IOSR Journal of Sports and Physical Education (IOSR-JSPE)
e-ISSN: 2347-6737, p-ISSN: 2347-6745, Volume 10, Issue 6, Series 1,(Nov. – Dec. 2023), PP 41-47
www.iosrjournals.org

Level Of Knowledge Of Adolescents About The Recommendations Of The World Health Organization On Physical Activity And Health

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Abstract:
Background*: The factor that most influences the health of an adult is inactivity during adolescence. The objective of this study was to determine the level of knowledge of adolescents about physical activity and health according to the recommendations of the world health organization.*
Materials and Methods*: An observational and descriptive cross-sectional study was carried out with 280 adolescents from the Tolima region - Colombians aged 11 to 18, who completed the physical activity and health questionnaire for adolescents (CUAFYS-J) online with demographic data, it consists of 20 items. Likert type with 4 response options, with a high, medium and low rating scale*.
Results*: 53.6% of adolescents consider themselves physically active, with women having the highest perception with a percentage of 57.1% more than boys with 25.6%. It was found that the majority of adolescents are not enrolled in sports training/sports schools. Descriptive and inferential statistics were used with the Kolmogorov-Smirnov test, significant differences between the gender and age groups were analyzed using the non-parametric sperman correlation test. There is a direct significant relationship for both dimensions (PA and health) of 95% (p ≤ 0.05).*
Conclusion: *adolescents present a level of knowledge with an average score of 62.5. Boys had a higher score than girls and were above the average level for both genders. The dimension with the highest percentage and score was health. The level of knowledge can contribute to improving the surveillance and application of interventions and development of PA and health policies to improve the quality of life of adolescents*
Keywords*: questionnaire, recommendations, young people, exercise, physical inactivity.*

Date of Submission: 21-12-2023 Date of Acceptance: 31-12-2023

I. Introduction

The concept of health has evolved from the absence of diseases to the current conception that is understood as a way of life. The World Health Organization (WHO) defines health as "the state of complete physical, mental and social well-being," and not just as the absence of disease. But the individual is not alone, but is in a permanent relationship with the environment and integrated into society. In fact, social and cultural values substantially modify (1) the subjective concept of health, expressed by the WHO. On the other hand, we must take into account He points out that this autonomous, joyful and supportive "way of living" is susceptible to being educated as far as it is human behavior (1); what we call "Quality of Life", that is, the healthy way of living is established as a healthy lifestyle with more quality, thanks above all to the increase in longevity. Finally, it is necessary to speak of Health Education as the set of information and educational activities that encourage people who want to have good health and know how to do it and to do what they can, individually or collectively to maintain it and resort to appropriate services (1)

The World Health Organization (WHO) has as a priority the increase in levels of physical activity (PA) among the population, according to scientific evidence showing that physically active people have lower risks of developing chronic non-communicable diseases (NCDs).), including obesity, diabetes, hypertension, cardiovascular diseases and several types of cancer (2,3) (4,5). Physical inactivity not only contributes to the risk of NCDs, but can also lead to the development of mental illnesses, the accumulation of stress and lower school performance (6). Physical activity (PA) has been shown to reduce anxiety and depressive disorders in children and adolescents, with participants ages 13 and older with a diagnosis of mental illness or depression showing the greatest reductions in depressive symptoms (7).

Likewise, PA has numerous health benefits and can help prevent several diseases (4,5). Globally, it is estimated that 3 in 10 people aged 15 years or older do not meet the recommendation of at least 150 min of

moderate PA per week (8). The results of the National Survey of the Nutritional Situation in Colombia (ENSIN-2010), mention that only 26% of the population meets the minimum PA recommended in the age group between 13 and 17 years (9).

Scientific evidence suggests that adequate levels of PA provide essential health benefits in children, adolescents and help maintain a healthy body weight. This is how the WHO (10) recommends performing PA for 60 minutes continuously or 10 minutes throughout the day, with moderate intensity, flexibility and muscle strength to achieve benefits and be considered physically active. As a consequence, it confirms that a better understanding of the recommendations influences changes in healthy lifestyles, would support the importance of compliance, programs and policies in the promotion of PA. (11).

Overweight is excess weight due to increased bone, muscle and fat mass, while obesity is excess weight due to increased fat mass (% body fat). In this way, we can identify obesity with overweight due to excess fat mass, although the nuance that differentiates them is found when the real weight exceeds 20% of the ideal weight, basically taking into account excess fat mass, that is when We talk about obesity. The causes of overweight and obesity are many, but fundamentally it is worth highlighting hypernutrition in terms of the number of Kcal, sedentary lifestyle or lack of physical exercise that produces little energy expenditure and genetics, since there are statistics that speak of a greater number of chances of suffering from obesity if our parents are obese (40% chance).

This is why education is essential in the development of children and adolescents; promoting it creates healthy environments and develops life skills, where they are taught to adopt or strengthen healthy lifestyles. They facilitate healthy behavior, develop healthy relationships, make decisions, empathize with others and manage their lives in a healthy and productive way (12,13). Schools are in an ideal position to promote strategies and provide an increase in PA levels (14).

Costa and others evaluated the healthiness of their lifestyles and related the scores obtained with different sociodemographic variables in school adolescents in Catalonia, the youngest students and those with greater family wealth obtained higher scores and boys scored higher than girls (15).

There are surveys, questionnaires that measure: mode, duration, intensity, calories expended and PA patterns. Furthermore, self-reported data related to lifestyle habits may be limited by bias and counting difficulties (16) (17) (Colley et al. - 2013 - The association between accelerometer-measured pat.pdf , n.d.) , self-report questionnaires such as (PAQ-A) (19); (PAQ-C) (20,21); APALQ assessment physical activity levels questionnaire, (22); 3-d BAD Bouchard activity diary,(23) (Martínez-Gómez, Martínez-de-Haro, et al., 2009b) ; F1-dPAQ Four by One Day Recall(23); YACH Yesterday activity checklist (25) ; RPAR Recess Physical Recall(25); Fitnessgram and PACE; PAR (26); ENERGY Energy-child Questionare (27). All of the above-mentioned measure PA but not level of knowledge.

The Cuafys-J questionnaire was found that evaluates knowledge of the WHO recommendations on PA and health. Obtaining a valid instrument will allow you to know how much you know and a timely educational intervention for adolescents, allowing you to prevent NCDs and improve general health. It is a self-report questionnaire for adolescents that offers a score. Questionnaires are a useful tool to assess PA in large populations(23) (24). They are tools widely used by health professionals. It is important to inform them of their quality and characteristics (Martínez-Lemos et al., 2016) . The objective of the present study is to determine the level of knowledge of Colombian adolescents about the WHO recommendations on PA and health, in addition to sociodemographic factors and their perception of PA.

II. Material and Methods

Population -Sample

quantitative, cross-sectional observational and descriptive study was carried out (29) with non-probabilistic convenience sampling, accessing the study population through emails, they completed the CUAFYS-J questionnaire online with demographic data. 280 adolescents from 11 to 18 years old from the city of Ibagué in commune 10 were invited to participate, where it is recorded that 9.2% are adolescents and 19.3% are from stratum 3, the stratum is the classification of those who have more economic capacity to pay public services, where 1 means low and 6 means high in commune 10, with similar sociodemographic characteristics. To this end, participants were selected according to the following inclusion criteria: (a) ages between 11 and 18 years; (c) residing in commune 10 of Ibagué; (b) that the parents signed the informed consent and assent; (c) complete 100% of the PA and health-youth questionnaire (CUAFYS-J).

Ethical considerations

The privacy of the participating adolescents was preserved, so the questionnaire was completely anonymous and began with information about the study, including informed consent and assent for their participation. The research is of minimal risk, according to the categories stipulated by Resolution 8430 of 1993 of the Ministry of Health of Colombia (Colombia, 2012). The 2008 Helsinki Declaration of the World Medical Association (Kong & West, 2001) was also taken into account, which promotes the dignity of people engaged in

health research and the protection of their well-being. In addition, the study was approved by the Bioethics Committee of the University of Extremadura (66/2020).

Procedure

The questionnaire was applied CUAFYS-J online by Moreno- Lavaho et al., (under review), which evaluates and records the level of knowledge that adolescents have about PA and health according to WHO recommendations , consists of 20 Likert-type items of 4 response options (disagree, neither agree nor disagree, agree, totally agree) contains 2 dimensions each of 10 questions: health (questions 2,4,5,8,9,10,14,17,18 ,19) and AF (questions 1,3,6,7,11,12,13,15,16,20). with a rating scale (scale) of 1 to 4 points, 20 correct answers equivalent to 100%, therefore, the scoring scale is: low level from 20 to 40; medium from 41 to 60 and high from 61 to 80. It was applied in the months of May to July 2023, accessing the study sample through emails, it lasted approximately 20 minutes to answer the questions of the instrument, along with some sociodemographic questions and perception questions.

The variables used for the descriptive analysis were age, gender, weight, height, BMI and included questions: did you consider yourself physically active? Are you enrolled in a sports training school? and their perception of PA and health knowledge.

Statistical analysis

The information was compiled in an Excel spreadsheet and subsequently decoded for statistical analysis with SPSS version 26 software; personal data was kept anonymous. For the descriptive analysis of the qualitative variables, frequencies were calculated with a 95% confidence interval. I determined the level of knowledge of the sample and the level of significance between variables was calculated. The normality assumptions of each of the questionnaire items were checked through the Kolmogorov-Smirnov test. Subsequently, a factor analysis was carried out according to (30), the study data demand that the variables must be processed inferentially with correlation statistics. Content validity and Cronbach's Alpha coefficient were carried out.

III. Result

The total number of participants successfully complied with the protocol established for the application of the CUAFYS-J, achieving the evaluation of a total of 280 adolescents with an average age of 15 years. A general average weight of 56 kg, an average height of 1.60 m and an average body mass index of 21.6 kg/m2, according to the WHO as normal weight, continuing with the questions: Yes, they were enrolled in a school of sports training, 77.1% of the adolescents answered No and 22.9% Yes; If they considered themselves more physically active, 53.6% answered Yes and 46.4% No; What is your perception of the knowledge you have in relation to PA? 60% responded with the Good option, followed by the Little option with 24.3%, very good with 8.9% and lastly very little with 6.8%; The perception of PA and health knowledge for both genders is considered Good according to (6). As shown in Table 1 .

Table 1.

Characterization of the study sample

Variables		Male n=133 (47.5%)	Female n=147 (52.5%)	Total n= 280
Years old)	Mean (SD)	14.84 (1.93)	15.27 (1.78)	15.06 (1.86)
Weight (kg)	Mean (SD)	59.12 (12.55)	54.10 (9.50)	56 (11.32)
Height (cm)	Mean (SD)	1.62 (0.08)	1.59 (0.06)	1.60 (0.07)
BMI	kg/m2 (SD)	22.20(3.45)	21.23 (3.38)	21.69 (3.44)
-Are you enrolled in a sports training school?.....	Without / %)	34 (25.6)	30 (20.4)	64 (22.9)
	No N / %)	99 (74.4)	117 (79.6)	216 (77.1)
-Do you consider yourself physically active?.....	Without / %)	66 (49.6)	84 (57.1)	150 (53.6)
	No N / %)	67 (50.4)	63 (42.9)	130 (46.4)
-What is the perception of the knowledge you have in relation to PA?.....	Very little (n/%)	7 (5.3)	12 (8.2)	19 (6.8)
	Little (n/%)	29 (21.8)	39 (26.5)	68 (24.3)
	Good (n/%)	86 (64.7)	82 (55.8)	168 (60.0)
	Very good (n/%)	11 (8.3)	14 (9.5)	25 (8.9)

N: number, %: percentage, SD: standard deviation

The assumption of normality was verified using the Kolmogorov-Smirnov test table 2.

Table 2.
Kolmogorov-Smirnov test for the sample

		Health	PA
N		280	280
Normal parameters [a,b]	Half	25.2393	30.19
	Desv . Deviation	2.62669	3,321
Maximum extreme differences	Absolute	.107	.092
	Positive	.065	.062
	Negative	-,107	-.092
test statistic		.107	.092
asymptotic sig. (bilateral)		,[000c]	,[000c]

a. The test distribution is normal.
b. It is calculated from data.
c. Lilliefors significance correction.

As the data do not follow a normal distribution, the sperman correlation was applied, resulting in a significance of (p=0.00) where we can conclude that there is a significant association between the variables PA and health. indicating that the variables have a correlation with a good relationship degree. as shown in table 3.

Table 3.
Correlations

			Health	PA
Spearman's Rho	health	Correlation coefficient	1,000	.311 **
		Sig. (bilateral)	.	,000
		N	280	280
	AF	Correlation coefficient	.311 **	1,000
		Sig. (bilateral)	,000	.
		N	280	280
**. The correlation is significant at the 0.01 level (two-sided).				

The general level of knowledge of the adolescents of commune 10, 62.5% obtained a medium score and 37.5% obtained a high score. At a general level, knowledge by male gender resulted in 64.7% obtaining a medium score and 35.3% obtaining a high score; 60.5% of the female gender obtained a medium score and 39.5% a high score; with men having the highest score at the average level than women, for both genders there was no low score. Table 4 shows the level of general knowledge of adolescents by health and PA dimension.

Table 4.
Level of general knowledge of adolescents by Health dimension

Punctuation	**Health**		**PA**	
	Frequency	Percentage %	Frequency	Percentage %
Half	212	75.7	151	53.9
High	68	24.3	129	46.1
Total	280	100.0	280	100.0

In table 5. The level of knowledge of adolescents by gender in the PA dimension, 55.6% of males had a higher percentage at the medium level and 44.4% had a high level; 52.4% of the women obtained a medium level and 47.6% a high level; No score was obtained at the low level, all were above.

Table 5.
Level of knowledge of adolescents by gender and PA dimension

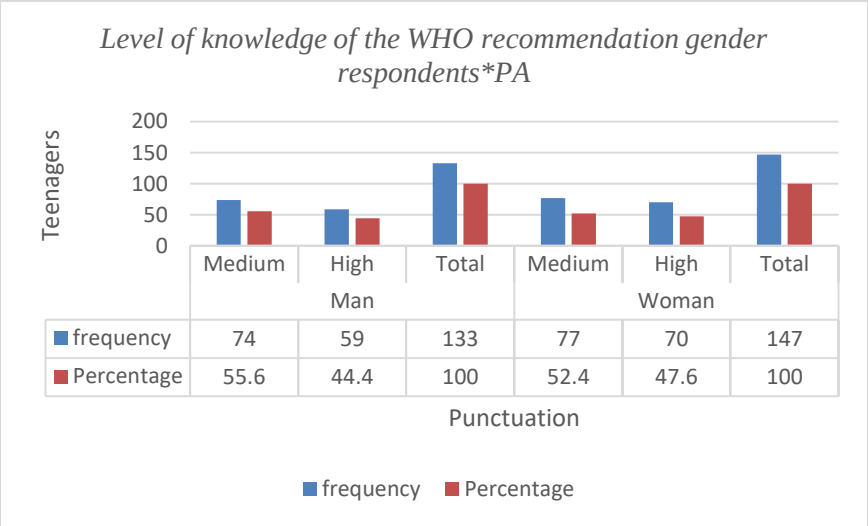
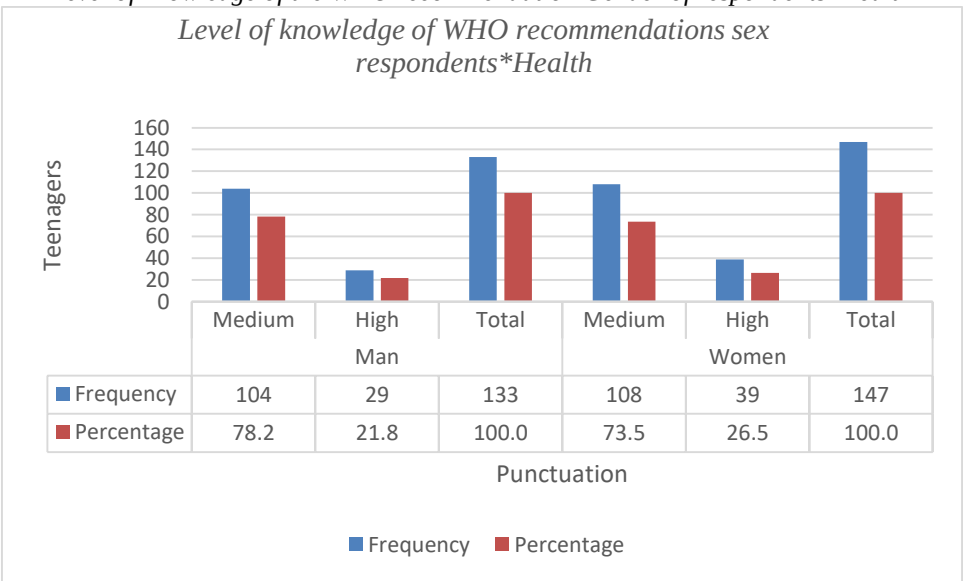


Table 6. The level of knowledge of adolescents by gender and health dimension, he 78.2 % of men had a higher percentage at the medium level and 21.8% at high level; 73.5% of the women obtained a medium score and 26.5% a high score.

Table 6
*Level of knowledge of the WHO recommendation Gender of respondents*Health*



In table 7. At a general level, the study sample presents an average level of knowledge with 41.3% and by gender, men have better knowledge than women. These results are similar to those found by (15)

IV. Discussion

The results of this study can be compared with those of other investigations that have focused on the analysis of the level of PA at school age. The results of this study are discussed with respect to other studies.

In recent years there has been considerable growth in research on the benefits of PA in young people, although there are risks associated with exercise, all reviews, guidelines and scientific societies accept that the benefits far outweigh the risks. Numerous observational studies and a small number of experimental studies indicate that regular PA is valuable for providing health benefits in children and adolescents. Recent large-scale epidemiological studies, using valid measures of PA, have demonstrated stronger associations than had previously been observed, and have helped clarify the dose-response relationship between PA and specific health outcomes (29).

In the United States, the CDC's YRBSS survey is the only surveillance system designed to track a variety of health risk behaviors of priority attention, including unhealthy eating behaviors; and physical inactivity. where schools play a crucial role in promoting the health and safety of young people. Every school day, the nation's schools provide an opportunity for more than 55 million students to learn about the dangers of behaviors that are not are healthy and practice skills that promote a healthy lifestyle. These unhealthy behaviors are usually established during childhood and persist into adulthood (31).

Being physically active during childhood and adolescence is not only important for the health of that period of life, but also for maintaining good health throughout the course of life. Practicing PA in childhood will make boys and girls feel competent in their physical skills and will probably make them more active during adulthood.

(26) applied the PACE questionnaire to a sample of 200 adolescents (99 boys and 101 girls) from the Community of Madrid (Spain), aged between 13 and 17 years, and found the following results: the boys performed PA (60 minutes or more) an average of 3.42 days per week (SD=1.52), while girls performed an average of 2.48 days per week (SD=1.42). The results of this research are similar to those of the present study, since men perform more PA than women.

The findings of the current research are similar to the intervention programs to promote PA in school children reviewed by Medina Blanco et al. in 2011 (32). The purpose of this systematic review was to evaluate PA promotion programs in children aged 6 to 12 years. Quasi-experimental and randomized studies with follow-up of at least twelve months collected in seven studies were included. that assessed PA using an accelerometer or pedometer. The results were heterogeneous since, although there was direct evidence of positive changes, these were not consistent because in five of the seven studies used, no significant differences were found, including the experimental study with a longer observation time. The moderate results of these interventions suggest the need to design new studies and programs that try to promote PA even more at these ages.

In a study carried out on 306 7-year-old Aragonese children in 2017, the percentage that met the WHO recommendations (active children) was 72% in boys and 41% in girls (17). In its 2016 report, the Foundation for Nutritional Research provides data on the prevalence of PA in children and adolescents in Spain. The report concludes that half of the population studied does not comply with the PA recommendations (Foundation for Nutritional Research. Report (2016). The findings of this research are similar as it indicates that young people lack knowledge about the recommendations of the WHO on health and well-being.

Bingham et al. examined the relationship between compliance with WHO PA recommendations and cardiovascular characteristics, which were strongly moderated by age. They found that compliance with PA recommendations was related to a beneficial hemodynamic profile as participants increased in age (33). According to (34), it was investigated that the majority of adolescents in schools in the city of Neiva, Colombia, do not comply with the WHO time and PA recommendations, where 80% do not comply with 60 minutes of PA daily. moderately strong, 52% are usually inactive and 27% are very inactive. These studies are similar to those found in this study.

Romero, Chinchilla and Jiménez (2008), in a study with 12-year-old students from the province of Malaga, show that only 14% of students perform daily PA in their free time. The results of Romero et al. They are more similar to those of the present study, especially to those of the Colombian sample, which presents an average knowledge of 62.5%. They differ somewhat more from the Indian sample, in which 26.8% of schoolchildren are active.

Currently, it is widely accepted that the regular practice of PA produces multiple benefits for people's health, which is why it is of great importance when it comes to seeking and achieving a good quality of life (35). Hence, the existence of a strong link between PA and health can be found (Consejo Superior de Deportes, 2010) and, in the same sense, constitutes the main justification for the promotion and practice of PA, exercise or sport with healthy orientation.

As in this research, 77.1% are not enrolled in sports schools. According to (35) students' perceptions of the determinants of PA, more than half of the respondents reported that their community does not offer places to exercise or organized sports competitions, even though they stated that their community has good security. This situation may have resulted in a third of students preferring to watch television and play video games, and not like to exercise (36). Another study from Thailand reported that 71.6% of school students aged 6 to 17 years reported that there were community facilities for exercise and sports. The perception reported by half of the students was that their own communities organized activities for participation, and 61.2% felt safe enough to join their community activities

Likewise, the WHO concludes (2015) that there is sufficient evidence in observational studies and experimental work that indicates that PA is positively related to cardiorespiratory and metabolic health parameters in children and young people. The results of this research are similar to those found by (37) in the sense that there is a direct relationship between PA and health.(6) adolescents over 13 years of age had less depression and stress who performed PA.

V. Conclusion

Knowledge about PA constitutes one of the pillars in the implementation of strategies, aimed at promoting self-care for health that modify the lifestyles of the population. In general terms, the knowledge of adolescents in Ibagué is satisfactory but there are components (such as PA) that need substantial improvement. It is also established that any study on the lifestyles of adolescents must take into account the sociodemographic factors that affect it, that is, age, gender, geographical location and economic level. Likewise, education systems must develop practices in coordination with students to satisfy self-care demands, providing educational support to regulate PA and developing actions to improve quality of life.

As future lines of research, it is recommended to carry out similar investigations, delving into the statistical analysis of the central variables, to better understand the relationships and interaction between them, so that researchers have greater knowledge about the usual PA level of schoolchildren from different countries around the world.

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