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Review Article

ACADEMIC PRODUCTION ON HEALTH IN HIGH SCHOOL PHYSICAL EDUCATION CLASSES: A SCOPING REVIEW

PRODUÇÃO ACADÊMICA SOBRE A SAÚDE NA EDUCAÇÃO FÍSICA NO ENSINO MÉDIO: REVISÃO DE ESCOPO

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RESUMO

O presente estudo objetivou verificar a produção *stricto sensu* (dissertações e teses) sobre o tema 'saúde' na Educação Física (EF) escolar no Ensino Médio. Realizou-se uma revisão de escopo com busca de dissertações de mestrado e teses de doutorado em bases eletrônicas. Dos 1.239 trabalhos identificados, 23 foram sintetizados. Verificou-se que as publicações entre 2010 e 2022 predominaram nas regiões Sul e Sudeste, especialmente na rede pública de ensino. Abordagens de intervenção destacaram-se, priorizando perspectivas teórico-conceituais para incentivar mudanças comportamentais na prática de atividade física. Iniciativas para estimular o protagonismo juvenil foram identificadas, enfatizando o papel essencial do professor de EF como mediador educacional. Conclui-se que a produção acadêmica ainda é limitada, com lacunas regionais e necessidade de diversificação das abordagens pedagógicas, apontando para a importância de pesquisas interdisciplinares e metodologias ativas que valorizem o protagonismo dos alunos.

Palavras-chave: Atividade física. Adolescentes. Promoção da saúde. Educação Física escolar.

ABSTRACT

The present study aimed to analyze the academic production of graduate programs, focusing on different approaches to health in Physical Education (PE) classes in high school. A scoping review was conducted by searching for master's dissertations and doctoral theses in electronic databases. Of the 1,239 studies identified, 23 were synthesized. Publications from 2010 to 2022 were predominantly from the South and Southeast regions, particularly in public schools. Intervention approaches stood out, prioritizing theoretical-conceptual perspectives to encourage behavioral changes in physical activity practices. Initiatives to promote youth leadership were identified, emphasizing the essential role of the PE teacher as an educational mediator. It is concluded that academic production is still limited, with regional gaps and a need for diversification of pedagogical approaches, highlighting the importance of interdisciplinary research and active methodologies that value student leadership.

Keywords: Physical activity. Adolescents. Health Promotion. School Physical Education.

Introduction

Physical Education (PE) is a field of knowledge and practice aimed at the holistic development of individuals, encompassing, for instance, social, physical, and cognitive skills[1]. In the Brazilian context, the trajectory of PE has gone through several phases, from a predominantly biological approach to more contemporary and emergent social perspectives. Soares[2] notes that, before the 19th century and the beginning of scientific research, human beings were predominantly analyzed from the perspective of the Natural Sciences, with a purely biological lens that disregarded their interaction with the environment. This perspective led to a manipulative use of PE by the bourgeois class, resulting in the disciplining of movement and a narrow conception of body and health.

Throughout the 20th century, PE was influenced by different paradigms, ranging from anatomical and biological logic to the reform movements of recent decades, which created space for social approaches within PE, such as critical-emancipatory, developmental, and constructivist perspectives[2]. PE originated as a mere activity in schools and gradually evolved to gain recognition as a curricular component. However, the initial approach, which focused on

building strong bodies and was typical of the hygienist period, was followed by a technicist phase emphasizing discipline and sports specialization. Later, a renewal movement opened space for more socially oriented approaches[2].

Despite this evolution, challenges persist—especially in high school, a critical period during which students need stimuli that awaken their interest in learning and promote their holistic development. For this reason, high school was chosen as the focus of this study, given that PE in this context is still often perceived in stereotypical terms, limited to gymnastics, sports, games, and physical activities. In this decisive stage of life, adolescents face specific challenges beyond the mere practice of sport, requiring a broader and more contextualized approach to school PE[3].

Thus, broadening the approach to the health theme in PE classes becomes essential, allowing students to engage in reflections that transcend a biological and mechanical view. Although there have been historical efforts to define "what health is," its understanding can vary significantly depending on individual, collective, and temporal perspectives. Moreover, the social determinants of health directly influence choices and opportunities for healthy habits. Health is not only related to physical aspects but also to body image, prevention of sexually transmitted infections, substance and alcohol use, and psychological factors such as anxiety, depression, and mental disorders. In this sense, addressing political, social, and economic issues that affect health within the school environment contributes to the comprehensive formation of high school students.

Although school PE has the potential to play a formative role during adolescence, transcending the traditional boundaries of gymnastics and sports, it is often underutilized due to a limited perception that restricts it to physical development alone. In addition to contributing to physical health and fitness, PE can be a valuable tool for adolescents' social, cognitive, and emotional development[4]. These considerations justify the need to understand such potential better, focusing not only on physical activity practice but also on the contribution of school PE to the comprehensive education of high school students.

The relationship between PE and health in the school environment goes beyond promoting physical activity, as it also involves emotional, social, and cultural aspects that impact students' well-being. PE has the potential to contribute to the formation of healthy habits, disease prevention, and the development of socio-emotional skills. However, this dimension remains underexplored in the high school context. The literature indicates that the way health is addressed in PE classes can directly influence students' perceptions of self-care, quality of life, and active lifestyles, reinforcing the need for further studies to broaden this understanding within the discipline[5].

Based on these premises, the present study was designed to answer the question: "How have graduate students investigated the theme of 'health' in high school PE classes?" This inquiry arises from the understanding that school PE when it transcends the mere practice of sport, offers fertile ground for promoting adolescents' holistic health. It is believed that graduate research on this topic may provide valuable ideas and actions regarding the approaches and strategies adopted to explore the potential of school PE and the PE teacher as catalysts for meaningful learning and the internalization of health-related knowledge—going beyond the reach of other high school subjects.

Therefore, this article aimed to examine the stricto sensu academic production (master's dissertations and doctoral theses), addressing the theme of "health" in school PE at the high school level. The choice of this corpus is justified by the role of graduate programs in knowledge production, as dissertations and theses are developed with the expectation of providing original contributions to the field offering new information, interpretations, or approaches to a given topic. It is also important to note that while the reviews by Dias et al.[6], Caraçato-Sousa et al.[7], and Rosas et al.[8] focused on scientific articles, some dissertations and

theses are never published in journals. A detailed analysis of this academic production may allow for a better understanding of how graduate research has addressed school PE in high school, particularly concerning the theme of health. This critical and in-depth approach may contribute to understanding the current landscape and guide future research in a highly relevant field for the development of adolescents.

Methodological Process

This scoping review was conducted following the recommendations of the Joanna Briggs Institute[9]. The Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) checklist guided the writing of this study, ensuring rigor throughout the following stages: identification of the research question, identification and selection of studies, data mapping and grouping, summary, development, and description of results[10]. The protocol for this study was registered in the Open Science Framework (OSF) [DOI 10.17605/OSF.IO/H8XFW].

This review was structured around three core domains:

- Population of interest: high school students and PE teachers working in Brazilian schools.
- Concept: health, regardless of how PE teachers interpret or address the topic in high school settings.
- Context: Brazilian schools that include PE in the high school curriculum, with no restriction concerning school administration (e.g., public or private institutions).

These Population, Concept, and Context (PCC) domains were the guiding framework for study inclusion. Searches were conducted in December 2022 across four national repositories of stricto sensu graduate research: the Coordination for the Improvement of Higher Education Personnel Theses & Dissertations Catalog (*Coordenação de Aperfeiçoamento de Pessoal de Nível Superior* – CAPES); the University of São Paulo (*Universidade de São Paulo – USP*) Digital Library of Theses and Dissertations; the Brazilian Digital Library of Theses and Dissertations (*Biblioteca Digital Brasileira de Teses e Dissertações* - BDTD); and the Latin American and Caribbean Literature in Health Sciences (LILACS). Grey literature was not included, as it did not align with the scope and delimitations of this study.

Search strategies were adapted to each database, as shown in Chart 1. These adjustments were necessary due to the unique features of each repository and aimed to maximize the retrieval of relevant studies. Descriptors in Health Sciences (DeCS) were defined, as well as keywords commonly found in the Portuguese literature (e.g., *Ensino Médio*, *Educação Física*, *saúde*, *adolescente*). Boolean operators OR and AND were used to structure the search strategies.

Chart 1 – Descriptors used in each database

Database	**Descriptors**
CAPES	("Educação Física" AND Ensino Médio AND saúde)
Biblioteca digital USP	(Educação Física AND Ensino Médio AND saúde)
BDTD	(“Educação Física” AND (Ensino Médio OR adolescente) AND saúde)
LILACS	((public* or health or salud or saúde) AND (Educação Física) AND (Ensino Médio OR adolescente) AND saúde)

Source: The authors.

The search strategy was established from January 2000—when the National Curriculum Parameters for High School were published—through December 2022, considering only works in Portuguese. Data were organized using Excel spreadsheets. Information such as author, year, title, objective, methodology, main findings, and access links were collected.

The operational process of this review involved three researchers. Two female researchers independently assessed titles, abstracts, and full texts. A third researcher was responsible for resolving disagreements and reaching consensus through team meetings.

The extracted information was based on previous studies with similar themes[8,11,12] and aligned with the objectives of the present review. One reviewer carried out data extraction and verified by another, with meetings held to address disagreements. Google Sheets was used to record relevant data such as authors, institution, type of research, school network, methodological strategies, and other parameters related to the study's topic.

The results were presented following the Joanna Briggs Institute recommendations[8]. All accessible and relevant data from the included studies were registered, covering participants, strategies, and outcomes. Study characteristics, discussions, and implications for future research were also addressed.

Results and Discussion

The selection process data are presented in the flowchart (Figure 1). An initial identification of 1,239 studies was followed by removing 101 duplicates, leaving 1,138 dissertations and theses for title and abstract screening. Of the 28 remaining studies, full texts were reviewed, and five were excluded for not having health as their main research focus. Consequently, the current synthesis was based on information from 23 studies (Chart 2).

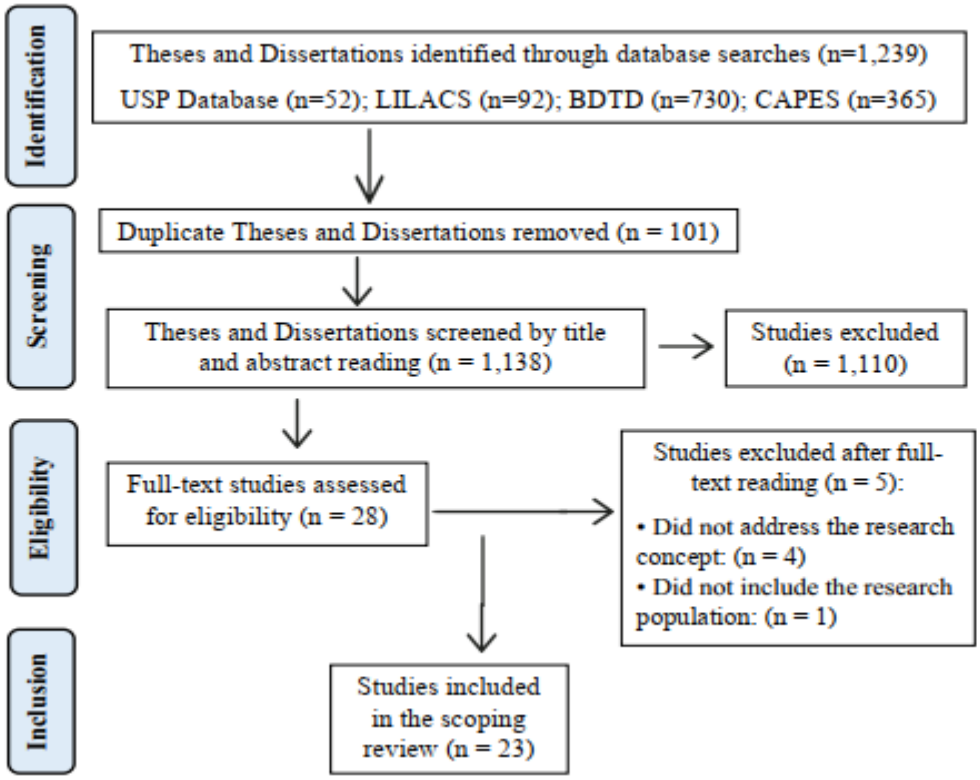

Figure 1 – PRISMA flow diagram. Coordination for the Improvement of Higher Education Personnel Theses & Dissertations Catalog (*Coordenação de Aperfeiçoamento de Pessoal de Nível Superior* – CAPES); University of São Paulo (*Universidade de São Paulo – USP*); Brazilian Digital Library of Theses and Dissertations (*Biblioteca Digital Brasileira de Teses e Dissertações* - BDTD); Latin American and Caribbean Literature in Health Sciences (*Literatura Latino-Americana e do Caribe em Ciências da Saúde* - LILACS).

Source: The authors.

Chart 2 – Objectives of the Included Studies. CE: Ceará, PE: Physical Education, MG: Minas Gerais, PR: Paraná

Number of studies	Author and year	Objective
1	Miranda (2019)[13]	To understand the meaningful learning process of the concepts related to acute and chronic cardiovascular system responses to physical exercise in Physical Education classes at the High School level.
2	Barreto Filho (2016)[14]	To develop an interdisciplinary and participatory program to raise first-year high school students' awareness of weight reduction.
3	Otte (2013)[15]	To analyze the effectiveness of the "Physical Education +: Practicing Health at School" project within the Physical Education curriculum in integrated federal public High Schools.
4	Cardoso (2011)[16]	To verify the impact of teaching methods centered on gymnastic activities, supported by theoretical-pedagogical foundations primarily focused on health promotion, health-related physical fitness, knowledge, and physical activity scores among High School students.
5	Spohr (2013)[17]	To analyze the implementation of the "Physical Education +: Practicing Health at School" intervention project developed in Physical Education classes in public High Schools in the city of Pelotas.
6	Conceição (2013)[18]	To thoroughly investigate adolescents' perceptions of leisure, Physical Education, and the relationship between these areas, examine whether these concepts are intertwined and, if so, how this occurs inside and outside school.
7	Luz (2016)[19]	To analyze the knowledge related to physical activity and health developed during High School Physical Education classes; to examine the theoretical and methodological assumptions related to physical activity and health presented in the Official Basic Education Documents (Brazil, 1999, 2000, 2006; Paraná, 2008, 2012); and to identify the knowledge of High School students related to physical activity and health.
8	Mantovani (2021)[20]	To design, implement, and evaluate a didactic proposal for teaching health-related topics in Physical Education classes and through self-study.
9	Jesus (2018)[21]	To analyze how the theme of health has been addressed in school Physical Education at the High School level, based on perceptions found in school documents and from the perspectives of Physical Education teachers and students.
10	Dias (2021)[22]	To understand the approach to the theme of body and health in Physical Education classes and to analyze how the school community perceives the relationship among Physical Education, body, and health.
11	Rocha (2017)[23]	To analyze the significance adolescents attribute to strategies for promoting health and physical activity within the school and community environments.
12	Pinto (2019)[24]	To propose developing and applying the illustrated material "Stretching Exercises and Active Interventions in the Promotion of Health for Integrated High School Students," in which stretching exercises were conducted to meet needs identified through practices in laboratories and workshops of integrated technical High School courses.
13	Faial (2021)[25]	To reveal adolescent students' perceptions regarding human relationships, health care, and the meaning of Physical Education in their lives, and to assess the profile of human relationships experienced in the discipline, lifestyle profiles, and the sense of life derived from bodily experiences of Curriculum Humanization in High School Physical Education.

14	Silveira (2010)[26]	To evaluate the knowledge of adolescents attending high school classes in the urban area of Pelotas regarding physical activity and its relationship to the prevention of chronic disease and its physiological effects on the human body.
15	Silva (2011)[27]	To reflect on media discourse concerning health and physical activity with young High School students.
16	Kremer (2010)[28]	To determine the intensity and duration of physical efforts in Physical Education classes in Elementary and High Schools.
17	Fernandes (2018)[29]	To design and apply a didactic sequence for teaching the topic "health-related physical fitness" in integrated High School Physical Education classes.
18	Deus (2021)[30]	To develop and analyze the application of a didactic proposal based on Education through Research to address health topics in integrated High School Physical Education classes.
19	Galvão (2020)[31]	To analyze the extent to which Physical Education teachers use integrative bodily practices as a strategy for students' holistic education.
20	Silva (2012)[32]	To investigate how Physical Education teachers working in High Schools have conceptualized and treated the contemporary body.
21	Costa (2014)[33]	To verify whether topics related to body culture in contemporary society are discussed with High School students by Physical Education teachers and to identify how adolescents deal with these themes in their daily lives.
22	Almeida (2020)[34]	To develop a digital booklet on health and quality of life for Physical Education teachers, based on a pedagogical action conducted with students from the Technical Course in Fisheries Resources at the Cabedelo campus of the Federal Institute of Education, Science and Technology of Paraíba (IFPB).
23	Souza (2020)[35]	To analyze the contributions of training in health-related physical fitness for Physical Education teachers working in schools in Quixeramobim, Ceará.

Source: The authors.

Regional and Methodological Distribution

Most studies covered 2016 and 2021, highlighting a recent research focus. The Southern region of Brazil led with 11 studies (47.9%), while no publications were identified from the Northern region. The Universidades Federais de Pelotas e Santa Maria stood out, with multiple studies on health in Physical Education classes for High School students (Table 1).

The scarcity of research in the Northern and Central-West regions may be related to the lack of graduate programs in Physical Education. In contrast, the Southern region is distinguished by a strong tradition in studies on health practices in School Physical Education. Monteiro Neto et al.[36] points to economic concentration in the South-Southeast, proposing a national project to decentralize knowledge and technology, fostering innovation in less developed areas. The predominance of studies in the Southern region may be attributed to academic infrastructure, an active researcher network, the influence of local educational policies, social demand, and funding.

The spatial heterogeneity of research is concentrated in the Southeast, notably in capitals[37] such as São Paulo, which accounts for approximately 20% of national scientific production[38,39]. In 2010, the South-Southeast axis held more than 72% of scientific production and 86% of patent applications, evidencing concentration in São Paulo[36]. Mapping studies indicate that 78% of the equipment in institutions linked to the Ministry of Science, Technology, and Innovation were located in the Southeast, revealing an intensely concentrated distribution of scientific and technological infrastructure in the country[40,41].

Within *stricto sensu* research, master's theses predominated, mainly focusing on students' perceptions and habits. Only one study investigated the school community, involving teachers, students, coordinators, and teachers from other disciplines[22]. Most research was conducted in the public education network, with federal universities being more prominent than state institutions (Table 1).

Table 1 – Characteristics of the studies

Research profile	n (% among 23 studies)
Year	
2016–2021	14 (60.9%)
2010–2015	9 (39.1%)
Brazilian region	
South	11 (47.9%)
Southeast	9 (39.1%)
Northeast	2 (8.7%)
Central-West	1 (4.3%)
North	0 (0.0%)
Institution*	
Federal University of Pelotas	5 (21.7%)
Federal University of Santa Maria	3 (13%)
Federal University of Rio de Janeiro	2 (8.7%)
State University of Northern Paraná	2 (8.7%)
Fluminense Federal University	2 (8.7%)
Type of *stricto sensu* research	
Master's dissertation	17 (74.0%)
Doctoral thesis	3 (13.0%)
Professional Master's dissertation	3 (13.0%)
Research participants	
Students	11 (47.9%)
Students and teachers	6 (26.0%)
Teachers	5 (21.8%)
School community	1 (4.3%)
Education network of the study	
Public	18 (78.2%)
Public and private	3 (13.0%)
Private	2 (8.8%)

*Presentation of the five most frequent
Source: The authors.

The categorization included intervention and observational research, the latter characterized by systematic observation of real-world political events[42]. This review encompasses observational designs such as cross-sectional, observational, case studies, ethnographic, exploratory, and descriptive studies.

Data collection and analysis primarily adopted a qualitative approach aimed at proposing lessons, assessing knowledge, and preparing teachers on physical fitness and health topics. However, the National Common Curricular Base (*Base Nacional Comum Curricular* - BNCC) emphasizes that, in High School, adolescents should not be limited solely to biological and age-related aspects but also consider social and cultural influences[43].

Regarding data collection instruments, some studies employed more than one method. Semi-structured interviews and questionnaires were the most frequently used, whereas focus groups were less commonly employed (Table 2).

Content analysis prevailed in most studies, with Bardin's content analysis being the most common[13,15,18,19,21,22,23,30,31]. Thematic content analysis[14,17,20] and the content analysis approach proposed by Turato[33] were also identified. Other qualitative analyses included phenomenological[25], textual-discursive[24,29], and critical discourse analysis[27]. Minayo[44] defines qualitative analyses as exploring the subjective universe, encompassing meanings, motives, aspirations, beliefs, values, and attitudes.

Complementarily, statistical analyses stood out in approximately one-third of the studies adopting a quantitative or mixed-method approach (Table 2). Considering that themes related to the social determinants of health also constitute a way to approach health in the classroom, publications addressing leisure, human relationships, media discourse, and body image were included[18,25,27,32].

Table 2 – Contextualization of the studies

Research context	n (% among the 23 studies)
Is health a primary element in the study?	
Yes	19 (82.6%)
No	4 (17.3%)
Study design	
Intervention	13 (56.6%)
Observational	10 (43.4%)
Data collection and analysis methods	
Qualitative	12 (52.2%)
Mixed	8 (34.8%)
Quantitative	3 (13.0%)
Data collection instruments*	
Questionnaires	17 (37.0%)
Semi-structured interviews	14 (30.4%)
Field diaries. written activities	9 (19.5%)
Physical tests	4 (8.8%)
Focus groups	2 (4.3%)
Types of data analysis*	
Content analysis	14 (53.9%)
Statistical analysis	8 (30.8%)
Qualitative analysis	4 (15.3%)

*Presentation of the five most frequent
Source: The authors.

Methodological strategies and pedagogical approaches

Regarding methodological strategies, the studies included theoretical-conceptual research[14,18,19,21,22,25,26,31,32,33]; theoretical-conceptual studies with intervention[13,15,17,20,23,24,27,34]; and exclusively intervention-based research[16,28,29,30,35] (Table 3).

Most studies focused on developing essential theoretical approaches, providing a conceptual framework grounded in data analysis and interpretation. Integrating theoretical discussions with practical interventions is fundamental to producing impactful research in educational contexts. Five studies emphasized the importance of theoretical foundations in developing teaching strategies[16,28,29,30,35].

The theoretical-conceptual approach goes beyond citing references, requiring a profound reflection on the construction and influence of these foundations on individuals. Presenting the theoretical framework helps structure reasoning, but explicit representation is essential to ensure the reproducibility of studies. Theoretical-conceptual approaches aim to understand specific aspects within a given context[45].

Among the identified objectives, the most prominent were those aimed at evaluating or enhancing students' knowledge about health[13,18,19,21–26,33]; investigating teachers' knowledge and perceptions regarding the topic of health[14,20,21,22,31,32,33,35]; and proposing strategies and didactic sequences to address the topic in school lessons[15,17,20,27,29,34,35]. Some studies also aimed to improve or evaluate students' physical fitness[16,24,25,28,30].

The strategies applied throughout the studies predominantly included reading, conducting research, and producing educational materials[15,17,24,27,29,31] as well as initiatives to make classes more dynamic, incorporating discussion circles, tasks, and self-assessment[13,20,21,24,27,29,34] (Table 3).

In terms of teaching strategies in studies that implemented interventions on health and school Physical Education, a variety of approaches were observed, with a notable emphasis on lecture-based classes[23,27,34] active learning[13,20,23,24,27,29,34] and the use of media[27,29,30,34]. Teaching strategies are situational; they are selected and employed to ensure students' effective engagement in the learning process[46-48].

Despite criticisms directed at lecture-based teaching, its effectiveness in transmitting health-related content is acknowledged. However, it is imperative to adopt this approach, shifting toward active, student-centered learning[47,49,50]. Active methodologies, as recommended by Lopes et al.[50], offer educational advantages within Physical Education. At the same time, the use of media, according to Silva and Linhares[51], enriches both the visual and interactive dimensions of learning. Lima et al.[52] highlight the need for further research concerning audience adherence, limitations in content dissemination, and the development of a critical culture.

Table 3 – Research strategies and actions

Methodological strategies	n (% among the 23 studies)
Research/Intervention	
Theoretical-conceptual	10 (43.4%)
Theoretical-conceptual and intervention	8 (34.8%)
Intervention only	5 (21.8%)
Research objectives*	
Assess students' knowledge	9 (30.0%)
Understand how teachers perceive the topic of health	8 (26.7%)
Propose didactic sequences to address the topic	7 (23.3%)
Increase/evaluate students' physical activity levels	5 (16.7%)
Analyze educational guiding materials	1 (3.3%)
Strategic actions in intervention studies*	
Active learning (discussion circles, tasks, etc.)	7 (22.5%)
Studies, investigations, and material development	7 (22.5%)
Interdisciplinary activities and actions	4 (13.0%)
Seminars, lectures, and workshops	4 (13.0%)
Use of media, interactive activities, and social networks	4 (13.0%)
Lecture-based classes	3 (9.6%)
Bodily practices and physical activity	2 (6.4%)

*Some studies included more than one element.
Source: The authors

Several studies[18,23,24,26,32,33] addressed leisure, nutrition, practice environments, socioeconomic status, skin color, sexuality, and aesthetics (body image). PE classes explored cross-cutting topics, including stretching, training, types of physical exercise, cardiorespiratory performance, physical capacities, media patterns, and quality of life[13,16,17,24,27,34].

Despite contributing to teaching strategies, many interventions were implemented independently of teachers, testing lesson suggestions without a deeper investigation into the educational context. Although many studies employed qualitative approaches, they focused on

assessing students' physical activity levels, sedentary behavior, and physical fitness improvements. The analysis of results reveals a strong emphasis on improving physical fitness, followed by the broadening of health concepts, physical activity levels, and student satisfaction, even with the advancement of active methodologies in teaching.

In PE classes, it is crucial to adopt comprehensive approaches beyond a narrow conception of health-centered solely on physical fitness. Emphasizing critical pedagogical approaches is essential, yet some studies overlook the social influences shaping harmful habits[53]. Reducing the concept of health to physical fitness improvement neglects essential dimensions of well-being, such as emotional, social, and psychological components.

Health is a multidimensional construct encompassing biological, psychological, and social factors[3]. Challenging studies that reduce health to physical parameters is vital to fostering a more comprehensive perspective, enriching the understanding of human well-being. Some studies proposed educational booklets: one directed at students with stretching exercises[24], and another aimed at teachers, focused on fostering students' holistic development in health and quality of life[34].

Assessment of teaching strategies and pedagogical interventions

Several studies implemented interventions through projects or programs to assess their impact on health promotion within PE classes[15,17]. Among the 15 studies evaluating teaching strategies, nine employed interviews, lesson plan analyses, and classroom observations[14,19,21,22,25,31,32,35]. Six studies evaluated teaching strategies through didactic sequences or actions proposed by the study itself[15,20,27,29,30,34] (Table 4).

Some researchers investigated motor performance[16], physical activity levels[15,16,17,24,28,30], and sedentary behavior[14,24,25,28,29,30] (Table 4). This biological perspective addresses the relationships among behavior, physical activity, and physical/motor health. The BNCC calls for a shift from this biological lens, advocating the formation of critically aware adolescents capable of understanding contemporary challenges[43]. Several studies also examined students' satisfaction with the implemented strategies[13,15,17,18,19,21,22,23,27,34].

Although many studies emphasized physical fitness[13,15,16,17,26,29,34], it is essential to recognize that limiting health to biological aspects restricts understanding social determinants[54,55]. The historical predominance of Biological Sciences and an educational orientation in this direction have influenced pedagogical practices, regulating bodies as 'healthy' entities[2]. Oliveira and Souza Júnior[56] highlight the limitations of interventions due to their prescriptive nature and lack of contextualization within the school environment. Exploring the relationships and effects of physical activity and the underlying social issues is essential.

Some studies[13,15,16,17,26,29,34] investigated students' understanding of health, physical fitness, and risk factors. Other studies[18,20,24,27] addressed broader issues influencing physical activity and healthy lifestyles, significantly expanding students' conceptualization of health (Table 4).

Table 4 – Main findings of the studies

Outcomes related to health parameters in school	n (% among the 23 studies)
Main findings from the analyses*	
Understanding of healthy lifestyle (students)	16 (21.3%)
Teaching strategies	15 (20.0%)
Student satisfaction with the implemented actions	10 (13.3%)
Health-related knowledge (teachers)	8 (10.8%)
Discussion of other related topics	7 (9.3%)
Physical activity level	6 (8.0%)
Sedentary behavior	6 (8.0%)
Health promotion actions	4 (5.3%)
Physical capacities	3 (4.0%)
Main outcomes achieved through the intervention*	
Increased awareness of health in PE classes (physical fitness)	7 (41.1%)
Broadened understanding of health (teachers)	4 (23.5%)
Increased awareness of health in PE classes (social issues)	4 (23.5)
Improvement in health-related physical fitness	2 (11.9%)

Note:* Some studies presented more than one element.
PE: Physical Education
Source: The authors.

Despite the importance of biological knowledge in physical activities, school-based PE should not be limited to this aspect. Integrating practice into students' routines, regardless of school influence, becomes necessary[57]. Following the interventions proposed in the studies, the authors observed an expansion of students' knowledge about health centered on eating habits, the absence of diseases, and the relationship with physical activity. The BNCC emphasizes the commitment to presenting social reality to stimulate students' intervention in their contexts[43]. It is essential to broaden this knowledge and employ strategies that satisfy students, considering them protagonists in the learning process.

By offering students a comprehensive understanding, it becomes possible to articulate physical and social aspects, achieving a broadened view of health. Oliveira et al.[5] suggest that pedagogically addressing the knowledge of bodily practices and physical activities allows recognition of their transition between individual/biological and collective/public aspects. In this perspective, health in school PE gains significance by considering subjects in an integral manner[58]. Students learn about the benefits of physical activity and understand how social, economic, and cultural factors influence health more broadly.

Four studies explored the relationship with social determinants of health[18,20,24,27]. Other studies addressed the benefits of physical activity for chronic diseases, the intensity and duration of exercise, and the influence of risk behaviors aimed at minimizing sedentary lifestyles.

Students are protagonists in the research, highlighting their understanding, relationships, and routine changes. Their opinions regarding health, lifestyle, and satisfaction with didactic approaches are evident in the analyses. Although students are the focus, the essential role of the teacher in this process cannot be neglected.

Vygotsky[59] underscores the importance of social interaction and mediation in the educational process, which is linked to the formation and development of individuals. The teacher's role as a mediator in learning is fundamental, directly influencing student progress. The teacher facilitates learning by mediating classroom conflicts to satisfy the educational process amid social inequalities and injustices. Studying and understanding the teacher's reality, context, and decision-making 'on the school grounds' is crucial to improving the educational environment.

In addition to discussions about health, studies have implemented health promotion actions, reflecting on themes such as leisure, nutrition, and body image[18,23,24,26,32,33]. No studies on psychological health were identified; however, one study[13] evaluated the profile of human relationships within the discipline.

By contextualizing health within the traditional contents of bodily culture, students comprehend that "choices," such as exercise and eating habits, are, for many, not merely choices but are interconnected with social context, promoting critical awareness. Teachers can explore pedagogical actions beyond biological bias, addressing topics such as social determinants of health, beauty standards, expanded health concepts, and cultural diversity of bodies. These approaches sensitize students to understand these issues in a complex and contextualized manner.[60]

Connecting students to social reality provides a critical perspective on their community, enabling reflections and more comprehensive decision-making that considers both physical aspects and social contexts. This broadened, transversal approach highlights health disparities due to social inequalities, raising awareness for health equity. Students prepare as change agents, developing critical skills to address public health issues, essential for engaging health professionals, educators, parents, and community members in a support network to strengthen health promotion initiatives.

Adopting a transversal and expanded perspective on health in PE and health programs provides students with a comprehensive and meaningful understanding of health determinants. This approach can result in a more conscious, sensitive, and committed generation promoting healthy lifestyles in individual and social contexts.

Implications for future research and pedagogical interventions

Based on the findings of this research, we recommend the following for future studies on health in PE classes in Brazilian secondary education:

1. The absence of studies from the North and Midwest regions highlights the need to expand graduate programs in PE in these areas. Future research could investigate specific barriers these regions face and propose strategies to decentralize academic production, ensuring that relevant topics such as health are equitably addressed nationwide.
2. Although many studies focus on physical fitness, there is a lack of approaches integrating social and cultural aspects of health in PE classes. Future research could explore methodologies that broaden students' perspectives on health, considering socioeconomic and cultural influences, encouraging critical discussion of these factors, and promoting a more comprehensive understanding of health.
3. The predominance of lecture-based classes and limited interventions suggests a need for more active and contextualized teaching strategies. Future research could investigate the impact of active methodologies and teacher-student mediation on student engagement and learning, aiming to make students protagonists of the learning process by exploring health topics in an integrated and practical manner.

Study limitations and possibilities

This study explores the approach to health in PE classes in Brazilian secondary education within the context of *stricto sensu* graduate programs. The results, obtained through a rigorous methodological process, contribute to perspectives on actions related to health in school PE, encouraging reflection on strategies and opening opportunities for advances in teaching this discipline, particularly on health topics. The research focuses on studies conducted

in Brazil that limit geographic generalizability. The scoping review prioritizes content and concepts without assessing methodological robustness. The selection of studies does not consider the quality or effectiveness of interventions. Although the search included four broad and traditional databases, some studies may not have been identified.

Final considerations

This review identified gaps in the academic production on health in school PE at the secondary education level, especially in the North and Midwest regions. The predominance of studies focused on physical fitness, with less attention to social and cultural health, reveals the need to diversify pedagogical approaches and academic investigations.

The findings suggest that expanding graduate programs in these regions and encouraging interdisciplinary research are essential for a broader understanding of health in the school context. Pedagogical actions should adopt active and contextualized methodologies, promoting students' protagonism in learning and integrating socioeconomic and cultural issues in health discussions.

Based on the identified findings and gaps, future research is expected to be conducted to promote a more inclusive, equitable, and comprehensive PE aligned with the demands and realities of Brazilian secondary education students.

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