

Integrating indigenous games into physical education: Students' experiences in Southwest Ethiopia

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ABSTRACT

Indigenous games constitute culturally situated forms of physical activity and community knowledge, yet their systematic integration into formal physical education remains limited. This study investigated secondary school students' perceptions and experiences of integrating indigenous games into physical education in Southwest Ethiopia and explored pedagogical, curricular, and institutional factors affecting implementation. A convergent parallel mixed-methods design was employed with 286 students from five secondary schools in Kaffa Zone. Quantitative data were collected through a structured questionnaire and analysed using descriptive statistics. Qualitative data were obtained from 10 students, four physical education teachers, and two school administrators through semi-structured interviews. Twenty physical education sessions were also observed. Interview and observation data were analysed thematically, and findings from the three strands were integrated during interpretation. Students expressed strong positive perceptions of indigenous games, particularly regarding curricular inclusion ($M = 4.48$, $SD = 0.71$), cultural understanding ($M = 4.41$, $SD = 0.74$), cooperation and teamwork ($M = 4.35$, $SD = 0.78$), and enjoyment ($M = 4.30$, $SD = 0.81$). However, 65.8% reported never participating or participating only once per term. Indigenous games appeared in only 15% of observed lesson plans, and none of the observed sessions demonstrated explicit alignment between games and stated curriculum objectives. Students also rated facilities and space ($M = 2.41$, $SD = 1.23$) and teacher encouragement ($M = 2.85$, $SD = 1.14$) comparatively low. Qualitative findings highlighted cultural meaning, informal participation, curriculum marginalisation, and gender-related participation patterns. The findings indicate a substantial gap between students' receptiveness to indigenous games and their formal curricular implementation. Effective integration requires curriculum recognition, teacher preparation, locally appropriate resources, community engagement, intentional lesson planning, and gender-responsive pedagogy. The study illustrates how culturally relevant pedagogy can connect community knowledge with formal physical education when institutional and pedagogical conditions support implementation.

KEYWORDS: Culturally relevant pedagogy; Sociocultural learning; Curriculum integration; Cultural heritage; Student participation; Gender equity; Secondary education

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1. Introduction

Physical education contributes to students' physical competence as well as their cognitive, affective, and social development. Quality physical education is associated with meaningful participation, inclusion, appropriately designed curricula, teacher development, community partnerships, and adequate resources (UNESCO, 2015). The cultural content through which physical activity is taught is therefore an important pedagogical consideration.

Indigenous games are embedded in local communities and may carry histories, social relationships, values, movement knowledge, and forms of collective participation. Research from African contexts associates indigenous games with physical, social, cognitive, and cultural learning, including cooperation, problem-solving, perceptual-motor development, and community connection (Brand, 2024; Hadebe-Ndlovu, 2022; Nxumalo et al., 2015; Sakala & Roux, 2024). Traditional games can also function as cultural resources through which learners encounter knowledge connected to family and community life (Bogopa, 2012; Thompson et al., 2014).

In Ethiopia, locally known games include Segno-Maksegno, Lebana Police, Abarosh, Suzi, Mehareben Yayachu, Gebeta, and Pepsi. Ethiopian educational materials recognise the contribution of indigenous games to physical capability and social interaction, while recent scholarship has documented the potential of indigenous play pedagogies for foundational motor competence (Aregay et al., 2022; Tadesse et al., 2026). The range of documented traditional sports and games also illustrates the breadth of Ethiopia's cultural physical-activity heritage (Eshetu et al., 2021).

Despite this potential, indigenous games may occupy a marginal position within formal physical education. The institutional prominence of football, volleyball, basketball, athletics, and other standardised sports can constrain curricular space for locally embedded activities. African research has identified curriculum time, teacher preparation, resource availability, and institutional priorities as barriers to integration (Matsekoleng, 2020; Mokotjo & Mokuku, 2020). Such conditions raise a pedagogical question: how can schools recognise students' existing cultural knowledge while transforming it into purposeful curriculum-aligned learning?

1.1. Theoretical Framework

Culturally relevant pedagogy (CRP) provides a useful framework for addressing this question. Ladson-Billings (1995) argued that students' cultural knowledge should function as an intellectual and pedagogical resource rather than as an occasional addition to schooling. Applied to physical education, this perspective suggests that indigenous games can connect physical competence with cultural knowledge, cooperation, identity, and meaningful participation. Culturally responsive physical education also requires teachers to recognise differences in students' experiences and learning needs when designing instruction and learning materials (Campos, 2026; Martin, 2026).

Sociocultural learning theory further explains why indigenous games may serve as educational resources. Learning is mediated through interaction, language, cultural tools, and participation in socially meaningful activities (Vygotsky, 1978). Indigenous games can therefore be understood not simply as physical activities but as culturally situated practices through which learners acquire rules, strategies, social norms, and meanings. Community members may contribute cultural and historical knowledge, while teachers provide pedagogical structure and curriculum alignment.

The two perspectives are complementary. CRP focuses attention on the legitimacy and educational use of students' cultural resources, while sociocultural theory highlights the social processes through which those resources become learning opportunities. Together, they suggest that the presence of an indigenous game in a lesson does not by itself constitute culturally responsive

pedagogy. Effective integration requires intentional objectives, inclusive participation, appropriate instruction, safety, assessment, and opportunities to connect the activity with cultural meaning (Fabian et al., 2024; UNESCO, 2015).

1.2. Research Gap and Purpose

Although existing literature documents the potential educational and cultural value of indigenous games, less is known about how students experience their integration into formal secondary physical education and how their perceptions correspond with actual classroom practice. In particular, there is limited evidence combining student perspectives with teacher and administrator accounts and direct observation of physical education lessons in the Ethiopian context. This study addresses this gap by examining student perceptions and experiences while considering teacher perspectives, school conditions, and observed pedagogical practice.

The study was guided by four research questions:

1. What are students' perceptions toward integrating indigenous games into physical education?
2. How do students experience indigenous games during physical education lessons?
3. What factors facilitate or hinder their integration?
4. What strategies may enhance effective integration?

2. Method

2.1. Research Design

A convergent parallel mixed-methods design was employed (Creswell & Plano Clark, 2018). Quantitative and qualitative data were collected during the same study period and analysed separately before being integrated during interpretation. The quantitative strand described the prevalence and distribution of students' perceptions and participation patterns, whereas interviews and observations provided contextual explanations and evidence concerning classroom practice.

2.2. Participants and Sampling

The target sample size was calculated using Yamane's formula (Yamane, 1967):

$$n = \frac{N}{1 + Ne^2}$$

where $N = 3,842$ total secondary school students in the five selected schools, and $e = 0.05$ (5% margin of error).

Using these values gives:

$$n = \frac{3,842}{1 + 3,842(0.05)^2} \approx 362$$

This yielded a target of 362 students.

Five secondary schools in Kaffa Zone were purposively selected based on the following criteria: (a) offering formal physical education programmes, (b) representing both urban and rural contexts, and (c) having at least 100 students enrolled in Grades 9–12. Within each school, students were stratified by grade level (9–12) and randomly selected proportionate to class size. A total of 286 students participated, representing a 79.0% participation rate of the target sample.

The quantitative sample comprised 286 students in Grades 9–12 from five purposively selected secondary schools in Kaffa Zone that offered formal physical education programmes. Stratified random sampling within schools yielded 156 male students (54.5%) and 130 female students (45.5%). The qualitative sample included 16 participants: 10 students, four physical education

teachers, and two school administrators. Twenty physical education sessions were observed across the five schools.

Demographic and school-context variables were collected to describe the sample and contextualise participants' experiences. They were not treated as primary explanatory variables in the present analysis.

2.3. Data Collection Instruments

2.3.1. Questionnaire

The structured questionnaire was developed through a multi-stage process. First, items were generated based on a review of relevant literature on indigenous games in physical education (Amusa & Toriola, 2010; Matsekoleng et al., 2024; Sakala & Roux, 2024) and adapted to the Ethiopian context. Second, three experts in educational research and physical education reviewed the items for content validity, clarity, and appropriateness. Third, the questionnaire was translated from English to Amharic and local languages (Kaffinonoo) by bilingual language experts, and back-translated to English to ensure accuracy (Brislin, 1970). The questionnaire comprised five sections: (a) demographic information (3 item), (b) perceptions of indigenous games (10 items), (c) participation frequency (1 item), (d) preferred activities (1 item with ranking), and (e) perceived barriers and enabling factors (10 items). Items were measured on a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree).

A pilot study was conducted with 30 students from a non-participating school. Specific Cronbach's alpha coefficients were: perceptions of indigenous games ($\alpha = .86$), cultural and social value ($\alpha = .84$), barriers and enabling factors ($\alpha = .82$), and teacher encouragement and resources ($\alpha = .79$). The overall Cronbach's alpha was .88, indicating good internal consistency.

2.3.2. Semi-Structured Interviews

Semi-structured interview guides explored experiences and perspectives among students, teachers, and administrators. Interviews were conducted in Amharic and local languages, transcribed, and translated.

2.3.3. Observation Checklist

An observation checklist documented lesson-plan inclusion, participation, gender equity, pedagogical use, cultural explanation, resources, safety, student engagement, and curriculum alignment. The observation criteria were coded dichotomously as "Yes" (criterion observed) or "No" (criterion not observed) during each 40-minute PE session. A criterion was coded "Yes" if it was present for at least 50% of the session duration or, for specific activities like indigenous games, if the activity occurred at any point during the session.

2.4. Procedure

Data were collected over six weeks. Questionnaires were administered during physical education sessions, followed by interviews and classroom observations. Permission was obtained from relevant institutional and zonal education authorities.

2.5. Validity, Reliability, and Trustworthiness

Three experts in educational research and physical education reviewed the instruments. A pilot study involving 30 students from a non-participating school produced specific Cronbach's alpha coefficients ranging from .79 to .86, indicating good internal consistency. Qualitative trustworthiness was addressed through attention to credibility, transferability, dependability, and confirmability

(Lincoln & Guba, 1985). Interpretations were grounded in interview accounts and compared with questionnaire and observation evidence.

2.6. Data Analysis

Quantitative data were analysed using IBM SPSS Statistics Version 26. All analyses were conducted using the raw data collected from the 286 participating students. Frequencies and percentages were used to describe categorical variables, while means and standard deviations summarised Likert-scale measures.

Qualitative interview and observation data were analysed thematically following Braun and Clarke's (2006) approach. Qualitative participants were purposively selected using maximum variation sampling to capture diverse perspectives. Ten students were selected based on grade level, gender (5 male, 5 female), and willingness to participate. Four physical education teachers were selected based on teaching experience (range: 3–22 years) and school representation. Two school administrators (one principal, one vice-principal) were selected to provide institutional perspectives.

Semi-structured interviews were conducted in Amharic or local languages (Kaffinonoo) based on participant preference. Each interview lasted 25–45 minutes (students: 25–35 minutes; teachers: 30–40 minutes; administrators: 35–45 minutes). All interviews were audio-recorded with participants' consent, transcribed verbatim, and translated into English by bilingual research assistants. Data analysis followed Braun and Clarke's (2006) six-phase thematic analysis approach.

Findings from the quantitative, qualitative, and observational strands were integrated using the "weaving" approach (Fetters et al., 2013), where findings from each strand were presented in a joint display (Table 7) and discussed thematically to identify convergence, complementarity, and divergence.

3. Findings

3.1. Participant Characteristics

Table 1 summarises the quantitative sample. The sample included students across four grade levels and represented both urban and rural school contexts. Male students constituted 54.5% and female students 45.5%.

Table 1 *Characteristics of quantitative participants (N = 286)*

Variable	Category	<i>n</i>	%
Gender	Male	156	54.5
	Female	130	45.5
Grade	9	82	28.7
	10	74	25.9
	11	68	23.8
	12	62	21.7
School context	Urban	162	56.6

Variable	Category	<i>n</i>	%
	Rural	124	43.4

3.2. Students' Perceptions of Indigenous Games

Students expressed consistently positive perceptions of the educational and cultural value of indigenous games (Table 2). The highest ratings concerned curricular inclusion ($M = 4.48$, $SD = 0.71$), cultural understanding ($M = 4.41$, $SD = 0.74$), cooperation and teamwork ($M = 4.35$, $SD = 0.78$), and enjoyment ($M = 4.30$, $SD = 0.81$). Teacher encouragement ($M = 2.85$, $SD = 1.14$) and facilities and space ($M = 2.41$, $SD = 1.23$) were rated considerably lower, providing initial evidence of a gap between student receptiveness and institutional support.

Table 2 Students' PEceptions of indigenous games in physical education

Item	<i>M</i>	<i>SD</i>
Enjoy participating in indigenous games	4.30	0.81
Make PE more interesting and motivating	4.19	0.87
Help students understand their culture	4.41	0.74
Improve cooperation and teamwork	4.35	0.78
Enhance physical fitness and endurance	4.13	0.90
Teachers encourage participation	2.85	1.14
Adequate facilities and space available	2.41	1.23
Should be part of the PE curriculum	4.48	0.71
Boys and girls participate equally	3.21	1.20
Develop problem-solving and creativity	4.27	0.84

Note. Items rated on a five-point Likert scale (1 = strongly disagree, 5 = strongly agree).

3.3. Participation Frequency

Table 3 shows that 188 students (65.8%) reported either never participating or participating only once per term, whereas 40 students (14.0%) reported weekly or more frequent participation. Thus, students' positive perceptions were accompanied by limited opportunities for formal participation.

Table 3 Frequency of indigenous-game participation during PE lessons

Frequency	<i>n</i>	%
Never	84	29.4
Once per term	104	36.4
2–3 times per term	58	20.3

Frequency	<i>n</i>	%
Once per week	32	11.2
More than once per week	8	2.8
Total	286	100

3.4. Students' Ranking of Preferred Physical Activities

Students were asked to rank five physical activities according to their preference. The activities were ranked from 1 (most preferred) to 5 (least preferred). Based on the reported overall ranking, football was the most preferred activity, followed by athletics, indigenous games, volleyball, and basketball, respectively (Table 4). Notably, indigenous games occupied the third position among the five activities, indicating that they remained a meaningful component of students' activity preferences despite their limited formal incorporation into physical education lessons.

Table 4 Students' preferred physical education activities

Activity	Mean	Rank
Football	1.45	1
Athletics	2.38	2
Indigenous games	3.02	3
Volleyball	3.55	4
Basketball	3.90	5

Note. Lower mean rank indicates higher preference (1 = most preferred, 5 = least preferred).

3.5. Qualitative Experiences

Four major themes emerged from the interviews: (1) cultural meaning and enjoyment; (2) informal participation versus formal curricular marginalisation; (3) institutional and pedagogical constraints; and (4) gender-related participation patterns.

3.5.1. Cultural Meaning and Enjoyment

Students described indigenous games as familiar cultural activities connected to home, family, and community life. Their presence in school was valued because it could make learning culturally meaningful. One student explained:

"Games like Segno-Maksegno and Lebana Police are not just games; they are stories from our grandparents. Playing Segno-Maksegno feels like I am learning the wisdom of our ancestors. It's about strategy and patience, things our culture values."

Another student added:

"When we play games like Gebeta or Suzi, I feel connected to my grandparents. These are games they played when they were young. It makes me proud of my culture."

3.5.2. Informal Participation Versus Formal Marginalisation

Participants reported that indigenous games occurred more often during breaks or after school than during formal physical education. Teachers described curriculum and examination pressures as limiting opportunities to use locally known games. One teacher with 14 years of experience stated:

"The curriculum is fixed on modern sports. I know the students love Gebeta and Segno-Maksegno, but there is no space for them in my lesson plan. I have to prepare them for exams and competitions that don't include these games."

Another teacher with 22 years of experience observed:

"I remember playing these games as a child. They were part of growing up. But now, the school expects us to focus on football, volleyball, and athletics because those are what students are tested on. Indigenous games are seen as play, not serious learning."

3.5.3. Administrator Perspectives on Institutional Constraints

One school administrator (vice-principal with 10 years' experience) acknowledged the cultural value of indigenous games but identified institutional constraints:

"I grew up playing Segno-Maksegno and Gebeta. These games taught me patience and strategy. However, as a school, we are judged by our students' performance in regional sports competitions—football, athletics, volleyball. These are the activities that bring recognition to our school. Indigenous games are seen as recreational, not competitive. If the education bureau recognised them in official competitions, we would allocate more time and resources."

Another administrator emphasised resource and training limitations:

"The challenge is resources. We have limited sports equipment, and we prioritise the sports that students will be tested on. Indigenous games require minimal equipment—stones, sticks, open ground—but we still need guidance on how to teach them properly. Our teachers were not trained in these games"

3.5.4. Gender-Related Participation Patterns

Participants described participation patterns that were not consistently equitable. Physically demanding or competitive games could become male-dominated, whereas games such as Gebeta and Suzi were described as more inclusive when deliberately structured. A female student observed:

"When we play Lebana-Police, the boys are very aggressive and they don't always let us play. The teacher just watches. It feels like some games are 'for boys'."

A male student acknowledged:

"Sometimes we get too competitive and forget to include the girls. The teacher doesn't say anything. But when we play Gebeta, everyone can play because it's more about thinking than strength."

These accounts suggest that culturally familiar activities require intentional pedagogical organisation to ensure equitable participation.

3.6. Observed PE Practice

The observations corroborated limited institutionalisation (Table 5). Indigenous games appeared in only three of 20 lesson plans (15%), and none of the observed sessions demonstrated explicit alignment with curriculum objectives. Only two sessions used indigenous games to teach physical or

moral skills, while cultural explanation occurred in one session. Adequate space and materials were available in only one session. Equal participation of boys and girls was observed in four sessions (20%).

Table 5 *Observation of indigenous games in 20 PE sessions*

Criterion	Yes n (%)	No n (%)
Included in lesson plan	3 (15)	17 (85)
Students actively participated	5 (25)	15 (75)
Boys and girls participated equally	4 (20)	16 (80)
Demonstrated teamwork/cooperation	8 (40)	12 (60)
Used to teach physical or moral skills	2 (10)	18 (90)
Sufficient space/materials	1 (5)	19 (95)
Teacher explained cultural significance	1 (5)	19 (95)
Students expressed enjoyment/motivation	7 (35)	13 (65)
Safety precautions followed	12 (60)	8 (40)
Aligned with curriculum objectives	0 (0)	20 (100)

3.7. Barriers and Enabling Factors

Table 6 shows that students perceived inadequate facilities and equipment, curriculum emphasis on modern sports, limited teacher training, and restricted instructional time as important barriers. Cultural relevance and familiarity and student enthusiasm were the strongest enabling factors. The main challenge therefore appears to concern implementation conditions rather than student interest.

Table 6 *Perceived barriers and enabling factors*

Factor	M	SD
Barriers		
Inadequate facilities and equipment	4.34	0.81
Curriculum focused on Western sports	4.27	0.83
Limited teacher training	4.20	0.86
Lack of time in PE lessons	4.00	0.94
Teacher preference for modern sports	3.78	1.04
Enabling factors		
Cultural relevance and familiarity	4.40	0.73

Factor	<i>M</i>	<i>SD</i>
Student interest and enthusiasm	4.23	0.79
Community support	3.84	0.98
Availability of open spaces	2.91	1.20
Administrative support	2.70	1.23

3.8. Mixed-Methods Integration

Table 7 summarises convergence across data sources. The three evidence strands converged on a central pattern: students were receptive to indigenous games, but formal opportunities to learn through them were limited. Qualitative accounts explained this discrepancy in terms of curriculum pressures, teacher preparation, resource constraints, and participation practices, while observations demonstrated that these constraints were visible in actual lessons. The integration followed the "weaving" approach (Fetters et al., 2013), where findings from each strand were presented together and discussed thematically.

Table 7 *Integration of quantitative, qualitative, and observational findings*

Finding	Quantitative evidence	Qualitative evidence	Observation evidence	Integrated interpretation
Students value games	High cultural/curricular ratings	Cultural meaning and enjoyment	Enjoyment/motivation in some sessions	Strong student receptiveness
Formal participation is limited	65.8% never/once per term	Games mainly during breaks	15% included in lesson plans	Positive attitudes do not translate into systematic implementation
Teacher/institutional support is limited	Teacher encouragement <i>M</i> = 2.85	Insufficient training and curriculum space	10% used games pedagogically	Implementation capacity is constrained
Resources are inadequate	Facilities <i>M</i> = 2.41	Budget and spatial constraints	Adequate resources in 5% of sessions	Resource constraints are evident across strands
Participation equity requires attention	Equity item <i>M</i> = 3.21	Male dominance in some games	Equal participation in 20% of sessions	Gender-responsive pedagogy is needed

4. Discussion

The central finding is a substantial gap between students' positive perceptions of indigenous games and their limited formal implementation in physical education. Students strongly supported curricular inclusion and recognised cultural, social, and educational value, yet nearly two-thirds reported no more than one participation opportunity per term. Observations reinforced this discrepancy: indigenous games appeared in only 15% of lesson plans and were never explicitly aligned with curriculum objectives. The pattern is consistent with African research identifying

curriculum constraints, inadequate teacher preparation, resource shortages, and institutional priorities as recurrent barriers (Matsekoleng, 2020; Mokotjo & Mokuku, 2020).

4.1. Culturally Relevant Pedagogy and Physical Education

The findings support the relevance of culturally relevant pedagogy to physical education. Students perceived indigenous games as meaningful cultural practices, suggesting that these activities can bridge students' lived experiences and formal learning. However, culturally relevant pedagogy requires teachers to connect cultural resources with explicit learning purposes, inclusive participation, and appropriate pedagogical processes (Ladson-Billings, 1995).

The distinction between cultural familiarity and pedagogical integration is important. Teachers can use indigenous games to teach movement skills, cooperation, strategy, fitness, decision-making, and social responsibility while also creating opportunities to discuss cultural meanings and histories. Meaningful integration of traditional Indigenous games requires attention to curriculum, teacher preparation, and assessment (Fabian et al., 2024).

4.2. Sociocultural Learning and the Informal–Formal Connection

Students' accounts situated indigenous games within family and community relationships, while teachers described the games as familiar to students but marginal within formal lessons. This indicates that community-based knowledge could be brought into the classroom rather than displaced by standardised sporting activities. A sociocultural perspective highlights the role of interaction with peers, teachers, and community members in transforming familiar cultural practices into structured learning experiences (Vygotsky, 1978).

Recent Ethiopian work on indigenous play pedagogies supports the potential for aligning locally known games with foundational movement competencies (Tadesse et al., 2026). The objective is not to replace modern sports but to create a balanced physical education curriculum in which culturally meaningful activities coexist with established sports.

4.3. Curriculum, Teacher Preparation, and Resources

Curriculum and institutional conditions emerged as central constraints. Students rated curriculum emphasis on modern sports, limited teacher preparation, and lack of instructional time as important barriers, while teachers described examination and competition pressures. Teacher willingness alone is therefore unlikely to produce sustained integration when curriculum expectations provide little space for indigenous games.

Teacher education should include identifying locally appropriate games, documenting rules and variations, linking games to learning outcomes, adapting activities, ensuring safety, and assessing learning. Resource development should also be locally grounded. The Malawi Institute of Education's initiative to develop sourcebooks on traditional games illustrates one possible approach to supporting teachers with practical materials (Malawi Institute of Education, 2025).

Resource constraints require careful interpretation. Students rated facilities and equipment relatively low, and observations found adequate space and materials in only 5% of sessions. The challenge may involve access to appropriate space, organisation of available materials, and institutional prioritisation rather than equipment scarcity alone.

4.4. Participation Equity

The qualitative and observational findings indicate that cultural relevance does not automatically guarantee equitable participation. Students described situations in which boys dominated some competitive or physically demanding games, and equal participation was observed in only 20% of

sessions. Teachers should therefore monitor participation rather than assume that a culturally familiar activity is inherently inclusive. Mixed-gender grouping, role rotation, rule modification, and explicit participation expectations can help ensure equitable opportunities.

5. Limitations

The study was conducted in five secondary schools in Kaffa Zone, limiting transferability to other Ethiopian regions. Questionnaire findings relied on self-reports and may be affected by recall or social-desirability bias. The qualitative sample was relatively small and purposively selected. Finally, 20 observed sessions provide a useful but limited snapshot of classroom practice. Future research could use longitudinal and intervention designs, broader regional samples, and systematic evaluation of curriculum and teacher-development initiatives.

6. Implications and Recommendations

6.1. Implications

6.1.1. *Implications for Pedagogical Practice*

Curriculum developers should identify indigenous games that can be linked to explicit physical, cognitive, social, and cultural learning outcomes. Teacher educators should prepare teachers to teach locally relevant games safely and inclusively. School administrators should support access to spaces, locally available materials, and community knowledge. Physical education teachers should incorporate selected games into lesson plans rather than treating them as occasional recreational activities.

6.1.2. *Implications for Practice*

Curriculum developers should explicitly identify appropriate indigenous games and connect them to learning outcomes, instructional time, safety, and assessment. Teacher education institutions should provide practical preparation in indigenous games and culturally relevant, gender-responsive pedagogy. Schools should work with community members to document local games and identify appropriate spaces and materials. Teachers should use intentional grouping, role rotation, rule adaptation, and reflective discussion to support equitable participation and cultural learning.

6.1.3. *Implications for Research*

Future studies should examine indigenous-game integration across multiple Ethiopian regions and educational levels. Longitudinal and intervention designs could investigate whether curriculum and teacher-development initiatives increase implementation and improve student outcomes. Research should also document community knowledge before games are standardised for school use and examine how particular games can be aligned with movement, social, cognitive, and cultural learning outcomes.

6.2. Recommendations

6.2.1. *For curriculum developers and policymakers*

- Curriculum documents should explicitly incorporate selected indigenous games, intended learning outcomes, instructional time, safety requirements, assessment criteria, and scope for local adaptation.
- Develop teaching and learning resources, including teacher guides and student workbooks, in collaboration with community elders and PE specialists.

6.2.2. For teacher education institutions

- Pre-service and in-service teacher education must include practical preparation in indigenous games together with culturally relevant and gender-responsive pedagogy.
- Teacher training should address pedagogical approaches for specific games, gender-sensitive teaching strategies, and resource mobilisation.

6.2.3. For school administrators

- Schools should partner with community elders, identify open spaces and locally available materials, and monitor participation equity.
- Resource allocation should not automatically privilege modern competitive sports.

6.2.4. For PE teachers

- Embrace culturally relevant pedagogy by incorporating indigenous games into lesson plans and connecting them to broader learning objectives.
- Use strategies such as mixed-gender teams and game modifications to ensure equitable participation.

6.2.5. For researchers

- Future research should move to longitudinal and intervention designs, document community knowledge before standardisation, compare regions, and report effect sizes and confidence intervals. The goal is not to replace modern sports but to establish a balanced, culturally responsive PE curriculum in which both forms of activity coexist and support physical, cognitive, and social development.

7. Conclusion

This study demonstrates a clear discrepancy between students' positive perceptions of indigenous games and their limited formal integration into secondary physical education. Students recognised the cultural, educational, social, and motivational value of these activities, yet quantitative, qualitative, and observational evidence consistently indicated that indigenous games occupied a marginal position in formal instruction. The principal challenge therefore concerns the conditions of implementation rather than student receptiveness.

Sustainable integration requires explicit curriculum recognition, teacher preparation, appropriate resources, intentional pedagogical design, community engagement, and attention to equitable participation. Culturally responsive physical education should not be understood simply as the inclusion of culturally familiar activities; it requires the systematic transformation of cultural knowledge into meaningful, inclusive, safe, and curriculum-aligned learning experiences.

8. Declarations

8.1. Conflict of interest

The author declares that there are no competing interests.

8.2. Funding

This research received no external funding.

8.3. Author contributions (CRediT)

Aduḡna Eshetu Keto: Conceptualization; Methodology; Software; Formal analysis; Investigation; Data curation; Writing—original draft; Visualization

8.4. Data availability statement

The underlying dataset is not publicly available due to the involvement of secondary-school students and potentially identifiable information. Data may be available from the corresponding author on reasonable request, subject to ethical restrictions.

8.5. Ethics approval

The study was conducted in accordance with international ethical principles for research involving human participants (e.g., the Declaration of Helsinki). Permission was obtained from the participating schools, and participants were informed about the purpose of the study, the voluntary nature of participation, and their right to withdraw at any time. Informed consent was obtained from all participants prior to data collection, and confidentiality and anonymity were maintained throughout the research process.

8.6. Use of artificial intelligence (AI) tools

No generative AI tools were used in the preparation of this manuscript.

8.7. Acknowledgements

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