Ann Ist Super Sanità 2015 | Vol. 51, No. 2: 111-115
DOI: 10.4415/ANN_15_02_07

Risky behaviours among university students in Italy

Andrea Poscia, Paolo Parente, Emanuela Maria Frisicale, Adele Anna Teleman, Chiara de Waure and Maria Luisa Di Pietro

Istituto di Sanità Pubblica, Sezione di Igiene, Università Cattolica del Sacro Cuore, Rome, Italy

Abstract

Background. The use of psychoactive substances is one of the most important public health issues. Tobacco, alcohol and illicit drugs are among the top risk factors for ill-health defined by World Health Organisation. The risky behaviours acquired in teenage can be magnified or decreased during university when a person starts having more awareness about the importance of own wellness. This paper describes the results of the project "Sportello Salute Giovani" ("Youth Health Information Desk") with respect to risky behaviours in a large sample of Italian university students.

Materials and methods. 18 questions of the survey "Sportello Salute Giovani" dealing with risky behaviors, the use of psychoactive substances such as tobacco, alcohol and illicit drugs were included. Absolute and relative frequencies were calculated. Besides, chi square test were used to test the differences in sex, age class and socio-economic status.

Results. About 24% of the interviewed students currently smokes. 89% and 42.2% respectively drinks at least rarely or weekly beer, wine or spirits. About 40% of students smoked at least a joint and about 2% used other drugs (mostly cocaine).

Conclusion. The "Sportello Salute Giovani" survey suggests that the frequency of risky behaviours in Italian university students is not reassuring, although they should be aware about the negative consequences on their and others health because of their educational level.

Key words

- risky behaviours
- smoke
- alcohol
- illicit drugs
- university students

BACKGROUND

The use of psychoactive substances is prevalent throughout the world and is associated with a significant public health burden. Tobacco, alcohol and illicit drugs are among the top 20 risk factors for ill-health identified by the World Health Organization [1]. They are strongly associated with several non communicable disease and they are leading cause of death and morbidity in most countries: it is estimated that tobacco is responsible for 8.8% of all deaths and for 4.1% of disability adjusted life years – DALYs, while alcohol is responsible for 3.2% of deaths and 4.0% of DALYs and illicit drugs for 0.4% and 0.8%, respectively. Furthermore, in people younger than 24 road traffic crashes represent the first cause of death, mostly related to alcohol abuse or illicit drugs use, especially when young people go out from a discotheque [2].

Youth smoking and use of other substances usually peak in late adolescence. Rates of substance use among adolescents seem to be increased in the last decades, with an earlier initiation [3].

Most studies are focused on teenage students because, as reported in the health behavior in school-aged children (HBSC) study [4] adolescence is the most important time to structure personality, creating the sense of the group and increasing chance to experiment and adopt behaviours that could have negative health consequences [5].

However, risky behaviours acquired in teenage can be magnified or decreased during university when a person starts managing his life, reconsidering personal life expectative and his future [6].

For all the main risk factors, males show higher prevalence than females [7].

Several studies have shown an important prevalence in tobacco use among college students even if most of them plan to quit before they graduate (56.8%) [8]. According to many studies, the prevalence of smoking continues to rise among college students and tobacco use is not limited to cigarettes, but include also cigars and waterpipe (narghile) [9, 10]. Reasons for tobacco use among university students could be related to alleviation of stress, life problems, peer pressure, social acceptance, class history of smoking, lower educational level of parents and the desire to attain high personality profile [11].

In some countries, hazardous alcohol consumption has been identified as the number one substance abuse

Address for correspondence: Paolo Parente, Istituto di Sanità Pubblica, Sezione di Igiene, Università Cattolica del Sacro Cuore, Largo F. Vito 1, 00168 Rome, Italy. E-mail: p.parente@outlook.it.

problem during university life [12-14]. Approximately 40% of American college students were heavy drinkers, defined as having five or more drinks in a row in the past 2 weeks. Heavy drinking increases after high school graduation, but college students increase distinctly more then nonstudent age-mates [15]. Alcohol consumption is a matter not limited to users: in 2001 Hingson *et al.* reported that 10.5% full-time 4-year college students were injured because of drinking, 12% were hit or assaulted by another drunk college student and 2% were victims of alcohol-related sexual assault or date rape [16]. Furthermore, driving and riding after alcohol or marijuana use is common among college students with a risk for not only for drivers, but also for their passengers [17].

A comprehensive review of drinking habits in European universities found a range of studies suggesting that hazardous levels of alcohol consumption were associated with increased levels of smoking and drug addiction [3, 18, 19] as well as higher prevalence of polysubstance use (9.9% in males and 4.6% in females) among 19-21 year-olds university students [3].

Trend data analysis shows slight improvement in above mentioned risky behaviours among universitary students [20] even if controversial results exist, especially for alcohol and illegal drugs [16].

The knowledge of risky behaviour prevalence among young adults can be considered very important to identify and build targeted strategies that can be carried on to prevent their effects trough the development of policies and programs on health education and promotion. While data about consumption of tobacco, alcohol and drugs among students (11-15) has been provided by the Italian HBSC Report [4] few and outdated information about risky behaviours among Italian university population are available.

Therefore, the objective of this paper is to describe and represent the results of the project "Sportello Salute Giovani" with respect to risky behaviours in a large sample of students from Italian universities to guide public policy response to this issue.

MATERIALS AND METHODS

The information regarding the study population, and study design, including the development process of the "Sportello Salute Giovani" questionnaire, the questionnaire contents, the data entry and cleaning, the codification of variables and the sample characteristics, have been previously covered in another paper in this same monograph [21].

To meet the aim of the present article, only the section referred to hazardous behaviours for health (questions 25-42) was analyzed.

Three questions (number 25-27) investigated the smoking habit of the students interviewed: questions were aimed to define the frequency of smoking and the age of starting to smoke.

Questions 28 to 33 were addressed the habit of drinking, especially the frequency of drinking beer, wine or other alcoholic drinks, the age in which students started to drink and the first drunk and how many drunks students got in the last 12 months.

Four questions (number 34-37) were aimed to investigate use of drugs (cannabis) or other hard drugs and the frequency of smoking a joint.

Last five questions (number 38-42) investigated the frequency of going to the disco, the habit of driving (after drinking alcohol substances, overpassing the allowed limits, or taking drugs), and the use of psychoactive drugs.

For each question absolute and relative frequencies were calculated. Furthermore, analysis were stratified for sex, age and socio-economic status as described in the methodological article of de Waure *et al.* [21] Chi square was used to test the difference among sex age and socio-economic groups. A p value < 0.05 was considered statistically significant.

Tables and graphs were used to summarize results. Questions about similar topics were grouped together if they have comparable answers.

RESULTS

The complete tabular presentation of the data regarding this section of the study can be found in the Appendix which is available online as Supplementary Material at www.iss.it/anna.

The majority of students answered they did not smoke ever (52.6%). The percentage of habitual smokers was 23.8% and most of them revealed to smoke 5-15 cigarettes per day (57.8%) and to have started between 14 and 15 years (43.7%).

Most students affirmed to not drink or drink rarely wine (50.1%), other alcoholic drinks (64.4%) or beer (57.6%), but there is a great percentage of them that declared to drink once/twice per week or even daily beer (28.5), wine (32.2%) or alcoholic drinks (18.1%) *(Figure 1)*.

About 60% of the students affirmed to start consuming alcoholic drinks at the age of 16 or before and 40% of them revealed also to have been drunk for the first time in the same period, while about 30% declared to be drunk from 17 years or later *(Table 1)*. The 7.7% of the interviewed students affirmed to have more than ten binges in the last 12 months and 25.7% more than one (but less than 10) in the same period.

38.6% declared to smoke a joint at least once, but most of students (97.9%) affirmed not to use any other drug. Among drugs user, cocaine was the most used (56.2%), followed by ecstasy (13.1%) and LSD (10.2%).

About the use of psychoactive drugs our analysis showed that most of the interviewed students (percentages > than 90%) do not take this type of drugs. However, among the users 22.2% assume this kind of drugs without medical prescription.

Even if most students declared not to drive after exceeding allowed alcohol limits (80.3%) or after using drugs (92.3%), 5% of them admitted to do it drunk and 2.6% under the effect of drugs (especially cannabis).

Stratification by sex

Smoking was generally more common in men than in women (19.4% *vs* 18.2%; $p < 0.01$) and men daily smoke more cigarettes than women (27.6 % m *vs* 21.9% f; $p < 0.01$) but sex did not result associated to the age

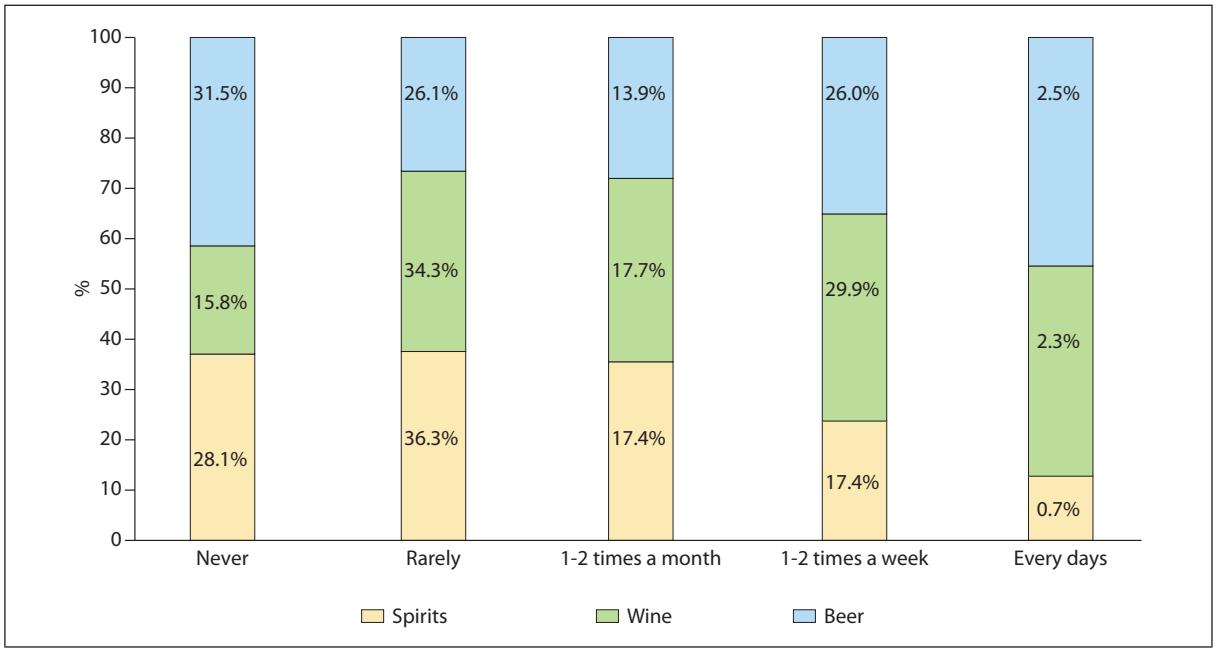

Figure 1
Frequency of alcohol consumption according to types of alcoholic beverages among Italian university students.

of starting. Among cigarette smokers significant differences between men and women were observed: 18.7% of males and 9.6% of females smoked 16-25 cigarettes per day ($p < 0.01$).

About the assumption of drugs the most students who declared to smoke a joint at least once were men. Women who never smoked a joint in the last 12 months accounted for 68.41% of the interviewed while men for 56.7%. The percentage of students who smoked a joint more than 40 times in the last year was 9.4% among men and 4.3% among women.

With respect to alcohol, significant differences among males and females were only demonstrated for drinking alcohol-starting age (14 years: 18.1% m *vs* 9.7% f; $p < 0.01$; 15 years: 21.1% m *vs* 15.6% f; $p < 0.01$).

The 10.7% of males *vs* only 1.7% of females revealed to often drive after exceeding allowed alcohol limits ($p < 0.01$) and 6.3% of male students *vs* 0.8% of women admitted to drive frequently after using drugs ($p < 0.01$).

Table 1
Age at first time of alcoholic drink/drinking spree

N = 8383 students	Age of first full alcoholic drink (%)	Age of first time getting drunk (%)
Never	13.0	32.3
11 years	1.0	0.4
12 years	1.3	0.6
13 years	3.5	2.0
14 years	12.5	7.4
15 years	17.4	11.3
16 years	25.6	16.9
17 years or later	25.7	29.2

Stratification by age groups

Significant differences were found with respect to psycho-drugs and alcohol consumption. In fact, 5.2% of students aged 18-21 answered to use psycho-drugs in comparison to 6.6% of 22-24 years old and 12.5% of 25-30 years old ($p < 0.01$). In the same way, the percentage of students who drink at least once a week beer or wine is significantly higher ($p < 0.01$) among 25-30 years old (3.6% for wine and 30.4% for beer) than among 22-24 (31.1% for wine and 27.6% for beer) and 18-21 (27.0% for wine and 23% for beer). No relevant difference was noted in smoking habits.

Stratification by socio-economic level

The most interesting difference associated to self-perceived socio-economic status regards the percentage of students drinking alcohol daily, even if clear trend cannot be identified. This percentage is significantly higher ($p < 0.01$) among those who affirmed to have a high income (4.2% for the ones who said to drink spirits, 7.2% for wine, 5.5% for beer) respect to those who affirmed to have a middle income (0.5% for spirits, 1.9% for wine, 2.5% for beer) or a lower income (1.1% for spirits, 3.1% for wine, 2.4% for beer).

DISCUSSION

The patterns of smoking habits and alcohol or drug use among university students enrolled in the present survey show the presence of several risky behaviours: about 24% currently smokes, 89% drinks at least rarely beer, wine or spirits and a great percentage (42.2%) declared to drink at least weekly one of the alcoholic beverages. Furthermore, about 40% of students smoked at least a joint, about 2% used other drugs (mostly cocaine) and more than 20% who used psychoactive drugs did not have a medical prescription for it.

However, as shown in previous studies, tobacco, alcohol and drug consumption is a consolidated habit that starts early [4]: among smokers, less than 20% starts smoking later than 16 years old and 10% is already an ex-smoker. Among drinkers, 56.1% has been drunk for the first time before the age of 17.

Most students answered not to drive after exceeding allowed alcohol limits or after using drugs (both cannabis or hard drugs) but 5% of students admitted to frequently drive drunk.

Looking at the sex difference, males show higher prevalence than females in all risky behaviours, but it is the closer sex gap, especially for tobacco use, to represent a global public health concern [22]. For example, in the HBSC study, among 15 years old students the prevalence of current smokers was 19%, for both males and females [4].

The overall prevalence of smokers (23.8%) is consistent with other data available for the general population. In Italy, in 2012, the proportion of smokers among population aged 14 and over amounted to 21.9%, according to a trend characterized by a slow and steady decline in the percentage of smokers, from 2001 to 2012. Cigarettes smoking is more prevalent among young people aged 25-34 years (28.6%) and among adults aged 45-54 years (28.7%). A previous study on medical student of the University of Milan reported that 22.4% were smoker, 56.3% never smoker and 19.6% ex-smokers [23], while in Camerino University the percentages were, respectively, 28.1%, 46.9% and 6.6% [24]. Lower prevalence of smokers in "Sportello Salute Giovani" survey could be partially explained by the faculties attended by the responders: as a matter of fact, a great difference between medical and non medical students was already found in Florence University, where 20.2% of future doctors were smokers against about 40% of jurisprudence and agrarian students [25]. Otherwise, a great heterogeneity of smoking prevalence among university students is reported in international literature: Thompson *et al.* have found an overall smoking rates of 17.2% (18.6 in males and 16.6% in females) [8]; in other studies, lifetime prevalence rate of cigarette smoking ranged from 9% to 45.7%, while current prevalence of cigarette smoking ranged from 1.8% to 32.9% [26, 27].

Regarding alcohol, in Italy the prevalence of abstainer adults (older than 15) is 32.4%, amounted to 18.6% for men and 45.2% for women [28]. Among young people the prevalence of consumers at risk is 14.1% for men and 8.4% for women, confirming the decreasing trend at national level in recent years even if with an increasing prevalence of binge drinking (21.8% for 19-24 years old men and 7.9% for 19-24 years old women) [29].

In our survey, the prevalence of students who declared to drink weekly at least one of the alcoholic beverages was 42.2%, higher in males (60.8%) than in females (32.9%) (data not shown). This regular alcohol consumption is significantly higher in respect of younger students (15 years old) (32% overall, 40% in males and 24% in females) [4], but also in respect of the 23.2% found among the students of Camerino University [24].

Other studies have shown several adverse consequences from alcohol consumption in university students ranging from violence and physical harm [30] to unplanned and unintended sexual intercourse [31]. One of the most worrisome problem associated with alcohol use is represented by road traffic crashes, especially among young adults: this survey highlights the great risk arising from students who drive frequently drunk (5%) or under the effect of drugs (2.6%), or who sometimes drive under the effect of this substances (respectively, 15.1% and 5.1%).

Data about drug use is interesting because a great number of students (4 out of 10) declared to smoke at least a joint, 2% reported to use illigal drugs and 22.2% of psychoactive drugs users assumed this kind of drugs without medical prescription. Kračmarová *et al.* found similar results: 50.4% of their sample have already tried an illegal drug and the most used substance was cannabis (46.7%), followed by cocaine (13.3%) [24]. Among the psychotropic drugs used by the students of the Medical School of the Federal University of Minas Gerais in Brazil, marijuana was reported only by 16.5% of students, LSD by 6.9% and cocaine consumption was rarely mentioned [32]. "Ever used" reached 33% for marijuana, 1.1% for cocaine, 2.1% for amphetamines without prescription, 6.9% for not prescribed benzodiazepines and 5.8% for not prescribed antidepressants in medical students at the Pontificia Universidad Católica de Chile [33].

Several studies have shown the association among risky behaviors [34], but also between risky behaviours and healthy lifestyle [35]. Even if "Sportello Salute Giovani" survey was not primarily designed to test this kind of association, further studies in this direction could be interesting to help identifying subjects at high risk and promote targeted strategies to improve health in this age.

CONCLUSIONS

The "Sportello Salute Giovani" survey suggests that the frequency of risky behaviours in Italian university students is not reassuring, although they should be aware about the negative consequences on their and others health because of their educational level. An important reason of concern is the relative high prevalence of students driving under the effect of illicit substances (alcohol and drugs). These behaviours and habits could take advantage from education on healthy lifestyle at school. Targeted programs should starts earliest, but they should be reinforced during university, together with a huge effort towards cost-effective policies at national and international level.

Conflict of interest statement

None.

Submitted on invitation.
Accepted on 16 April 2015.

REFERENCES

1. World Health Organization. *The World Health Report 2002. Reducing risks, promoting healthy life.* Geneva: WHO; 2002.
2. Arria AM, Caldeira KM, Vincent KB, Garnier-Dykstra LM, O'Grady KE. Substance-related traffic-risk behaviors among college students. *Drug Alcohol Depend* 2011;118(2-3):306-12.
3. Melchior M1, Chastang JF, Goldberg P, Fombonne E. High prevalence rates of tobacco, alcohol and drug use in adolescents and young adults in France: results from the GAZEL Youth study. *Addict Behav* 2008;33(1):122-33.
4. Cavallo F, Giacchi M, Vieno A, *et al. Studio HBSC in Italia (Health behavior in School-aged children): Rapporto sui dati 2010.* Roma: Istituto Superiore di Sanità; 2013. Available from: www.iss.it/publ/index.php?lang=1&id=2685&tipo=5.
5. Herzlich C. *Health and illness.* London: Academic Press; 1973.
6. Conner M, Norman, P. *Predicting health behaviour. Research and practice with social cognition models.* Buckingham: Open University Press; 1995.
7. World Health Organization. *The global burden of disease: 2004 update.* Geneva: WHO; 2008.
8. Thompson B, Coronado G, Chen L, Thompson LA, Halperin A, *et al.* Prevalence and characteristics of smokers at 30 Pacific Northwest colleges and universities. *Nicotine Tob Res* 2007;9(3):429-38.
9. Rigotti NA, Lee JE, Wechsler H. US college students' use of tobacco products: results of a national survey. *JAMA* 2000;284:699-705.
10. Zahlan L, Ghandour L, Yassin N, Afifi R, Martins SS. Double trouble. Exploring the association between waterpipe tobacco smoking and the nonmedical use of psychoactive prescription drugs among adolescents. *Drug Alcohol Depend* 2014;145:217-23.
11. Kegler MC, Kingsley B, Malcoe LH, Cleaver V, Reid J, *et al.* The functional value of smoking and non-smoking from the perspective of American Indian youth. *Fam Commun Health* 1999;22:31-42.
12. Murphy F, Murphy M. The use of social marketing messages to reduce binge drinking among Irish third level female students. *Academic Public Administration Studies Archive – APAS*; 2010.
13. McCabe SE. Gender differences in collegiate risk factors for heavy episodic drinking. *J Stud Alcohol Drugs* 2002;63:49.
14. Webb E, Ashton C, Kelly P, *et al.* Alcohol and drug use in UK university students. *Lancet* 1996;348:922-5.
15. O'Malley PM, Johnston LD. Epidemiology of alcohol and other drug use among American college students. *J Stud Alcohol Suppl* 2002;(14):23-39.
16. Hingson RW1, Zha W, Weitzman ER. Magnitude of and trends in alcohol-related mortality and morbidity among US college students ages 18-24, 1998-2005. *J Stud Alcohol Drugs Suppl* 2009;(16):12-20.
17. Whitehill JM, Rivara FP, Moreno MA. Marijuana-using drivers, alcohol-using drivers, and their passengers: prevalence and risk factors among underage college students. *JAMA Pediatr* 2014;168(7):618-24.
18. Wicki M, Kuntsche E, Gmel G. Drinking at European universities? A review of students' alcohol use. *Addict Behav* 2010;35:913-24.
19. Woolard R1, Liu J, Parsa M, *et al.* Smoking is associated with increased risk of binge drinking in a young adult Hispanic population at the US/Mexico border. *Subst Abus* 2014;9:0 [Epub ahead of print].
20. Mooney H. Teens' smoking, drinking, and drug taking at decade low in England. *BMJ* 2014;349:g4828.
21. de Waure C, Poscia A, Virdis A, Di Pietro ML, Ricciardi W. Sportello Salute Giovani project: study population, questionnaire, data management and sample description. *Ann Ist Super Sanità* 2015;51(2):96-8.
22. Khor YL, Foong K, Farizah H, *et al.* Factors associated with tobacco use among female college and university students in Kuala Lumpur, Malaysia. 2006. Available from: www.seatca.org/dmdocuments/37_factors_associated_with_tobacco_use_among_female_college_and_university_students_in_kuala_lump.pdf.
23. Rea B1, Tortorano AM. Tobacco smoking among medical students of the University of Milano, Italy. *Ann Ig* 2006;18(6):559-63.
24. Kračmarová L, Klusoňová H, Petrelli F, Grappasonni I. Tobacco, alcohol and illegal substances: experiences and attitudes among Italian university students. *Rev Assoc Med Bras* 2011;57(5):523-8.
25. Lucenteforte E, Vannacci A, Cipollini F, *et al.* Smoking habits among university students in Florence: is a medical degree course the right choice? *Prev Med* 2010;51(5):429-30.
26. Babatunde OA, Elegbede OE, Ayodele LM, *et al.* Cigarette smoking practices and its determinants among university students in Southwest, Nigeria. *J Asian Sci Res* 2012;2(2):62-9.
27. Ngahane BHM, Luma H, Mapoure YN, Fotso ZM, Ze EA. Correlates of cigarette smoking among university students in Cameroon. *Int J Tuberc Lung Dis* 2013;17(2):270-4.
28. World Health Organization. *Global status report on alcohol and health.* Geneva: WHO; 2014. Available from: www.who.int/substance_abuse/publications/global_alcohol_report/msb_gsr_2014_2.pdf?ua=1.
29. Scafato E, Gandin C, Galluzzo L, Martire S, Di Pasquale L, Ghirini S, for the CSDA Working Group (Centro Servizi Documentazione Alcol). *Epidemiology and alcohol-related monitoring in Italy and in the Regions. Evaluation of the National Observatory on Alcohol – CNESPS on the impact of the alcohol consumption in support for the implementation of the activities of the National Alcohol and Health Plan. Report 2013*. Roma: Istituto Superiore di Sanità; 2013. (Rapporti ISTISAN, 13/3).
30. Hope A, Dring C, Dring J. *College lifestyle and attitudinal national (CLAN) survey. The health of Irish students.* Dublin: Health Service Executive; 2005.
31. Poulin C, Graham L. The association between substance use, unplanned sexual intercourse and other sexual behaviours among adolescent students. *Addiction* 2001;96:607-21.
32. Petroianu A1, Reis DC, Cunha BD, Souza DM. Prevalence of alcohol, tobacco and psychotropic drug use among medical students at the Universidade Federal de Minas Gerais. *Rev Assoc Med Bras* 2010;56(5):568-71.
33. Romero MI, Santander J, Hitschfeld MJ, Labbé M, Zamora V. Illicit and psychotropic drug use among medical students at the Pontificia Universidad Católica de Chile. *Rev Med Chil* 2009;137(4):459-65.
34. Davoren MP, Shiely F, Byrne M, Perry IJ. Hazardous alcohol consumption among university students in Ireland: a cross-sectional study. *BMJ Open* 2015; 29;5(1):e006045.
35. Moreno-Gómez C, Romaguera-Bosch D, Tauler-Riera P, *et al.* Clustering of lifestyle factors in Spanish university students: the relationship between smoking, alcohol consumption, physical activity and diet quality. *Public Health Nutr* 2012;15(11):2131-9.