MENSTRUAL EDUCATION, HEALTH AND PHYSICAL EDUCATION - A STUDY CONDUCTED WITH PORTUGUESE YOUNG GIRLS

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ABSTRACT

Portuguese young girls, who usually reach their menarche from the age of 12/13, are faced with biological and emotional factors that, compared to their male counterparts, create an inequality of opportunity for the practice of physical and sports activity (PSA) in the school curriculum, through Physical Education (PE), which for the World Health Organization (WHO, 2018) is a practice that helps develop physical abilities, increase the general pleasure in physical and sporting practice, and has a real impact on counteracting a sedentary lifestyle.

The physical state of the (pre)menstrual period, whose systemic effect includes a state of inflammation that includes several physical limitations (Goldstuck, 2020) is still not widely addressed in the school context and is rarely considered for the practice of Physical Education, reflecting in the short and medium term on their health and well-being.

For this research, conducted with a sample of 461 young Portuguese students, aged between 17 and 21, we aimed to understand factors perceived by a group of Portuguese female students, regarding their (pre)menstrual state which interfere with their well-being, in the context of practicing Sports and Physical Activity in Physical Education.

This information was collected in 2024 using a questionnaire created in Google Forms, which complied with ethical procedures, including an informed consent form at the beginning, safeguarding voluntary participation, confidentiality, and anonymity. The data were statistically analyzed using SPSS version 29.

The results obtained allowed us to infer that for a large number of university girls, the physical symptoms of the (pre)menstrual state condition the practice of AFD at school, and that the context of Physical Education does not create the best conditions to increase the general pleasure in physical activity, reducing the differences with their male colleagues and promoting active lifestyle habits, which are important for their health, in the short, medium and long term.

Keywords: physical education; young girls; menstruation; education and health

RESUMEN

Educación menstrual, salud y educación física -Un estudio realizado con jóvenes portuguesas. Las jóvenes portuguesas, que suelen alcanzar la menarquia a partir de los 12/13 años, se enfrentan a factores biológicos y emocionales que, en comparación con sus homólogos masculinos, crean una desigualdad de oportunidades para la práctica de la actividad física y deportiva (AFD) en el currículo escolar, a través de la Educación Física (EF), que para la Organización Mundial de la Salud (OMS, 2018) es una práctica que ayuda a desarrollar las capacidades físicas, aumentar el placer general en la práctica física y deportiva, y tiene un impacto real en contrarrestar un estilo de vida sedentario.

El estado físico del período (pre)menstrual, cuyo efecto sistémico incluye un estado de inflamación que incluye varias limitaciones físicas (Goldstuck, 2020) aún no es ampliamente abordado en el contexto escolar y rara vez es considerado para la práctica de la Educación Física, reflejándose a corto y mediano plazo en su salud y bienestar.

Para esta investigación, realizada con una muestra de 461 jóvenes estudiantes portuguesas, con edades comprendidas entre 17 y 21 años, nos propusimos comprender los factores percibidos por un grupo de alumnas portuguesas, en relación a su estado (pre)menstrual que interfieren en su bienestar, en el contexto de la práctica de Deportes y Actividad Física en Educación Física.

Esta información se recogió en 2024 mediante un cuestionario creado en Google Forms, que cumplió con los procedimientos éticos, incluyendo un formulario de consentimiento informado al principio, salvaguardando la participación voluntaria, la confidencialidad y el anonimato. Los datos fueron analizados estadísticamente mediante el programa SPSS versión 29.

Los resultados obtenidos permitieron inferir que para un gran número de chicas universitarias, los síntomas físicos del estado (pre)menstrual condicionan la práctica de AFD en la escuela, y que el contexto de la Educación Física no crea las mejores condiciones para aumentar el placer general por la actividad física, reduciendo las diferencias con sus colegas masculinos y promoviendo hábitos de vida activos, importantes para su salud, a corto, medio y largo plazo.

Palabras clave: educación física; chicas jóvenes; menstruación; educación y salud

INTRODUCTION

WHO presents Physical Education (PE) as a series of practices that help develop physical fitness and attitudes and create positive lifestyle habits, helping to increase physical and sports activity in general and fighting a sedentary lifestyle (2018). At school, as children and young people, in addition to the possibility of creating positive lifestyle habits through the reinforcement of physical exercise, they can acquire knowledge and practice hygiene habits. On the other hand, Condessa & Anastácio (2024) refer to adolescence period as a very relevant stage in the construction of body identity, with great importance for the happiness of young people, being a process that occurs from an early age, due to the various changes at a biological, psychological, cognitive and social level, and where education plays an increasingly relevant role, as it can interfere positively.

Thomas, Gallagher, and Thomas (2001) list three factors as being relevant to changes in motor skills: biological factors, involvement factors, and their interaction. In this sense, as a biological factor, we highlight those associated with growth and sexual maturation resulting from puberty, in particular those related to sexual maturity. Due to the amount of time young people spend at school, the school community must consider issues associated

with the comprehensive development and sexual maturity of adolescents, particularly girls. However, in Portugal, girls face biological and emotional factors that do not favor regular and positive physical exercise, with an impact on their motor performance. According to Campos et al (2011), several studies indicate that the practice of physical activity is more related to the biological age than chronological age. Young people of the same age may present different stages of pubertal development, with different impacts on their physical activity levels physical characteristics, and sexual maturation can probably be considered an essential factor in measuring the practice of physical activity at this specific stage and consequently your level of performance.

As factors of involvement in school and, on particular in the practice of Sports and Physical Activity at school, we will address the limitations that children and young people face at this stage and that, therefore, discourage the practice of physical exercise. In fact, the physical state of the (pre)menstrual period, which they face every month, is reflected in their health and well-being, and is never considered for the practice of Physical Activity and Sports and is still very little discussed in a school context. Dhar, Mondal, and Bhattacharjee (2023) determined that both sedentary and vigorous physical activity may be a risk factor for increased menstrual disorder. Young women often suffer from menstrual disorders, the most common being dysmenorrhea and premenstrual syndrome, whose systemic effect includes a state of inflammation that includes several physical limitations, such as : fatigue, nausea, headaches, diarrhea, abdominal pain and cramps, headaches and, often, shortness of breath (Goldstuck, 2020). The combination of one or more harmful symptoms of menstrual patterns can have a greater impact on the daily lives of these young women and can be aggravated or alleviated by numerous factors, including the quality of physical activity.

According to the WHO (2006), adolescents should practice a minimum of 300 minutes of moderate to vigorous physical activity per week, with emphasis on aerobic exercises, muscle strengthening and flexibility. Campos et al. (2021) report that such recommendations contribute to the healthy growth and development of young people, as well as favoring and encouraging good lifestyle habits in adulthood, which enhances the prevention of chronic degenerative diseases. In this same orientation according Condessa & Anastácio (2024), for the Portuguese National Health System (NHS) physical activity is recommended in daily life to avoid a sedentary lifestyle and, also, to maintain personal hygiene, avoid stress, do things that give you pleasure and look for the positive side of life.

OBJETIVES

Our purpose was to understand factors perceived by a group of Portuguese female students, regarding their (pre)menstrual state, which interfere with their well-being, in the context of practicing Physical Education, and to reflect on some of their positive proposals for a better integration into these practices.

PARTICIPANTS

The sample of our study consists of 461 University Students, from all over Portugal, young girl people aged between 17 and 21 years old, having an average age of 19.6 years, with a standard deviation of 1.4%. In this group, 96.1% were undergraduate students and 3.9% were master's students. Their mother's role model, which is important to keep them informed about the stages of puberty, we recorded that 29.3% had mothers with higher education or secondary school (35.4%). Contributing negatively to their lifestyle habits, 14.1% were smokers. Our selection was random, made on-line by online collection, "Snowball" type

METHODOLOGY

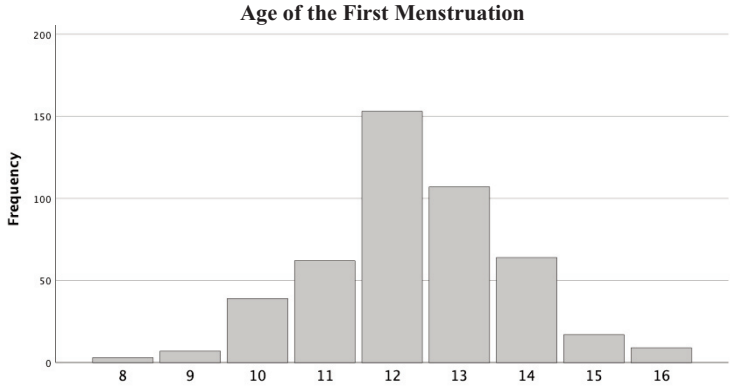
For this cross-sectional study, a questionnaire survey was applied in Google Forms, which included closed (Likert scale type) and open questions. This instrument, approved by the Ethics Committee in 2024, included, right at the beginning, an informed signature term, guaranteeing voluntary participation, anonymity, and confidentiality. For data analysis, we used SPSS (Statistical Package for the Social Sciences), in the 29th version, and

used simple descriptive and central statistical analysis [frequency (n); percentage (%); mean / average (x) and standard deviation (sd)] and correlational analysis [Correlation Coefficient Bravais-Pearson (r) a p≤ .05].

RESULTS

The analysis of our results was carried out based on the two purposes of the study and is the result of a systematic analysis of the questionnaire questions relevant to the study.

Fig. 1. Age of the first menstruation of our young girls.



The majority of these students had their first menstrual period before the age of fourteen (80.5%), having appeared between 12 and 14 years, presenting an average age of 12.3 years (12.31.4).

On the other hand, we can see in Table 1, than when we seek to know the (pre)menstrual symptoms we find a variety of answers among the pre-defined categories: 1 - "I never feel"; 2 – I feel slightly"; 3-"I feel it, but it s bearable"; 4 – "I feel it strongly and it makes my activities difficult".

Table 1. Physical symptoms associated with the menstrual period in our young girls.

	Physical symptoms associated with the menstrual period			
	A few days before I feel generalized physical fatigue		**During my period I feel** generalized physical fatigue	
	Frequency (n)	Percent (%)	Frequency (n)	Percent (%)
I never feel	164	35,6	103	22,3
I feel slightly	147	31,9	165	35,8
I feel it, but it's bearable.	116	25,2	135	29,3
I feel it strongly and it makes my activities difficult.	34	7,4	58	12,6
Totality	461	100,0	461	100,0
Average(x) ±Standard Deviation (sd)	2,04±0,950		2,32±0,958	

These girls feel the symptoms most during their menstrual period (with 9.3% more affirmative responses for the two highest categories and a higher average value), with 29.3% reporting feeling generalized tiredness and 12.6% even having difficulty performing physical and motor activities that are required of them. As we can see, these symptoms are also observed in the phase preceding menstruation (25.2% feel tired, but it is bearable, and 7.4% feel it intensely), resulting in at least one week of discomfort.

Thus, approximately 57.3% presented mild or surmountable symptoms and 7.4% presented more pronounced symptoms in the premenstrual phase, increasing this percentage to 65.3% and 12.6%, respectively, during the menstrual period. On the other hand, we observed that no significant relationship was found between the age of the first menstruation and (pré-)menstrual symptoms, and its relationship with the difficulty of physical practice was not studied.

Table 2. Limiting factors associated with symptoms of the menstrual period.

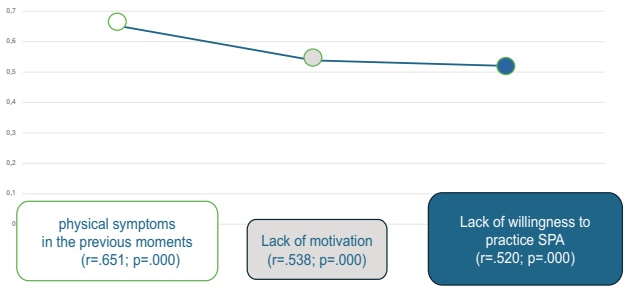
	I am prevented from doing physical activity/sports because of...				I don't feel motivated to practice physical activity/sports because of...			
	Physical symptoms in the days before to menstruation		Physical symptoms during my period		Physical symptoms in the days before to menstruation		Physical symptoms during my period	
	Frequency (n)	Percent (%)	Frequency (n)	Percent (%)	Frequency (n)	Percent (%)	Frequency (n)	Percent (%)
Totally false	77	16,7	44	9,5	60	13,0	37	8,0
False	219	47,5	162	35,1	150	32,5	86	18,7
True	124	26,9	186	40,3	188	40,8	226	49,0
Totally true	41	8,9	69	15,0	63	13,7	112	24,3
Totality	461	100,0	461	100,0	461	100,0	461	100,0
x ± sd	2,28±0,846		2,61±0,855		2,55±0,885		2,90±0,861	

In Table 2, we present the girls' responses about the limiting factors of pré-menstrual and menstrual physical symptoms, and which condition physical/sports practice and/or the lack of motivation for it, with higher average values for the menstrual period. Although for 55.3% of women, physical symptoms during their period prevent them from doing physical activity/sports, it is the lack of motivation that has an even greater impact (+18%). Not only are physical factors limiting, but also psychological ones.

Although a high number of these adolescents (68.6%) mentioned that during their menstrual period, they do not feel comfortable doing physical activity/sports, some do not agree (31.4%). However, a few numbers of students tend to increase my physical/sports activity to reduce the physical symptoms (28.1%), or emotional symptoms (18.4%) associated with their period and some girls (17.3%) say they tend to do more physical activity to improve their cognitive and intellectual symptoms associated with the menstrual period.

Researching the relationship between physical (pre)menstrual symptoms and the factors that prevented them from practicing Sports and Physical Activity, through the Bravais-Pearson correlation coefficient (r), we determined some strong relationships that we present below (Fig. 2).

Fig. 2 – Relationships between physical symptoms that prevent young girls from practicing in Sports and Physical Education (SPA)



We found a strong relationship between the physical symptoms that prevented these young women from practicing sports and physical activity (SPA) during their menstrual period and the physical symptoms in the moments before the arrival of this phase (r = 0.651; p = 0.000). On the other hand, the relationship between their agreement with lack of motivation (r = 0.538; p = 0.000) and the lack of willingness to practice Sports and Physical Activity (r = 0.520; p = 0.000) was another point of great interest. Therefore, these young women strongly agreed with these items (73.5% and 68.8%).

Most of the interviewees stated that they did not miss physical exercise (73.5%), although they did not reveal that they increased the amount of exercise to reduce physical and emotional symptoms associated with the phase of the (pré-)menstrual period.

Then, to subsequently request positive contributions in the context of school PA practice, in terms of adequacy to menstrual hygiene and what desires existed for better conditions, we collected the perceptions of these girls about the hygiene contexts existing in the involvement of Physical Education at their school(s)/University(ies) (Table 3).

Table 3. Conditions and Improvements to be made at the School/EF - Quality of facilities and support for menstrual hygiene

	Regarding the sanitary facilities at your school or university, indicate what is available in terms of suitability for menstrual hygiene:					Regarding the sanitary facilities at your school or university, indicate what you would like to see for menstrual hygiene:			
	Menstrual hygiene products in physical education changing rooms		Physical education changing rooms with showers			Physical education changing rooms with menstrual hygiene products		Physical education changing rooms with more privacy	
	Frequency (n)	Percent (%)	Frequency (n)	Percent (%)		Frequency (n)	Percent (%)	Frequency (n)	Percent (%)
Not at all suitable, non-existent	359	77,9	198	43,0	I totally disagree	24	5,2	24	5,2
Somewhat suitable	34	7,4	38	8,2	I disagree	25	5,4	29	6,3
Suitable	28	6,1	123	26,7	I agree	69	15,0	75	16,3
Very suitable	40	8,7	102	22,1	I totally agree	343	74,4	333	72,2
Totality of answers	461	100,0	461	100,0	Totality of answers	461	100,0	461	100,0
x ± sd	1,45±0,92		2,27±1,23		x ± sd	3,59±0,815		3,56±0,829	

According to the testimonies left, regards in the table 3, the involvement created in the EF changing room context was not the best and many of these young women corroborated the need to create better conditions at school, with dissemination and communication for everyone, for example, about the changes that occur during

the menstrual period, and with the provision of hygiene products (89.4%) and greater privacy in the changing rooms (91.5%).

DISCUSSION AND CONCLUSIONS

The results obtained allowed us to infer that for a large number of university girls, the physical symptoms of the (pre)menstrual state condition the practice of Sports and Physical Activity at school, This is in line with the cross-sectional study presented by Finne et al. (2011), which determined some relationship between early maturation and less physical activity in female adolescents, for whom physical inactivity was more associated with those who had irregular menstruation.

We know that the context of Physical Education does not create the best conditions to increase the general pleasure in physical activity, reducing the differences with their male colleagues and promoting active lifestyle habits, which are important for their health, in the short, medium, and long term. A study of Riddoch et al. (2001), with European students aged between 9 and 15 years, confirmed significant gender and age differences in physical activity, with differences demonstrated consistently across all four countries. More recently, Campos et al. (2021) reported that the association between the stage of sexual maturation and the level of physical activity in adolescents requires further research. New knowledge in the area is important to enable professionals involved in adolescent health to act effectively in combating physical inactivity.

Regarding Physical Education conditions for practicing Sports and Physical Activity, these girls shared their perceptions and proposals for improvement. They considered important for the school community to have more knowledge about the menstrual period and its impact on their health and well-being, as well as about changing rooms, which must comply with the legislation of ordinance 454/2023, being another aspect that needs to be improved, reinforcing the provision of adequate hygiene materials and greater privacy. We know that there is a law that approves the general technical and operational requirements for public sports facilities, but there is still much to be done.

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