

Leisure, sedentary lifestyle and health in Ecuadorian teenagers

Tiempo libre, sedentarismo y salud en adolescentes ecuatorianos

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ABSTRACT

Introduction: The study of leisure not only favors an approach to the time dedicated to non-working activities, but also to relate recreational habits with levels associated to physical inactivity and health.

Objective: This research paper focuses on the evaluation of leisure (active and passive) of Ecuadorian adolescents and their relationship with the existing level of physical inactivity.

Methods: To this end, the Ecuadorian reality was adapted into a survey of Leisure, similar to the ages studied, applied in countries like Colombia, Cuba, Chile, Paraguay and Uruguay; and PAQ-A (Physical Activity Questionnaire for Adolescents) internationally used and validated. It was taken a sample of 429 students aged 12-13 years, 438 (14-15 years) and 430 (16-17 years), obtaining a sample size of 1 297 students from Colegio Nacional Juan de Salinas.

Results: The results show that in their leisure students dedicate 47.16% to passive activities with a predominant use of technology, listen to music and watch TV; 19,91% to dynamic activities with a predominance of walking, going to the disco and sports.

Conclusion: It is shown that the misuse of leisure is favouring a marked physical inactivity in adolescents, laying the foundation for the subsequent design of a program of physical and recreational activities according to the socio-economic, historical and cultural conditions of the Ecuadorian mountain range.

Keywords : Adolescents; Leisure; Physical Inactivity; Physical Activity; Ecuador.

RESUMEN

Introducción: el estudio del tiempo libre, no solo posibilita conocer el tiempo dedicado en la realización de actividades no laborales, si no permite correlacionar los hábitos recreativos del sujeto con los niveles asociados de sedentarismo y salud.

Objetivo: la presente investigación se enfoca en la evaluación del tiempo libre activo y pasivo de adolescentes ecuatorianos, y su relación con el nivel de sedentarismo existente.

Métodos: para ello, se adecuó a la realidad ecuatoriana una encuesta de Tiempo Libre similar para las edades estudiadas, aplicadas en países como Colombia, Cuba, Chile, Paraguay y Uruguay; y el PAQ-A (Physical Activity Questionnaire for Adolescents) utilizados y validados internacionalmente. Se estudia una muestra entre los 12-13 años de 429 estudiantes, entre 14-15 años de 438 estudiantes, y entre los 16-17 años a 430 estudiantes, obteniendo un tamaño de muestra de 1297 estudiantes pertenecientes al Colegio Nacional Juan de Salinas.

Resultados: los resultados demuestran que en el tiempo libre los estudiantes realizan un 47,16 % de actividades pasivas con un predominio del uso de tecnología, escuchar música y ver televisión; y el 19,91% actividades dinámicas con un predominio de pasear, ir a la discoteca y hacer deporte.

Conclusiones: se demuestra que el mal uso del tiempo libre está incidiendo en un marcado sedentarismo en los adolescentes, sentando las bases para el diseño ulterior de un programa de actividades físico-recreativas adecuadas a los condicionantes socio-económico, históricos y culturales de la sierra ecuatoriana.

Palabras clave: Adolescente; Tiempo libre; Sedentarismo; Actividad Física; Ecuador.

INTRODUCTION

The use of leisure, the level of physical inactivity and health are associated variables. They are an essential part of the life of contemporary teenagers, according to the stage of development they are in and their milieu: family, neighbourhood and school^{1,2}. The modification of the daily life of teenagers has reached critical situations of systemic inactivity^{3,4}, for which it is necessary to make them aware of the importance of dynamic and fruitful activities during their leisure⁵; this reality has brought about social and health problems that affect the development of the human being for the next decade^{6,7,8}.

In the current Ecuadorian society, there is a progressive concern about the use of leisure by healthy citizens^{9,10,11,12,13} or those with disabilities, among others^{14,15,16,17,18}. The influence of socializing agents and technological means due to the impact of science, in the so called comfort and calm of the post-modern environment, has had such an impact that the education of leisure for the comprehensive development of the human being^{19,20} has deteriorated with activities that have no benefits for health^{21,22}, and it reduces the quality of life^{23,24,25,26}. Inactivity is a problem present in many countries^{27,28,29}, which have established policies and specific actions that respond to the characteristics of each social-economic, historic and cultural milieu³⁰.

The low level of regular physical activity of the population has become a problem of public health, demanding a high expense to governments for the treatment of conditions that might be solved with a simple increase of daily exercise^{31,32}. Under this premise, physical education and sports take part as an important promoter of health in adolescence and for that, specific intervention programs are designed³³.

Under that premise, several research studies have been carried out that characterize the specific motivations of each culture for the practice of the physical activity^{34,35,36}, among them, according to Videra & Ruiz³⁷, entertainment, learning new skills, fitness, competition and cooperation, gaining a social status, prestige and recognition, as well as the most relevant lack of motivation cases, which include excess of work and study, inappropriate facilities, monitors and laziness. In that sense, it is vital to establish variables that favor and disfavor the practice of physical activities in specific milieus, setting diagnoses before, during and after starting a process^{38,39} and studying the key variables that have significant incidence on them^{40,41,42}, by designing a coherent proposal with an impact of the motivation of the subject by the systematic practice of physical activities as a healthy habit.

This paper intends to find the general key factors or variables that determine the influence on the culture of using leisure by secondary level students, and how it affects the physical inactivity level (low level of physical activity), due to the rising demonstration of negative attitudes towards the practice of exercise in their leisure. Therefore, this paper aims to determine the incidence of physical inactivity in teenagers of Colegio Juan de Salinas of Sangolquí, through the evaluation of active and passive leisure of the students.

METHODS

The sample belongs to students of Colegio Nacional Juan de Salinas, Republic of Ecuador, which has a total of 2 966 students distributed, according to 95% of confidence, in 640 men and 657 women. Of them 429 are aged 12-13 years; 438, 14-15 years and 430, 16-17, having a total sample of 1 297 students.

The survey is defined as Leisure Questionnaire, and is based on questions asked in surveys used in similar studies in Colombia, Cuba, Chile, Paraguay and Uruguay. It is worth noting that the survey's questions were adapted to the Ecuadorian reality both for active and passive activities. The questionnaire consists of three specific questions; the first one is referred to the preference of being alone or with company during leisure. The second lists 16 activities both active and passive, making emphasis in the days of the week used by the sample, being alone or with a companion. The third question is designed likewise. It is added a 17th option for them to say if there is an extra activity, not included in the questionnaire. The essential idea is to determine the passive and active activities from the human motion perspective.

In regard to the level of physical activity, it was applied the PAQ-A (Physical Activity Questionnaire for Adolescents).

The PAQ-A is a simple questionnaire that assesses the physical activity the adolescent had in the last seven days. The global result of the test is a 1 to 5 score that allows establishing a graduation of the level of physical activity displayed by each teenager. The physical activity measured by the PAQ-A has founded associations with indicators of adiposity, bone mineral content, variability of the heart rate, as well as some psychological indicators (sport competence, body satisfaction, anxiety). Moreover, the

PAQ-A allows knowing in which moments of the day and the week the teenagers are more active. The PAQ-A is included in the so called "PAQ family" that comprises similar questionnaires to assess physical activity in three age groups: children aged 8-12 years in the PAQ-C (Physical Activity Questionnaire for Children), adolescents 13-18 years PAQ-A as it is the case; and in adults using the PAQ-A (Physical Activity Questionnaire for Adults).

The PAQ-A is made up by nine questions that assess different aspects of the physical activity carried out by the teenager using a five level Likert scale. Although there are only eight questions to calculate the final score, this questionnaire assesses the leisure physical activity of the teenager in their last seven days, during the physical education lessons, in school days (meals, afternoons and nights) and during the weekend. The last two questions of the questionnaire evaluate which level of physical activity, out of the five in proposal; best describes the physical activity developed during the week and its frequency per day. The final score is obtained by using the arithmetic mean of the scores resulting for the eight questions. The ninth question allows knowing if the teenager was sick or if there was something that kept them from doing physical exercise. This questionnaire can be applied at school; it takes some 10-15 minutes.

RESULTS

The percentage of the leisure preferences (alone and with a companion) was 81% accompanied and 19% alone.

The activities evaluated have several behaviours such as:

- 1) Reading: They read alone (19,35%) or with a companion (14,69%) from Monday to Wednesday, showing a considerable decrease towards the weekend.
- 2) Sleeping: In their leisure the sleep alone (43,58%) and with companionship (7,29%) mostly on Sundays, Mondays and Tuesdays.
- 3) Watching TV: they said the watch TV alone (15,71%) and with a companion (44,83%) everyday except Fridays; Tuesdays have the highest percentage.
- 4) Sport activities: their levels of practice are very low, alone (7,16%) and accompanied (10,34%), which means there is lack of sport activities. The few of them that practice sports mainly do it on weekends and show a significant decrease on Wednesday and Thursdays.
- 5) Playing: alone (11,06%) and with a companion (18,42%) they play very little and preferably in companionship, specially on Wednesdays and Saturdays.
- 6) Using technology: by recording a high number of those who do it with a companion (54,63%) and 30,50% alone, it shows that it is a frequent collective activity and all days of the week.
- 7) Listening to music: likewise there are high levels when listening to music, alone (25,13 %) and with a companion (55,76%), all days of the week except on Sundays.
- 8) Taking a walk: the members of the sample take few walks, alone (15,10%) and accompanied (23%), especially on Thursdays and Fridays in both cases.

9) Karaoke: this activity is not so regular, alone (5,01%) and in companionship (14,44%), noting that 30,53% of them do it on Fridays with a companion.

10) Going to the disco: there is little activity in this item, alone (5,40%) and with a companion (13,51%), mostly on Fridays and Saturdays.

11) Movies: the same as the disco, just 4,21% of them go alone and 14,79% of them go with a companion, preferably on weekends.

12) Drinking alcohol: alone (0,62%), this is a low amount in comparison to those who like to drink in companionship (21,29%), mostly on Fridays and Saturdays. It is worth highlighting that 25 of them drink alcohol alone and on Saturdays.

13) Smoking: alone (28,97%) and in companionship (33,34%). It clearly shows, given the age of the students surveyed, that there is a bigger problem to come due to the consequences it has for health, which could be the topic for another study, especially of factors that trigger lung conditions. They generally smoke on Fridays and Saturdays.

14) Household activities: they make very few household activities; 3,95% alone and 9,03% with companions. Those with higher percentage do it on Saturdays and Sundays.

15) Volunteering: there is almost no volunteering, alone (0,31%) and in companionship (1,83%), from Tuesdays to Thursdays.

16) Attending public shows: this activity is hardly practiced: alone (1,45%) and with a companion (4,71%). It is done mostly on weekends.

Summing up, from the study showed in Table 1, the percentages of passive activities practiced alone determine 17,43 percent, and with companions show 26,58%, which predominate over dynamic or active activities (Table 3), alone: 7,16%, with a companion: 12,75%.

In general, the percentages of the sample are low, that is to say that in the leisure the relation of the level of passive activities during leisure is of two per ten students; while in regard to the level of dynamic activities only one out of 10 students practice dynamic activities.

On the other hand, weekends are more active and the first days of the week are more passive. In the sample studied, the percentages of both passive and dynamic activities in the leisure are low (tables 1 and 2).

Table 1. Study of the passive activities (Alone and with companions)

PASSIVE ACTIVITIES		
ACTIVITY	ALONE	WITH COMPANIONS
READING	19,35	14,69
SLEEPING	43,58	7,29
WATCHING TV	15,71	44,83
USING TECH.	30,5	54,63
LISTENING TO MUSIC	25,13	55,76
KARAOKE	5,01	14,44
MOVIES	4,21	14,79
DRINKING ALCOHOL	0,62	21,29
SMOKING	28,97	33,34
ATTENDING SHOWS	1,45	4,71
AVERAGE	17,43	26,58

Table 2. Initial levels of social behavior. Friedman test

Ranks

	Average rank
Always	1,25
Someti mes	2,42
Never	2,33

Contrast statistics (a)

N	12
Chi-square	10,844
gl	2
Asymp. Sig.	,004

a Friedman test

The Mann-Whitney U test does not show significant differences in the variables studied (table 3)

Table 3. Study of the dynamic activities (Alone and with companions)

DYNAMIC ACTIVITIES		
ACTIVITY	ALONE	WITH COMPANIONS
SPORTS	7,16	10,34
PLAYING	11,06	18,42
WALKS	15,1	23,37
GOING TO THE DISCO	5,4	13,51
HOUSEHOLD ACT.	3,95	9,03
VOLUNTEERING	0,31	1,83
AVERAGE	7,16	12,75

A comparison of the dynamic activities is appreciated in table 4.

Table 4. Comparison of the dynamic activities (Alone and with companions) Mann-Whitney U test

Ranks

	Groups	N	Average rank	Sumo f the ranks
Dynamic activities	1Alone	6	5,17	31,00
	2Acompannied	6	7,83	47,00
	Total	12		

Statistics of contrast(b)

	Dynamic activities
U from Mann-Whitney	10,000
W from Wilcoxon	31,000
Z	-1,281
Asymp. Sig. (bilateral)	,200
Exact Sig. [2*(unilateral Sig.)]	,240(a)

a Not corrected for ties.

b Group variable: Groups

The Mann-Whitney U test does not show significant differences in the variables studied

In regard to the evaluation of the PAQ-A questionnaire, in the first question it was determined that in the activities of their last week, 62% practice the activities included in the questionnaire and 38 % do not.

However 60 % have practiced the sports planned, and as main activity walking at 86,51% and dancing at 79,41%; the PAQ-A establishes soccer as the most attractive sport (74,87%) and athletics 73,94%, which are those practiced the most (table 5).

Table 5. PAQ-A Study

ASSESSMENT					
QUESTION	%	%	%	%	%
1	38,00	27,00	21,00	8,00	6,00
2	6,17	25,29	38,38	16,19	14,03
3	40,56	27,37	18,89	7,40	5,78
4	9,25	31,38	38,70	9,48	11,18
5	15,19	28,14	35,31	13,49	7,86
6	12,03	42,02	28,22	12,03	5,71
7	21,05	40,94	23,44	8,48	6,09
8	27,70	24,00	26,97	11,32	
AVERAGE	21,24	30,77	28,86	10,80	8,09
LIKERT SCALE	1 NON-ACTIVE	2 HARDLY ACTIVE	3 SLIGHTLY ACTIVE	4 ACTIVE	5 VERY ACTIVO

The research states the relation between the use of leisure and the physical inactivity level of the students aged 12-17 of Colegio Juan de Salinas. It is worth highlighting that the sample studied prefer, according to their personal interests, social activities and 81% of the in companionship and 19% alone.

As conclusion, in terms of Physical Activity (alone or with a companion) the subjects develop little physical activity in their leisure. As priorities stands out listening to music (55,76%), and the use of technologies 54,63%, passive activities with a high percentage when they are accompanied by others and the use of technology (30,50 %) as the highest percentage when being alone.

In regard to dynamic activities, the percentages when being alone (7,16%) or with companions (12,75%) register a low percentage, for which in the statements of solutions to the appropriate and dynamic use of leisure, it is determined that any dynamic activity, as long as it is proposed in a motivational way is valid to increase the level of physical activity of the population under study.

DISCUSSION

In regard to the evaluation of the leisure time, it is determined that 81% of the students like to have company and 19% alone. The aforementioned indicates the high socializing value of these ages^{1,2}, for which, the subsequent design of a physical and recreational program of activities should have a collective character as a motivational factor^{34,35}.

By comparing the percentage of the passive activities (Alone and with Companions), the Mann-Whitney U test does not show a significant difference ($p=0,315$). This proves, as an *ex-ante* evaluation^{38,39}, the varied preferences of the subjects undergone to survey, which indicates that a further design of the program of physical and recreational activities should include a rigorous control of the variables studied^{40,41,42}, and be comprehensive enough to respond to the several demands of the sample, as it is affirmed by Gonçalves-Silva & collaborators¹⁹, and by Ordás and collaborators²⁰ from the perspectives of individuality, team work, interrelation and cooperation.

Despite the Dynamic activities presented better percentage indicators in the With Companions variable^{12,7,5} in regard to the Alone variable^{7,16}, the Mann-Whitney U test establishes no significant differences ($p=0,240$). Although the students of the sample prefer to practice the activities in groups, the subsequent design of a program of physical and recreational activities should include the individual character of the preferences of each member to establish individual programs of physical condition³³, although it is reaffirmed the comprehensive character of a future proposal of physical and recreational activities.

Placing the eight questions of the PAQ-A in the Likert scale, it is determined that 30,77% of the teenagers studied are hardly active; 28,86 % are slightly active, and 21,24% non-active, concluding that they certainly have a low level of physical inactivity that causes a high level of inactivity in 81,11% of the cases, which is very serious if considering the age and the school level of the students surveyed. Similar indicators are established in other studies²⁷, inferring that this problem is present in many countries.

According to the Likert scale, 30,77% of the adolescents studied of Colegio Juan de Salinas, is hardly active, 28,86 slightly active and 21,24% non-active, which leads us to the conclusion that they have a problem of low physical activity, deducing from the physical inactivity perspective that there is a high level 81,11 % at present and in the future, something serious if considering the age and school level of the students. On the other hand, and taking into account several sources consulted^{27,7,25,28}, this problem is present in many countries, each with specific characteristics.

The proposal that accompanies the present paper should be put in practice as a pilot in the school level hoping that it can be applied and determine permanent programs of massive activities, in which humans cultivate habits for a proper use of the leisure, in order to reduce the physical inactivity in our society. This study intends to define future evaluation tools to take specific decisions for the sector and intervene and state proposals that respond to its needs and characteristics.

Conclusions

With the analysis of the surveys applied, it is stated the importance of defining the characteristics of the population to work with. Probably, the different proposals of practicing some leisure activities for the Ecuadorian teenager, without making ex-ante diagnosis of the antecedents, are the reasons why the impacts expected are not present in the study, and therefore the solution to the problems the societies of the world are suffering are not approached from an autochthonous perspective, which reduces the effectiveness of the physical and recreational activities proposed. Therefore, it was established how leisure has influence on the physical inactivity of the teenagers of Colegio Juan de Salinas of Sandolquí, setting some useful parameters for further designs of physical and recreational programs.

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