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A study regarding alcohol consumption and knowledge on alcohol among Romanian medical students

Studiu privind consumul de alcool și cunoștințele despre alcool la studenții mediciniști români

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Abstract

Background. Young adults are at the highest risk for alcohol-related harm.

Aims. The purpose of this study was to assess alcohol consumption among Romanian university medical students, as well as their knowledge regarding alcohol and the effects of alcohol consumption on the body.

Methods. A cross-sectional study was applied on 458 undergraduate medical university students selected randomly from the "Iuliu Haţieganu" University of Medicine and Pharmacy Cluj-Napoca. Of these students, 166 were males and 292 were females. The mean age of the students was 21.90 ± 3.22 years. Participants completed a self-administered questionnaire consisting of questions assessing quantity and frequency of alcohol intake, and alcohol knowledge. Each participant received a total score with regard to their alcohol and drinking practice, ranging from 0 to 31. Data were analyzed using SPSS version 20.

Results. Male students drank more units of alcohol per week than female students (10.66 units of alcohol/week for males versus 7.06 units of alcohol/week for females, p< 0.001).The study revealed that students had relatively low levels of knowledge regarding the effect of alcohol on the body, myths about alcohol and facts about alcohol beverages (M = 14.49 ± 4.10). Males had statistically significantly higher scores than females (15.42 ± 4.11 versus 14.00 ± 3.99; p< 0.001), and students in the third year of medical school had higher knowledge scores than first year students.

Conclusions. This study showed a high alcohol consumption among Romanian medical university students. Efforts to educate students about drinking practices should be enhanced throughout university.

Key words: students, alcohol consumption, alcohol knowledge.

Rezumat

Premize. Adulții tineri sunt cei mai expuși pericolelor datorate consumului excesiv de alcool.

Obiective. Scopul acestui studiu a fost de a estima consumul de alcool la studenții mediciniști, precum și cunoștințele acestora legate de alcool și de efectele consumului de alcool asupra organismului.

Metode. S-a folosit un studiu transversal, care a inclus 458 studenți de la Universitatea de Medicină şi Farmacie „Iuliu Haţieganu", Facultatea de Medicină, Cluj-Napoca. Dintre participanții la studiu, 166 au fost băieți și 292 au fost fete. Vârsta medie a lotului a fost de 21,90 ± 3,22 ani. Studenții au completat un chestionar autoadministrat, care a cuprins întrebări referitoare la consumul de alcool (cantitate-frecvență), precum și întrebări privind cunoștințele legate de alcool. Fiecare participant a obținut un scor de la 0 la 31, legat de practicile referitoare la consumul de alcool. Datele au fost analizate în programul SPSS versiunea 20.

Rezultate. Băieții au consumat semnificativ mai mult alcool decât fetele (10,66 unități alcool/săptămână față de 7,06 unități alcool/ săptămână la fete, p< 0,001). Studiul a arătat că studenții au relativ puține cunoștințe legate de miturile despre alcool și efectele asupra organismului (scor mediu al lotului 14,49±4,10 față de 31 maxim). Băieții au avut un scor semnificativ mai crescut decât fetele (15,42±4,11, față de 14,00±3,99; p< 0,001). Studenții din anul al treilea prezintă un scor al cunoștințelor mai mare, decât al celor din primul an de studiu.

Concluzii. Studiul scoate în evidență un consum relativ crescut de alcool la studenții mediciniști. Totodată, rezultatele studiului arată necesitatea educării studenților asupra obiceiurilor defectuoase relaționate consumului excesiv de alcool.

Cuvinte cheie: studenți, consum de alcool, cunoștințe legate de alcool.

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Introduction

Young adults aged 18-29 years are at the highest risk for both short and long-term alcohol-related harm. In particular, university students have been repeatedly identified as being especially vulnerable, with surveys revealing that the majority of university students drink alcohol and some of them drink at hazardous or harmful levels (Baker & Stockton, 2012). A few studies have indicated that students on the whole have a lack of knowledge concerning mood modifiers, including alcohol. Most of the authors of these previous studies concluded that knowledge about alcohol and drugs was not very good, and they recommended adequate educational programs on mood modifying substances (Granville-Chapman et al., 2001).

Interest in preventing alcohol abuse among this population has prompted the development and implementation of a range of intervention and prevention programs. Although there is mixed evidence with respect to the efficacy of these programs in reducing alcohol consumption, individuals still require knowledge about responsible drinking practices so they can make informed decisions about their alcohol consumption (White et al., 2005). Studies in this area, most of which have been conducted on university students in the USA, generally reveal low levels of knowledge in relation to alcohol and drinking practices.

Objectives

The objective of this study was to estimate students' alcohol consumption, for both males and females, and to determine students' knowledge about alcohol so as to provide information for health educators as an aid to program development.

Hypothesis

In Romania, there are few studies investigating alcohol consumption among university students, and none of them has examined knowledge about alcohol and safe drinking.

Material and methods

Research protocol

This study received the approval of the Ethical Committee of "Iuliu Hatieganu" University, No. 765/17.05.2013. The participants in the study gave their informed consent.

a) Period and place of the research

The study was performed during the academic years 2013-2014 and 2014-2015. The participants were randomly selected first, third and fourth year students at the Medical Faculty of "Iuliu Hațieganu" University Cluj-Napoca.

b) Subjects and groups

The sample comprised 458 male and female undergraduate students.

The Romanian education system requires 6 years of university education in medical school. Of these students, 166 were male and 292 were female. The mean age was 22.19 (SD=3.22) for males and 21.74 (SD=3.21) for females, with a mean age of the sample of 21.90 (SD=3.22). Of the study group, 144 participants (30.76%) were in the first year, 171 (36.53%) were in their third year and 153 (32.69%) were in the fourth year of university.

c) Tests applied

Participants completed a self-administered questionnaire that consisted of questions assessing quantity and frequency of alcohol intake, and alcohol knowledge. The questionnaires were administered during mandatory activities (such as practical activities) to encourage participation. All students agreed to complete the questionnaire. The informed consent form explained both the study and participants' rights. These rights included the options to not participate or stop at any time without any negative consequences. During data collection, the research team was present in the classrooms. The instrument was called Student Alcohol Questionnaire (Engs, 1975). Permission was granted to use the questionnaire for this study from researchers at Indiana University. The 31 alcohol knowledge true/false questions were based on information found in pamphlets published by the American Medical Association, Alcoholics Anonymous and the National Council of Alcoholism. Some questions were adapted to Romanian customs and regulations. The questions contained items regarding: facts about alcohol (e.g. alcohol is usually classified as a stimulant); the effect of alcohol on the body (e.g. drinking milk before drinking an alcoholic beverage will slow absorption of alcohol into the body); myths about drinking (e.g. drinking coffee or taking a cold shower can be an effective way of sobering up); and facts about alcoholic beverages (e.g. beer usually contains 2-12% alcohol by volume) (Engs & Hanson, 1989). The reliability of the Romanian version of Student Alcohol Questionnaire is similar to that of the English version (Engs & Hanson, 1994).

In the administration of the test, students were asked to mark "true", "false" or "don't know". The questionnaires were anonymous and confidential so as to minimize either faked true or faked false answers. The questionnaire took approximately 25-30 minutes to complete. Those who participated in this study did so voluntarily and were offered no compensation.

The instrument assessed the usual frequency and quantity of beer, wine and spirits consumed by the student. The frequency response categories were assigned constant values allowing to calculate units per week (every day = 7.0, at least once a week but not every day = 3.5, at least once a month but less than once a week = 0.5, more than once a year but less than once a month = 0.12, once a year or less or not at all = 0). To compute the drinks of alcohol consumed on a weekly basis, a mean score was calculated by multiplying the quantity by the recoded frequency weight for each beverage type and summing the three scores.

A drink was defined as a glass of any alcoholic beverage (beer, wine, spirits), assuming that a standardized glass of beer, wine or spirits contains a similar quantity of alcohol (10-12 g).

Drinking knowledge score

Each participant received a total score, ranging from 0 to 31. Participants received one mark for every correct answer on the questionnaire and the total score represented overall knowledge about alcohol and drinking practices.

This total score was calculated by summing one mark for every correct answer on the questionnaire. Knowledge scores were calculated both for males and females.

d) Statistical processing

As this study employed an exploratory quantitative approach, the data in this paper were primarily presented using descriptive statistics and were analyzed using a series of t-tests and chi-square analyses, and ANOVA with Games Howell post-hoc testing for multiple comparisons. Data were analyzed in SPSS 20.

Results

The results of our study showed that beer was the favorite drink for both males and females. Males drank significantly more alcohol than female students (Table I).

Table I

Units of alcohol consumed by the students

Variable	Gender	Mean	Std. deviation	p-value (t test)
Units of beer/week	Male	5.95	8.13	0.000
	Female	3.26	6.47	
Units of wine/week	Male	3.05	5.18	0.131
	Female	2.50	4.87	
Units of spirits/week	Male	1.66	3.35	0.518
	Female	1.30	2.96	
Total units of alcohol/week	Male	10.66	12.44	0.001
	Female	7.06	10.65	

Out of 31 possible correct answers, the total group obtained a mean score of 14.5, which represented 46.77% or slightly less than half of the questions answered correctly. Many students adhered to myths about alcohol. Approximately 70.7% subscribed to the myth that alcohol is a stimulant and about 91.9% thought that drinking coffee or taking a cold shower was an effective way of sobering up. Most of the students (81.8%) did not know how much alcohol distilled alcoholic beverages contain (Table II).

There were many misconceptions regarding the actions of alcohol on the body or facts about beverages. About 33% of students did not know that the legal definition for intoxication in Romania regarding driving was 0.08% blood alcohol concentration (BAC). About 90.4 students did not know that eating or drinking milk before drinking alcohol could slow down the absorption of alcohol into the body (Table II).

The study reveals a highly significant relationship ($p<.001$) between gender and scores, with a higher percentage of male students scoring above the mean than female students. This could mean that in classes or universities primarily composed of female students, more emphasis should be placed on information about alcohol due to their apparent greater lack of knowledge about the subject (Table III). There appeared to be a significant statistical difference relationship between class level and students' alcohol knowledge, students in the third year of study (at the medical university) having higher knowledge scores than students in the first year of study. Students with a background of Orthodox, Catholic and Reformed religion, which allows drinking, appeared to have higher scores than students with backgrounds that do not allow drinking (Islamic) or without religion, but statistical analyses of scores and religion indicate that this relationship was not statistically significant ($p=0.43$).

Table II

Questions about alcohol and correct answers

Nr.	Question content	Students' correct answers (percentage %)
1.	Drinking milk before drinking an alcoholic beverage will slow the absorption of alcohol into the body (t)	9.6
2.	Wines are made by fermented grains (f)	75.6
3.	Alcoholic beverages do not provide weight-increasing calories (f)	65.6
4.	In Romania/other countries, drinking is usually considered an important socializing custom in business, for relaxation and for improving interpersonal relationships (t)	53.4
5.	Alcohol is usually classified as a stimulant (f)	29.3
6.	Alcohol is not a drug (f)	47.9
7.	In Romania, a blood alcohol level of 0.08 g per hundred is an offense for driving on public roads (t)	66.7
8.	Approximately 10% of fatal highway accidents are alcohol related (t)	56
9.	Alcohol was used for centuries as a medicine in childbirth, for sedation and surgery (t)	55.6
10.	Table wines contain 2-12% alcohol by volume (t)	57.9
11.	Many people drink to escape from problems, loneliness and depression (t)	86.5
12	Liquor mixed with soda pop will affect you faster than liquor drunk straight (f)	29.5
13	The most commonly drunk alcoholic beverages in Romania are distilled liquors (tuica, vodka) (t)	8.3
14.	A person cannot become an alcoholic by just drinking beer (f)	26.3
15	A 150 pound person, to keep his/her blood alcohol concentration below the legally intoxicated level, would have to drink fewer than 3 beers in an hour (f)	18.6
16	To prevent getting a hangover, one should sip one's drink slowly, drink and eat at the same time and not drink over one's limit (t)	57.3
17	Responsible drinking can result in relaxation, enhanced social interactions and a feeling of well-being (t)	74.1
18	Distilled liquors (whisky, gin, vodka) usually contain about 15-20% alcohol by volume (f)	18.2
19	Moderate consumption of alcoholic beverages is generally not harmful to the body (t)	53.4
20	An ounce of whisky contains about 60 calories (f)	5.3
21	Many people drink for social acceptance, because of peer group pressure and to gain adult status (t)	73.3
22	It takes about as many hours as the number of beers drunk to completely burn up the alcohol ingested (t)	18.6
23	Liquors such as gin, scotch and whiskies are usually distilled from mashes made from fermenting grains (t)	51.6
24	There is usually more alcoholism in a society that accepts drunken behavior than in a society that frowns on drunkenness (t)	39.3
25	Beer usually contains 2-12% alcohol by volume (t)	64.1
26	Eating while drinking will have no effect on slowing down the absorption of alcohol in the body (f)	56.6
27	Drinking coffee or taking a cold shower can be an effective way of sobering up (f)	8.1
28	Wines throughout history have been commonly drunk at religious ceremonies and family gatherings (t)	87.8
29	Throughout history, many societies have banned alcohol for religious reasons (t)	54.1
30	Alcohol has only been used in very few societies throughout history (f)	38.9
31	Liquor taken straight will affect you faster than liquor mixed with water (t)	61.8

The study also analyzed the knowledge scores in students living in different conditions. Apparently students who lived in university campus had higher scores of knowledge ($M=15.28$, $SD=3.73$) than students who lived with their parents or in rent apartments, but these differences were not statistically significant ($p=.09$) (Table III).

Table III
Demographic variables and score of knowledge

Variable	Number of respondents	Mean score ± SD
Year of study[a]		
First	144	14.27 ± 3.57
Third	171	15.51± 3.81
Fourth	143	14.99± 4.61
Gender[b]		
Male	166	15.43 ± 4.11
Female	292	14.06 ± 3.99
Religion[c]		
Without	23	14.30 ± 4.07
Orthodox	265	14.81± 3.89
Catholic	28	15.71 ± 3.90
Reformed	18	13.53 ± 4.95
Neoprotestant	18	13.95 ± 3.52
Islamic	6	13.66 ± 3.82
Living conditions[d]		
Home with parents	11	14.08 ± 4.41
Rent apartment alone	133	13.94 ± 4.02
Rent apartment with friends	179	14.78 ± 3.98
University campus	119	15.28 ± 3.73
Private university building	16	14.54 ± 4.09

[a] ANOVA F (2,465) = 9.26, p< .001; [b] t (2,466) = 3.640, p<.001; [c] ANOVA F (5,354) = 0.973, p=0.43; [d] ANOVA F (4,450) = 1.990, p=0.09

Discussion

College student drinking has been studied extensively in North America (Wechsler & Nelson, 2001), the problem receiving frequent media attention, research funding and intervention programming (***, 2002). Several factors have been found to be associated with alcohol use, abuse and dependence, such as genetic factors, environmental factors, emotional and psychological instability, gender, sexual identity, cognitive factors, peer pressure, family history and achievement (Presley, 2002). Although the problem of alcohol use is evident in most countries of the world, there is a comparatively small amount of research from a few European countries (Karam et al., 2007) and from Australia (Dowling et al., 2006; Lindsay, 2001).

According to Espad Report, the trend in alcohol use in Romania remains high, associated with an increase in illicit drug use (***, 2015). Studies have shown a higher intake of alcohol among male students compared to female students (Lorant et al., 2013).

The results of the present study appear to confirm the opinions that factual information held by students concerning alcohol and drinking is lacking. The total sample answered slightly less than half of the knowledge questions correctly. Results from this study, particularly the finding that students with more alcohol knowledge also drank more, suggest that interventions have to be focused on them to reduce drinking behavior. On the other hand, the generally low score of all participants suggests that these young people are potentially harming themselves without knowing it.

The highest scores of knowledge are those of medical school students in their third year of study. Healthcare professionals represent the main group of health workers with an important role in prevention, early detection and treatment of alcoholism. These suggest that greater efforts should be made to improve alcohol education at the university level.

The study showed that many students did not know the alcoholic content of alcoholic beverages, especially distilled liquors, so they would not be able to estimate the safe level of drinking. This can lead to an increase in alcohol consumption levels. Students in Romania had relatively poor knowledge of alcohol metabolism, risky drinking levels, and permissible consumption levels for driving. Approximately 8.1% of the participants correctly identified that nothing (i.e. only time, rest and sleep) can be done to lower BAC levels. This lack of knowledge can engage students in binge drinking (White et al., 2003). Students who binge drink are more likely to experience a wide range of problems, including academic difficulties, social conflict, risky sexual behavior, risky driving behavior, vandalism, injury and alcohol overdose (Nasui et al., 2016; Guo et al., 2016). Binge drinkers were also more likely to engage in other risk behaviors such as tobacco and illicit drug use (Miller et al., 2007). In addition to the harm drinkers cause to themselves, they cause problems to others on and around the campus, to the larger campus community (MacArthur et al., 2012; Mekonen et al., 2017).

Policies of excessive drinking prevention and alcohol poisoning should include education about alcohol and its effects, confidential help for those in difficulty and procedures for managing individuals with drinking problems.

Although further research is required to investigate the impact of educational interventions on knowledge and the impact of improving knowledge on consumption (Sharmer, 2001), the results of this study highlight the need for increased alcohol awareness, particularly in relation to responsible drinking practices among university students. Social norms initiatives have been demonstrated to be effective in reducing alcohol use on college campuses by changing the perceived norms related to alcohol use (Perkins, 2003).

Regardless of whether education is an important component of prevention and intervention programs for alcohol abuse, knowledge on drinking practices is necessary for individuals to make an informed decision about their alcohol consumption (Martin et al., 1991). Efforts to educate students about drinking practices should be enhanced throughout university. In fact, the low average scores of the study group may suggest that it is important to implement alcohol education programs at the earliest feasible age, such as primary or secondary school (Wechsler et al., 2002).

Conclusions

1. The study reveals a high percentage of drinkers, among both males and females.

2. Low students' knowledge about alcohol and drinking practices suggests the need for implementing alcohol education programs among students.

Conflicts of interests
There are no conflicts of interests.

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