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## Impact of prices on the prevalence of alcohol consumption among medical school students

### Abstract

**Introduction.** Alcohol is a major risk factor of diseases, especially cardiovascular diseases, and mortality. There are more and more proposals to reduce alcohol consumption, including the controlling the price of alcohol.

**Aim.** The aim of this study was to assess the prevalence of alcohol use among students of the Medical University of Lublin, with a particular focus on the impact of alcohol prices on the size of its consumption.

**Material and methods.** A survey among 168 students from various fields of study was conducted in 2012. The research tool was a questionnaire containing 43 questions.

**Results.** Alcohol was consumed by 92.86% of respondents (95.24% men and 92.06% women). Most of them (48.72%) were drinking less than once a week, 31.41% – one or two times per week and 19.87% – more than twice a week. Nearly two times more likely to drink are men. Since the start of their higher education, 36.49% of students increased alcohol intake, for 43.24% consumption remained unchanged, and decreased for 20.27%. The most common alcohol of choice is beer (to 56.41%), followed by wine (20.51%) and vodka (16.67%). Men spend more on alcohol per week compared to women. Students who positively evaluate their health spend less on alcohol than those who rate their health as average or poor. However, the level of wealth does not affect the profile of drinking alcohol. Introduction of a minimum price for alcohol is advocated by 27.00%, against 45.00%, no clear opinion is presented by 28.00% of respondents.

**Conclusions.** Student community is aware of the problems associated with alcohol and proposes several ways to minimize abuse. However, there is no clear support for any of these ideas. Price does not play the most important role in choosing the type of alcohol, but with the increase by 50% or more, we can expect a significant reduction in consumption. Low probability of large markup, which would significantly reduce alcohol consumption, forces to look for other ways of fighting this addiction.

**Keywords:** alcohol, price, students, medical school, alcohol policies.

DOI: 10.12923/j.0044-2011/123-4/a.06

### INTRODUCTION

Drinking alcohol, next to smoking, obesity and hypertension, is a major risk factor of diseases, particularly cardiovascular diseases, and mortality. It takes also the third place, after the low-birth weight and unsafe sexual behavior among the causes of premature death and ill health [1]. Gastrointestinal diseases, especially cancer and ulcers, and some infectious diseases such as AIDS and tuberculosis are more common in people who abuse alcohol. Every year around the world about 2.5 million people die because of the harmful use of alcohol. Among young people aged 15-29 about 320 thousand die each year because of alcohol-related reasons, which is 9% of the total mortality in this age group [2]. However, the effects of alcohol do not affect only the consumers, but also those of their environment, for example family and relatives. As a result, the whole society suffers from this abuse, because enormous resources should be spend to fight this addiction, as well as the treatment of conditions which

are consequences of alcohol consumption, remains complex and expensive.

Poland is among the countries with the highest consumption of alcohol in the world. In 2009, the average citizen of this country (15 years and above) drank 13.6 liters of pure alcohol [3]. In the European Union member countries the average consumption of alcohol accounts for 12.5 liters and the Polish result, although moderate among them, it still two times higher than the average amount of alcohol consumed in the world. In 2008 in Poland, 19.3% of men consumed large amounts of alcohol (a large amount of alcohol for men is >10 liters of 100% alcohol per year, for women it is >7.5 liters), while among women this amount was 2.4% [4].

The need to reduce this phenomenon is obvious. To tackle alcohol-related problems, many states introduced anti-alcoholic policies to reduce the intake of alcohol. It may include such measures as reducing the alcohol availability, promoting educational actions, reducing impact of alcohol marketing, etc. Recently a discussion arises on the introduction

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of a minimum price for alcohol. In some Western European countries (United Kingdom), the latter element began to be put into practice.

## AIM

The aim of this study was to assess the prevalence of alcohol use among students of the Medical University of Lublin, with a particular focus on the impact of alcohol prices on size of its consumption.

## MATERIAL AND METHODS

We surveyed 168 students of the Medical University of Lublin. Men accounted for 25.0% of the group, 75.0% were women. The average age was 20.9 years. Respondents were mostly students of public health (33.3%), medicine (24.4%) and dentistry (13.7%). The vast amount of surveyed – 71.4% were Year 1-3 students. As the place of origin more than half (50.5%) declared village, the rest came from towns. Every ninth student had higher education diploma (11.9%).

As a research tool we used own questionnaire. It consisted of 43 questions (39 closed, 4 open). It was divided into two parts; the first was filled by all respondents, while the second was for drinkers only. In addition to the general questions, there were questions about opinions on raising the price of alcohol, the introduction of the limited off-licence opening hours and the request or response to the proposition of increasing prices of alcoholic beverages by 50 or 100%.

## RESULTS

Alcohol is consumed by 92.86% of our respondents (95.24% men and 92.06% women). Most of them (48.72%) drink less than once a week, 31.41% – once or twice a week and 19.87% – more than twice a week. Nearly two times more likely to drink are men. See Table 1 ( $p=0.01917$ ).

**TABLE 1. Frequency of drinking among male and female students.**

Sex	Frequency of drinking (weekly)		
	<1	1-2	>2
Male	30.00%	40.00%	30.00%
Female	55.17%	28.45%	16.38%
Total	48.72%	31.41%	19.87%

More likely to drink are students from the first group of courses (medicine, pharmacy, dentistry): 97.30%, compared with 89.13% of those within a group of the other courses (medical analytics, nursing, emergency medicine, physiotherapy, public health, obstetrics, dietetics) ( $p=0.04342$ ). Since the start of the studies, alcohol intake increased in 36.49% of students, for 43.24% remained unchanged and decreased for 20.27%. Being outside of the student community (e.g. at home), 8.05% of the students do not drink at all, 43.62% drink less, for 40.94% alcohol consumption does not change, while 7.38% drink more outside of the student campus. Increased consumption outside of the group of students concerns 12.50% of men and 5.50% for women ( $p=0.48200$ ). In case of 17% of respondents one of their parents had problems with alcohol, more often it was the father.

## PREFERENCES

The most common alcohol of choice is beer (for 56.41%), followed by wine (20.51%) and least likely to be chosen is vodka (16.67%). The situation is different for the distribution of second choice alcohol: 19.23% would choose beer, 23.08% wine, 35.90% vodka.

Taste preferences influence the choice of drink to the greatest extent (they are important for 74.36%). As less important there are listed: price (14.47%), availability (6.41%), and other factors (4.49%). On average, during the week, students are drinking 2.68 bottles of beer (0.5L), 1.64 glasses of wine (0.2L) and 3.21 glasses of vodka (0.05L). To intensify the effect of alcohol, 40% of drinking men and 22.93% women sometimes deliberately combined drinking beer and vodka ( $p=0.04532$ ). What is interesting, mixing different types of alcohol concerns the students who assess their health as average or worse than those who positively evaluate their health (56.25% versus 24.24%) ( $p=0.03957$ ). Among the respondents 16.00% declare drinking symbolically (amount undefined), 31.00% drink until they will have 'a good mood', 49.00% of respondents finish drinking, when they feel that they should not drink any more. Students who end up consumption when someone tells them to stop comprise 3.00% and 1.00% drink to unconsciousness (in the survey they answered „until you tear off the film”).

### Conflicts with law

Among subjects were ca. dozen students who admitted to driving a car immediately after drinking alcohol. As much as 7.95% answered that they had one or more times such an incident. More likely to admit so were male students (23.5% of male respondents versus 4.5% of female respondents) ( $p=0.02188$ ). The frequency of such cases is increasing along with the year of study: such incidents had not occurred to 97.22% of undergraduate students and only to 81.22% of postgraduate students ( $p=0.01055$ ).

Some of surveyed students also happened to drive a car on the so-called 'hangover' and 12.58% had once and 10.60% had two or more times drove on the following day. Such incidents admitted respectively 20.00% and 22.50% of male and respectively 9.91% and 6.31% of female students ( $p=0.00213$ ). This was more likely to happen to postgraduate students (30.03% of them confirmed driving at hangover once (6.06%) and two or more times – 24.24%) than undergraduate students (20.37%: 13.89% once, 6.48% two or more times) ( $p=0.01055$ ). Cases of hangover driving were more common for students coming from rural areas than from urban areas: rural 30.27% (13.16% once and 17.11% minimum two times) and the city 15.07% (10.96% and 4.11%) ( $p=0.02845$ ).

Students also had alcohol-related law conflicts: 12.5% of male and only 0.92% of the surveyed women experienced police intervention whilst drinking ( $p=0.00144$ ).

### Reduction of consumption

Respondents asked for the ban on drinking in public mostly supported it (42% advocate the ban, against 31.33%, 26.67% have no opinion). It is interesting that the percentage of those against legal public drinking is higher among men (50% in favor, 37.50% against) than among women

(39.09% in favor, 29.09% against), it has a significance level of  $p=0.06086$ .

We also asked respondents how to reduce drinking in our society and the answers (they could select more than one) are as follows: 47.02% proposed intensifying educational campaigns, 35.12% suggested increasing the minimum age for buying alcohol, 29.17% proposed raising the price of alcohol, 14.88% wanted the introduction of the limited hours of alcohol sales. There is no need to limit alcohol consumption for 13.10% of students.

### Price of alcohol

Men spend more on alcohol per week compared to women: 71.79% of men spend less than 25 Polish zloty (approx. 6 EUR) per week and 28.21% spent more than 25 zloty. For women these percentages are respectively 90.65% and 8.41% ( $p=0.00772$ ). Students, who positively evaluate their health, spend less on alcohol than those who rate their health as average or poor. More than 25 zloty is spent by 10.85% of the first group, while such amount is accompanied by 37.50% of the respondents assessing their health average or worse ( $p=0.01380$ ).

The introduction of a minimum price for alcohol is advocated by 27.00%, against – 45.00%, there is no clear opinion for 28.00% of respondents. If the price of the preferred alcohol has increased by half, then just 3.00% of the students would completely refrain from buying alcohol, and further 71.00% would reduce its volume, with significant 26.00% that would not change the amount of alcohol purchased. However, if the price were doubled, 16.00% would give it up, 70.00% would reduce, and 14.00% would leave the amount of drunken alcohol unchanged.

## DISCUSSION

Medical school students are a special group that in the near future will promote a healthy lifestyle and fight addictions, including alcoholism – the most common addiction in Poland. Comparing the profile of surveyed students, we can say that it does not differ much from the profile of young people, including school youth, from other provinces. As in the Mazowieckie and Warmia-Mazury voivodeships, in Lublin region – the most popular type of alcohol for young people was beer (everywhere around 55-60% of the preferred alcohol). Students from Lublin drink even more often than their colleagues in Lodz (respectively, 19.87% compared to 9.2% who drink at least twice a week) [5-7].

There are no reports in the literature on the actual costs incurred on alcohol. Hence, it appears that our work in this area is novel. Like the reports of our university in 2007 – the amount of wealth does not affect the profile of drinking alcohol. It is necessary, however, to constantly monitor the intake of alcohol and promote a greater public debate on this important issue [8,9].

## CONCLUSIONS

Student community is aware of the problems associated with alcohol and presents several ways to tackle abuse. However, there is no clear support for any of these ideas. Particular consideration should be on young people, because university studies are often a period of increased consumption of alcohol. Price does not play the most important role in choosing the type of alcohol, but with a major increase (half and the more of the current price) we can expect a significant reduction in consumption.

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