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ORIGINAL

AUTOPERCEPCIÓN DE LA SALUD, ESTILO DE VIDA Y ACTIVIDAD FÍSICA ORGANIZADA

HEALTH SELF-PERCEPTION, LIFESTYLE AND ORGANIZED PHYSICAL ACTIVITY

Nuviala Nuviala, A.[1]; Grao Cruces, A.[2]; Fernández Martínez, A.[3]; Alda Schönemann, O.[4]; Burges Abad, J.A.[5] y Jaume Pons, A.[6]

1 PhD in Humanities. Professor, Pablo de Olavide University. anuvnuv@upo.es
2 Intern student at the Sports and Information Technology Department. Pablo de Olavide University. albegc@hotmail.com
3 PhD in Physical Education. Professor, Pablo de Olavide University. afermar1@upo.es
4 B.A.in Physical Education. Department of Education, Government of Aragon oscar_alda@hotmail.com.
5 B.A. in Physical Education. Department of Education, Government of Aragon jaburges@hotmail.com
6 B.A. in Physical Education. Department of Education, Government of Aragon ajpons5@hotmail.com

Spanish-English translation: Cayetana Guerra; e-mail aitana_25@hotmail.com.

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ABSTRACT

For an effective implementation of programs whose purpose is the creation of a healthy lifestyle, it is necessary to assess the beliefs the group has, among which we find health self-perception, an indicator related to the lifestyle. This paper aims to establish lifestyle typologies and to know if they are related to the perception of health. The population object of study was 745 adolescents. The cluster analysis is the technique used for grouping. The results show the existence of two lifestyle groups. There are no differences regarding perception

of health between the groups and the realization of physical activity does not influence the adscription to the groups or the self-perceived health.

KEY WORDS: health self-perception, adolescents, lifestyle, physical activity

RESUMEN

Para una eficaz puesta en práctica de programas cuyo fin sea la creación de un estilo de vida saludable es necesario la evaluación de las creencias que el grupo tiene, entre las que se encuentra la autopercepción de la salud, indicador relacionado con el estilo de vida. El objeto de este trabajo es establecer tipologías de estilo de vida y conocer si presentan relación con la percepción de la salud, al tiempo que relacionamos participación en actividades físicas, estilo de vida y percepción de la salud. La población objeto de estudio ha sido 745 adolescentes. El análisis por conglomerados es la técnica utilizada para la agrupación. Los resultados demuestran la existencia de dos grupos de estilo de vida. No existen diferencias en la percepción de la salud entre ambos grupos y la realización de actividad física organizada no influye ni en la adscripción a los grupos, ni en la salud autopercibida.

PALABRAS CLAVE: autopercepción de la salud, adolescentes, estilo de vida, actividad física

INTRODUCTION

In general there is a concern in society and especially among the people involved in health issues, from medical professionals to educators related to these topics, about the influence that the developed societies have on health, as a result of a lifestyle that imposes changes in the diet, work, life rhythm, and even in the own response of the healthcare services. (Nuviala, Munguía, Fernández, García and Ruiz, 2009; Palomo, Márquez-Calderón, Ortún and Benavides, 2006). The socio-economic development has brought enormous improvements in health, but it also provides new health risks related to environment, behavior and lifestyles.

The unhealthy and sedentary lifestyle, which is the result of this set of factors referred before and of others, is considered the epidemic of the XXI century because of its impact on health, and currently being in the spotlight of international health and education policies (Hernández, Velázquez, Martínez, Garoz, López and López, 2008), as it constitutes one of the leading causes of death and decrease of life quality throughout the developed world. (U.S. Department of Health and Human Services, 1996).

This concern extends to the youngest, since the habits adopted during the last years and the lifestyle have led to a negative evolution of the same (Moreno, Muñoz-Tinoco, Pérez and Sánchez-Queija, 2004), materializing in a significant

increase of sedentary life in population(Levin, Ainsworth, Kwok, Addy, y Popkin,1999; Kann, Kinchen, Williams, Ross, Lowry, Grunbaum, and Kolbe, 2000; Trost, Pate, Sallis, Freedson, Taylor, Dowda and Sirard, 2002). Girls and especially adolescents are the ones who do less physical activity when compared with boys in all group ages (Caspersen, Periera. and Curran.; 2000; Kimm, Glynn, Kriska, Barton, Kronsberg, Daniels, Crawford, Sabry, and Liu, 2002).

But the consequences of this lifestyle go beyond. Thus, Pastor, Balaguer and García-Merita (2006), in a study carried out on adolescents between 15 and 18 years old, concluded that performing sport and physical activity exerts an indirect influence on health behaviors. Physical inactivity is associated with consumption habits of unhealthy substances such as tobacco (Carrasco, 2004; McGinnis and Foege, 1993; Moreno and cols., 2004) and alcohol, a serious concern in Spanish youth (Espada, Pereira and García-Fernández, 2008). As with physical activity, girls are who consume this type of substances at a greater extent (Espada, Pereira and García-Fernández, 2008; Moreno and cols., 2004; Rodrigo, Márquez, Batista-Foguet, García, Rodríguez, Martín and Martínez, 2006), and as they get older, their use increases (Batista-Foguet, Mendoza, Pérez-Perdigón and Rius, 2000).

In addition, the regular practice of physical activity has been related to the fight against drug addiction (Moreno and cols., 2004; Rodríguez-Huerta, 1999), so it is not surprising that the European Parliament (Schmitt, 2007) has urged to promote this type of practice.

As it can be seen above, lifestyle influences on health, having a direct influence on morbidity and even on mortality (Kujala, Kaprio, Sarna and Koskenvuo, 1998; Wei, Kampert, Barlow, Nichaman, Gibbons, Paffenbarger and Blair, 1999). An active and healthy lifestyle contributes to a more efficient functioning of various body systems, weight maintenance, reduction of degenerative diseases, reduction in mortality and an increase in the overall improvement of life quality (Bouchard, Shephard and Stephens, 1994; Sallis and Owen, 1999). An active lifestyle during adolescence has benefits for contemporary and future health (Riddoch, 1998; Sallis, 1994; Sallis and Owen, 1999). Not only has it direct effects on health but also active adolescents perceive a better health status (Arruza, Arribas, Gil De Montes, Irazusta, Romero and Cecchini, 2008; Balaguer, Castillo, Moreno, Pastor, Blasco and Alberca, 1997; Castillo and Balaguer, 1998; Vilhjalmsson, 1994; Vilhjalmsson and Thorlindsson, 1998). That is why childhood and adolescence become the best times to develop and create a healthy lifestyle since they are the periods on which certain behavior patterns start being consolidated. During this stage, habits and lifestyle understood as those automatic responses to different situations (Carpi, Zurriaga, González, Marzo and Buunk, 2007), are being formed (Vingilis, Wade and Seeley, 2002). It is not therefore a period in which only physical and psychological changes occur (Pesa, Syre and Jones, 2000), but it is also a critical period in building a healthy lifestyle that will be extended to adulthood (Currie et al., 2004; Gil, Moreno, Vinaccia, Contreras, Fernández, Londoño,

Salas and Medellín, 2004; Kelder, Perry, Klepp and Lytle, 1994; Vingilis, Wade and Seeley, 2002).

For Gil and cols. (2004), a necessary step for the effective implementation of social intervention programs, whose goal is the creation of a healthy lifestyle, is the assessment of the knowledge and beliefs that the group, to whom the programs is addressed to, has regarding it . Therefore, any program we want to develop whose goal is the consolidation of a lifestyle in adolescents needs a research that relates the different variables that make up the program to the perception of health.

Health self-perception does not provide accurate information of itself, but it gives it to us indirectly. It is a commonly used indicator in the studies of self-rated health between adolescent population (Vingilis, Wade and Seeley, 2002; Wade, Pevalin and Vingilis, 2000; Wade and Vingilis, 1999) and adult population (Kennedy, Kawachi, Glass and Prothrow-Stith, 1998), with a high degree of correlation to the health results obtained in adult population (Benyamini, Idler, Leventhal and Leventhal, 2000; Idler and Benyamini, 1997).

During adolescence, physical problems are almost nonexistent (Piko, 2007). Several psychosocial factors, income, academic results, relationship with parents, self-esteem and sex have been related to the self-perception of health in adolescents. (Piko, 2000; Thorlindson, Vilhjalmsson and Valgeirsson, 1990; Vingilis, Wade and Adlaf, 1998; Vingilis, Wade and Seeley, 2002; Wade and Vingilis, 1999). Likewise, habits typical of a healthy lifestyle, proper diet, no tobacco, no drugs and no alcohol consumption and the practice of physical activity have been related to the self-perceived health in adolescents. (Johnson and Richter, 2002; Milligan, Burke, Beilin, Richards, Dunbar, Spencer, Balde and Gracey, 1997).

In the light of the above data, the objectives of this study carried out with boys and girls from Compulsory Secondary Education and Baccalaureate (Bachillerato) in three rural public schools of three different regions in Aragon are: to establish lifestyle typologies, to relate lifestyle typologies to health perception and to place the participants of organized physical activities in the different groups created by the cluster analysis.

MATERIAL AND METHODS

PARTICIPANTS

The participants in this study were all the students who attended class the day the questionnaire was administered, without making any selection between the different groups/classes, being all of them part of the study, and the number of surveyed a total of 745 students, of whom 55,7% were girls, and 44,3% boys, enrolled in the first cycle of Compulsory Secondary Education (34,4%), in the second cycle of Compulsory Secondary Education (40,6%) and in

Baccalaureate (25%), living in three different regions from Aragon: Bajo Aragón-Caspe (31,0%), Borja (24,2%) and Comarca del Aranda (44,8%).

PROCEDURE

The students from the three education centers , aged 12 to 17 years old, were asked to answer a questionnaire designed with variables and dimensions included in the study Health Behavior in School Aged Children (HBSC) (Moreno and cols. 2004) and in the questionnaire Self-Administered Physical Activity Checklist (SAPAC) (Sallis, Strikmiller, Harsha, Feldman, Ehlinger, Stone, Williston and Woods, 1996), adapted for Spanish population (Tercedor y Lopez, 1999). This tool was made to conduct a study of life habits related to adolescents´ health. The question "if they participated in organized physical activities" was added to the questionnaire, being students able to choose between the options "yes, I participate in organized physical activities" and "I don´t currently participate in organized physical activities"".

The tool has the necessary psychometric properties for the development of this type of study. The content validity was achieved following the methodological guidelines proposed by Martínez (1995). First, after a literature review, the dimensions and variables were defined, and the indicators were selected based on their relevance to the content and its feasibility of application. Later, a selection was made of external people who collaborated in the writing of the questions, and had experience in the scientific and practical field of the topic to research. This group carried out a series of objections and comments materialized on a scale that assessed "the suitability-coherence" of the items. Lastly, the final questionnaire was developed with the indicators that had greater acceptance by the group of experts. The final result with a scale, Likert type of 5 points, from "strongly disagree"(1) to "strongly agree" (5), comprising 29 items grouped in four dimensions: Sport trainers, material resources, activities and image of the organization.

The reliability of the tool was determined by the test-retest method, for which the Pearson correlation coefficient was used. This method consists in applying the test to the same group of subjects (24) on two separate occasions, in this case in a town that did not participate in the research, leaving a gap of time between both, and the correlation between the two set of scores is calculated. In the present study the reliability of the items related to the use of leisure time and the consumption of harmful substances was determined.

Correlation test-retest	
Daily time spent on homework	0,92**
Daily time spent on watching TV	0,94**
Daily time spent on computer	0,89**
Daily time spent on physical activity	0,93**
Alcohol consumption	0,96**
Tobacco consumption	0,95**
Drugs consumption	0,99**

** The correlations are significant at 0,01 level (bilateral).

Table 1. Test-retest correlations of the items.

During the administration of the instrument, that was answered anonymously being the interviewer present, and taking the instrument 15 minutes to be filled in, a member of the research team was present to give the preparatory instructions and to carry them step by step. During the time the questionnaire was being administered, the researcher and the teacher in charge of the group circulated around the classroom helping students to understand the instructions and answer them correctly.

DATA ANALYSIS

Once the fieldwork and the data processing were finished, we proceeded to analyze the results. We have interpreted the data through the application of different techniques of quantitative analysis needed for this research by means of SPSS 16.0 software. In order to facilitate interpretation and presentation of data, the answers have been grouped in three homogenous groups. So, when we study the time spent on daily leisure activities, they are grouped in “less than an hour”, “between one hour and two” and “more than an hour”. When we investigate the consumption of various substances, we have three categories: “usually”, “occasionally” and “never”. Finally the possible answers regarding the perception of health are “good”, “normal” and “bad”.

We have used the descriptive analysis where the statistics found are frequencies and percentages. After the descriptive analysis, we have continued with the cluster analysis in two phases. This statistical technique is a screening tool designed to discover natural groupings in a set of data that otherwise would not be possible to detect. As a result of the analysis different groups will appear, that in our case the own program determines automatically relating the time spent on the different activities.

After the grouping of adolescents, we carry out Pearson´s chi-squared test (χ^2), in order to establish differences in proportions between clusters and variables: sex, education level, participants in organized physical activities and health

perception. We will say that when the p-value is greater to 0.05, it means that there is independence between the variables, that is, there is no association between both. Conversely, if it is less, then we can say that there is an association.

RESULTS

We will start by considering the time adolescents spend on passive leisure time activities. 53,7% spend less than an hour a day to play or work with the computer or games console and only a 7,9% spend more than two hours a day.

As regards the time spent on watching TV, the modal value is between one and two hours, response made by 50,8%. 20,1% state watching TV less than an hour a day, and the remaining 27, 8% watch TV more than two hours a day.

To the inactive spare time, we have to add the time spent on homework. The most frequent response among adolescents is the use of an hour to two hours daily for academic activities. Nearly one quarter have expressed spending less than an hour on this type of activities.

Only 32,1% state spending less than an hour on physical activity practice during their leisure time. Nearly half of the adolescents, object of the study, have declared performing between one and two hours of sport practice.

If we analyze alcohol, tobacco and other drugs consumption, we observe that 72, 1% declare that they do not consume alcohol, and only 2,6% confirm they consume. We find 68,2 % of non smokers and 21,5% are regular smokers. Finally, 4,1% of adolescents state usually consuming some type of drugs, 8,6% occasionally, and the remaining 87,3% declare they have never consumed.

When carrying out the cluster analysis, we obtain two groups. The first one is characterized by spending less time on homework, being in that group the adolescents that spend more time on playing and surfing in the computer and who spend more time performing leisure time physical-sport activities. In this group we find the smokers, alcohol and drug consumers.

In the second group we find adolescents who spend more time on school activities and who spend less time on computer and games consoles. In this group the time spent on physical activities is less than in the first group. Finally we can notice that in this group the consumption of alcohol, tobacco and other substances is less than in the previous group (Table 2).

Dimensions of use of leisure time		Resulting groups of the cluster analysis	
		1	2
Time spent on school activities	Less than an hour	70,1%	29,9%
	Between one hour and two	38,8%	61,2%
	More than two hours	23,0%	77,0%
Time spent on watching TV	Less than an hour	40,7%	59,3%
	Between one hour and two	41,2%	58,8%
	More than two hours	47,6%	52,4%
Time spent on computer	Less than an hour	43,0%	57,0%
	Between one hour and two	36,1%	63,9%
	More than two hours	79,2%	20,8%
Time spent on physical activity	Less than an hour	45,2%	54,8%
	Between one hour and two	35,5%	64,5%
	More than two hours	54,6%	45,4%
Alcohol consumption	Usually	100%	0%
	Occasionally	86,9%	13,1%
	Never	24,7%	75,3%
Tobacco consumption	Usually	100%	0%
	Occasionally	100%	0%
	Never	17,1%	82,9%
Drugs consumption	Usually	100%	0%
	Occasionally	100%	0%
	Never	35,1%	64,9%
Total (n=745)		42,9%	57,1%

Table 2. Differences in lifestyle between the two resulting clusters. Percentage

As shown in table 3, we find greater health perception in cluster 2. There are not significant differences in the performance of organized physical activities and being part of either group. Finally we can see that in group 2 there are more boys and more students from the first cycle of Compulsory Secondary Education and Baccalaureate.

Variables		Resulting groups of the cluster analysis		χ^2	*p*
		1	2		
Sex	Girl	51,2%	48,8%	15,201	,000
	Boy	36,1%	63,9%		
Cycle	1st cycle CSE	33,6%	66,4%	14,529	,001
	2nd cycle CSE	50,6%	49,4%		
	Baccalaureate	43,2%	56,8%		
Organized PA	I perform organized PA	41,8%	58,2%	,737	,391
	I don´t perform organized PA	45,3%	54,7%		
Health Perception	Bad	100,0%		31,752	,000
	Normal	74,5%	25,5%		
	Good	39,2%	60,8%		
Total (n=745)		42,9%	57,1%		

Table 3. Contingency table belonging to a cluster based on sex, education level, performance of organized physical activity and health perception. Contrast test χ^2 and p-value.

DISCUSSION

Lifestyle and habits understood as those automatic responses to the different situations, are formed along childhood and adolescence. There lies the importance of knowing them at this time, being a period in which they start being consolidated. A necessary step for the effective implementation of intervention programs, whose goal is the creation of a healthy lifestyle, is the assessment of the knowledge and beliefs that the group, to whom the programs is addressed to, has regarding it. The self-perception of health is an indicator used frequently in studies of self-rated health, which is related to lifestyle. Therefore the goal of this paper is to establish lifestyle typologies and to know if there is a relationship between them and the perception of health the adolescents have, and at the same time to determine if the participants of organized physical activities develop a healthier lifestyle and if their perception of health is better than of those who do not participate in these leisure time activities.

The adolescents, object of our study, can be classified as medium-low consumers of television, following the guidelines of the American Academy of Pediatrics (2001). The time spent on this activity is lower than the extracted from Moreno and cols.´ study (2004). The dedication to school activities is slightly slower to the one published in the study of the authors mentioned above, and yet the time spent on computer and/or games consoles is the same as in the aforementioned study.

In our opinion, among the most striking and positive data is the fact that only 32,1% state having spent less than an hour on the practice of physical activity in

their spare time, result that is much more favorable than the one provided by Nuviala, Munguía, Fernández, García and Ruiz (2009). This result may be considered possible if we observe that the time spent on other activities is medium-low.

Regarding the consumption of substances harmful to health, it shows very similar results to the rest of Spanish adolescents (Moreno y cols., 2004), we can stress that Aragonese adolescents of this study claim to smoke more and that the consumption of drugs is slightly higher. We have 87,3% of Aragonese adolescents, object of this study, who declare to have never taken drugs over more than a ninety percent of adolescents in the study published by the Ministry of Health and Consumer Affairs.

Health self-perception shows very positive results, since the vast majority believe they have good health, much more positive result than the obtained by Erginoz, Alikasifoglu, Ercan, Uysal, Ercan, Kaymak and Ilter (2004) in Turkish adolescents and similar to that provided by Moreno and cols. (2004).

The obtained results from carrying out the cluster analysis on the lifestyle of adolescents, object of this study, allow to state that there are two groups. Group 1 is made up of adolescents than consume more substances harmful to health and excel in spending more time on physical activities whereas Cluster 2 is made up of adolescents who spend between one hour and two on physical practice and state that they do not consume alcohol, tobacco and drugs (table 4).

Cluster	**1**	**2**
Use of spare time		
TV time		
Computer time	More amount of time	
School activities time	Least amount of time	More amount of time
Daily P.A	Adolescents that spend more time	Greater number of adolescents who spend between 1 and 2 hours a day
Consumption of substances		
Alcohol	Greater alcohol consumption	Lower alcohol consumption
Tobacco	Tobacco consumers	No tobacco
Drugs	Drug consumers	No drugs
Socio-demographic		
Sex		More girls
Education level	2nd Cycle CSE	1 cycle ESO and Baccalaureate
Health Perception	Worse perception of health	Better perception of health
Organized P.A		

Table 4. Main characteristics of the members of the different clusters resulting from the analysis.

One of the main objectives of this study was to establish lifestyle typologies and associate them with the perception of health. As shown in the table above, group 2 stands out for a better perception of health. Among the characteristics of this group are the non-consumption of alcohol, tobacco and drugs, habits that have been related to the self-perceived health among adolescents (Johnson and Richter, 2002; Milligan, Burke, Beilin, Richards, Dunbar, Spencer, Balde and Gracey, 1997). Within this group we find out that a lot of them spend between one and two hours on physical activity, the amount necessary to keep or improve health according to the criteria set by the American College of Sports Medicine (1988) and followed by Andersen, Harra, Sardinha, Froberg and cols. (2006), so it is not surprising that they have a good assessment of their health, result that confirms those obtained in several researches (Castillo and Balaguer, 1998; Pastor, Balaguer, Pons and García-Merita, 2003; Vilhjalmsson, 1994; Vilhjalmsson and Thorlindsson, 1998).

The perception adolescents have regarding health status is related to different psychosocial factors and academic outcomes (Piko, 2000; Thorlindson, Vilhjalmsson and Valgeirsson, 1990; Vingilis, Wade and Adlaf, 1998; Vingilis, Wade and Seeley, 2002; Wade and Vingilis, 1999). The results we have obtained are in this line since as it can be seen, group 2 is also made up of Baccalaureate students, that is, older but with better school grades which would explain this result.

Focusing on group 1 and taking into account the contributions made by Sallis (1994) among which it is found that physical activity and computer games are incompatible, we observe that this assumption is not fulfilled in our population and we can stand at the side of Gorley (2003) and Samdal, Tynjala, Roberts, Sallis, Villberg and Wold (2007), since we can see that the results obtained allow us to state that there is a low association between the passive use of the spare time and the amount of physical practice carried out.

The most paradoxical result of the study is given in group 1. In this cluster, the consumers of harmful substances to health (alcohol, tobacco and drugs) are grouped and at the same time in this group we find a great amount of adolescents that claim spending more than two hours on physical practice. However this result is not new, it has already been stated by Bovard (2008) and Piko (2000), for whom the adolescents, who are more engaged in exercise or in potentially dangerous sport activities, are probably more prone, in other spheres of life, to take risks such as illicit drug use or drinking.

Another important objective of this study was to associate the practice of organized physical activity with lifestyle and health perception. With the technique used, cluster analysis, we cannot obtain any conclusion. The problem does not lie on the technique since applying Pearson's chi-squared test (χ^2) there are not significant differences among participants and non participants of organized physical activities. This result is due to the behavior of these adolescents.

Despite this fact, we shall keep insisting on the need to promote organized physical activities among adolescents, since there is a relation between the amount of organized physical activity performed and the membership to organized physical activities (p=.000), as Aarnio (2003) and Nuviala, Munguia, Fernandez, Garcia and Ruiz (2009) concluded, it certainly becomes a more active and healthier lifestyle, bearing in mind that there is a general consensus that physical activity during childhood is beneficial for physical, social and emotional development. (Boreham and Riddoch, 2001; Nuviala, Ruiz, and García, 2003). Therefore, we as Winters, Petosa and Charlton (2003) see the importance and necessity of promoting physical activity during adolescence.

The strategies to promote physical activities aimed to achieve a healthy lifestyle pointed at first at individual type measures, however at this time, Public Health Policies and their interventions are intended to modify social and environmental conditions in order to facilitate the adoption of a healthy lifestyle. (McKinlay y Marceau, 2000). There is a gap in this area, since the relation between lifestyle and social and environmental conditions has not been sufficiently studied. (Aarnio, Winter, Kujala and Kaprio, 2002) and they need of studies closer to each context depending on the peculiarities of the group of adolescents in order to adapt the promotion strategies to the group.

CONCLUSION

The subjects, object of this study, adolescents who live in rural areas, show a more active use of their leisure time than the rest of Spanish population with the same age. Their perception of health is excellent despite they consume more harmful substances.

After the cluster analysis we have observed that there are two groups. A first group in which the amount of time spent on computer or games console and on the physical activity performed is important. This group is more prone to the consumption of harmful substances to health. A second group that carries out enough physical activity to keep and improve their health, spends more time on school activities and does not consume any harmful substance to health.

We did not find differences in the perception of health between both groups and the performance of organized physical activity does not influence on the membership to any of the groups or on the self-perceived health.

Therefore, we think that lifestyle and health perception are the result of a set of social and individual factors. We believe that the measures to be taken in order to create an active and healthy lifestyle are the establishment of global plans that join activities of various types and involve different social agents. Partial measures, like sport programs, have limited results.

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