

ORIGINAL RESEARCH

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Physical activity, eating habits and tobacco and alcohol use in students of a Catalan university

Actividad física, hábitos alimenticios y consumo de tabaco y alcohol en estudiantes de una universidad catalana

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| Abstract |

Introduction: University populations are considered as vulnerable groups when it comes to acquiring health habits.**Objective:** The aim of this study is to know the levels of physical activity and health habits of the students of the University of Lleida.**Methods:** Healthy habits and the practice of physical activity in university students were evaluated through the Global Physical Activity Questionnaire (GPAQ).**Results:** 600 students from the University of Lleida participated during the period 2014-2015. 30.7% of them smoked, while 96.7% reported alcohol consumption, and 75.5% practiced physical activity. More than 62% of male students practiced physical activity between 3 and 7 days a week compared to 33.5% of women (p=0.000). More than 30% of the students ingested fruit every day and 65% did so at least 4 days a week. 19.4% of women and 7.9% of men consumed fruit daily, finding significant differences (p=0.001).**Conclusions:** 30% of the participant did not meet the minimum recommendations of physical activity. A high percentage of participants have a low fruits and vegetables consumption and a high prevalence of risk of alcohol consumption. An educational intervention by universities is suggested to encourage the practice of healthy habits in students.**Keywords:** Physical Activity; Tobacco; Feeding Behavior; Students; Alcoholism (MeSH).

| Resumen |

Introducción. La población universitaria se considera un colectivo vulnerable a la hora de adquirir hábitos de salud.**Objetivo.** Conocer los niveles de actividad física y los hábitos de salud de los estudiantes de la Universidad de Lleida.**Materiales y métodos.** Se valoraron los hábitos saludables y la práctica de actividad física en estudiantes universitarios mediante el cuestionario Global Physical Activity Questionnaire.**Resultados.** Participaron 600 estudiantes de la Universidad de Lleida durante el periodo 2014-2015; 30.7% fumaba, 96.7% consumía alcohol y 75.5% practicaba actividad física. Más del 62% de los hombres practicaban actividad física entre 3 y 7 días a la semana frente al 33.5% de las mujeres (p=0.000). Más del 30% de estudiantes ingirió fruta cada día y 65% lo hizo al menos 4 días a la semana; en específico, 19.4% de las mujeres y 7.9% de hombres consumía fruta a diario, encontrándose diferencias significativas (p=0.001).**Conclusiones.** El 30% de los estudiantes no cumple con las recomendaciones mínimas de actividad física. Un alto porcentaje de los participantes tiene escaso consumo de frutas y verduras y presenta elevada prevalencia de consumo de riesgo de alcohol. Se sugiere una intervención educativa en estudiantes y por parte de las universidades respecto a la práctica de hábitos saludables.**Palabras clave:** Actividad física; Tabaquismo; Conducta alimentaria; Estudiantes; Alcoholismo (DeCS).

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Introducción

The promotion of healthy habits, particularly those related to physical activity (PA) and eating, is one of the primary work functions of health and education professionals. (1)

University students are a vulnerable group in terms of the influence of current lifestyles according to trends, usually characterized by health-risk behaviors. These behaviors include diets saturated in fat that lead to high cholesterol levels, low consumption of fruits and vegetables (2) and high levels of tobacco and (3) alcohol use (4) and sedentary lifestyle. (5) Therefore, universities are a strategic place to promote, on the one hand, patterns of behavior that favor health and, on the other, effective ways that lead to increased participation in healthy habits. (6)

It is of great interest for public health to know the evolution and trends of the university population, especially regarding sedentary lifestyles and healthy habits. (7) This allows establishing strategies to prevent and promote health, particularly among social groups that are consolidating their lifestyles and whose future behavior should be a model to imitate. (5) In Catalonia, Spain, the Secretaria General de l'Esport (General Secretary of Sports) promotes the University Sports of Catalonia Strategic Plan 2013-2020 (PEUC), which shows the need to analyze the current situation in the different Catalan universities to establish specific action plans in each institution to promote physical activity.

Several studies have attempted to determine proper levels of physical activity and health in university students to establish prevention and health promotion strategies. (8-11) With the aim of developing education and intervention actions aimed at introducing possible modifications in the behavior of university students, it is essential to determine which habits are predominant. To obtain this type of information, questionnaires are usually used (12), including the Global Physical Activity Questionnaire (GPAQ) — recommended by the World Health Organization —, which was elaborated to study PA and eating habits, and has acceptable levels of reliability and validity. (13,14)

The objectives of this study were to know the levels of physical activity and health habits — feeding and consumption of tobacco and alcohol— of the students of the University of Lleida (UDL) and to identify inappropriate behaviors related to healthy habits.

Materials and methods

This is a cross-sectional, observational and descriptive study on eating habits and behaviors related to physical activity in students of the UDL enrolled during the period 2014-2015.

Participants

A non-probabilistic sample was taken for convenience, stratified by sex and studies completed, and representative of the UDL students, which implies a confidence level of 95% and a maximum sampling error of $\pm 5\%$. The population consisted of 290 men (48.3%) and 310 women (51.7%), with an average age of 21.69 years [standard deviation (SD): 4.61]. Trained surveyors applied 600 questionnaires using a face to face modality and convenience with respect to the places, days and times of greatest transit of students within the university.

Measurements

To estimate PA, the Spanish version of the GPAQ was used (15), which consists of a series of questions grouped into domains: work, transport, recreation, tobacco consumption, alcohol consumption and diet. The questions about work and recreation inquired about the frequency and duration of different types of PA according to their

intensity. Regarding diet, questions sought to find about the intake of fruits and vegetables, frequency of consumption, etc.

Participants provided their informed consent in writing and the study was evaluated and approved by the Ethics and Good Practices Committee of the UDL on April 10, 2014.

Statistical analysis

The statistical program SPSS Statistics version 20.0 was used for analysis. The exact chi-square test was applied to evaluate the differences in PA according to sex and alcohol and tobacco use, while the Student's t-test was used to evaluate the differences in the time of practice of PA according to sex and free time.

Results

The research involved 600 subjects, 290 (48.3%) men and 310 (51.7%) women, with an average age of 21.6 years (SD: 4.61).

When examining the variables tobacco use, alcohol consumption and PA (Figure 1), it was found that 30.7% of students smoked and 96.7% reported alcohol consumption. When distributing the sample by sex, tobacco use was higher in women than in men (34.8% vs. 26.2%, $p=0.027$). Regarding alcohol consumption, a very similar percentage was found in men and women (96.9% vs. 96.5%, $p=0.623$). The question about whether students travel by foot or bicycle for at least consecutive 10 minutes showed that 73.8% of the sample did so, with a higher percentage observed in women (78% vs. 69.3%; $p=0.019$).

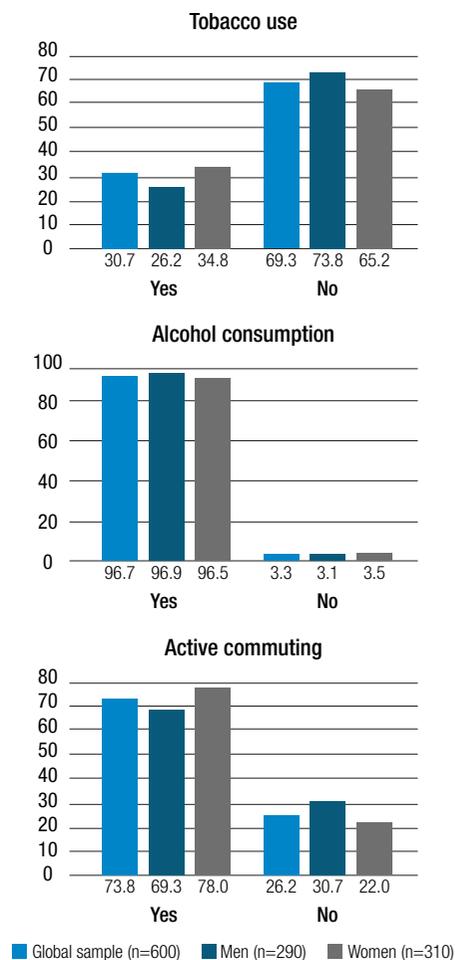


Figure 1. Descriptions of health habits.

Source: Own elaboration.

Table 1 shows that most university students practiced vigorous (66.2%) or moderate (63.5%) PA. With respect to the number of days they practiced vigorous PA, 62% of men and 33.5% of women did it between 3 and 7 days a week. For moderate PA, 54% of men and 33% of women practiced it between 3 and 7 days per week. In both cases, significant differences were found ($p=0.000$).

Table 2 shows the time, expressed in minutes, that students spent on PA; for the most part, the practices were over 60 minutes.

Table 3 shows that more than 30% of respondents ingested fruit every day and more than 65% did so at least 4 days a week. When analyzing daily vegetable consumption, it was found that women ingested more than men (19.4% vs. 7.9%; $p=0.001$).

Table 1. Descriptive index of physical activity practices.

Frequency	Vigorous						Moderate					
	Global sample		Men		Women		Global sample		Men		Women	
	f	%	f	%	f	%	f	%	f	%	f	%
Every day	22	3.7	11	3.8	11	3.5	36	6.0	16	5.5	20	6.5
5-6 days per week	78	13.0	54	18.6	24	7.7	81	13.5	55	19.0	26	8.4
3-4 days per week	184	30.7	115	39.7	69	22.3	143	23.8	87	30.0	56	18.1
1-2 days per week	113	18.8	41	14.1	72	23.2	121	20.2	45	15.5	76	24.5
No	203	33.8	69	23.8	134	43.2	219	36.5	87	30.0	132	42.6
Total	600	100	290	100	310	100	600	100	290	100	310	100

f: frequency.

Source: Own elaboration.

Table 2. Time spent doing physical activity.

Duration	Vigorous						Moderate					
	Global sample		Men		Women		Global sample		Men		Women	
	f	%	f	%	f	%	f	%	f	%	f	%
<60 min	148	24.7	74	25.5	74	23.8	160	26.6	73	25.2	87	28.1
61-100 min	108	18.0	66	22.8	42	13.5	55	9.2	38	13.1	17	5.5
>100 min	139	23.2	81	27.9	58	18.7	140	23.3	75	25.9	65	21.0
0 min	205	34.2	69	23.8	136	43.9	245	40.8	104	35.9	141	45.5
Total	600	100	290	100	310	100	600	100	290	100	310	100

f: frequency.

Source: Own elaboration.

Table 3. Description of eating habits.

Variable	Fruits						Vegetables						
	Global sample		Men		Women		Global sample		Men		Women		
	f	%	f	%	f	%	f	%	f	%	f	%	
Daily consumption	0 days	24	4.0	11	3.8	13	4.2	17	2.8	10	3.4	7	2.3
	1 day	27	4.5	12	4.1	15	4.8	51	8.5	29	10.0	22	7.1
	2 days	52	8.7	22	7.6	30	9.7	125	20.8	72	24.8	53	17.1
	3 days	77	12.8	42	14.5	35	11.3	121	20.2	59	20.3	62	20.0
	4 days	76	12.7	33	11.4	43	13.9	94	15.7	50	17.2	44	14.2
	5 days	88	14.7	47	16.2	41	13.2	66	11.0	26	9.0	40	12.9
	6 days	50	8.3	23	7.9	27	8.7	34	5.7	15	5.2	19	6.1
	7 days	197	32.8	93	32.1	104	33.5	83	13.8	23	7.9	60	19.4
	DK/DA	9	1.5	7	2.4	2	0.6	9	1.5	6	2.1	3	1.0
Total	600	100	290	100	310	100	600	100	290	100	310	100	
Number of servings per day	0 servings	20	3.3	9	3.1	11	3.5	13	2.2	9	3.1	4	1.3
	1 serving	261	43.5	130	44.8	131	42.3	399	66.5	204	70.3	195	62.9
	2 servings	226	37.7	106	36.6	120	38.7	122	20.3	55	19.0	67	21.6
	3 servings	55	9.2	22	7.6	33	10.6	27	4.5	8	2.8	19	6.1
	4 servings	13	2.2	7	2.4	6	1.9	12	2.0	2	0.7	10	3.2
	> 4 servings	8	1.3	5	1.7	3	1.0	4	0.7	0	0.0	4	1.3
	DK/DA	17	2.8	11	3.8	6	1.9	23	3.8	12	4.1	11	3.5
	Total	600	100	290	100	310	100	600	100	290	100	310	100

f: frequency; DK/DA: do not know/do not answer.

Source: Own elaboration.

Discussion

Most students drink alcohol at least once a month, without significant differences between men and women. While it is true that few students do it between 1 and 2 days per week, this figure is higher than that found by other authors (16), who also reported higher alcohol consumption in men than in women. The results of this research are above those found by Castañeda-Vázquez & Romero-Granados (17), since more than one third of the population studied use alcohol on weekends and more than 40% do so occasionally. One of the main problems of university students is binge drinking, which has been described by several authors. (18,19)

In turn, tobacco is also used by one third of the students, a figure similar to that reported by Castillo-Viera & Sáenz-López (20) in students of the University of Huelva, although tobacco consumption in this age group is studied in a very superficial way. (3) In addition, prevention campaigns in this type of population are difficult and insufficient, so it is important to continue conducting research on lines of action and their effectiveness for controlling smoking at the youngest possible age.

Regarding transport, most of the students in this study move actively, whether by walking or cycling or any other means of transport. Comparing sexes, women show higher rates of active commuting than men, and they do it more frequently. There is evidence that active commuting to the educational center (school, institute, university, etc.) is an opportunity to increase PA levels in young people and prevent or mitigate the increase of body weight. (21-24) One of the main reasons found in this study for high mobility in bicycles is the orographic characteristics of Lleida, which is a small city without significant slopes, so it is not necessary to travel long distances to get anywhere. In consequence, some authors have considered developing strategies based on socio-ecological models (25), actions in relation to urban design, transport systems or resources for recreation and green spaces.

According to different studies, adults aged between 18 and 64 years should accumulate a minimum of 150 minutes per week of moderate aerobic PA or 75 minutes per week of vigorous aerobic PA (or the equivalent combination of both). The present study shows that 75% of university students are regularly active and that, of these, a large percentage have a high level of PA, so the majority are regularly active; this coincides with other studies conducted in university populations. (9,11) It was also found that most students who practice PA, do so two or more days a week, so the promotion and awareness campaigns towards the practice of PA should be directed towards a smaller group of students who do not carry out any PA at all.

PA practice had statistically significant differences between sexes. This is a constant pattern, since PA is one of the few health-related behaviors typically more prevalent in men than in women. (6,16,26) In this sense, activities that motivate university students to adhere to the practice of PA should be promoted.

Another variable studied was fruits and vegetables intake in students, but data were not encouraging, since only a third of the students consume fruits on a daily basis and only half do it between 3 and 6 days per week. The consumption of vegetables is much lower, since only 1 in 10 students interviewed here do it daily, being more frequent in women. Following the recommendations of the dietary guidelines for the Spanish population (27,28), which suggest the daily consumption of fruits and vegetables, the students of the UDL are still far below the established figures. (27,28)

These results show a progressive loss of adherence to the Mediterranean diet, characterized by a high consumption of vegetables and a abundant consumption of fresh fruits, as no student consumed

these products. (29) The lack of consumption of fruits and vegetables could predict an increase in pathologies derived from poor diet, such as obesity or diabetes. (30,31)

University students are a key population to carry out health promotion and prevention activities, so it is necessary to create strategic education plans that improve the quality of life and promote the acquisition of good eating habits and the performance of PA. Based on the results, the UDL will propose specific strategies for the promotion of healthier lifestyles.

One of the main limitations of this study is that data related to alcohol consumption was self-reported and this means that, although data are reliable, could be biased despite having answered the test anonymously. Socio-economic data that could bias the results were not collected either. However, it is essential to be able to detect risk consumption early in order to modify consumption patterns in a population so vulnerable to its effects. Intervening the university population at risk may provide important benefits, not only in academic terms but in future pathologies derived from the consumption of alcohol and tobacco.

Conclusions

A high percentage of students use alcohol and tobacco regularly. The vast majority of students move actively, especially women. This study shows that a significant amount of university students are regularly active and that, of these, a high percentage has a high level of PA practice. According to the recommendations of different dietary guidelines, students of the UDL are far below in terms of consumption of fruits and vegetables.

Conflicts of interest

None stated by the authors.

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WILLIAM SMELLIE, M.D. (1754)

*"A Sett of Anatomical Tables with explanations and an
abridgement of the Practice of Midwifery"*