



The importance of physical education in the development of school-age children

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ABSTRACT

Physical inactivity poses a significant challenge in our contemporary society, emerging as one of the primary risk factors for mortality on a global scale. This issue is exacerbated by various elements, including dietary habits and attitudes toward adopting a healthy and active lifestyle. The need to address each of these factors becomes imperative to comprehend the benefits and drawbacks that can impact our health and physical well-being. The central objective of this research is to determine whether the level of physical activity these young individuals engage in regularly aligns with the recommended standards for their specific age group. Childhood and preadolescence are crucial stages in physical and mental development, and a lack of appropriate physical activity during this period can have long-term consequences for health.

Keywords: Physical activity, Healthy habits, Physical condition, Sedentary lifestyle, Students.

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INTRODUCTION

Physical activity (PA) and the adoption of healthy lifestyle habits are crucial factors in everyone's life. In our society, these aspects are subjects of interest for study because their impact on the lives of children worldwide is a crucial factor. The age range of 6-12 years becomes a target population for acquiring healthy lifestyle habits that endure over time (Rosado et al., 2020).

On the other hand, physical inactivity (PI) is a prevalent issue in our society, being one of the most significant risk factors for mortality globally. This aspect, coupled with others such as nutrition, can lead to cardiovascular diseases directly related to the level of physical activity and health. Therefore, it is essential to have basic recommendations on how to engage in this physical activity, including intensity, duration, or type (Bull et al., 2020).

The regular practice of physical activity brings numerous benefits. According to a study conducted by Calzada et al. (2016), various dimensions are affected by sports participation. The benefited dimensions include psychological, social, and physiological aspects. When we refer to the prevention of cardiovascular, metabolic, or cardiorespiratory diseases, we are addressing the physiological field. The psychological aspect is evident in the sense of happiness derived from regular exercise. Finally, the social dimension is one of the most important for children in this age group. Thanks to sports, many young people meet new individuals and socialize, enhancing their self-esteem and overall happiness.

In recent years, there has been a progressive decline in levels of physical fitness (PF) in children and adolescents. PF is a significant physiological factor that indicates the health status of the population in general, particularly in children. This trend deserves careful attention, as physical fitness levels determine the health status of individuals and strongly predict cardiovascular diseases (Rosa-Guillamón et al., 2017).

When discussing children aged 6-12 years, it is crucial to consider schools as ideal places for health promotion, given the substantial amount of time they spend in educational institutions (Abarca-Sos et al., 2015). Therefore, the subject of Physical Education (PE) takes on special importance, allowing the active participation of all enrolled children, contributing to their own learning (Jurado et al., 2006). Additionally, Physical Education helps develop values such as respect, collaboration, tolerance, and effort (Sánchez-Oliva et al., 2014). Along the same lines, students show high motivation for this subject, displaying positive attitudes toward engaging in physical activity at school (Martínez et al., 2012; Méndez-Giménez et al., 2018).

Physical education needs to be understood from the perspective of the teacher, students, the implemented teaching program, and the values of sports (Zueck Enríquez et al., 2020). Another fundamental aspect in the individual's development related to physical activity is the recess periods present in the school schedule. Several days a week, students do not have physical education classes, and their only opportunity to move around in school is during the break time between classes. Therefore, achieving an active recess is crucial to reach the recommended levels of activity (Baquero and García, 2017; Mellado et al., 2023).

In general, many young people do not engage in enough physical activity to benefit their health. For many of them, school represents the only place to play and move. Therefore, awareness must be raised about the importance of physical education in schools for health promotion (Abarca-Sos et al., 2015), with the PE teacher playing a fundamental role in this process (López-D'Amico, 2019).

On the other hand, Pérez-Soto et al. (2019) state that the period when children engage in intentional and active physical activity is in the afternoon, after completing academic tasks. Therefore, extracurricular activities are a source of enjoyment where they can participate in sports, have fun, and socialize with their peers (Iturricastillo & Irigoyen, 2016).

Finally, the objective of this work is to understand and assess the level of physical activity of boys and girls in primary education and determine if it aligns with the recommendations set by international institutions.

MATERIAL AND METHOD

Participants

A total of 91 students completed the entire questionnaire (Table 1), comprising 41 males (45.1%) and 50 females (54.9%). The age of the participants ranged from 9 to 12 years: twenty-seven ($n = 27$) individuals were 9 years old (29.7%), fourteen ($n = 14$) were 10 years old (15.4%), thirty-two ($n = 32$) were 11 years old (35.2%), and eighteen ($n = 18$) were 12 years old (19.8%). Additionally, it is important to note that all respondents belonged to 2 grades in the primary education stage, specifically 4th grade ($n = 41$) (45.05%) and 6th grade ($n = 50$) (54.95%).

Table 1. Sociodemographic data of the participants.

Age	9 years	27	29.7
	10 years	14	15.4
	11 years	32	35.2
	12 years	18	19.8
Sex	Female	50	54.9
	Male	41	45.1
Grade	4°	41	54.9
	6°	50	45.1

Source: Author's own work.

Procedure

Firstly, contact was made with the management teams of various schools to request collaboration and approval for participation in the study. Once both approvals were obtained, questionnaires were sent via different links through email. The APALQ questionnaire (Assessment of Physical Activity Levels Questionnaire) was selected, which was necessary to conduct the research.

After selecting the measurement instruments, it was developed and disseminated through the internet using the Google Forms® program. On the first page of the questionnaire, participants were informed of the entire process, the general objective of their participation, as well as the policy to always maintain anonymity and their right to withdraw from the study at any time without cause or justification, following the guidelines set by the Declaration of Helsinki (WMA, 2021) and the Belmont Report (1979).

Instruments

The following validated instruments were used for data collection in this study. Additionally, sociodemographic variables were collected beforehand to contextualize the sample worked with.

Assessment of Physical Activity Levels Questionnaire (APALQ): This instrument encompasses various items related to the type of practice and level of physical activity undertaken by individuals. Responses are

quantified on a Likert scale ranging from 1 to 4/5, depending on the evaluated question, where the lowest value is 1 and the highest is 4 or 5. As stated by the author, by summing the responses to each question, a score is obtained reflecting the level of physical activity of the subjects. In this way, the minimum possible score is 5, while the maximum is 22. Within this score range, the following levels of physical activity are defined: 5-10 (Sedentary), 11-16 (Moderate), and greater than 17 (Active) (Jurado et al., 2019; Zaragoza et al., 2012).

Statistical analysis

The statistical analysis was conducted using statistical software (office package, Excel program). Firstly, a descriptive analysis of response frequencies was carried out, through which data on sociodemographic variables were obtained. Subsequently, analyses were performed to determine the response percentages of each individual based on each of the items in the questionnaire used.

RESULTS

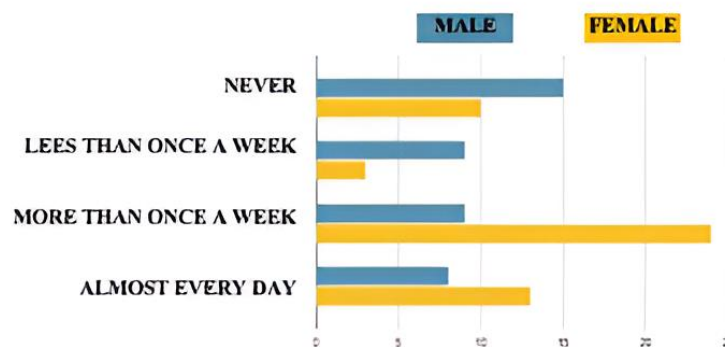
Firstly, in Table 2, we find that 40.65% of the subjects do not engage in extracurricular physical activity either never or less than once a week. According to the criteria established by the APALQ instrument, this percentage of students is classified in the Sedentary level. On the other hand, 59.35% of the total subjects engage in extracurricular physical activity Almost every day (very active level) or more than once a week (moderately active level).

Table 2. Analysis of organized extracurricular physical activity.

Frequency	n	(%)
Never	25	27.47
Lees than once a week	12	13.18
More than once a week	33	36.26
Almost every day	21	23.07

Source: Author's own work.

Item 1. Practice of organized sports activity outside of school



Source: Author's own work.

Figure 1. Percentage of organized extracurricular physical activity.

As observed in Figure 1, the 25 youths who never engage in organized extracurricular physical activity are divided into 15 males and 10 females. Additionally, there are 9 boys who participate in this type of activity

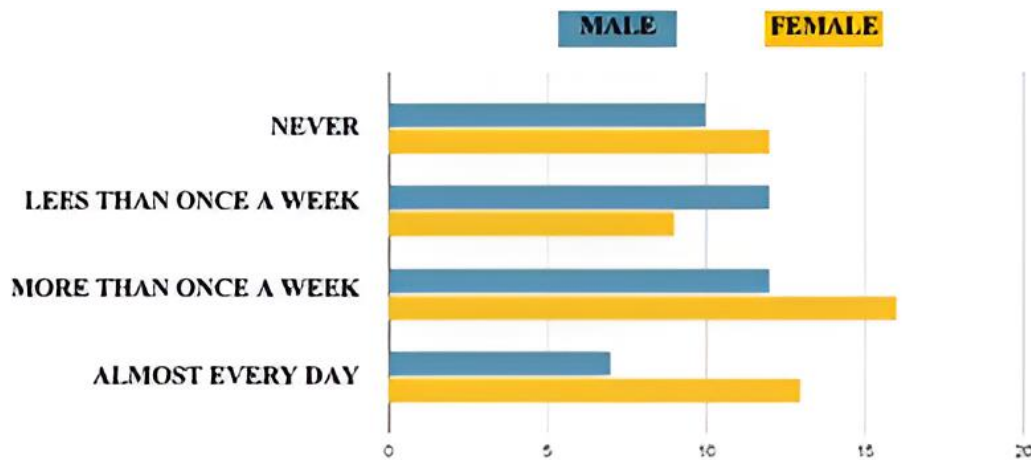
less than once a week and 3 girls who also do so at this frequency. In summary, there are 24 males who meet this item with a frequency of zero or less than once a week (26.28%), and 13 females who also do so (14.27%). All of them would be classified as sedentary individuals. On the other hand, 17 male subjects engage in it almost always or more than once a week (18.68%), and 37 females also do so (40.65%). All of them fall under the categories of moderately active and very active.

Item 2. Practice of unorganized sports activity outside of school

We find that 47.24% of the subjects never engage in unorganized extracurricular physical activity or do so less than once a week. According to the criteria established by the APALQ instrument, this percentage of students is considered in the Sedentary level.

On the other hand, 52.76% of the total subjects engage in unorganized extracurricular physical activity Almost every day (Very active level) or more than once a week (Moderately active level) (Figure 2).

As observed in Figure 2, the 22 youths who never engage in unorganized extracurricular physical activity are divided into 10 males and 12 females. Additionally, there are 12 boys who participate in this type of activity less than once a week and 9 girls who also do so at this frequency. In summary, there are 22 males who meet this item with a frequency of zero or less than once a week (24.17%), and 21 females who also do so (23.07%). On the other hand, 19 male subjects engage in it almost always or more than once a week (20.87%), and 29 females also do so (31.86%). All of them fall under the categories of Moderately active and very active.

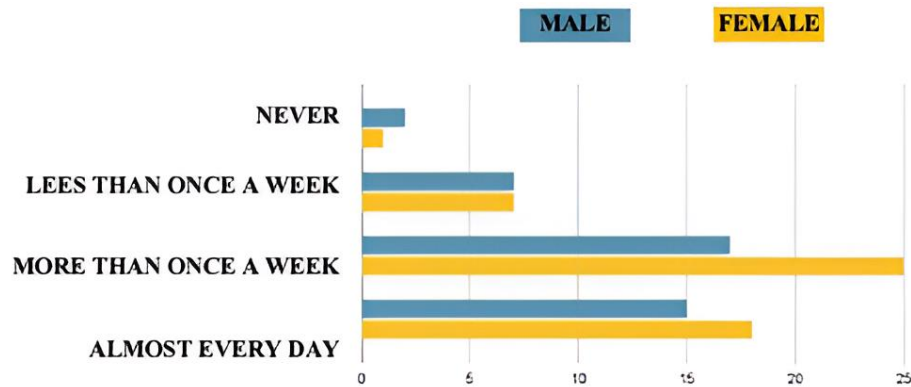


Source: Author's own work.

Figure 2. Percentage of unorganized extracurricular physical activity.

Item 3. In Physical Education classes, how many times do you engage in sports or physical activity for at least 20 minutes?

Figure 3 shows the results regarding the vigorous activity performed by all students in Physical Education classes. As observed, 18.57% of the total responses indicate that they do not engage in vigorous physical activity for at least 20 minutes in class, responding Never ($n = 3$) or less than once a week ($n = 14$). On the other hand, if we consider the categories More than once a week ($n = 42$) and almost always ($n = 33$), the majority of students, specifically 82.41% of the total, fall within the established guidelines. Within this group, 46.15% of this percentage would be moderately active, while 35.26% would be considered very active.

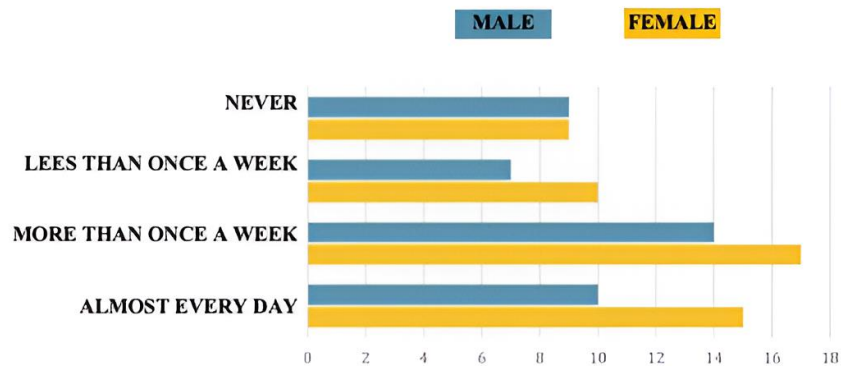


Source: Author's own work.

Figure 3. In Physical education classes, how many times does one engage in sport of physical activity for at least 20 minutes? Divides by sex.

Item 4. Outside of school, how many hours per week do you engage in vigorous physical activity?

In Figure 4, it can be observed that around 61% (27.47% never and 34.06% once a week) of the participants do not engage in any vigorous physical activity outside of school. Additionally, 18.68% participate in activities of vigorous intensity more than once a week. Lastly, around 20% of the surveyed individuals state that they engage in vigorous physical activity regularly. Furthermore, in this graph, it can also be observed that females engage in more vigorous physical activity than males in all three analysed categories (less than once, more than once, and regularly).



Source: Author's own work.

Figure 4. Outside of school, how many hours a week does engage in vigorous physical activity?

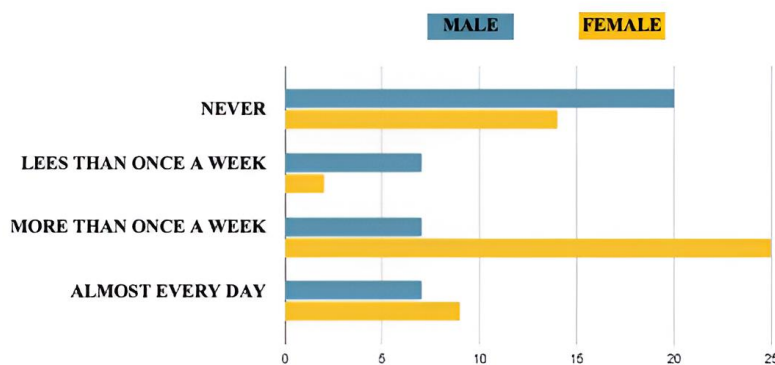
Item 5. Number of subjects engaged in competitive physical activity in their free time

Lastly, in Figure 5, it is observed that 34 subjects do not engage in competitive sports in their free time, accounting for 37.36% of the total surveyed. To this percentage, 9 subjects who engage in it less than once a week are added, representing another 9.89% of the total. All of them would be classified as sedentary individuals.

On the other hand, 34 respondents participate in competitive sports more than once a week, accounting for 37.36% of the total (Moderately active). Additionally, 14 individuals engage in it more frequently, almost every day, representing 15.38% of the total (Very active).

Also, as observed in Figure 8, male subjects do not engage in competitive sports at all, compared to the 14 females who also do not. Regarding the frequency "Less than once a week", the male figure still predominates, with 7 subjects engaging in it at this frequency compared to 2 females.

On the other hand, when referring to engaging in competitive sports "More than once a week", the female figure predominates with 25 subjects compared to 7 males. The same occurs with the frequency "Almost always", with 9 responses from females and 7 from the opposite gender.



Source: Author's own work.

Figure 5. Participation in competitive sport in free time. Divided by sex.

DISCUSSION

Firstly, when comparing this study with Alonso-Ondiviela's (2020), both focusing on Primary Education, significant differences in results are observed. Overall, substantial discrepancies are noticed in the percentages of sedentary, moderately active, and very active groups regarding physical activity. In terms of the sedentary group, the difference is considerable, with 29% more subjects, 40.65% in this study, compared to 11% found in Alonso-Ondiviela (2020). In the very active group, the results are more similar, with a not very significant difference of 9% (23.07% in this study versus 14% in Alonso-Ondiviela's study). Finally, in the moderately active group, both studies differ significantly, with 36% of responses in this study compared to 75% in the compared study.

Other studies that used this measurement instrument, such as Rodríguez Muñoz (2015), also differ regarding the sedentary group, with 6% of respondents in this group, in contrast to 40.65% in this study. In relation to this, the literature is clear and states that sedentary behaviour increases with age and accentuates during adolescence (Arévalo et al., 2020; Berglind and Tynelius, 2018; Gutiérrez and Gallego, 2017). On the other hand, in the very active group, Rodríguez's study shows 48% of total responses, while this study shows 23.07% of subjects very active in physical activity. Finally, the results are similar in the moderately active group, which meets the basic recommendations of the WHO, with 46% in the compared study compared to 36% in this study.

In another vein, it has been demonstrated that there are gender differences in physical activity, with males being more active in most cases (Alonso-Ondiviela, 2020; Beltrán Carillo et al., 2017; Pozo Cano, 2022). This gender discrepancy is attributed to a combination of sociocultural factors, including women's limited participation in sports, lack of family support, and gender role divergences in recreational activity preferences. These elements can have a significant impact on the observed disparity (Aguilar et al., 2018; Arévalo et al., 2017; Taverno et al., 2013).

However, the results of this study show a different pattern, as the male gender represents a higher percentage in the sedentary group in most of the analysed items. Regarding physical activity in leisure time (outside of school), approximately 20% of males do not meet the basic recommendations of the WHO and are considered sedentary, in contrast to the approximately 16% of females. In the same line, it can be observed that around 35% of females, compared to 26% of males, always or almost always engage in competitive physical activity. Likewise, various research has pointed out higher participation of females in physical activities. However, these studies indicate that girls tend to choose moderate-intensity activities, such as household chores and dancing, while male adolescents dedicate considerably more time to vigorous-intensity physical activities, according to identified findings (Aguilar et al., 2018; Martínez et al., 2019; Oliveira and Parra, 2018; Sallis et al., 2018; Taverno et al., 2013), although in our study, the tendency to engage in sports is higher in females in all aspects.

On the other hand, competitive physical activity is a relevant factor in this study. This type of activity promotes the practice of physical exercise in students' free time. According to the results of Pozo Cano (2022), 54% of respondents claimed to participate in some competitive sport, with predominantly male gender in the affirmative response. However, this study shows some discrepancy in the results of this item. Specifically, regarding the practice of competitive physical activity, it is shown that around 48% of respondents engage in competitive physical activity at least once a week, and the male gender predominates in the affirmative response. In contrast, 37.36% of the total practice it more than once a week, and 14 individuals engage in it more frequently, almost every day, representing 15.38%. On the other hand, concerning the physical activity performed in class through the Physical Education subject, in this study, it is found that 18.57% of the total respondents do not engage in vigorous physical activity in class. In contrast, 82.41% of responses claim to meet the established vigorous physical activity time in this item.

In conclusion, it has been evidenced that to achieve adherence to regular physical activity practice and, consequently, the improvement of healthy habits, parents should encourage young people to participate in physical activities. This becomes more effective when both the mother and father maintain an active lifestyle. This statement can enhance positive influence, fostering the natural adoption of physical activity as part of their leisure time (Arévalo et al., 2017; Márques, et al., 2017; Olivares, et al., 2015; Vaquero et al., 2020).

CONCLUSIONS

After collecting and presenting the results of this study, several conclusions can be drawn. The objective of the instrument used is to measure the level of physical activity of the analysed subjects, and thus classify them into various groups (Sedentary, moderately active, very active). Analysing the results obtained, it can be affirmed that the level of physical activity obtained by the study population is low, with a high number of subjects falling into the sedentary group. If we consider the basic recommendation offered by the WHO to engage in physical activity more than two days a week, many of the participants surveyed in this research would not meet this recommendation. Therefore, these types of investigations are of vital importance since,

thanks to these results, the sedentary lifestyle of many subjects can be confirmed, aiming to address this detected physical inactivity.

Another noteworthy aspect in this study is the difference observed between both sexes. As mentioned, multiple studies demonstrate that the majority of individuals settling in the sedentary group are females. In contrast, this study presents a different perspective. The female gender plays a significant role in percentages related to the moderately active and very active groups, engaging in extracurricular activities, whether competitive or recreational.

Finally, it is important to note that this study has a limitation regarding the sample, as it is not representative, and therefore, the authors recommend further research on these issues to provide more specific data.

AUTHOR CONTRIBUTIONS

Conceptualization, R.C.C and D.R.C.; Methodology, P.D.-F. and D.R.C.; Formal Analysis, P.D.-F. and S.S.M; Investigation, R.C.C.; Original Draft Preparation, P.D.-F. and D.R.C.; Review and Editing, S.S.M; Supervision, P.D.F. All authors have read and agreed to the published version of the manuscript.

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DISCLOSURE STATEMENT

No potential conflict of interest was reported by the authors.

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