

Hábitos no saludables y práctica de actividad física en estudiantes universitarios españoles: papel del género, perfil académico y convivencia

Unhealthy habits and practice of physical activity in spanish college students: the role of gender, academic profile and living situation

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recibido: Enero 2012
aceptado: Julio 2012

Resumen

El objetivo del estudio es identificar los factores personales asociados con el consumo de drogas y la práctica de actividad física en una población de estudiantes universitarios del noroeste de España. Se realizó un estudio cross-sectional entre Enero y Abril de 2010 usando un cuestionario autocontestado que incluía género, edad, titulación y curso de estudios, convivencia y trabajo, y también preguntas sobre su consumo actual de tabaco, consumo de alcohol y episodios de consumo elevado de alcohol, uso de drogas ilegales y frecuencia de actividad física. Se calcularon las prevalencias y se realizó un análisis bivariante y multivariante por regresión logística para distintos modelos para los hábitos ajustando por las variables sociodemográficas. La mayoría de los estudiantes consume alcohol (78,3%), un 31,7% consume tabaco y un 34% ha consumido drogas ilegales en algún momento. La prevalencia de realización de actividad física suficiente fue del 22,7%, siendo claramente menor en mujeres y en titulaciones no vinculadas al deporte. Menos mujeres consumen drogas ilegales y alcohol, pero el consumo episódico elevado de alcohol es mayor en mujeres. Vivir con amigos es un factor de riesgo para el consumo de drogas legales e ilegales respecto a vivir con los padres. Las titulaciones sobre deporte, salud y educación mostraron menores prevalencias de consumo de drogas que las otras. Puesto que el consumo de drogas y la inadecuada actividad física varían según género, situación de convivencia y titulación, sería apropiado tener estas diferencias en cuenta para diseñar intervenciones más eficientes de promoción de la salud.

Palabras clave: Estudiantes universitarios, actividad física, hábitos no saludables, género, situación de convivencia.

Abstract

The aim of this study is to identify personal factors associated with drugs use and the practice of physical activity in a college student population in northwest Spain. A cross-sectional survey was conducted between January and April 2010 using a self-administered questionnaire including questions concerning gender, age, course and year of study, living arrangements and work. Participants were asked also about current tobacco use, alcohol drinking and heavy episodic drinking, illegal drugs use, and frequency of physical activity. Prevalences were calculated and bivariate and multivariate logistic regression analyses were conducted to calculate separate models for the different habits making adjustments for the demographic variables. Most of students consumed alcohol (78.3%), with 31.7% consuming tobacco and 34% having used illegal drugs at some point. The prevalence of sufficient physical activity was about 22.7% and it was clearly lower in women and in courses no linked with sports. Women have been lesser consumers of illegal drugs and alcohol. However, heavy episodic drinking is clearly associated with women. Living with friends was noticed as a risk factor, both for tobacco use and the consumption of alcohol and illegal drugs, when compared with living at home. Courses of study connected with sport, health and education showed a lower prevalence of drug uses than the other courses analysed. Since distribution of drug use and insufficient physical activity depending on gender, living arrangement and the course of study, it would be appropriate to design more efficient interventions of health promotion take these differences into account.

Keywords: College students, physical activity, unhealthy habits, gender, living situation.

Unhealthy habits are a prevailing problem in society and one of the main causes of premature death and illness (WHO, 2009). These habits are usually acquired in youth or early adulthood (Steptoe et al., 2002).

Although the consequences of such lifestyles are obvious, a high proportion of young people, including university students, lead unhealthy lives indulging in such habits as avoidance of physical activity, unsuitable diet, and a high intake of alcohol, tobacco and illegal drugs (O'Malley, & Johnston, 2002; Steptoe, & Wardle, 2001; Steptoe et al., 2002).

These unhealthy habits are associated with problems of health and emotional well-being, as well as poor results in studies, which can in turn worsen existing health problems or lead to new ones (Boot, Rietmeijer, Vonk, & Meijman, 2009; Steptoe and Wardle, 2001).

Drug use among those who are developing physically and socially is a major problem worldwide. It is therefore important to ascertain the patterns of consumption of legal and illegal drugs in order to tackle the problem nationally in Spain and on the European level (European Monitoring Centre for Drugs and Drug Addiction, Annual Report 2011). Several studies about these lifestyles in college students, mainly alcohol use, have been developed in the US, but in Europe there are not so usual and the results are not easily transferred since college students characteristics and drinking culture are not similar (Wicki, Kuntsche, & Gmel, 2010)

Furthermore, most university students' level of physical activity is not enough to be considered healthy, and many find serious difficulties in increasing their amount of physical activity while at university (Haase, Steptoe, Sallis, & Wardle, 2004; Keating, Guan, Piñero, & Bridges, 2005).

The transition to higher education is associated with a combination of stressors that have a great impact on the lifestyles chosen (Borsari, Murphy, & Barnett, 2007; Von Ah, Ebert, Ngamvitroj, Park, & Kang, 2004; Wechsler et al., 2002). Furthermore, for those who study away from home, the new independence from parental control and greater availability of substances may lead to a greater risk of acquiring toxic habits, a number of studies indicating shared accommodation as a risk factor for the consumption of alcohol and other substances (Boot, Rosiers, Meijman, & Van Hal, 2010; Caamaño-Isorna, Corral, Parada, & Cadaveira, 2008)

Moreover, other factors such as the course of study and combining study with work differ greatly among students and must be taken into account when analysing students' behaviour.

However, very few studies have jointly analysed the influence of such factors as the living situation, course of study and working while studying on the consumption of alcohol, tobacco and other substances, together with physical activity (Boot et al., 2010) Studies of this type are even less common in Spain (Jiménez-Muro Franco, Beamonte San Agustín, Marqueta, Gargallo Valero, & Nerin de la Puerta,

2009). In addition, factors like living situation, gender or academic profile can be related to each and constitute a confounding bias. This study seeks to deepen in the influence of these factors in drugs use and in a healthy habit like physical activity, through a multivariate analysis to shed light on the interaction between those factors.

The hypotheses of this study are that living with parents and studying courses that included health education in their syllabi are related to lower drug use and more usual practice of physical activity. According to these hypotheses, the aims of this study are to identify personal factors associated with drug use and the practice of physical activity in a student population in northwest Spain.

Methods

Participants

A descriptive cross-sectional survey was conducted in which all the students aged 22 or less enrolled for the academic year 2009-10 on the Pontevedra Campus of the University of Vigo were eligible to take part, following a convenience sampling. Students over the age of 22 were excluded as their conditions were considered different, and unsuitable for the survey, according with the definition of traditional students who are those students who entered higher education at the age of 18 straight from school or further education, and studied continuously and full time for either three or four years (Laing, Chao, & Robinson, 2005).

Instruments

Sociodemographic and academic questions

The questionnaire included questions concerning gender, age and year of study. The question on students' living situations had four options: with parents, alone, in a hall of residence or in a shared flat.

The question on work had three possible answers: I don't work, I work part-time and I work full-time, due to the low number of full-time workers (3), the last two answers were considered together as a single category for analysis.

According to the syllabus of the courses on which students were enrolled, the sample was divided into four academic fields: Sport, Education, Health and Others.

Drug use

With regard to habits, participants were asked if they currently smoked tobacco. They were also asked if they drink alcohol and those who answered affirmatively were asked to state the largest number of drinks consumed in a single session within the previous 30 days. Men consuming 8 or more standard drink units (SDUs) and women consuming 6 or more in a row, were considered heavy episodic drinkers. (Valencia-Martín, Galán, & Rodríguez-Artalejo, 2009).

As for illegal drugs, participants were asked if they had ever consumed any, and were classified as non-consumers or ever consumers, the latter being asked what kinds of drugs they had consumed.

Physical activity questions

In order to assess their level of physical activity (PA), participants were asked how many times a week they did any moderate or intense physical activity, those declaring a frequency of at least 3 times a week being considered active.

Procedures

Data were collected by means of a voluntary and anonymous self-administered ad hoc questionnaire between January and April 2010. In order to maximize participation, the questionnaire was distributed on a day when there was a class of the most popular option for each course. Students participating gave their informed written consent and received a small gift by way of thanks. Questionnaires with any questions left unanswered were excluded from the analysis.

Losses and missing data

Of the 2215 students aged 22 or less, 784 (35.4%) participated in the study and of those, 750 (95.6%) completed the questionnaire properly. Mean age of participants was lower than that of total eligible students (19.7 vs 20.0 years).

The study had the approval of the Pro-Vice Consulate's Department for Students and of the governing bodies of the centres involved, and was assessed and approved by the committee of ethics and good practice of the University of Vigo.

Statistical Analysis

Prevalence was calculated for each of the categories of variables studied. A bivariate analysis was performed of the association between each life habit and the sociodemographic and academic variables, studied by calculating the odds ratio (OR) with confidence intervals of 95% together with the Chi-squared test. Cohen's index was calculate to measure the effect size of gender differences.

Multivariate logistic regression analyses were conducted to calculate separate models for 1) tobacco use, 2) alcohol use, 3) illegal drugs use and 4) physical activity, taking the living situation as an independent variable and making adjustments for sex, age, academic level, year of study and work.

Missing data analysis.

In order to assess possible selection biases, the distribution by age, sex and academic level of the participants was compared with those who did not completely fill in the questionnaire.

Computer programs

For storing, recording and descriptive treatment of data, the SPSS-16 statistical program was used. For

epidemiological analysis, association measures and logistic regression, the program used was EPINFO 3.5.1 for Windows.

Results

Demographic characteristics

Table 1 shows the distribution of the sample regarding the different sociodemographic and academic characteristics by gender. Significant differences were observed between men and women regarding course of study, with a larger proportion of men on courses linked with sport, and more women in the other groups. A significant difference was also observed ($p=0.03$) between the living situations of men and women, with more women living with their parents and more men sharing with friends. However, only differences on the academic profile between health ($d=-0.61$) and sport ($d=0.78$), show a moderate effect size.

Consumption prevalences

Table 1 and Figure 1 shows the consumption prevalences for the different substances, 20.1% stating that they consumed substances of no kind, while the great majority consumed alcohol (78.3%), with smaller proportions currently consuming tobacco (31.7%) and having used illegal drugs at some point (34%). The different habits are clearly associated, with 20.8% of participants positive for all 3 habits, 22% positive for alcohol and one of the others, while 35.5% stated that they only consumed alcohol and 1.6% said that they had consumed tobacco and/or illegal drugs but not alcohol.

Bivariate and multivariate analyses

The results of the bivariate analysis and logistic regression analysis of the link between possible predictive factors and drug use are shown in Table 2.

The older the participants, the greater the contact they have had with the tobacco habit and drug use. As for the

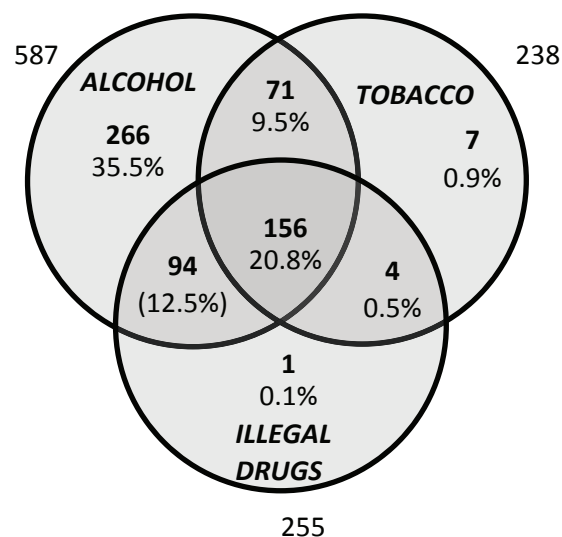


Figure 1. Consumption prevalences and co-use of different substances.

Table 1. Demographic characteristics of the whole population and distribution by gender.

| | Total | Male | Female | p | d |
|-------------------|----------------------|---------------------|----------------------|--------|-------|
| N | 750 | 229 | 521 | | |
| Age [Mean (SD)] | 19.69 (1.32) | 19.83(1.36) | 19.62 (1.30) | 0.0432 | +0.16 |
| Year of study | | | | | |
| 1 st | 269 (35.9) | 79 (34.5) | 190 (36.5) | 0.6043 | --- |
| 2 nd | 239 (31.9) | 77 (33.6) | 162 (31.1) | 0.4934 | --- |
| 3 rd | 178 (23.7) | 47 (20.5) | 131 (25.1) | 0.1708 | --- |
| 4 th | 64 (8.5) | 26 (11.4) | 38 (7.3) | 0.0668 | --- |
| Academic Profile | | | | | |
| Sport | 134 (17.9) | 92 (40.2) | 42 (8.1) | 0.0001 | +0.78 |
| Education | 121 (16.1) | 27 (11.8) | 94 (18.0) | 0.0321 | -0.17 |
| Health | 199 (26.5) | 16 (7.0) | 183 (35.1) | 0.0001 | -0.61 |
| Others | 296 (39.5) | 94 (41.0) | 202 (38.8) | 0.5569 | --- |
| Living situation | | | | | |
| With parents | 440 (58.7) | 122 (53.3) | 318 (61.0) | 0.0468 | -0.16 |
| Alone | 15 (2.0) | 5 (2.2) | 10 (1.9) | 0.8120 | --- |
| Hall of residence | 47 (6.3) | 14 (6.1) | 33 (6.3) | 0.9087 | --- |
| With peers | 248 (33.1) | 88 (38.4) | 160 (30.7) | 0.0385 | +0.16 |
| In employment | | | | | |
| Yes | 129 (17.2) | 31 (13.5) | 98 (18.8) | 0.0782 | --- |
| Tobacco use | | | | | |
| Yes | 238 (31.7) | 70 (30.6) | 168 (32.2) | 0.6493 | --- |
| Alcohol use | | | | | |
| Yes | 587(78.3) | 194 (84.7) | 393 (75.4) | 0.0045 | -0.21 |
| Illegal drugs use | | | | | |
| Yes | 255 (34.0) | 105 (45.9) | 150 (28.8) | 0.0001 | -0.33 |
| No substance use | | | | | |
| Yes | 151 (20.1) | 32 (14.0) | 119 (22.8) | 0.0053 | -0.20 |
| Physical Activity | | | | | |
| Yes | 170 (22.7) | 98 (42.8) | 72 (13.8) | 0.0001 | 0.67 |
| HED | | | | | |
| Yes | (n=539) 289(53.6) | (n=173) 73(42.2) | (n=366) 216(59.0) | 0.0003 | -0.32 |

Note: p value of Student's t test for age and p value of chi squared analysis for other variables. Cohen's d index according to the corresponding test.

sex, the bivariate analysis shows women to have been lesser consumers of illegal drugs and alcohol but, according to the multivariate analysis, differences are not significant for alcohol. However, heavy episodic drinking is clearly seen to be associated with women [OR 2.13 (1.41-3.22); $p < 0.001$]. However, although statistically significant the effect size of these differences are small according to Cohen's index. (Table 1).

Living with friends was noticed as a risk factor, both for tobacco use and the consumption of alcohol and illegal drugs, when compared with living at home. Likewise, those who lived in university halls of residence had higher prevalence values than those living with their parents for

tobacco, illegal drugs and alcohol, although the difference was only statistically significant for the first of these. No link was found between work and any of the habits analysed.

As for the academic fields, it should be said that in general, those connected with sport, health and education showed a lower prevalence of drug use than the other courses analysed, in some cases with statistical significance.

The prevalence of sufficient physical activity was about 22.7% and had association with living situation and sex, being clearly lower in women [OR 0.36 (0.23-0.56); $p < 0.0001$] and in courses linked with sports, where it is much more common than for the other courses (Table 3).

Table 2. Prevalences, Crude and adjusted ORs for the different drugs as functions of the factors analysed.

| | | TOBACCO | | | ILLEGAL DRUGS | | | ALCOHOL | | | HED | | |
|------------------|-------------------|---------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|---------------------|-------------------------------------|-------------------------------------|---------------------|-------------------------------------|-------------------------------------|
| | | Prevalence (%) | Crude OR (95% CI) | Adjusted OR (95% CI) | Prevalence (%) | Crude OR (95% CI) | Adjusted OR (95% CI) | Prevalence (%) | Crude OR (95% CI) | Adjusted OR (95% CI) | Prevalence (%) | Crude OR (95% CI) | Adjusted OR (95% CI) |
| Age | | 1.10 (0.98-1.23) | 1.20 (1.03-1.39) | | 1.17 (1.04-1.31) | 1.24 (1.06-1.44) | | 1.00 (0.88-1.14) | 1.03 (0.87-1.22) | | 1.04 (0.92-1.18) | 1.02 (0.86-1.22) | |
| Gender | Male | 30.6 | 1 | 1 | 45.9 | 1 | 1 | 84.7 | 1 | 1 | 42.2 | 1 | 1 |
| | Female | 32.2 | 1.08 (0.77-1.51) | 1.04 (0.71-1.53) | 28.8 | 0.48 (0.35-0.66) | 0.48 (0.33-0.70) | 75.4 | 0.55 (0.37-0.84) | 0.69 (0.43-1.10) | 59.0 | 1.97 (1.37-2.85) | 2.13 (1.41-3.22) |
| Living situation | With parents | 26.6 | 1 | 1 | 27.5 | 1 | 1 | 71.4 | 1 | 1 | 54.3 | 1 | 1 |
| | Alone | 40.0 | 1.84 (0.64-5.28) | 1.89 (0.63-5.72) | 26.7 | 0.96 (0.3-3.07) | 0.81 (0.23-2.79) | 73.3 | 1.10 (0.34-3.53) | 1.04 (0.32-3.42) | 80.0 | 3.37 (0.7-16.13) | 3.44 (0.69-17.22) |
| | Hall of residence | 40.4 | 1.87 (1.01-3.48) | 1.95 (1.01-3.74) | 36.2 | 1.49 (0.8-2.81) | 1.52 (0.79-2.94) | 83.0 | 1.96 (0.89-4.30) | 1.57 (0.7-3.54) | 56.8 | 1.10 (0.55-2.20) | 1.05 (0.51-2.15) |
| | With peers | 38.7 | 1.74 (1.25-2.43) | 1.78 (1.25-2.54) | 45.6 | 2.21 (1.59-3.06) | 2.11 (1.48-2.99) | 89.9 | 3.58 (2.25-5.68) | 3.22 (1.99-5.19) | 50.7 | 0.87 (0.61-1.24) | 0.86 (0.59-1.26) |
| Academic Profile | Others | 39.9 | 1 | 1 | 41.9 | 1 | 1 | 84.5 | 1 | 1 | 55.8 | 1 | 1 |
| | Sport | 23.1 | 0.45 (0.29-0.72) | 0.46 (0.28-0.76) | 35.8 | 0.77 (0.51-1.18) | 0.58 (0.36-0.92) | 82.8 | 0.89 (0.51-1.54) | 0.83 (0.46-1.51) | 49.5 | 0.78 (0.49-1.24) | 1.01 (0.61-1.69) |
| | Health | 21.5 | 0.41 (0.25-0.68) | 0.42 (0.25-0.70) | 23.1 | 0.42 (0.26-0.68) | 0.44 (0.26-0.73) | 74.4 | 0.53 (0.32-0.89) | 0.58 (0.34-1.01) | 48.2 | 0.74 (0.45-1.21) | 0.74 (0.44-1.26) |
| | Education | 31.7 | 0.70 (0.48-1.02) | 0.76 (0.50-1.16) | 27.6 | 0.53 (0.36-0.78) | 0.70 (0.46-1.08) | 68.3 | 0.49 (0.26-0.61) | 0.55 (0.34-0.88) | 56.7 | 1.04 (0.67-1.61) | 0.88 (0.54-1.42) |
| Year of study | 1st | 29.0 | 1 | 1 | 32.3 | 1 | 1 | 77.3 | 1 | 1 | 51.6 | 1 | 1 |
| | 2nd | 36.0 | 1.35 (0.93-1.96) | 1.07 (0.71-1.61) | 33.9 | 1.07 (0.74-1.55) | 0.76 (0.50-1.16) | 81.2 | 1.26 (0.82-1.95) | 1.11 (0.69-1.77) | 52.8 | 1.05 (0.70-1.58) | 1.03 (0.65-1.64) |
| | 3rd | 32.6 | 1.16 (0.77-1.75) | 0.83 (0.51-1.36) | 37.1 | 1.23 (0.83-1.83) | 0.81 (0.49-1.33) | 75.3 | 0.89 (0.57-1.39) | 0.78 (0.45-1.36) | 55.1 | 1.15 (0.73-1.81) | 1.11 (0.63-1.97) |
| | 4th | 23.4 | 0.74 (0.39-1.39) | 0.38 (0.18-0.82) | 32.8 | 1.02 (0.57-1.83) | 0.44 (0.22-0.91) | 79.7 | 1.15 (0.59-2.25) | 0.65 (0.28-1.50) | 60.4 | 1.43 (0.75-2.73) | 1.24 (0.55-2.79) |
| In employment | No | 32.5 | 1 | 1 | 37.2 | 1 | 1 | 17.8 | 1 | 1 | 53.8 | 1 | 1 |
| | Yes | 27.9 | 0.80 (0.53-1.22) | --- | 33.3 | 1.19 (0.80-1.76) | --- | 17.0 | 0.95 (0.60-1.50) | --- | 52.6 | 0.95 (0.61-1.48) | --- |

Note. In bold: p value < 0.05.

Table 3. Prevalences, crude ORs and ORs adjusted by logistic regression for physical activity as a function of the different factors analysed.

| | | Prevalence (%) | PA | PA |
|------------------|-------------------|----------------|-------------------|----------------------|
| | | | Crude OR (95% CI) | Adjusted OR (95% CI) |
| Age | | | 0.95(0.83-1.08) | 0.87(0.72-1.05) |
| Gender | Male | 42.8 | 1 | 1 |
| | Female | 13.8 | 0.21(0.15-0.31) | 0.36(0.23-0.56) |
| Living situation | With parents | 24.8 | 1 | 1 |
| | Alone | 6.7 | 0.22(0.03-1.66) | 0.18(0.02-1.75) |
| | Hall of residence | 17.0 | 0.62(0.28-1.37) | 0.38(0.14-0.99) |
| | With peers | 21.0 | 0.81(0.55-1.17) | 0.68(0.43-1.07) |
| Academic Profile | Sport | 64.2 | 1 | 1 |
| | Health | 19.0 | 0.13(0.07-0.23) | 0.15(0.08-0.28) |
| | Education | 12.6 | 0.08(0.05-0.14) | 0.11(0.06-0.21) |
| | Others | 12.2 | 0.08(0.05-0.13) | 0.09(0.05-0.15) |
| Year of study | 1st | 25.7 | 1 | 1 |
| | 2nd | 22.2 | 0.83(0.55-1.24) | 0.72(0.42-1.22) |
| | 3rd | 15.7 | 0.54(0.33-0.88) | 0.50(0.25-0.98) |
| | 4th | 31.3 | 1.32(0.73-2.39) | 1.02(0.41-2.51) |
| In employment | No | 22.2 | 1 | --- |
| | Yes | 24.8 | 1.15(0.74-1.80) | --- |

Note. In bold: p value < 0.05.

Discussion

The results of this study show that the living situation, sex and course of study are factors clearly associated with lifestyle habits during student's time at university

The prevalences were 78.3% and 31.7%, for alcohol and tobacco use respectively, and 34% declared having used illegal drugs at some point

Living with friends/flat mates and being a man, have been shown as risk factors for alcohol and illicit drugs use, while academic profiles related to health and education seems to be protective. Physical activity prevalence is low, especially in women (d=0.67).

As future qualified professionals, university students' health and welfare are of especial interest. This time of life is often a period of major changes leading to adulthood, the change from school to university supposing a major source of stress associated with the acquisition of less healthy habits (Dodd , Al-Nakeeb, Nevill, & Forshaw, 2010).

Substance use prevalences

Alcohol is the most consumed substance (78.3%), a value that are high but similar to those found by different authors in Spanish university students in recent years (López López, Santín Vilariño, Torrico Linares, & Rodríguez González, 2003; Mota, Alvarez-Gil, Corral, Rodríguez Holguín, Parada, Crego, Caamaño-Isorna, & Cadaveira, 2010; Vázquez, Blanco, & Torres Iglesias, 2006) and somewhat higher than those detected by the National Health Survey in 2006 (Instituto

Nacional de Estadística, 2006) for the age range 16-24 years (72.6%).

Likewise, the tobacco habit showed values close to those found by the National Health Survey for this age range and other authors' observations in university populations (Jiménez-Muro Franco et al., 2009; Martín, Molina, Fernández, Fernández, de Abajo, & Delgado, 2011)

Our results regarding illegal drug use were somewhat lower than those found by Jiménez-Muro Franco et al. (2009), who found percentages of over 50% in men and women, and by Font-Mayolas, Gras, & Planes, (2006), with rates of 75% for men and 50% for women, but were nevertheless worrying.

Physical activity

The prevalence of the practice of sufficient physical activity was low, as described by many authors (Irwin, 2004; Haase et al., 2004; Dodd et al., 2010), and showed no association with the other habits studied (data not shown), unlike the findings of such other authors, who observed an association between high levels of moderate or high physical activity and binge drinking (Vaez & Laflamme, 2003; VanKim, Laska, Ehlinger, Lust, & Story, 2010) and also with a lower proportion of tobacco use, or like Dodd et al. (2010) who, in a cluster analysis, observed an association between moderate physical activity and binge drinking in the last seven days.

Personal factors and substance use

Substance use and living situation

From the results obtained it would seem clear that living at home is associated with lower substance consumption, which is in agreement with other authors' studies of university students (Boot et al., 2010; Caamaño Isorna et al., 2008; Gfroerer, Greenblatt, & Wright, 1997).

It should be pointed out that living with parents shields students from alcohol consumption but not from heavy episodic drinking, as also observed by Mota et al. (2010), but unlike the effect described by other authors in the USA (Gfroerer et al., 1997; Weitzman, Nelson, & Wechsler, 2003).

These differences between Spanish and American findings could have several explanations. On the one hand, as described for France by Riou Franca, Dautzenberg, Falissard, & Reynaud (2010), fewer students live in halls of residence and there are no fraternities on campus, unlike the situation in the USA, where membership of these organizations has a clear link with binge drinking (McCabe, Schulenberg, Johnston, O'Malley, Bachman, & Kloska, 2005; Weitzman et al., 2003). On the other hand, the habitual form taken by binge drinking among Spanish youths is the so-called *botellón*, literally "big bottle", which is an informal party usually held on the street or in open areas attended by groups of youths, who buy in supermarkets, prepare and consume alcoholic beverages, and that has been shown clearly associated with peer groups, not with family

influence (Llorens, Barrio, Sánchez, Suelves, & ESTUDES Working Group, 2011).

Gender differences

Being a woman seems to be a protective factor in the consumption of illegal drugs and alcohol, although the effect size is small. However, those women who do drink consume similar amounts to men of the same age, as previously described by Cortés Tomás, Espejo Tort, & Giménez Costa, (2007) for adolescents during the academic year 2005-06. Given that the physiological differences of the sexes imply the use of a lower cut-off point (6 or more units for women as opposed to 8 for men), this study shows that women who drink are likely to indulge in heavy episodic drinking to twice the extent of men. Although most of the studies detected opposite results (Asthon, & Kamali, 1995; Bendtsen, Johansson, & Akerlind, 2006; Ghodse, & Howse, 1994; Newbury-Birch, White, & Kamali, 2000; Webb, Ashton, Kelly, & Kamali, 1996), some authors have reported similar findings (Plasschaert, Hoogstraten, van Emmerick, Webster, & Clayton, 2001; Underwood, & Fox, 2000). Moreover, in order to compare our results, it is necessary take into account that the high cut-off points used in our study could introduce differences in prevalence and distribution of this problem, relative to other studies that use lower cut-off points, usually 5 units for men and 4 units for women.

It should also be pointed out that there is a difference in the amount of physical activity, with fewer women doing sufficient, as previously described by other authors (Dodd et al., 2010; Hacıhasanoğlu, Yıldırım, Karakurt, & Sağlam, 2011; Irwin, 2004).

Academic profile

Regarding the differences observed between courses of study, there seems to be a certain protective effect from drug use among students on courses connected with health, education and sport, where there is a greater academic insistence on the effects of these habits on health, while courses associated with sport clearly affect the level of students' physical activity. All this explains why this characteristic should be included in the multifactor analyses of the life habits of university students and the need to bear it in mind when designing programmes of prevention and health promotion.

Employment situation

Unlike the recent findings of Butler, Dodge, & Faurote's (2010) about greater alcohol consumption among those who combined work with study, ours show no link between working and a greater prevalence of drug use, in agreement with Digrande, Perrier, Lauro, & Contu (2000).

Methodological considerations

Due to the convenience sampling employed and the voluntary answer of the questionnaires, selection biases could be produced, and should be taken into account in the interpretation of the results.

As the links found arise from a cross-sectional study, we cannot say whether the independent variables appear

before or after the dependent ones. For example, it is not clear whether sharing accommodation is a risk factor for substance abuse or whether those who decide to live at home with their parents do so for reasons that also limit their contact with drugs, while it has also been observed, for example, that students who live with their parents declare a poorer state of health than those in shared accommodation (Boot et al., 2009).

Likewise, as described by McCabe et al. (2005) regarding sororities and fraternities in the USA, those who choose this type of residence showed a greater tendency towards substance consumption before joining, while similarly there is possibly a selection process when choosing both the course of study and a type of residence, which is reflected by pre-existing habits.

Most surveys of university populations are conducted in class, as this is the most accessible environment, although a certain selection bias is assumed leading to an underestimation in the results, as those students who attend class regularly are those with healthier life habits (Riou Franca, Dautzenberg, Falissard, & Reynaud, 2010).

Furthermore, self-reported substance use questionnaires have been shown to be reliable for substance studies (Brenner, Billy, & Grady, 2003), although they may be subject to social desirability bias.

Conclusions and practical implications

Drug abuse and insufficient physical activity are common problems among university populations with different distributions depending on age, gender, type of accommodation and the academic field. Likewise, the concomitant consumption indices suggest that both therapeutic interventions and consumption prevention campaigns should be carried out together against the different types of drugs, whether legal or illegal.

It would be appropriate that health promotion initiatives like REUS (Spanish Network of Healthy Universities) design their interventions taking these differences into account in order to obtain better results. Future research, through prospective studies, would clarify the nature of the relationship between personal factors identified and lifestyle, and the effect of the actions proposed.

Acknowledgements

Funding

This work has been supported by Catedra Filgueira Valverde of the University of Vigo. 2009.

Conflict of interest

None.

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