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Alcohol use among medicine and law students in Poland

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ABSTRACT

Introduction. Alcohol, together with drug use such as marijuana, is a major health concern that may influence the life of both doctors and medicine students. It is therefore important to investigate their habits associated with those hazardous behaviors.

Material and methods. A voluntary survey containing 12 questions regarding their drinking habits and marijuana use was sent to law and medicine students from two cities in Poland, Poznan and Lublin. 814 responses were collected and the results were compiled using STATISTICA 10 program.

Results. Mean age of alcohol initiation was revealed to be very similar in all groups at below 16 years of age. Although majority of students drink less than once a week (41% male and 65.7% female), men were found to use alcohol much more frequently and in higher quantities than female students. Half of future doctors would stop at the lowest stage on a proposed alcohol intoxication scale, while 11.6% would venture to the highest, third one. Those values for law students were 36.2% and 26%, respectively. 70% of men and 52.9% of women have tried marijuana. Majority of them smoke less than once a month, but almost a quarter of law students and 15% of medicine students do it at least once a month.

Conclusions. More emphasis should be put on educating future doctors and general public about dangers associated with hazardous drinking and cannabis use. Prevention of such behaviors should be conducted at an age as young as possible.

Keywords: drugs, addiction, hazardous drinking, marijuana.

Introduction

Alcohol is one of the main causes of death in highly developed countries. In Europe, a quarter of deaths among people aged 15–29 years old is linked to alcohol and dangerous behaviors associated with its consumption [1]. Alcohol overuse is commonly associated with pathological population margin. It should be noted that alcohol is dangerous not only among chronic alcohol abusers, but also among casual consumers (binge drinking). Alcohol overuse also favors experimenting with other psychoactive and illegal substances. Medicine students are no exception and their alcohol drinking habits are similar to other people their age. Future doctors with unhealthy habits may be less effective in educating their patients on leading a healthy lifestyle [2]. Alcohol abuse among students may lead to injuries, conflicts, violent behavior, sexual abuse, learning problems and death [3]. Young, active people with above average intelligence tend to have high levels of discipline, which may give them false sense of control over their addictions. This may further weaken their awareness and lead to reckless and dangerous behaviors. Students often don't realize that the level of alcohol intoxication they consider typical for a night out with friends is indicative of alcohol poisoning. This study attempts to evaluate drinking habits of medical students. As future doctors, they should exhibit a high level of knowledge about the influence of alcohol and its chronic and casual abuse, on human

body. At the same time, doctors are often associated with alcohol abuse.

Material and methods

A voluntary survey was conducted in March 2015. Anonymous questionnaires were sent out and placed on internet forums for medical and law students in Poznan and Lublin to fulfill. The survey consisted of 12 questions regarding basic information of the participants (sex, age, university etc.) and their experiences associated with alcohol and marijuana use (**Table 1**). 814 students filled out the questionnaire.

The characteristics of the group are shown in **Table 2**.

The results were compared among medicine and law students. The groups were also divided by the city of residence and of course, male and female participants. Alcohol intoxication levels were suggested based on an artificial scale [5] translated and presented in **Table 3**.

Only stages 2 to 4 were presented as options in the questionnaire.

The results were compiled using STATISTICA 10 program. Group characteristics were created using basic statistics.

Results

Mean age of alcohol initiation was revealed to be 15.62 years for both men and women. Those from the village started later, at age 15.99, as compared to city residents at 15.38 years. This age for medicine doctors turned out to be 15.55 years compared to 15.38 for law students. No significant differences were revealed between any of those groups. An average student has his/her first contact with alcohol being under 16 years old. That's when they graduate from gymnasium and proceed to high school. The transition, associated with new environment, more freedom and influence from older students may facilitate alcohol initiation at this particular age.

Table 4 represents the frequency of alcohol consumption of students in aforementioned groups.

Table 1. Questions in the form

Age	
Sex	Male/Female
Faculty	Medicine/Law
Faculty year	1–6
Residence	– city above 500 000 inhabitants – city between 100 000 and 500 000 inhabitants – city below 100 000 inhabitants – village
University residence	Poznań/Lublin
Age of alcohol initiation	
How often do you drink alcohol	Every day 5–6 times a week 3–4 times a week 1–2 times a week less than once a week
How much alcohol do you consider safe/normal to drink during one evening? * one shot of vodka (50 ml) equals one beer; one shot of vodka equals one drink unless you know your favourite drink contains more shots of vodka	1–2 shots 3–4 shots 5–6 shots 7–8 shots more than 10 shots
What kind of behaviour do you consider indicative of having drunk too much alcohol * In short, when do you think you've had enough to drink	Self control impairment, sluggishness, verbosity Coordination and balance impairment, aggression Sleepiness, deep self control and balance impairment, mumbling, unsteady walk
Have you ever tried marijuana?	Yes/No
If yes, how often do you smoke?	Every day Few times a week Once a week Few times a month Less than once a month

Table 2. Clinical characteristics of the study group

N	814
Sex (M/F)	307/507
Age (years)	22.5 (18–40)
Faculty (medicine/law)	398/416
Year	1st – 152 2nd – 181 3rd – 161 4th – 126 5th – 103 6th – 91
Residence	City above 500 000 inhabitants – 304 City between 100 000 and 500 000 inhabitants – 196 City below 100 000 inhabitants – 206 Village – 108
University residence (Poznań/Lublin)	592/222
Alcohol initiation age	15.46 (6 – 23)
Frequency of alcohol consumption	Less than once a week – 459 1–2 times a week – 247 3–4 times a week – 74 5–6 times a week – 18 Every day – 16
Amount of alcohol considered safe/normal to drink during one evening (measured in shots of vodka or equivalent)	Between 1 and 2 – 182 Between 3 and 4 – 287 Between 5 and 6 – 206 Between 7 and 8 – 90 More than 10 – 49
Behavior considered indicative of having drunk too much alcohol	Self control impairment, sluggishness, verbosity – 353 Coordination and balance impairment, aggression – 307 Sleepiness, deep self control and balance impairment, mumbling, unsteady walk – 154
Past or current marijuana use (yes/no)	483/331
Frequency of marijuana use	Every day – 11 Few times a week – 25 Once a week – 12 Few times a month – 41 Less than once a month – 337

Table 3. Stages of alcohol intoxication based on [5]

Blood alcohol concentration	Exhibited behavior
Stage 1. 0.3 – 0.4 permille	Reduction of self-criticism; high mood and self-confidence. Longer reaction time and worsened coordination
Stage 2. 0.5 – 0.6 permille	Self control impairment, sluggishness, verbosity
Stage 3. 0.7 – 2.0 permille	Further coordination and balance impairment, aggression; lower concentration and balance; blood pressure and heart rate elevated
Stage 4. 2.0 – 3.0 permille	Sleepiness, deep self control and balance impairment, mumbling, unsteady walk
Stage 5. 3.0 – 4.0 permille	Deep consciousness impairment leading to coma; reflexes and all senses impaired; lowered blood pressure and body temperature; possible cardiac arrhythmia and breathing depression
Stage 6. over 4.0 permille	Coma, cardiac arrhythmia, breathing depression, blood pressure lowering

Subtle differences are evident in this particular aspect. About three times more men than women drink 3–4 times a week as well as residents of cities compared to those from villages. The distinction is even more noticeable in regard to drinking every day. Majority of students from both sexes drink less than once a week. Faculty chosen by students has less influence on their drinking habits than sex or original residence where those from the city are likely to drink more often than those from the village.

Table 5 shows how the amount of alcohol considered safe/normal to drink during one evening differs between the groups investigated.

Data show that sex related frequency of drinking corresponds with the amount of alcohol likely to be consumed by both sexes. Female students generally tend

Table 4. Frequency of alcohol consumption

Men	Less than once a week – 41.0% 1–2 times a week – 36.5% 3–4 times a week – 15.6% 5–6 times a week – 3.3% Every day – 3.6%
Women	Less than once a week – 65.7% 1–2 times a week – 26.6% 3–4 times a week – 5.1% 5–6 times a week – 1.6% Every day – 1%
Village	Less than once a week – 72.2% 1–2 times a week – 19.4% 3–4 times a week – 3.7% 5–6 times a week – 3.7% Every day – 0.9%
City	Less than once a week – 54.0% 1–2 times a week – 32.0% 3–4 times a week – 9.9% 5–6 times a week – 2.0% Every day – 2.1%
Medicine	Less than once a week – 58.3% 1–2 times a week – 29.4% 3–4 times a week – 7.5% 5–6 times a week – 2.5% Every day – 2.3%
Law	Less than once a week – 54.6% 1–2 times a week – 31.2% 3–4 times a week – 10.6% 5–6 times a week – 1.9% Every day – 1.7%

Table 5. Amount of alcohol considered safe/normal to drink during one evening (measured in shots of vodka or equivalent)

Men	Between 1 and 2 – 16.9% Between 3 and 4 – 29.6% Between 5 and 6 – 25.7% Between 7 and 8 – 16.3% More than 10 – 11.4%
Women	Between 1 and 2 – 25.6% Between 3 and 4 – 38.7% Between 5 and 6 – 25.0% Between 7 and 8 – 7.9% More than 10 – 2.8%
Village	Between 1 and 2 – 25.0% Between 3 and 4 – 30.6% Between 5 and 6 – 25.0% Between 7 and 8 – 10.2% More than 10 – 9.3%
City	Between 1 and 2 – 22.0% Between 3 and 4 – 36.0% Between 5 and 6 – 25.5% Between 7 and 8 – 11.2% More than 10 – 5.5%%
Medicine	Between 1 and 2 – 27.1% Between 3 and 4 – 37.2% Between 5 and 6 – 20.9% Between 7 and 8 – 9.0% More than 10 – 5.8%
Law	Between 1 and 2 – 17.8% Between 3 and 4 – 33.4% Between 5 and 6 – 29.6% Between 7 and 8 – 13.0% More than 10 – 6.2%

to drink less than male students. Students from villages are however more likely to go to the extremes as twice as many of them would drink more than 10 shots of vodka than those from the city. As before, there is no major distinction between medicine and law students. However, medicine students are more likely to stop at 1 or 2 shots (27.1%) than law students (17.8%).

Table 6 shows what behavior is considered by students from the investigated groups as being indicative of having drunk too much alcohol.

This variable finally differentiates medicine and law students. 26% of the latter group would stop at stage 4 of alcohol intoxication scale, the highest presented in the questionnaire. Roughly one in ten medicine students would venture that far, with half of them stopping at stage 2 (lowest presented to choose from). Only 36.2% of law students would finish drinking that early. Half of women in the study would bring drinking to a halt at the lowest stage while only 30.6% men would stop that early. Almost twice as many male students (27%) are likely to drink up until stage 4 symptoms occur; only 14% of women would drink as far as that.

Table 7 reveals what percentage of students evaluated in the study have ever tried marijuana.

There is almost no difference between faculties and only slight one between sexes and different residencies. Only 52.9% of women have ever tried marijuana whereas 70% of men have ever had any association with the drug. As for the students from cities and villages those values are 61.5% and 45.4%, respectively. Additional distribution of the answers between male and female students from both faculties who admitted to smoking cannabis was made (**Table 8**) showing the frequency of their marijuana use. Most of those who ever tried marijuana do not do it regularly but a relatively high percentage (between 10% and 37% depending on sex and faculty) do it at least few times a month, male law students being the most frequent smokers.

It should be noted, however, that this representation might not be accurate as the group of smokers within the study was low to begin with. Dividing it by frequency of use further dilutes the number of individuals amounting for each % point.

Table 6. Behavior considered indicative of having drunk too much alcohol

Men	Self control impairment, sluggishness, verbosity – 30.6% Coordination and balance impairment, aggression – 42.3% Sleepiness, deep self control and balance impairment, mumbling, unsteady walk – 27.0%
Women	Self control impairment, sluggishness, verbosity – 51.1% Coordination and balance impairment, aggression – 34.9% Sleepiness, deep self control and balance impairment, mumbling, unsteady walk – 14.0%
Village	Self control impairment, sluggishness, verbosity – 44.4% Coordination and balance impairment, aggression – 34.3% Sleepiness, deep self control and balance impairment, mumbling, unsteady walk – 21.3%
City	Self control impairment, sluggishness, verbosity – 43.2% Coordination and balance impairment, aggression – 38.2% Sleepiness, deep self control and balance impairment, mumbling, unsteady walk – 18.6%
Medicine	Self control impairment, sluggishness, verbosity – 50.8% Coordination and balance impairment, aggression – 37.7% Sleepiness, deep self control and balance impairment, mumbling, unsteady walk – 11.6%
Law	Self control impairment, sluggishness, verbosity – 36.2% Coordination and balance impairment, aggression – 37.7% Sleepiness, deep self control and balance impairment, mumbling, unsteady walk – 26.0%

Table 7. Past or current marijuana use

Men		Yes – 70.0% No – 30.0%
Women		Yes – 52.9% No – 47.1%
Village		Yes – 45.4% No – 54.6%
City		Yes – 61.5% No – 38.5%
Medicine	Male students	Yes – 69.3% No – 30.7%
	Female students	Yes – 55.2% No – 44.8%
Law	Male students	Yes – 70.7% No – 29.3%
	Female students	Yes – 50.6% No – 49.4%

Table 8. Frequency of marijuana use among male and female students

		Every day	Few times a week	Once a week	Few times a month	Less than once a month
Medicine	Male	1.0%	8.0%	3.0%	8.0%	80.0%
	Female	2.3%	1.5%	0%	6.2%	90.0%
Law	Male	4.6%	10.2%	7.4%	14.8%	63.0%
	Female	1.6%	3.1%	0.8%	7.0%	87.5%

Discussion

Mean age of alcohol initiation is very similar among students from all investigated groups. Therefore sex, residence and future faculty do not have any influence on further differences in alcohol drinking behavior (frequency and volume of liquor consumption and their manners after "hitting the bottle"). As young age of alcohol initiation is a risk factor for future binge drinking [6] it should be noted that individuals from all groups are equally susceptible to this major health concern.

More male than female physicians report hazardous (large amounts and/or frequent) drinking [7] and the study clearly shows that this tendency starts at least as early as during medical studies. However, there is a higher percentage of female doctors presenting hazardous drinking than women in general population. A lower percentage of hazardous drinkers is exhibited among male doctors than men in general population

[7]. The same concurrence is exhibited in regard to marijuana use among female and male doctors (higher in the latter group) as well as female and male students (**Table 8**). Additionally, higher illegal drug use is reported among doctors than in general population [7] which is concerning, as the group meant to educate and set an example for others is using more than those they should supervise and educate.

As apparent as the tendency among all students to drink excessively is from this study, it is not as observable in real life. One of the reasons may be the fact that students with drinking problems are more likely to seek help in their peers and parents [8] than any institutions able to reliably measure the magnitude of the problem. Drinking problems among students remain therefore not only mostly unsolved but, more importantly, unidentified.

The fact that medicine students are more likely to recognize too high alcohol intoxication (**Table 6**) than their peers from law school may be comforting, but the percentage of alcohol over-users among physicians suggests that this knowledge does not help them reduce the magnitude of the problem in their own behavior.

Preventive measures should be taken at an age as young as possible as cannabis users are more prone to failing their studies [9]. Additionally, marijuana use is known to have a negative influence not only on physical but mental health [5] which may in turn lead to lower competence of doctors exposed to drugs, not to mention legal problems that may significantly harm their career.

Conclusions

More emphasis should be put on educating both medical students and general public about dangers associated with hazardous drinking and drug use. As doctors are often the first to respond to their patients exhibiting signs of substance over-use, they should be competent enough not only to help others but also control and avoid being exposed to the problem themselves. It is especially important regarding the fact that quarter of deaths in young people is related to alcohol use.

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