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Assessment of Physical Education at The High School Level in Dhankauda Block, Sambalpur, Odisha

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Abstract

The present study investigates the status of physical education in selected high schools of Dhankauda Block, Sambalpur District, Odisha, with particular emphasis on the availability and adequacy of physical and human resources. The study was conducted using a descriptive survey design. A purposive sample of ten government and government-aided high schools was selected, comprising 120 respondents, including 10 headmasters, 10 Physical Education Teachers (PETs), and 100 students. Primary data were collected through structured questionnaires designed separately for each respondent group. The findings reveal considerable disparities in the availability and condition of physical education infrastructure across schools. While most schools possess playgrounds and some basic facilities, variations exist in size, maintenance, and accessibility. A few schools lack proper playgrounds, sports rooms, and storage facilities, thereby limiting the effective implementation of physical education programs. The study also highlights differences in the availability of trained PETs and the frequency of physical education classes, indicating that schools with qualified personnel and better infrastructure demonstrate more regular and structured physical education activities. The study concludes that despite the presence of physical education, gaps in infrastructure and implementation remain, requiring improved facilities, stronger support, and effective policy execution.

Keywords: Physical Education, High Schools, Infrastructure, Human Resources, Sambalpur, Odisha, Resource Management

1. Introduction

Physical education at the high school level plays a vital role in fostering the holistic development of students by promoting physical fitness, mental well-being, discipline, teamwork, and leadership qualities. As an integral component of the school curriculum, it contributes not only to students' physical growth but also to the development of essential life skills and positive behavioral patterns. In recent years, growing concerns regarding sedentary lifestyles, unhealthy dietary habits, and increased engagement with digital media have highlighted the urgent need to strengthen physical education in schools (Tiwari, 2021). Regular participation in structured physical activities has been associated with

improved physical health, enhanced cognitive performance, and better emotional regulation among adolescents (Bailey, 2006; Arora et al., 2012). Moreover, physical education programs provide opportunities for social interaction, cooperation, and the cultivation of sportsmanship, thereby supporting students' social development (Weiler et al., 2014).

The theoretical foundation of physical education is based on the concept of physical activity, defined as bodily movement requiring energy expenditure. School-based programs include structured exercises and sports such as athletics, team games, and yoga to enhance strength, endurance, flexibility, and overall fitness (Swaminathan et al., 2011). Beyond physical benefits, regular activity reduces stress and anxiety (Adlakha et al., 2017) and positively influences academic performance by improving concentration and cognitive function (Arora et al., 2012). In India, physical education is increasingly recognized as a vital component of holistic education, emphasizing health awareness, skill development, yoga, and the use of technology in fitness monitoring (Hardman, 2008; Kar & Behera, 2021; Mann & Sharma, 2015; Panda, 2017). Despite its acknowledged importance, the implementation of physical education at the school level often faces significant challenges, particularly in relation to the availability and effective utilization of human and material resources (Swaminathan et al., 2010). Many schools encounter constraints such as inadequate playgrounds, insufficient sports equipment, lack of trained Physical Education Teachers (PETs), and limited institutional support. Furthermore, the increasing influence of fast food consumption and sedentary behavior among adolescents has contributed to rising cases of obesity and lifestyle-related health issues, reinforcing the necessity for well-structured and effectively implemented physical education programs (Tiwari, 2017).

In this context, the present study examines the status of physical education at the high school level in Dhankauda Block of Sambalpur District, Odisha. The study examines the availability and utilization of physical resources such as playgrounds, sports equipment, water facilities, and first-aid provisions, along with the effectiveness of human resources, including Physical Education Teachers and school administrators. By analyzing the perspectives of headmasters, PETs, and students, it aims to assess infrastructure, stakeholder cooperation, sports participation, and inclusivity for Children with Special Needs (CWSN), thereby identifying key gaps and strengths in the existing system.

2. Literature Review

The review of literature critically analyzes a broad spectrum of studies related to physical education, physical activity, and associated health outcomes among children and adolescents. It highlights the influence of cultural, geographical, and contextual factors that shape the effectiveness of physical education programs in different settings. This comprehensive examination offers a deeper understanding of how these variables interact and impact the implementation and outcomes of physical education initiatives.

Tiwari and Tiwari (2021) provide important insights into the cultural aspects of physical education through a comparative analysis of India and Thailand. Their findings emphasize that cultural norms and societal values significantly influence perceptions and participation in physical education. What proves successful in one cultural environment may not necessarily yield similar results in another, thereby stressing the need for culturally responsive physical education programs. The literature further identifies major challenges confronting physical education in India. Tarun et al. (2017) and Swaminathan et al.

(2010) point out issues such as insufficient infrastructure, shortage of qualified personnel, and a gradual decline in physical activity levels among children with increasing age. These concerns are especially evident in urban areas, where sedentary lifestyles are intensifying due to excessive screen exposure and limited access to safe recreational facilities. Such trends contribute to growing public health concerns, including increased risks of obesity and cardiovascular diseases. The studies advocate for focused interventions tailored to urban contexts, such as improving school-based and community-level physical activity opportunities.

Another significant dimension discussed in the review is the relationship between diet and physical activity. Arora et al. (2012) demonstrate a clear association between regular breakfast intake and improved health indicators, including lower obesity prevalence and higher physical activity levels. This finding reinforces the necessity of integrating nutrition education with physical education to promote overall well-being. However, the literature indicates a gap regarding the long-term interaction between dietary habits and physical activity, particularly across varied socio-economic groups. More longitudinal research is recommended to better understand their combined impact over time.

The rising prevalence of adolescent obesity is another pressing issue highlighted by Panda (2017) and Adlakha (2017). They attribute this trend to factors such as unhealthy eating patterns, sedentary behavior, and inadequate emphasis on physical education within schools. Obesity is presented not only as a health challenge but also as a broader socio-economic concern due to its implications for healthcare expenditure and quality of life. The authors recommend context-specific strategies that address the distinct needs of urban and rural populations. The influence of the built environment on physical activity behavior is also emphasized. Adlakha (2017) explains how urban design elements—such as availability of parks, neighborhood walkability, and safe recreational areas—can either facilitate or restrict physical activity. Enhancing infrastructure and urban planning is therefore considered crucial for encouraging active lifestyles. Nevertheless, the review notes limited longitudinal evidence examining how environmental changes over time affect health and activity patterns.

From an educational perspective, Hardman (2008) and Bailey (2006) provide a global outlook on the implementation of physical education, particularly in resource-limited settings. They highlight disparities in access to quality physical education due to shortages of trained teachers, facilities, and institutional support. The authors underscore the importance of policy advocacy and governmental commitment in strengthening physical education systems worldwide. The review ultimately calls for coordinated and school-centered strategies to promote physical activity, drawing on the work of Weiler et al. (2014) and Cale (2023). Schools are recognized as critical platforms for fostering active lifestyles, but programs must be context-sensitive and inclusive of cultural, socio-economic, and environmental realities. Collaboration among schools, families, communities, and policymakers is essential to create supportive environments that sustain physical activity both within and beyond school settings.

Although existing studies recognize the importance of physical education, there is limited region-specific research on the availability and effective utilization of physical and human resources in high schools of Odisha, particularly in rural and semi-urban areas. Moreover, little evidence exists on the grassroots implementation of policies or the perspectives of key stakeholders such as headmasters, PETs, and students. To address these gaps, the present study conducts a focused investigation of high

schools in Dhankauda block, Sambalpur district, providing context-specific insights to strengthen physical education practices.

3. Data Base and Methodology

The present study adopted a descriptive survey design to examine the existing status of physical education in high schools of Dhankauda Block, Sambalpur District, Odisha. The population comprised government and government-aided high schools in the block, including headmasters, Physical Education Teachers (PETs), and students of Classes VIII to X. A purposive sampling technique was employed to select ten high schools. From each school, one headmaster, one PET teacher, and ten students were selected, resulting in a total sample of 120 respondents (10 headmasters, 10 PET teachers, and 100 students). The detailed distribution of respondents is presented in Table 1.

Table 1: Sample Distribution of Respondents by School

District	Block	School Name	Total Respondents	Headmaster	PET Teacher	Students
Sambalpur	Dhankauda	Govt. Girl High School, Burla	12	1	1	10
		Hindi Nodal High School, Golbazar	12	1	1	10
		Municipal Boys' High School, Modipada	12	1	1	10
		Govt. Girl High School, Hirakud	12	1	1	10
		Burla Boys High School	12	1	1	10
		Govt. High School, A. Katapali	12	1	1	10
		Budharaja Govt. High School	12	1	1	10
		S.D.S Girls High School, Modipada	12	1	1	10
		Panchayat High School, Chiplima	12	1	1	10
Total	-	-	120	10	10	100

4. Results and Discussions

The results of the study are presented and analyzed in this section based on the data collected from headmasters, Physical Education Teachers (PETs), and students of the selected high schools. The findings are organized according to the objectives of the study, with particular emphasis on the availability and adequacy of physical resources and human resources. The data are presented in tabular

form and followed by concise interpretation to highlight key observations and disparities in the existing system of physical education.

Table 2: Availability of Playgrounds and Open Space in the Surveyed Schools

School Name	Playgrounds (Yes/No)	Size of Playground (in square meters)	Open Space for Sports (Yes/No)	Remarks
Govt. Girl High School, Burla	Yes	500	Yes	Spacious playground, good for outdoor sports.
Hindi Nodal High School, Golbazar	No	0	Yes	Limited open space, no proper playground.
Municipal Boys' High School, Modipada	Yes	600	Yes	Sufficient space for sports activities.
Govt. Girl High School, Hirakud	Yes	400	No	Playground available but no open space for additional activities.
Burla Boys High School	Yes	700	Yes	Large playground with ample open space.
Govt. High School, A. Katapali	No	0	No	No playground or open space available.
Budharaja Govt. High School	Yes	550	Yes	Good playground and open space.
Budharaja Govt. High School	Yes	300	Yes	Small playground, but usable for basic activities.
S.D.S Girls High School, Modipada	Yes	450	Yes	Moderate size playground with open space.
Panchayat High School, Chiplima	Yes	650	Yes	Well-maintained and large playground.

Table 2 shows that 8 out of 10 schools have playground facilities, while 2 schools lack proper playgrounds, and one of them also lacks open space entirely. The size of playgrounds varies considerably (300–700 sq. m.), indicating uneven infrastructure distribution. Although most schools possess some open space for sports, limitations in size and availability restrict the effective implementation of diverse physical education activities in certain schools. The findings suggest the need for infrastructure improvement to ensure uniform and adequate physical education facilities across all high schools.

Table 3: Type and Condition of Physical Education Infrastructure

School Name	Sports Room (Yes/No)	Condition (Good/Fair/Poor)	Remarks
Govt. Girl High School, Burla	Yes	Good	Well-maintained sports room.
Hindi Nodal High School, Golbazar	Yes	Poor	The sports room is overcrowded.
Municipal Boys' High School, Modipada	Yes	Good	Well-equipped and maintained.
Govt. Girl High School, Hirakud	No	Poor	No proper physical education infrastructure.
Burla Boys High School	Yes	Good	Fully equipped and in good condition.
Govt. High School, A. Katapali	No	Poor	Lack of facilities or sports room.
Budharaja Govt. High School	Yes	Fair	Some equipment needs repair.
S.D.S Girls High School, Modipada	No	Fair	Gymnasium available, but no sports room.
Panchayat High School, Chiplima	Yes	Good	Maintained properly and well-used.

Table 3 shows the availability and condition of physical education infrastructure in the surveyed schools. Out of nine schools, six have sports rooms, while three (Govt. Girl High School, Hirakud; Govt. High School, A. Katapali; and S.D.S Girls High School, Modipada) either lack a sports room or have limited facilities. Four schools (Govt. Girl High School, Burla; Municipal Boys' High School, Modipada; Burla Boys High School; and Panchayat High School, Chiplima) report their sports rooms are in good condition. However, Hindi Nodal High School, Golbazar, has overcrowded facilities, and Budharaja Govt. High School's sports room is in fair condition with some repair needs. Two schools (Govt. Girl High School, Hirakud and Govt. High School, A. Katapali) lack proper infrastructure, with their facilities reported as poor. These findings reflect significant disparities in physical education resources across schools.

Table 4: Condition of Physical Education Infrastructure in the Schools

Condition of Infrastructure	Number of Schools	Remarks
Good	4	Well-maintained, equipped sports rooms
Fair	2	Needs some improvements

Poor	4	Insufficient facilities and infrastructure

Table 4 presents the condition of physical education infrastructure across the surveyed schools. It shows that four schools have good infrastructure, characterized by well-maintained and fully equipped sports rooms. Two schools fall under the fair category, indicating that their facilities require some improvements but are still functional. However, four schools report poor conditions, reflecting insufficient physical education infrastructure, with either inadequate or outdated facilities. This distribution underscores the unequal availability and maintenance of sports resources in the schools surveyed, with a significant number of schools facing challenges in providing adequate physical education infrastructure.

Table 5: Availability and Condition of Storage Space for Sports Materials

Storage Space Available (Yes/No)	**Number of Schools**	**Condition of Storage (Good/Fair/Poor)**	**Remarks**
Yes	6	Good: 5, Fair: 1	Sufficient storage available and well-maintained
No	4	Poor: 4	Lack of storage space for materials

Table 5 shows the availability and condition of storage space for sports materials in the surveyed schools. Out of the 10 schools, 6 have storage space for sports materials. Of these, 5 schools have well-maintained storage facilities, while 1 school has fair storage conditions. These schools are able to store sports equipment properly, ensuring their longevity and readiness for use.

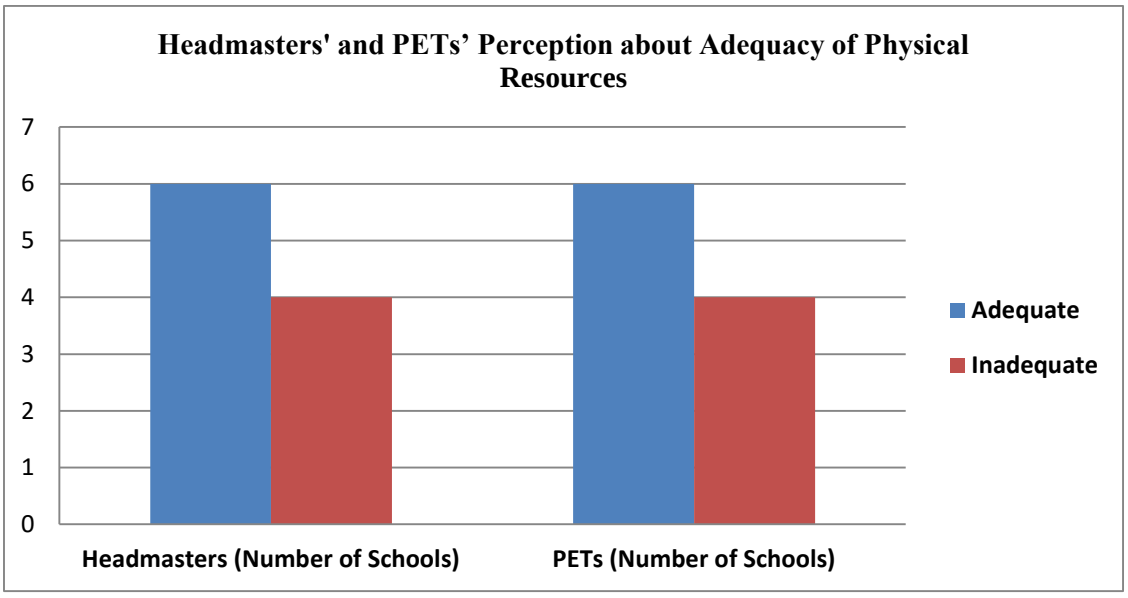
However, 4 schools do not have any storage space for sports materials, and the condition of facilities in these schools is poor. The lack of adequate storage space affects the proper maintenance and organization of sports equipment, which could hinder the effective use of sports resources in these schools.

Table 6: Headmasters' and PETs' Perception about Adequacy of Physical Resources

Perception (Adequate/Inadequate)	**Headmasters (Number of Schools)**	**PETs (Number of Schools)**	**Remarks**
Adequate	6	6	Both agree on adequacy of resources
Inadequate	4	4	Both highlighted insufficient resources

Table 6 shows the perceptions of Headmasters and Physical Education Teachers (PETs) regarding the adequacy of physical resources across schools. Both Headmasters and PETs agree that in six schools, the resources are adequate, reflecting a shared belief in the sufficiency of facilities and equipment. Conversely, in four schools, both Headmasters and PETs perceive the resources as inadequate, pointing to a consistent recognition of insufficient infrastructure and equipment in these schools. This alignment in perception highlights areas where physical resources need significant improvement.

Figure 1: Headmasters' and PETs' Perception of Adequacy of Physical Resources



The figure 1 shows the perceptions of headmasters and Physical Education Teachers (PETs) regarding the adequacy of physical resources in the surveyed high schools. Both groups report that in six schools, resources are adequate, indicating sufficient infrastructure and facilities for conducting physical education activities. Conversely, four schools are perceived to have inadequate resources by both headmasters and PETs, highlighting gaps in infrastructure, equipment, and facilities. The alignment between the two groups' responses suggests a shared understanding of the resource constraints, emphasizing areas where improvements are needed to ensure equitable and effective physical education provision.

Table 7: Availability of Trained Physical Education Teachers (PETs) and Frequency of Physical Education Classes

School Name	Number of PETs	Qualification of PETs	Frequency of PE Classes	Duration per Class (Minutes)	Remarks
Govt. Girl High School, Burla	1	B.P.Ed	3 times/week	40	Regular PE classes
Hindi Nodal High School, Golbazar	0	None	1 time/week	30	Limited PE classes
Municipal Boys' High	1	M.P.Ed	5	45	Regular and

School, Modipada			times/week		frequent PE classes
Burla Boys High School	1	B.P.Ed	4 times/week	45	Frequent PE classes
Panchayat High School, Chiplima	1	B.P.Ed	2 times/week	40	Regular PE classes

Table 7 highlights the availability of trained Physical Education Teachers (PETs) and the frequency and duration of physical education (PE) classes across five surveyed schools. Four schools reported having at least one qualified PET, with qualifications ranging from B.P.Ed to M.P.Ed, which supports the regular conduction of PE sessions. The frequency of PE classes in these schools varies from two to five times per week, with class durations typically between 40 to 45 minutes, indicating a structured approach to physical education. However, one school (Hindi Nodal High School, Golbazar) lacks a trained PET and conducts PE classes only once a week for 30 minutes, pointing to a significant gap in physical education delivery. This table reflects the positive impact of trained personnel on the regularity and quality of PE classes, while also underlining the challenges faced by schools without dedicated PE staff.

Table 8: Number of PETs and Students per School

School Name	Number of PETs	Number of Students	PET to Student Ratio
Govt. Girl High School, Burla	1	10	01:10
Hindi Nodal High School, Golbazar	1	10	01:10
Municipal Boys' High School, Modipada	1	10	01:10
Govt. Girl High School, Hirakud	1	10	01:10
Burla Boys High School	1	10	01:10
Govt. High School, A. Katapali	1	10	01:10
Budharaja Govt. High School	1	10	01:10
S.D.S Girls High School, Modipada	1	10	01:10
Panchayat High School, Chiplima	1	10	01:10
Hindi Nodal High School, Golbazar	1	10	01:10

Table 8 shows the uniform distribution of Physical Education Teachers (PETs) across all surveyed high schools, with each school having **1 PET assigned to 10 students**, resulting in a consistent **PET-to-student ratio of 1:10**. This balanced ratio suggests that each PET is responsible for a manageable number of students, which could potentially facilitate effective instruction and personalized guidance in physical education activities. However, while the ratio appears ideal on paper, qualitative factors such as class frequency, infrastructure, and resource utilization still play a crucial role in determining the overall effectiveness of physical education delivery in these schools.

5. Conclusion

The present study has undertaken to examine the status of physical education in selected high schools of Dhankauda Block, Sambalpur District, with specific emphasis on the availability and adequacy of physical and human resources. Based on the analysis of data collected from headmasters, Physical Education Teachers (PETs), and students, the study provides important insights into the existing infrastructure and implementation of physical education programs at the high school level. The findings reveal that although a majority of schools possess basic facilities such as playgrounds and sports rooms, there are significant disparities in terms of size, condition, and maintenance of infrastructure. Some schools lack adequate playgrounds, proper sports rooms, or storage facilities for sports materials, which directly affects the quality and scope of physical education activities. Variations in the condition of infrastructure—ranging from good to poor—indicate uneven distribution of resources and highlight the need for standardized facility development across schools.

With regard to human resources, the study shows that the presence of trained PETs positively influences the regularity and effectiveness of physical education classes. Schools with qualified PETs conduct PE classes more frequently and in a structured manner, whereas schools with limited or no trained personnel demonstrate reduced engagement in physical education activities. Although the recorded PET-to-student ratio appears manageable, the effectiveness of physical education delivery depends not only on staffing but also on infrastructure, scheduling, and administrative support. In conclusion, while certain schools demonstrate satisfactory provision of physical education facilities and personnel, notable gaps persist in infrastructure adequacy, maintenance, and uniform implementation. To ensure equitable and effective physical education across all high schools, there is a need for focused policy intervention, improved infrastructure development, regular monitoring and strengthened institutional commitment. Strengthening these aspects will contribute significantly to promoting students' physical well-being and holistic development.

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