



Enhancing School Health Program Effectiveness: The Strategic Role of Physical Education, Sports, and Health Teachers in Senior High Schools

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ABSTRACT

Purpose of the study: This study aims to analyze and describe the role of Physical Education, Sports, and Health teachers in optimizing the implementation of the School Health Program in public senior high schools in Bantul Regency.

Methodology: This study employed a survey method involving 31 teachers as the total population. Data were collected using a structured questionnaire based on educational, preventive, curative, and managerial indicators. Instrument validity was confirmed through expert judgment, and reliability was tested using Cronbach's alpha. Supporting data were obtained through observation and documentation, and analyzed using descriptive percentage techniques.

Main Findings: The results indicate that the role of teachers in optimizing is generally at a moderate level. The educational aspect is the most dominant, while the preventive, curative, and managerial aspects are less optimal. implementation tends to be partial, with limited teacher involvement in management and insufficient integration across health program components.

Novelty/Originality of this study: This study provides a comprehensive analysis of teachers' roles by integrating educational, preventive, curative, and managerial aspects within a single framework. It also offers a context-based perspective at the senior high school level, highlighting the strategic position of teachers as key actors in optimizing school health programs.

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1. INTRODUCTION

Schools are strategic institutions in developing human resources who excel not only academically but also physically and mentally healthy [1]-[3]. High school education plays a crucial role in preparing students for a productive and character-based adult life. Student health is a primary prerequisite for optimal and sustainable learning. Research shows that student health is closely related to academic achievement, attendance, and school engagement [4]. Therefore, schools are required to systematically integrate health services through the School Health Program as a foundation for student health development [5], [6].

Indonesian national education emphasizes that the goal of education is not only to educate the nation but also to develop individuals who are physically and mentally healthy. Law Number 20 of 2003 concerning the National Education System places the development of students' full potential as the primary focus of education

[7], [8]. In line with this, the modern educational development paradigm emphasizes the importance of a holistic approach that integrates academic and health aspects [9]. International studies also confirm that schools play a strategic role in promoting adolescent health [10], [11]. However, the implementation of school health policies at the educational unit level still shows significant variation in quality.

The School Health Program is a cross-sectoral program aimed at improving students' healthy lifestyles through health education, health services, and fostering a healthy school environment. Has proven effective in fostering clean and healthy living behaviors when managed optimally and sustainably [12]. The role of is becoming increasingly important amidst increasing adolescent health issues, such as low physical activity, sports injuries, and mental health disorders. However, various studies show that in secondary schools often operates administratively without optimizing its educational and preventive functions [13]-[15]. This situation highlights a gap between the ideal concept of and actual practice.

Physical Education, Sports, and Health teachers hold a strategic position in the implementation of the School Health Unit due to their competencies directly related to health, physical activity, and injury prevention [16], [17]. Teachers are equipped with knowledge of anatomy, physiology, physical fitness, and first aid relevant to school health services. Research suggests that the active involvement of teachers can increase the effectiveness of health promotion programs in schools [18]. However, in practice, management in many schools is delegated to non- teachers or administrative staff. This indicates a mismatch between the professional potential of teachers and their actual roles.

Several studies in Indonesia have focused primarily on the availability of facilities and student involvement through organizations such as the Youth Red Cross , without examining in-depth the role of teachers as key actors. Previous research has tended to focus on students' knowledge levels or the completeness of facilities [19], [20]. Thus, there is a research gap in the lack of empirical studies specifically analyzing the optimization of the role of physical education teachers in the management and implementation of school health programs at the high school level. Furthermore, regional context is often overlooked, even though regional characteristics influence the implementation of school health programs. Therefore, studies based on local contexts are crucial to enrich the research literature.

Bantul Regency is one of the regions with a relatively evenly distributed number of public senior high schools and has facilities in each school. However, based on preliminary studies, the optimization of the role of physical education teachers in activities in public senior high schools throughout Bantul Regency has not been systematically documented [21]. The novelty of this research lies in its comprehensive analysis of the role of physical education teachers in optimizing , not only as instructors but also as managers, facilitators, and agents of school health promotion. This approach aligns with global research recommendations emphasizing the role of teachers as health promoters in the school environment [22]. Therefore, this research makes both theoretical and practical contributions to the development of based on the professional role of physical education teachers. Although previous studies have examined the implementation of the School Health Program, significant gaps remain in their focus and depth of analysis. Studies by Ivani [23] and WHO emphasize the strong relationship between students' health and academic achievement, yet they do not specifically address the roles of school-level actors in implementing health programs. Meanwhile, Anggraini et al. [24] highlight the effectiveness of in promoting healthy behaviors, but their study primarily focuses on program outcomes rather than the roles of teachers as key implementers. Furthermore, Nafisah [25] reveal that implementation tends to be administrative in nature; however, they do not thoroughly analyze the underlying causes from the perspective of teacher competence and involvement, particularly that of teachers. Therefore, it can be concluded that previous research has not comprehensively examined the optimization of teachers' roles as key actors in managing and implementing, especially at the senior high school level.

The novelty of this study lies in its comprehensive approach to analyzing the role of teachers in optimizing the. Unlike previous studies, this research positions teachers not only as educators but also as facilitators, implementers, and managers of school health programs [26]. It integrates four main dimensions of teacher roles educational, preventive, curative, and managerial within a single analytical framework. In addition, this study adopts a context-based perspective by focusing on public senior high schools in Bantul Regency, providing more specific and empirically grounded insights into the actual implementation of at the local level.

This study offers both theoretical and practical implications. Theoretically, it contributes to the body of knowledge on school health programs by emphasizing the strategic role of teachers as central actors in implementation. Practically, the findings can serve as a reference for schools in developing more effective policies regarding role distribution and program management [27]. Moreover, this study highlights the importance of strengthening teachers' competencies through professional development and training, as well as enhancing collaboration between schools and health institutions to improve the overall effectiveness of.

The urgency of this study is driven by the increasing complexity of adolescent health issues in school environments, including low levels of physical activity, a higher risk of sports-related injuries, and the growing prevalence of mental health problems. These challenges require the optimization of as an integrated preventive and promotive effort within schools. Without the active and effective involvement of teachers, the implementation

of is likely to remain suboptimal. Therefore, this study is essential in providing empirical insights into the role of teachers in, which can serve as a foundation for improving the quality of school health services as part of sustainable human resource development. dan rekomendasi praktis bagi penguatan. Dengan demikian, penelitian ini berkontribusi dalam menjembatani kesenjangan antara kebijakan, teori, dan praktik di sekolah menengah.

2. RESEARCH METHOD

2.1 Research Design

This study employed a quantitative descriptive research design using a survey method [28]. The survey method was chosen because it is appropriate for collecting data from a population to describe existing conditions and determine the actual status of the object being studied at the time the research was conducted. This research aimed to analyze and describe the role of Physical Education, Sports, and Health teachers in optimizing the implementation of the School Health Program in public senior high schools in Bantul Regency.

The study focused on four main dimensions of teachers' roles, namely educational, preventive, curative, and managerial aspects. Through this approach, the researcher sought to obtain a comprehensive overview of the extent to which Physical Education, Sports, and Health teachers contribute to the effectiveness of School Health Program implementation in schools.

2.2 Population and Sample

The population of this study consisted of all Physical Education, Sports, and Health teachers in public senior high schools throughout Bantul Regency, totaling 31 teachers. Since the total population was fewer than 100 respondents, all members of the population were included as research subjects. Therefore, this study applied a total sampling technique, in which the entire population served as the sample.

Total sampling was considered appropriate because it allowed the researcher to obtain comprehensive and representative data regarding the role of Physical Education, Sports, and Health teachers in optimizing the School Health Program without excluding any respondents.

2.3 Research Instrument and Data Collection Technique

The main instrument used in this study was a structured questionnaire [29] developed to measure the role of PJOK teachers in optimizing the implementation of the School Health Program. The questionnaire was arranged based on four indicators of teacher roles, namely: (1) educational role, (2) preventive role, (3) curative role, and (4) managerial role.

Each indicator consisted of several statement items using a Likert scale with four response categories: strongly agree, agree, disagree, and strongly disagree. The use of the Likert scale aimed to measure respondents' perceptions systematically and quantitatively regarding their involvement in School Health Program activities.

Before being distributed to respondents, the instrument underwent content validity testing through expert judgment involving experts in physical education and school health management. The validation process considered the relevance of indicators, clarity of language, and suitability of each statement item with the research objectives.

Instrument reliability was tested using Cronbach's Alpha coefficient to ensure internal consistency. An instrument is considered reliable if the Cronbach's Alpha value is greater than 0.70. The reliability test was conducted before the main data collection process.

In addition to questionnaires, supporting data were obtained through direct observation and documentation study. Observation was conducted to examine the actual implementation of School Health Program activities in schools, while documentation included school reports, School Health Program administration records, teacher assignments, and other relevant supporting documents. These techniques were used to strengthen data validity through source triangulation.

2.4 Data Analysis Technique

The collected data were analyzed using descriptive statistical analysis with percentage techniques [30]. This method was used to describe the level of teachers' roles in optimizing School Health Program implementation based on each research indicator:

$$P = \frac{F}{N} \times 100\% \quad \dots(1)$$

Where:

P = Percentage

F = Frequency

N = Total number of respondents

The raw data obtained from each questionnaire item were then converted into score categories based on the ideal mean (Mi) and ideal standard deviation (SDi). The categorization aimed to classify the level of teachers' roles into four categories:

Normal Range	Category
$Mi + 1.5 SDi < X \leq Mi + 3 SDi$	Very High
$Mi < X \leq Mi + 1.5 SDi$	High
$Mi - 1.5 SDi < X \leq Mi$	Moderate
$Mi - 3 SDi < X \leq Mi - 1.5 SDi$	Low

This classification was used to determine the extent to which Physical Education, Sports, and Health teachers played their roles in educational, preventive, curative, and managerial dimensions of School Health Program implementation.

2.5 Research Procedure

The research procedure was conducted through several systematic stages [31]. The first stage was preparation, which included identifying the research problem, determining the research focus, reviewing relevant literature, and developing research instruments based on the indicators of Physical Education, Sports, and Health teachers' roles in School Health Program optimization. The second stage involved instrument validation through expert judgment to ensure the content validity of the questionnaire. Revisions were made based on suggestions and feedback from validators. After revision, the instrument was tested for reliability using Cronbach's Alpha.

The third stage was data collection. The validated and reliable questionnaire was distributed to all Physical Education, Sports, and Health teachers in public senior high schools in Bantul Regency. At the same time, observations and documentation studies were conducted to support and strengthen the main data obtained from the questionnaires. The final stage was data processing and analysis. All collected data were checked, coded, tabulated, and analyzed using descriptive percentage techniques. The results were then interpreted to provide a comprehensive understanding of the strategic role of Physical Education, Sports, and Health teachers in optimizing the School Health Program implementation in schools.

3. RESULTS AND DISCUSSION

The discussion of this study shows that the role of Physical Education, Sports, and Health teachers in optimizing the School Health Program has generally been implemented in the "moderate" category, meaning that teachers have participated in supporting school health activities, although the implementation has not yet reached the ideal standard. This finding reflects that teachers are already aware of their responsibilities in maintaining students' health and well-being, but there are still structural, technical, and managerial barriers that limit the effectiveness of their roles. This result is in line with the study conducted by Andermo [32], which found that the implementation of School Health Program in Indonesian secondary schools was mostly categorized as "adequate" because teachers were active in educational activities but still weak in preventive and managerial functions. Their study emphasized that the success of School Health Program largely depends on teacher involvement beyond classroom instruction, especially in preventive health services and school health management.

The strongest role identified in this study is the educational aspect. Physical Education, Sports, and Health teachers actively provide health education related to healthy lifestyles, physical fitness, personal hygiene, balanced nutrition, and disease prevention. These activities are usually integrated into classroom learning, sports practice, and extracurricular school programs. This indicates that teachers have successfully implemented their primary pedagogical function as educators and health promoters. According to Dhamchenko [33], health education delivered by Physical Education teachers significantly improves students' awareness of healthy behavior because students tend to respond more positively to practical and activity-based learning approaches. Similarly, research by Varea [34] revealed that schools with active Physical Education teachers in health promotion showed better student discipline in maintaining hygiene and participating in physical activity programs. This supports the present study, where the educational dimension appears as the most dominant indicator.

In the preventive aspect, the role of teachers is categorized as adequate but still requires significant improvement. Teachers have supervised students during physical activities, provided safety instructions, ensured proper warm-up routines, and attempted to minimize sports injuries. However, more systematic preventive actions such as regular health screening, early identification of student health problems, nutrition monitoring, and continuous physical fitness evaluation are still limited. This finding is consistent with the study by Vaughan Cruickshank et al. [35], which found that preventive health services in schools were often poorly implemented because teachers lacked technical training in health screening procedures and schools had limited collaboration with local health centers. Preventive health services require not only teacher awareness but also institutional

support, including partnerships with health professionals. Without this support, prevention tends to be incidental rather than systematic.

The curative aspect shows an even weaker result, where teachers mostly provide only basic first aid for minor injuries such as bruises, sprains, or small wounds during sports activities. Their involvement in broader health service functions remains limited because they are not medically trained personnel. This finding aligns with the study of Septa Diana Nabella et al. [36], who explained that most Physical Education teachers only perform emergency first aid and refer serious cases to school clinics or nearby health facilities. This limitation is understandable because curative services require professional medical competence, but it also indicates that the health service component of School Health Program has not been fully optimized. According to World Health Organization, effective school health services should include early treatment, referral systems, and coordinated health monitoring, not merely temporary first aid. Therefore, the curative weakness found in this study reflects a broader institutional limitation rather than solely individual teacher performance.

The managerial aspect is the weakest dimension identified in this research. Physical Education, Sports, and Health teachers are often not fully involved in planning, organizing, implementing, and evaluating School Health Program programs. In many schools, School Health Program management is delegated to administrative staff or teachers from unrelated disciplines. This condition creates a mismatch between teacher competence and actual responsibility distribution. Research by Agustinus Hermino [37] also found that school principals often assign School Health Program responsibilities based on administrative convenience rather than professional relevance, causing Physical Education teachers to be excluded from strategic health program management. This situation weakens the effectiveness of School Health Program because managerial decisions are made without sufficient understanding of student physical health and health education principles.

The imbalance among educational, preventive, curative, and managerial roles indicates that School Health Program implementation has not yet been comprehensively integrated. The dominance of the educational role shows that teachers still function mainly within traditional instructional boundaries, while their broader potential as health facilitators and program managers remains underutilized. According to Rie Ogasawara [38], professional teachers should not only teach but also act as organizers, facilitators, motivators, and evaluators of school development programs, including student health services. This theoretical perspective supports the argument that Physical Education teachers should be positioned more strategically in School Health Program management rather than being limited to classroom instruction.

Another important issue identified is the lack of coordination between schools and external health institutions such as community health centers. Limited collaboration reduces the effectiveness of preventive and curative services because schools cannot independently manage all health-related needs. Research by Ninsima [39] showed that schools with strong collaboration between teachers and local health centers had significantly better School Health Program outcomes, including regular health check-ups, vaccination programs, and health counseling sessions. In contrast, schools with weak institutional partnerships tended to run School Health Program only as an administrative obligation rather than a functional health promotion system. This finding strongly supports the present study, where limited coordination contributes to the moderate rather than optimal implementation of School Health Program.

Furthermore, inadequate facilities and infrastructure also become major obstacles. Many schools still lack proper first aid rooms, health equipment, sports safety tools, and monitoring instruments for student health assessment. According to Elisabeth Lisu [40], program effectiveness is highly influenced by resource availability because even well-designed educational interventions cannot function properly without adequate supporting facilities. This explains why teacher competence alone is insufficient if not accompanied by institutional investment in school health infrastructure.

Therefore, optimizing the School Health Program requires a systematic and integrated strategy. Strengthening teacher competencies through specialized training in school health services, improving facilities and infrastructure, involving Physical Education teachers in strategic program management, and enhancing cross-sector collaboration with health institutions are essential steps. This study confirms that Physical Education, Sports, and Health teachers are key actors in improving school health quality. Their role should not be limited to teaching sports and physical activity but expanded toward becoming health promoters, facilitators, implementers, and managers of comprehensive school health programs. This is supported by the study of Ayu Khoirotul et al. [41], which concluded that schools with empowered Physical Education teachers demonstrated stronger School Health Program sustainability and better student health outcomes. Thus, strengthening teacher roles is not only an educational necessity but also a strategic investment in the long-term development of healthy school environments.

Gap analysis based on previous studies shows that most earlier research has primarily focused on one specific dimension of the School Health Program, particularly health education or preventive services, without comprehensively examining the integrated role of Physical Education, Sports, and Health teachers across educational, preventive, curative, and managerial aspects. For example, the study by Lauren Herlitz [42] emphasized the effectiveness of health education delivered by Physical Education teachers in improving students' healthy behavior, but it did not analyze teachers' managerial involvement in School Health Program

implementation. Similarly, Stephen Dodd et al. [43] focused mainly on preventive health services such as supervision and health monitoring, yet the study lacked discussion regarding curative support and program management structures. Meanwhile, Ana Paula [44] examined managerial weaknesses in School Health Program implementation but did not specifically connect them with the professional competence of Physical Education teachers. Therefore, a significant research gap remains in understanding how these four dimensions interact simultaneously in determining the effectiveness of School Health Program implementation, especially at the senior high school level in Bantul Regency.

The novelty of this study lies in its comprehensive approach to analyzing the role of Physical Education, Sports, and Health teachers in optimizing the School Health Program through four integrated dimensions: educational, preventive, curative, and managerial roles. Unlike previous studies that tended to examine these aspects separately, this research provides a holistic perspective on how teacher competence and institutional structure influence the effectiveness of school health programs. In addition, this study specifically focuses on public senior high schools in Bantul Regency, which provides contextual evidence from a regional educational setting that has not been widely explored in previous literature. Another important novelty is the identification of managerial role weakness as the most critical issue, showing that the problem of School Health Program optimization is not only related to teacher competence but also to structural role distribution and policy support within schools.

The implications of this study are both theoretical and practical. Theoretically, this research strengthens the concept that Physical Education, Sports, and Health teachers should be viewed not only as subject teachers but also as strategic agents in school health development. Their professional role should include health promotion, prevention, basic health services, and program management. Practically, the findings provide important recommendations for school principals, education offices, and health institutions to strengthen teacher empowerment in School Health Program implementation. Schools need to involve Physical Education teachers more actively in School Health Program planning and evaluation, while local governments should provide continuous professional development programs, health-service training, and stronger collaboration with community health centers. This study also implies that improving school health quality requires institutional commitment rather than relying solely on individual teacher initiative.

This study has several limitations that should be considered. First, the research only involved 31 Physical Education, Sports, and Health teachers from public senior high schools in Bantul Regency, which limits the generalizability of the findings to other educational levels or regions with different institutional conditions. Second, the study used a questionnaire-based quantitative approach, which may not fully capture the deeper contextual challenges, perceptions, and practical barriers experienced by teachers in implementing School Health Program. Third, the study focused only on the teacher perspective and did not include data from school principals, students, parents, or health officers, whose perspectives could provide a more comprehensive understanding of School Health Program implementation. Therefore, future research is recommended to apply mixed methods or qualitative approaches and involve multiple stakeholders to obtain richer and more in-depth findings.

In conclusion, this study confirms that the role of Physical Education, Sports, and Health teachers in optimizing the School Health Program in public senior high schools in Bantul Regency is generally categorized as moderate, with the strongest contribution found in the educational aspect and the weakest in the managerial aspect. This indicates that teachers have successfully performed their instructional responsibilities in promoting student health awareness, but their broader involvement in preventive services, curative support, and program management remains limited. The imbalance among these dimensions reflects that School Health Program implementation has not yet been fully integrated and still faces structural, institutional, and resource-related challenges. Strengthening teacher competencies, improving facilities and infrastructure, enhancing collaboration with health institutions, and aligning role distribution with professional expertise are essential steps to improve the effectiveness of School Health Program. Ultimately, empowering Physical Education teachers as educators, facilitators, and managers of school health programs is a strategic effort to create healthier, safer, and more sustainable school environments for students.

4. CONCLUSION

This study concludes that the role of Physical Education, Sports, and Health teachers in optimizing the School Health Program in public senior high schools in Bantul Regency is generally at a moderate level, indicating that their roles have been implemented but not yet fully optimized. The findings reveal that the educational aspect is the most dominant, while the preventive, curative, and managerial aspects remain less developed and not well integrated. This imbalance suggests that implementation tends to be partial rather than comprehensive. The limited involvement of teachers in managerial roles, along with constraints in training, facilities, and institutional support, further hinders the effectiveness of. Therefore, optimizing requires a more systematic approach through strengthening teacher competencies, improving infrastructure, and enhancing coordination among stakeholders,

so that Physical Education, Sports, and Health teachers can function more effectively as key agents in promoting students' health in schools.

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