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Teachers' Perspectives on the Role of Physical Education in Promoting Health Culture for Chronic Disease Prevention among Secondary School Students

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Abstract

The present study aimed to examine the views of secondary school teachers in Jijel Province, Algeria, regarding the role of physical education in promoting health culture for the prevention of chronic diseases among students. A total of 42 secondary school teachers from Jijel Province responded to an online questionnaire covering four dimensions: Curriculum content and cognitive aspects related to disease prevention, Students' health awareness, Teaching methods and motivation for disease prevention, and Pedagogical, structural, and temporal barriers. Responses were collected using a five-point Likert scale. Descriptive statistics were calculated for the overall dimensions and for each dimension separately. The results showed neutral responses for the first two dimensions, Curriculum content and cognitive aspects related to disease prevention and Students' health awareness, with mean scores of 3.02 and 3.10, respectively. In contrast, teachers expressed agreement with the dimensions Teaching methods and motivation for disease prevention and Pedagogical, structural, and temporal barriers, with mean scores of 3.70 and 4.01, respectively. Overall, the findings suggest that while teachers show strong motivation to promote health-related behaviors, the curriculum content and students' health awareness remain moderate. In addition, structural and logistical barriers such as limited facilities, overcrowded classes, and time constraints represent major challenges that limit the effective implementation of health-oriented physical education.

Keywords: *Physical Education, curriculum, health care, chronic disease, secondary school*

Introduction

Health is widely recognized as a multidimensional state of optimal well-being, encompassing physical, mental, emotional, social, and intellectual domains (Viner, & Macfarlane, 2005). It goes beyond the mere absence of disease, reflecting an individual's capacity to adapt to and manage life challenges. Health promotion, in this context, involves enabling individuals to adopt lifestyle behaviors that support the maintenance and enhancement of overall well-being. It is an active process that empowers people to take responsibility for their own health and make informed choices (Hof-Nahor, Biswas, 2020).

However, when this state of optimal functioning is disrupted, disease emerges as a condition of physiological or psychological imbalance that impairs normal functioning. Among the various forms of disease, chronic noncommunicable diseases have become particularly concerning in recent decades. Over the past decades, chronic diseases such as obesity, type 2 diabetes, hypertension, and cardiovascular disorders have emerged as major public

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health challenges worldwide (Chengyu et al., 2024). According to the World Health Organization (2025), noncommunicable diseases killed at least 43 million people in 2021, accounting for approximately 75 % of all non-pandemic deaths globally. Of these, about 18 million occurred before the age of 70, and major contributors included cardiovascular diseases, cancers, chronic respiratory diseases, and diabetes. Once considered primarily adult conditions (Warsy & el-Hazmi, 1999), these non-communicable diseases are increasingly observed among adolescents and young adults (Watson et al., 2022). Sedentary behaviors, poor dietary habits, and insufficient physical activity are key contributors to this trend, leading to the early onset of health complications and increased long-term risks (World Health Organization, 2025).

Physical activity is recognized as one of the most effective protective factors against chronic diseases. Regular participation in moderate-to-vigorous physical activity improves cardiovascular and metabolic function, supports weight management, and enhances mental well-being. In contrast, physical inactivity is now considered a leading global health risk factor (Anderson, & Durstine, 2019). In this regard, the World Health Organization recommends that adults engage in at least 150–300 minutes of moderate-intensity physical activity per week, or 75–150 minutes of vigorous-intensity activity, to achieve substantial health benefits and reduce the risk of noncommunicable diseases (World Health Organization, 2020). Promoting active lifestyles from a young age is therefore essential to prevent the early development of chronic conditions.

Within schools, physical education (PE) plays a role in promoting students' physical and mental well-being (Ramires et al., 2023). Beyond its traditional focus on sports and motor skill development (Jiang et al., 2025), PE has the potential to foster students' health knowledge, awareness, and preventive competencies. However, research suggests that the preventive health role of PE is often underrealized in practice. Evidence based on perceptions of secondary school teachers and students indicates certain limitations in this regard. For instance, a study conducted among secondary school teachers in England found that, despite policy discourse emphasizing health promotion, PE practice remained largely sport- and performance-oriented (Green & Thurston, 2002). Similarly, research involving upper secondary school students in Norway reported limited perceived development of health competence through PE classes (Haga et al., 2024). As these findings are grounded in specific European educational contexts, perceptions of PE's health-promoting role may vary across different educational systems and cultural settings, including regions in Africa, the Middle East, Asia, and other developing or transitional contexts where curricular priorities, institutional resources, and socio-cultural expectations may differ substantially.

In order to examine the extent to which physical education contributes to promoting health culture for the prevention of chronic diseases in Algeria, the present study explores the interaction between the educational curriculum and the health context. Specifically, it aims to determine the extent to which the secondary school physical education curriculum equips students with the necessary health and preventive competencies to address chronic diseases, to assess the level of health awareness among this population, and to identify the pedagogical and structural barriers that may hinder the achievement of the intended preventive objectives.

Materials and methods

Participants

A total of 42 physical education teachers working at the secondary school level in Jijel Province, Algeria, participated in the present study during the 2025–2026 academic year. Participants were contacted via social media platforms and invited to complete the questionnaire. Most participants were aged between 31 and 40 years (n = 30, 71.4%), followed by those aged 41–50 years (n = 8, 19%) and 24–30 years (n = 4, 9.5%). Regarding educational level, 31 teachers held a Master's degree (73.8%) and 11 held a Doctoral degree (26.2%). In terms of teaching experience at the secondary level, 17 participants had 11–15 years of experience (40.5%), 10 had 1–5 years (23.8%), 9 had 6–10 years (21.4%), 5 had 16–20 years (11.9%), and 1 had more than 20 years of experience (2.4%). Informed consent was obtained from all participants prior to data collection, and the study was conducted in accordance with the ethical principles of the Declaration of Helsinki (World Medical Association, 2013).

Study Design

This is a descriptive cross-sectional study aimed at exploring secondary school teachers' perspectives on the role of physical education in promoting health culture for the prevention of chronic diseases among students. Data were collected using a questionnaire, which was specifically designed and distributed to secondary school teachers in Jijel Province, Algeria, between 17 and 28 February 2026. The questionnaire, included both single-choice items and five-point Likert scale questions. Completion of the questionnaire required approximately 10 minutes.

Data collection method

Data were collected using a questionnaire developed by the researchers specifically for the purposes of this study. The instrument was constructed based on a comprehensive review of relevant literature and similar previous studies (Green & Thurston, 2002). The questionnaire was divided into six sections. The first section addressed participation in the study, in accordance with research ethics. The second section collected demographic information through three single-choice questions. The third section included four questions on curriculum content and cognitive aspects related to disease prevention. The fourth section comprised three questions on students' health awareness from the teachers' perspective. The fifth section contained four questions on teaching methods and motivation for disease prevention, while the sixth section included four questions on pedagogical, structural, and temporal barriers. All items used a five-point Likert scale ranging from "Strongly Agree" to "Strongly Disagree." To establish its face and content validity, the instrument was thoroughly reviewed by a panel of experts specialized in physical education, ensuring the clarity and relevance of all items. Furthermore, internal consistency of the questionnaire was assessed using Cronbach's alpha ($\alpha = 0.82$), and test–retest reliability evaluated on a pilot sample of six teachers yielded a high correlation ($r = 0.78$).

Statistical analysis

After downloading the responses from Google Forms, the data were organized using Microsoft Excel 2013. Descriptive statistics for demographic variables were presented as frequencies and percentages, while responses to the five-point Likert scale items were summarized as means ± SD. The internal consistency of the questionnaire was assessed using Cronbach's alpha, and test–retest reliability was evaluated using the Pearson correlation coefficient on a pilot sample of 06 teachers who completed the questionnaire twice with a six-day interval. The level of statistical significance was set at $p \leq 0.05$. All analyses were performed using Microsoft Excel and IBM SPSS Statistics (Version 26).

Results

Tables 1–5 and Figure 1 present the descriptive statistics and response distributions for all questionnaire items.

Overall Results of the Questionnaire

Table 1 presents the descriptive statistics for the questionnaire dimensions. The highest mean score was observed for Pedagogical, Structural, and Temporal Barriers (Mean = 4.01, SD = 0.79), followed by Teaching Methods and Motivation for Disease Prevention (Mean = 3.70, SD = 0.87), both indicating agreement among participants. In contrast, Students' Health Awareness (Mean = 3.10, SD = 1.10) and Curriculum Content and Cognitive Aspects Related to Disease Prevention (Mean = 3.02, SD = 1.09) showed neutral levels of agreement.

Table 1. Descriptive Statistics for the Questionnaire Dimensions

Dimensions	Sample (n)	Mean	SD	%	Level of agreement
Curriculum content and cognitive aspects related to disease prevention	42	3.02	1.09	60.4	Neutral
Students' health awareness		3.10	1.10	62	Neutral
teaching methods and motivation for disease prevention		3.70	0.87	74	Agree
pedagogical, structural, and temporal barriers		4.01	0.79	80.2	Agree

Note: SD: Standard Deviation

Results by Dimension

Table 2 presents the item-level results for Dimension 1. All items showed neutral levels of agreement, except for the item related to curriculum flexibility (Mean = 3.40, SD = 1.07), which indicated agreement. The lowest mean scores were observed for the items addressing the coverage of exercise physiology content and explicit instructional units linking physical activity to chronic disease prevention (both Mean = 2.81), reflecting moderate perceptions regarding the adequacy of curricular content in supporting preventive health objectives.

Table 2. Descriptive Statistics of the Items of Dimension 1: Curriculum Content and Cognitive Aspects Related to Disease Prevention

Questions	Sample (n)	Mean	SD	%	Level of agreement
The current physical education curriculum adequately covers the theoretical aspects related to the physiology of physical exertion	42	2.81	1.03	56.2	Neutral
The curriculum includes explicit instructional units that link physical activity to the prevention of chronic diseases		2.81	1.07	56.2	Neutral
The theoretical lessons included in the curriculum contribute to building a solid health knowledge base among students, beyond the competitive aspect		3.07	1.08	61.4	Neutral
The curriculum provides flexibility that allows the teacher to focus more on the physical preventive aspect rather than on the technical skills of team sports		3.40	1.07	68	Agree

Note: SD: Standard Deviation

Table 3 shows the results for Dimension 2. All items demonstrated neutral levels of agreement. The highest mean score concerned students' interest in health information (Mean = 3.26, SD = 1.14), followed closely by awareness of the relationship between exercise intensity and physiological improvement (Mean = 3.24, SD = 1.11). The lowest mean was recorded for students' awareness of the risks of physical inactivity (Mean = 2.81, SD = 1.01), indicating moderate perceptions of students' overall health awareness.

Table 3. Descriptive Statistics of the Items of Dimension 2: Students' health awareness

Questions	Sample (n)	Mean	SD	%	Level of agreement
Students possess sufficient health awareness regarding the risks of physical inactivity and its relationship to diseases	42	2.81	1.01	56.2	Neutral
Students are aware of the direct relationship between the intensity of physical activity and the improvement of cardiovascular and respiratory functions		3.24	1.11	64.8	Neutral
Students show as much interest in the health information provided by the teacher as they do in playing and competing		3.26	1.14	65.2	Neutral

Note: SD: Standard Deviation

Table 4 presents the results for Dimension 3. Most items showed agreement, particularly the use of dialogical methods (Mean = 4.07, SD = 0.59) and strategies promoting physical activity as a daily lifestyle (Mean = 3.93, SD = 0.51). The allocation of time to link activities with health benefits also indicated agreement (Mean = 3.43, SD = 0.93). However, the item related to the availability of educational tools showed a neutral level of agreement (Mean = 3.38, SD = 1.09).

Table 4. Descriptive Statistics of the Items of Dimension 3: teaching methods and motivation for disease prevention

Questions	Sample (n)	Mean	SD	%	Level of agreement
In my teaching, I rely on strategies that encourage students to make physical activity a daily "lifestyle" beyond the school environment	42	3.93	0.51	78.6	Agree
The available educational tools (brochures, posters, heart rate monitors, etc.) contribute to enhancing students' motivation toward preventive learning		3.38	1.09	67.6	Neutral
I allocate sufficient time at the end of each lesson to connect the physical activity performed with the health benefits achieved		3.43	0.93	68.6	Agree
The dialogical method and discussion play an effective role in persuading students to adopt lasting healthy behaviors		4.07	0.59	81.4	Agree

Note: SD: Standard Deviation

Table 5 presents the findings for Dimension 4, which showed consistent agreement across all items. The highest mean score was observed for the lack of sports facilities and equipment (Mean = 4.21, SD = 0.71), followed by class overcrowding (Mean = 4.19, SD = 0.70). The weekly contact hours (Mean = 3.81, SD = 0.85) and lack of specialized training courses (Mean = 3.83, SD = 0.81) also indicated agreement, highlighting the perceived impact of structural and organizational barriers.

Table 5. Descriptive Statistics of the Items of Dimension 4: pedagogical, structural, and temporal barriers

Questions	Sample (n)	Mean	SD	%	Level of agreement
The weekly contact hours (two hours) prevent reconciling the completion of the curriculum with the achievement of preventive health objectives	42	3.81	0.85	76.2	Agree
The lack of sports facilities and equipment constitutes an obstacle to implementing certain instructional units with a preventive focus		4.21	0.71	84.2	Strongly Agree
The high student-to-class ratio hinders the accurate monitoring of each student's physical health status		4.19	0.70	83.8	Agree
The teacher lacks specialized training courses on how to teach "Physical Education for Health" instead of purely "Sports-Based Physical Education"		3.83	0.81	76.6	Agree

Note: SD: Standard Deviation

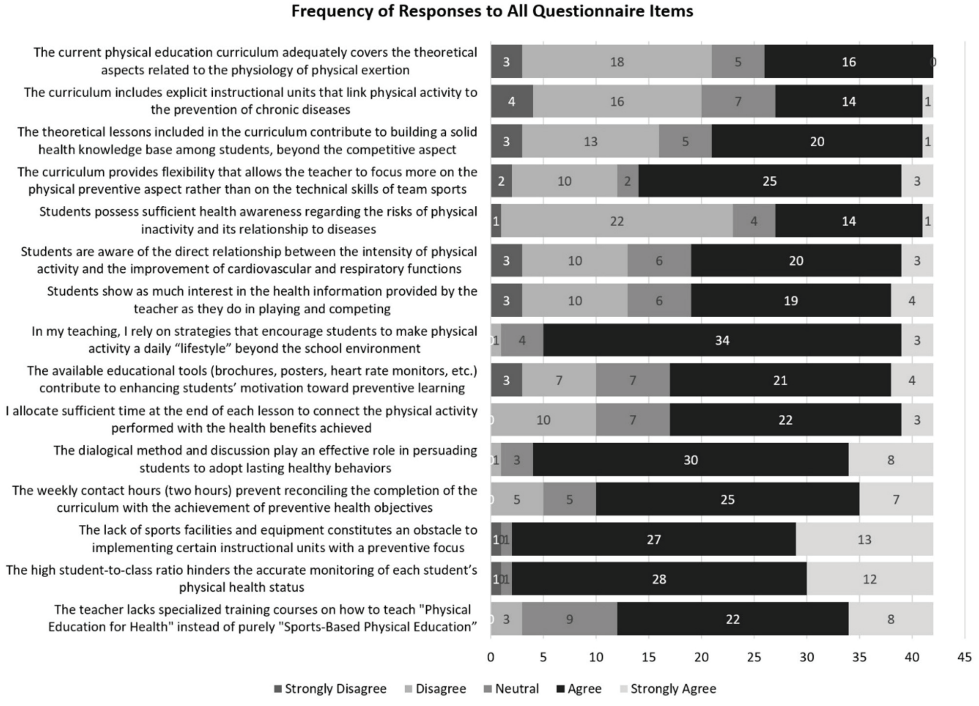

FIGURE 1. Literature Search and Selection Strategy (Prisma Flow Chart)

Discussion

The aim of this study was to examine the perspectives of secondary school teachers in Jijel Province, Algeria, regarding the role of physical education in promoting health culture and preventing chronic diseases among students. The results reveal that the work environment is the most important factor limiting the implementation of health-related aspects in the physical education curriculum. The high mean score (4.01) for pedagogical, time, and structural barriers indicates that teachers face significant difficulties in applying the health dimension of the curriculum. Limited time and weak infrastructure reduce the effectiveness of physical education classes and often limit them to simple physical activities instead of using them as a strategic tool to promote health culture. These findings are consistent with Hardman (2008), who reported that the marginalization of physical education in school schedules and the lack of resources reduce its ability to produce sustainable health outcomes. In addition, the relatively low standard deviation (0.79) suggests that teachers have similar views about these barriers, indicating that they are common challenges in secondary schools in Jijel. Despite these structural barriers, the results reveal a relatively strong level of professional awareness among teachers. The mean score for teaching methods and motivation (3.70) suggests that teachers try to use different teaching strategies to encourage healthy behaviors among students. This may be related to the high academic level of many teachers (Master's and PhD degrees). Teachers are not only providing health information but also trying to develop sustainable health behaviors through improved teaching approaches. This finding is consistent with Haerens et al. (2011), who emphasized that teaching styles that support student autonomy can increase students' motivation to adopt an active lifestyle.

However, the comparison between these two results shows an important gap. Teachers demonstrate strong pedagogical motivation, but they work in a limited structural environment. This contradiction may create professional stress for teachers if these conditions are not improved by educational authorities.

The results also indicate some methodological limitations in the secondary school physical education curriculum. Neutral responses related to concepts of exercise physiology and preventive education suggest that there is a gap between physical practice and scientific understanding. The lowest mean score (2.81) was recorded in items related to exercise physiology, which suggests that the Sport-Education Model dominates the curriculum more than the Health-Related Fitness Model. As a result, students may practice physical activity without clearly understanding its scientific and health benefits. This may prevent physical activity from becoming a long-term health habit that helps prevent chronic diseases (Haerens et al., 2011).

At the same time, curriculum flexibility appears as a positive aspect, with a mean score of (3.40). Teachers feel that they have some freedom to adapt their teaching methods and introduce health topics. However, this flexibility can also be problematic because it depends mainly on the individual teacher's competence to compensate for the absence of explicit curriculum units related to issues such as obesity and diabetes. Therefore, developing an effective preventive curriculum requires integrating these topics clearly into the official program and linking physical activity with health knowledge (Metzler, 2017).

Overall, the results suggest that teachers show good professional readiness and motivation, but the curriculum still lacks strong scientific content related to exercise physiology and health prevention. The results related to students' health awareness and motivation provide further insights. The findings show that students generally gave neutral responses, indicating moderate or unstable awareness of the importance of physical activity. Although interest in health information recorded the highest mean (3.26), followed by awareness of the relationship between physical effort and physiological improvement (3.24), these values remain close to the neutral level. This suggests that students' knowledge about health is still superficial and has not yet developed into strong behavioral beliefs. The lowest mean score was found for awareness of the risks of physical inactivity (2.81), which indicates a concerning lack of understanding of the dangers of sedentary lifestyles. Many students may therefore participate in sports mainly for school requirements or recreation, rather than for health reasons.

These findings are consistent with Sallis et al. (2012), who argued that having health information does not automatically lead to an active lifestyle unless individuals understand the risks of physical inactivity. The variation in students' responses (standard deviation between 1.01 and 1.14) also suggests differences in social and cultural influences, indicating that students' health awareness is shaped not only by school but also by external factors. Similarly, Biddle & Asare (2011) found that adolescents often focus on immediate outcomes such as enjoyment or appearance rather than long-term health benefits.

Overall, the results suggest that students have limited health awareness. They show some interest in health information but do not fully understand the long-term risks of inactivity. Therefore, the physical education curriculum should move from simply providing knowledge to encouraging healthy behaviors, by linking physical activities with real health issues.

The results also show that pedagogical, structural, and time constraints are the main obstacles to implementing the health dimension in physical education. The results reveal strong agreement among teachers regarding these challenges. The lack of facilities and equipment recorded the highest mean score (4.21), followed by overcrowded classes (4.19). These results indicate that teachers work in difficult physical conditions that limit the effectiveness of physical education classes. In such environments, the teacher may focus mainly on maintaining order rather than developing students' physical and health competencies.

The problem is not limited to infrastructure. Teachers also reported limited teaching time (3.81) and lack of specialized training (3.83). These conditions reduce teachers' ability to focus on preventive health education. These results support the conclusions of Hardman (2008), who highlighted the gap between educational policies and the reality of limited resources. They also align with the perspective of Kirk (2010), who argued that overcrowded and restrictive environments encourage traditional teaching methods and reduce student motivation.

The results also reveal that the current curriculum lacks clear instructional units related to exercise physiology and health education, which contributes to moderate or weak health awareness among students, especially regarding the risks of physical inactivity (mean = 2.81). These findings are consistent with the work of Green & Thurston (2002) in England, who reported a gap between official educational discourse and actual practice in physical education. Similarly, Haga et al. (2024) found limited perceived health competence among students in Norway. However, the main difference in the Algerian context is that the challenges are largely structural, such as lack of facilities and overcrowded classes (mean = 4.21). This supports the conclusion of Hardman (2008), who argued that limited resources in developing contexts often reduce the importance of physical education in schools. Overall, the findings suggest that students' limited health awareness is not mainly due to teachers' competence but rather to restrictive educational conditions. This conclusion is consistent with Sallis & McKenzie (1991), who emphasized that physical education can contribute to public health only when sufficient teaching time and resources are available.

Conclusion

In conclusion, the present study highlighted the potential of the secondary school physical education curriculum to support national health awareness and chronic disease prevention strategies in Algeria. The findings demonstrate a high level of professional readiness, solid academic qualifications, and strong motivation among physical education teachers to actively contribute to these health preventive goals.

Through this investigation, the researchers established that while teachers possess strong pedagogical readiness, the current school environment and the structure of the curriculum present valuable opportunities for ongoing logistical and conceptual optimization. To further maximize this pedagogical contribution, the study suggests that future educational planning could focus on enhancing the integration of explicit instructional units related to exercise physiology and preventive health within the official program. Additionally, providing further institutional support, such as expanding specialized training and continuously upgrading school sports facilities, would significantly enhance teachers' ability to balance standard curriculum requirements with preventive health objectives. Ultimately, these insights offer a collaborative perspective for educational authorities to continuously develop school infrastructure and curricula, ensuring that physical education serves as an effective, long-term strategic tool for youth health promotion.

Disclosure of interest
All authors declare no conflict of interest.

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