. The participants in this study had a minimum of 4 years of service and a maximum of 65 years of service with an average of 14.5 years of work experience and a standard deviation of 7.714. It was found from their work experiences that most of the stakeholders who participated in this study had been employed for approximately 14 years. It was anticipated that having work experience would greatly improve the study's capacity to obtain enough data from the participants.

**Table 2** Stakeholder's work experience

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

### 3. Findings and Discussion

The necessary information addressing the factors influencing physical activity in primary schools was acquired for the current investigation. Five primary themes that addressed the importance and issues related to school-based physical activity participation emerged after respondent data was gathered: school-related (*physical education curriculum, school facilities and resources*), interpersonal-related (*family, peer influences*), intrapersonal-related (*lack of awareness and motivation*), were reviewed as the potential themes. In general, the obtained information was related to socio-ecological model factors including Individual (motivation influences), interpersonal (family, peer, PE teacher influences), and school-related (physical education, lack of facilities influences) factors.

#### 3.1. School-related factors: - physical education curriculum

Promoting school-based physical activity is significantly facilitated by physical education(31). Many studies also supported this idea. However, this reality has been affected by multiple factors in school settings(32–34). Besides this, K2 (a professional expert) said,

*"I believe that the physical education curriculum needs to be modified in Ethiopia. There is insufficient time allotted for physical education instruction in primary schools to cover both theoretical and practical lessons. Even from kindergarten to the university level, it needs modification. To me, the physical education teaching curriculum must be the same as in other fields of study in schools. Because physical activity is crucial to keeping them healthy and preventing them from developing non-communicable diseases, So, priority must be given to physical activity. As a scholar, I'm also working on this. We need to discuss the current issue with the education minister too. Unless it's difficult to promote in a short period, That's all about".*

K7 (a government official) said, *"As a government official, we are currently working on promoting sports activities like athletics, football, and volleyball outside of school. But still, priority is not given to school-based physical activity and health programs. Maybe we lack implementation. Also, physical education curriculum needs to be modified. Some professional experts are working on this. However, this study motivated us, as a government, we need to start planning and promoting school-based sporting activities".*

In addition, K19 (physical education teacher) stated that *"we have numerous obstacles to overcome. I'm aware that Ethiopian primary schools provide physical education as a subject. However, this is not trustworthy. Basic physical education can't be effective under the current curriculum system. The forty-minute physical education sessions are divided into theoretical and practical classes, which usually take place once or twice a week. We are finding it difficult to promote. Similarly, we do not emphasize physical activities; instead, we solely focus on theoretical sessions and pay greater attention to Football and Athletics competitions. Not only this but there are a lot of factors that affect it, like our school facilities, family pressure and the learning surroundings. We also need the training to update ourselves. Some of us even did not recognize the basic terms of sports science like physical activity, physical exercise, physical fitness, and physical education. I was also confused about this. However, let's struggle to promote physical activity in school settings".* In addition, K12 (Principal) stated that, *"as a school director, I'm trying to supervise and manage every activity that takes place at school. I oversee personnel, plan education systems, and give students an enjoyable atmosphere in which to learn. I think that students who engage in physical activity benefit both academically and health-wise. However, in our school, various challenges are hindering this. For example, the physical education curriculum lacks enough physical education teachers. We have 17 sections from 5 to 8 grades. But our physical education teachers are only two. They are unable to address all these classes. Sometimes, the students can play themselves without the physical education teacher's guidance. Even for me, the physical education curriculum needs modification. Frankly speaking, it's the problem of all schools in Ethiopia. Concerned bodies must collaborate with us to solve these problems. As a result, our school's physical activity is not promoted well. Sorry to say this, and thank you for your research".*

According to the responses above, primary schools encountered numerous obstacles when trying to encourage students to participate in physical activity. These obstacles included the physical education curriculum, a shortage of teachers, and insufficient time during physical education classes to teach students about physical activity(26,33,35,36). However, For schoolchildren to have better lives in the future, physical education is essential(36,37). As a result, the curriculum of physical education in Ethiopia has been suggested to be modified, and concerned bodies must be involved in this to promote physical activity in school settings.

### 3.2. School-Related factors: - Lack of enough facilities

One of the biggest obstacles to increasing physical activity in school contexts is the lack of facilities and resources(24,38). In particular, the academic achievement of students is significantly impacted by a lack of resources in schools(39,40). Students' enjoyment of school may be declining as a result of limited resources. Students may experience elevated stress levels as a consequence of it(41). However, a few of the participants provided their suggestions regarding the matter.

K3 (a school principal) stated "*We do not have enough facilities in our school. For example, we have no gym, football playground, basketball court, volleyball, etc. Generally, we don't have enough outdoor and indoor facilities. This, in my opinion, is a crucial element affecting early adolescents' engagement in physical activity in school. In addition, school-based physical education needs more attention from the government and physical education teachers. I experienced this*". Similarly, K11 (physical education teacher) said, "*Generally in Ethiopian schools, particularly in our school, there are no modern resources, facilities, or equipment to teach our students. I think this is a serious problem. It is a national issue. For me, the quality of education is not possible to achieve. Students want to enjoy their lives. This is a potential risk of not increasing early adolescent participation in school-based physical activity*".

In addition, K8 (professional expert) said that "*lack of school resources is a burning and hot issue in our country. In me, not considering the sports facility building at the beginning stage is a crucial problem. However, government policy, political issues, sources of income, and socio-ecological factors are challenging this. Furthermore, the school principals and school physical education teachers do not push and demonstrate these challenges officially. This is also the problem. Maybe the strategies will be conducting scientific research and collaborating with concerned bodies. A safe environment is important for school-aged children. Unless it's difficult to maximize our field of study in a school setting*".

In general, regarding the resources available in schools, most of the respondents had similar opinions. They provided evidence that physical education resources in primary schools ought to be significant(23,26,42). This suggests that to resolve this issue, extra attention is required. The primary school therefore required a suitable playground for outdoor and indoor sports activities.

### 3.3. School-Related factors: - inadequate resources and unsafe environment

According to this study, the school community is composed of individuals who work together to provide a safe atmosphere for teaching physical education that motivates students to be active in school settings(11). However, in Ethiopia, issues related to the school community are crucial in limiting physical activity engagement in schools(14,43). Key factors influencing physical activity include the availability of physical education teachers, the assistance of school administrators, the support of school board members, and the accessibility of places for physical activity(44). In this way, information about the variables impacting school-based physical activity and its significance for early adolescents was gathered from stakeholders for this investigation.

K20 (the school Principal) said "*According to my experience, the cooperation of the school community is low to promote physical activity. We have only three physical education teachers. We have only a football playground. All sports activities will be performed on the football field. It's also not safe and comfortable to play, to teach, or to enjoy. I think the motivation of physical education teachers is low. Why do they not ask this problem to the concerned body? I don't know. We have low communication with them. I am aware that students can perform better if they are more physically active and fit. However, the situation at our school is very different. That's why we have a low number of students here. They want to join a somewhat better school than this one. Physical activity is crucial, however. We must take this issue more seriously*".

K6 (Gamo Zone Sports Department) Stated that "*we lack cooperation with school principals. We made an effort to encourage physical activity in schools. Thus, some of the school coordinators have not accepted yet. In addition, I think the basic challenge is that all of us focus on ball games and weightlifting activities rather than physical activity participation at the school level. Generally, as a Gamo Zone sports department, we saw a lack of awareness among school principals; some of them don't believe in the importance of physical activity. They think physical activity needs an extra budget to be*

*promoted in schools. However, the strategic solution would be to give training, organize meetings on sports campaigns, and work together with family and government to solve the existing challenges. We are also planning to do this".*

K4 (a professional expert) shared the same idea with this. Stated that *"it is true that school-related factors affect students' physical activity. I know the school community plays a vital role. But they are sleeping, and we are too. Sorry to say this. As a researcher, I need to do more. I appreciate this research. It motivated me too. In addition, early adolescents' participation in physical activity is also influenced by the physical education curriculum, the duration of physical education sessions, and the accessibility of facilities and equipment. Let's strive together, work with the school community, and let's initiate them. Focus on social media and sports technology is a critical method to promote physical activity. These, in my opinion, are a few scientific strategies that have been effective in raising and encouraging early teenage students' involvement in physical activity at the school level".*

K17 (the physical education teacher) said that *"the most critical factor influencing school-based physical activity is the physical education teacher. We do not motivate our students to be active every day. We didn't ask the school board coordinator and the national government to solve the problems regarding the lack of sufficient facilities in the school. I don't want to update myself. My staff too. We have rights and responsibilities, but we haven't asked anybody yet. We don't cooperate with school-related bodies. This is the problem. We must put it into practice. This is the solution to promoting physical activity in school settings".*

K14 (a government official) stated that *"physical activity is a critical issue in Ethiopia as a whole. If physical activity increases in school, it will significantly influence students' healthy lifestyles. I know there are many factors. For example, organizational, individual, family, and community factors. In addition, we have the financial, facility, human resources, so-called physical education teachers, and infrastructure problems in the whole school community. However, as a government, the current policies and practices of the physical education curriculum do not fulfil the interests of students. Therefore, the situation is not appropriate for stakeholders to promote physical activity in primary schools. We have an assignment to do so, and the professionals must be seriously involved in solving these problems. We need to work with schools. then the solution will be seen soon".*

K16 (Schools Board Director) stated, *"As a school board administrator, we collaborate with the national government located in the Gamo Zone, the principals of each school, physical education teachers, and student representatives. I know my biggest duty is managing the schools and ensuring that each student receives a suitable education. Besides this, I understand physical activity is important for students, even for us. However, as a government, we lack infrastructure and facilities in each school. In addition, we do have not enough physical education teachers in each school, and we have no cooperation with each other either. Currently, physical activity is remedial for health improvement. As a manager, I will call a meeting for all concerned parties. I will raise this issue so we can do as much as possible. Hopefully, I promise, almost all schools will begin morning-based physical activity in each school. I appreciate and recognize this research".*

Generally, according to the responses from the participants, this inquiry demonstrated that primary schools faced numerous barriers in their efforts to encourage physical activity in schools. These difficulties included a shortage of resources for physical education, inadequate facilities and equipment, the time allotment for physical education classes, negative perceptions from parents, and a shortage of physical education teachers hindering physical activity among early adolescents(16,45,46).

### **3.4. Interpersonal-related: - Family factors**

Engaging in physical activity is indeed a complex behaviour affected by various elements, such as social, family-related, environmental, and peer-related influences(47,48). The social support aspects that have been most extensively researched concerning physical activity and are best suited to explain the diversity in early adolescent physical activity levels are peer pressure, family-related influence, and interpersonal support. In light of this issue, some of the stakeholders stated that; K9 (Family) said *"I try to push my child to be involved in school physical education class. But he asks me to buy him some sports equipment. Unfortunately, I can't do that. I have a low level of income. I think this influences my child to be active; furthermore, in the Gamo zone, Parents don't know more about the health advantages of being active. That's our problem. Even the school physical education teacher did not do this. They never asked me/us about my/our child's physical activity level. It seems like this is the big problem I have in mind".*

In addition, K10 (physical education teacher) stated; *"As a physical education teacher, we have been countering some of the challenges of promoting physical activity participation in school settings. Such factors as family influence, cultural norms, peer pressure, and social support are the major challenges facing early adolescents. particularly, perceptions of their family and their peers' influence. However, we also lack the necessary assets to establish a motivating and supportive*



*atmosphere for early adolescents to engage in physical activity. That's our problem. Maybe this research motivated me to do so".*

### **3.5. In line with this, K18 (regional sports administrator) said,**

*"In general, in Ethiopia, especially in the southern parts, we have no organized guidelines to promote physical activity throughout the schools. However, our socioeconomic status, lack of awareness, and parental and school-community support may affect this. We also have a big problem. We are working on professional competition sports but are not focused on early-age physical activity participation. I know the grassroots level of sporting activities is very important to developing our sports industry, and it helps to make children have a healthy life in school".* Also, K15 (family) said, *"My target is not to talk about a lot on subject matter. However, I forbid my child from engaging in any physical activity. Our religious protocol, cultural norms, and related disciplines do not allow this. I want her to learn, not exercise".*

This suggests that school-based physical activity was affected both directly and indirectly by factors related to interpersonal or social support, according to the respondents(49–51). However, The probability that early adolescents would engage in the levels of physical activity that also increased was increased by social support from parents and peers(52). Therefore, For Ethiopian youngsters, social support is a significant and positive indicator of physical activity.

### **3.6. Intrapersonal-related factors:- lack of awareness and motivation**

Physical activity is a key medicine to maintain an early adolescent's healthy lifestyle, and it is essential in improving their cognitive, mental, and physical performance in the classroom(53). However, physical activity in school settings has been affected by many challenging factors. As a result, the study participants demonstrated the existing challenges and suggested the basic strategies to promote physical activity in school settings.

Several stakeholders expressed their opinion that engaging in physical activities is affected by personal-related factors. For example;

K1 (Physical education teacher) stated that *"primary school students are not motivated to be active in the school setting. They have low self-efficacy and attitudes toward physical activity in the school environment. Some of them like to watch social media rather than be involved in physical activity".* K5 (Physical education teacher) also stated that *"they have no interest to engage in. However, many barriers are hindering their participation. For example, sportswear, time allocation for physical education class and school assignments make them too busy and lazy to be active".* In addition, K13 (Professional expert) said, *"I think early adolescents lack awareness of the significance of physical activity. This leads to less motivation and interest. So the physical education teachers and concerned bodies must promote awareness".*

This indicates that respondents believed that intrapersonal or individual-related factors primarily influenced school-based physical activity participation. However, motivation and knowledge had a greater impact. As a result, to address the needs of students with different abilities and interests in physical activity, the school community, especially, to encourage students to engage in school health activities, physical education teachers play a crucial role(23,31). In addition, Enhancing the enjoyment and attractiveness of sporting activities is an effective approach for raising teenage engagement in school-based physical activity(4,54).

Therefore, based on the above findings, the current study indicates that physical activity is essential for school-aged early adolescents. However, a variety of factors influence it.

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## **4. Conclusion**

Based on the perspectives of stakeholders, this study found that implementation of physical activity in schools is limited by factors linked to socio-ecological model factors including individual, social support, family and school-related factors. Particularly, primary schools fail to provide enough attention to physical education because of inadequate physical education curriculum, a lack of awareness and poor involvement from stakeholders, government policy, a lack of cooperation, a shortage of qualified physical education teachers, a lack of safe learning environments, a low level of government attention and a lack of facilities affecting the student's participation in physical activity. However, physical activity in educational settings is indeed critical for early adolescents to improve their physical, social, mental, and academic well-being, as well as to stay active in and out of the classroom.

As a result, according to the respondents' information, the current inquiry pointed out that physical activity in schools is affected by a variety of factors. Therefore, to encourage physical activity programs in primary schools, cooperation

between stakeholders and with school community is essential to increase awareness of the existing problems and to promote school health initiatives.

Future recommendations to be implemented in Ethiopia

- The current study suggests crucial strategies to successfully increase school-based physical activity. These are;
- Modifying the curriculum of physical education and offering additional teaching opportunities for physical activity during school breaks and after school should be a good way to encourage physical activity in school settings.
- Increasing the amount of time allotted to physical education in the school curriculum should be an effective measure for boosting physical activity.
- Promoting physical activity using social media and other technology is an excellent method for enhancing the level of school-based physical activity.
- Finally, the study suggests that collaboration between the school community and stakeholders is crucial for promoting physical activity participation in primary schools.
- Furthermore, further research is needed on a huge number of participants with different data collection tools to identify the impact of stakeholders on school health initiative programs in the southern parts of Ethiopia.

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## Compliance with ethical standards

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I would like to admire my supervisor, Professor Wu Yi-Gang. In addition, I express thanks to Gamo zone primary schools and everyone who was involved, particularly Tariku Tesfaye, Agidew Wubkalu, Hiwot Bekele, Zerihun Yilma, Tseynesh Shoke, Dereje Paolos, Assegid Ketema, and Dr. Biruk Amare, who have all positively impacted this project's outcome.

### *Disclosure of conflict of interest*

The authors verify that there is no conflict of interest in this report.

### *Authors Note*

Physical activity is a medicine. Therefore, Let's struggle for physically active teenagers for a better world

### *Authors' contributions*

This article is part of my PhD study, with the support of my supervisor Professor Wu Yi-Gang, who shaped the paper into its final version.

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### Author's short Biography



I am **Mulugeta Debebe**. I was born on July 14, 1994, in Ethiopia. I am currently a lecturer in the sports science department at Arba Minch University in Ethiopia, having started on October 26, 2015. I hold a master's degree in football coaching, a bachelor's degree in sports science, and diplomas in health and fitness, massage therapy, and football coaching, all achieved with great academic honours, and awards and recognitions. In addition, I am a health and fitness instructor.

I previously published on health, fitness, and football for youth development in Ethiopia. Also, I am a member of the International Society for Physical Activity and Health Association. Currently, I am pursuing a Ph.D. at the Shanghai University of Sports in China, and am conducting scientific research projects on exercise as medicine, physical activity, and the health industry in Ethiopia and around the world. As a young scholar, I hope to contribute to the development of well-qualified, physically active, and healthy individuals in Ethiopia and globally.