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Problem drinking in first – year students at the University of Zagreb

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Abstract – *Aim*: The aim of this analysis was to investigate the problem drinking among first year university students in Zagreb and differences upon different scientific fields of study. *Methods*: The data used were obtained from the research about health behaviours and perception of preventive activities of first year university students in Zagreb, part of the scientific project of the Ministry of science, education and sport »Characteristics, trends and determinants of addictive behaviour in youth«, 2009. The sample of 1939 students (900 males, 1039 females) was stratified by gender and type of university studies. *Results*: 72,4% of first year university students in Zagreb drink alcohol beverages. Almost every fifth student might have some reasons for concern about drinking alcohol. For 5,9% of male and 1,1% of female students, most likely a problem with the consumption of alcoholic beverages exists. *Conclusion*: Problem drinking differences in different scientific fields of study exist for female students. Screening for at-risk or heavy drinking should be built in as a normal part of school medi-

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cine screenings. All students have to be included in the strategy of health promotion and universal prevention programs.

Key words: AUDIT, students, university

INTRODUCTION

The university environment has a significant role in shaping student behaviours and needs to be such that it does not support a heavy drinking culture. The harms and risks associated with heavy drinking are well documented. The brains of young people are still developing during the late teens and early 20s and drinking heavily can negatively impact areas of the brain related to executive functioning such as paying attention, planning and making decisions, processing emotions, and controlling impulses leading to irrational behaviour.[1]

Historically, men have always consumed more alcohol than women. This is still the case but women are catching up to their male counterparts. This is especially the case with young women.[2] Harms and risks for both genders include injuries resulting from assaults, motor vehicle crashes, driving with someone who is impaired, sexual assault, unplanned sexual activity and unprotected sex. Harms to health include a range of acute and chronic health impacts that exist along a continuum of severity and that include death.[3] Enrolment in college and not living with parents is associated with higher rates of heavy alcohol use.[4] In the period of the transition to adulthood, when academic life can carry with it enormous social, academic, emotional and financial pressures, many students consume alcohol and drunkenness is increasingly becoming the norm.[5] Alcohol use among adolescents and college students is also associated with a broad array of risk behaviours, including tobacco use and drinking and driving.[6]

SUBJECTS AND METHODS

The aim of this analysis was to investigate problem drinking among first year university students in Zagreb. The data used were obtained from the research about health behaviours and perception of preventive activities of first year university students in Zagreb which was part of the scientific project of the Ministry of science, education and sport »Characteristics, trends and determinants of addictive behaviour in youth«, 2009. Target group were 2009 students from the first year university studies at the University of Zagreb. The sample size was 15% of the regular first year univer-

sity students. The sample was stratified by gender and type of university studies. 1939 students (900 males, 1039 females) agreed to participate in the survey and correctly filled out questionnaires. The responders rate was 96%.

By division of the University of Zagreb, faculties were divided by the type of study program in the field of natural sciences, technical, biomedical, biotechnical, social sciences and humanities and the artistic field.

Instrument: The instrument was modified and expanded ESPAD (European School Survey on Alcohol and Other Drugs) questionnaire. Questionnaire is used in the international ESPAD research and it is a structured, internationally harmonized questionnaire. For the purpose of this research among university students standard questionnaire was expanded to comprehensively reflect behaviours that students conduct as a more grown up population including assessment of drinking habits. Data were collected during the systematic exams at the school medicine services from the Public Health Institute Dr. Andrija Stampar. Students participated in the study anonymously; no identification data were taken of individual students, so there is no possibility of identifying them. Anonymity is further strengthened by the fact that all students themselves, after filling put in their questionnaires in the provided boxes, were then sent to the Croatian National Institute of Public Health.

Measurements: Alcohol use was assessed by asking students on how many occasions (if any) did they drink alcoholic beverage during the last 30 days. Response options were: 0, 1–2, 3–5, 6–9, 10–19, 20–39, 40 or more. Students who answered »0« and »1–2« (less than three times) were compared to those who answered »3–5«, »6–9«, »10–19«, »20–39«, »40 or more« (more than three times).

Alcohol intoxication was assessed by asking students on how many occasions (if any) they had been intoxicated from drinking alcohol beverages, for example staggered when walking, not being able to speak properly, throwing up or not remembering what happened during the last 30 days. Response options were: 0, 1–2, 3–5, 6–9, 10–19, 20–39, 40 or more*).* Students who answered »0« (had not been intoxicated from drinking alcoholic beverages) were compared to others (had been intoxicated from drinking alcoholic beverages).

Driving a car after drinking alcohol beverages was assessed by asking students on how many occasions in the last 12 months you were driving a car within one hour after you were drinking one or more alcoholic beverages. Response options were: 0, 1, 2, 3, 4–7, 8 or more. Students who answered »0« (did not drive a car after drinking alcohol beverages) were compared to others (drove a car after drinking alcohol beverages).

Driving in a car with driver who was drunk was assessed by asking students on how many occasions in the last 12 months you were driving in a car with drunk driver. Response options were: 0, 1, 2, 3, 4–7, 8 or more. Students who answered »0« (did not drive in a car with drunk driver) were compared to others (drove in a car with drunk driver).

The Alcohol Use Disorders Identification Test (AUDIT) was developed by the World Health Organization as a simple way to screen and identify people who are at risk of developing alcohol problems. The test contains 10 multiple choice questions on quantity and frequency of alcohol consumption, drinking behaviour and alcohol-related problems or reactions. AUDIT is a valid and reliable screening device for college students, and could play an important role in assessing youthful problem drinkers for early intervention programming. Responses to each question are scored from 0 to 4, giving a maximum possible score of 40. If the total score was 0–8, probably there are no problems related to alcohol consumption, 8–11 score indicates there are reasons for concern, 11–15 score there are indications of serious problems, above 15 most likely there is a problem. Students with total score 0–8 (probably there are no problems related to alcohol consumption) were compared to others (indications of problem drinking).

Statistical analysis: Variables describing the frequency of risk behaviours were shown in the frequency distribution. As the previous studies have shown gender differences in drinking habits, the data were analyzed by gender. By using AUDIT scale drinking problem was estimated. The proportion of those who have no problems with drinking alcoholic beverages, those whose drinking habits indicate reasons for concern, those whose drinking habits indicate serious problems and those who most likely have problems related to alcohol consumption was calculated. The prevalence of problem drinking by scientific fields of study programs at the University of Zagreb was calculated. Differences among students belonging to different scientific fields were tested using Chi-Square test.

RESULTS

Number of students in the sample belonging to different scientific fields of study are shown in the Table 1.

Results about alcohol consumption in the last 30 days are shown in the Table 2. Three of four students drank alcohol beverages during the last 30 days. More male (79,5%) than female (66,4%) students drank alcohol beverages during the last 30

Table 1. Scientific fields of study

Variable	Student of which faculty?		
Scientific field of study	Students		
	Male	Female	Total
Natural sciences N (%)	64 (41,3)	91 (58,7)	155 (100,0)
Technical sciences N (%)	414 (69,1)	185 (30,9)	599 (100,0)
Biomedical sciences N (%)	30 (26,5)	83 (73,5)	113 (100,0)
Biotechnical sciences N (%)	76 (44,4)	95 (55,6)	171 (100,0)
Social sciences N (%)	224 (36,4)	392 (63,6)	616 (100,0)
Humanities and Art N (%)	92 (32,3)	193 (67,7)	285 (100,0)

Table 2. Alcohol consumption in the last 30 days

Variables	On how many occasions (if any) have you had any alcoholic beverage to drink during the last 30 days?		
	Male	Female	Total
Never N (%)	185 (20,5)	340 (33,6)	525 (27,6)
1 to 6 times N (%)	493 (55,5)	579 (57,2)	1072 (56,4)
6 and more times N (%)	210 (23,6)	93 (9,2)	303 (15,9)

days. More male than female students drank alcohol beverages 6 and more times during the last 30 days as well.

Results about alcohol intoxication in the last 30 days are shown in the Table 3. More male (19,6%) than female (8,6%) students have been intoxicated one or more times from drinking alcohol beverages in the last 30 days.

Table 3. Alcohol intoxication in the last 30 days

Variable	On how many occasions (if any) have you been intoxicated from drinking alcohol beverages, for example staggered when walking, not being able to speak properly, throwing up or not remembering what happened during the last 30 days?		
	Male	Female	Total
Yes N (%)	174 (19,6)	88 (8,6)	262 (13,7)
No N (%)	715 (80,4)	930 (91,4)	1645 (86,3)

Vehicle handling and ride with a driver after drinking alcohol beverages are shown in the Table 4. More male (22,2%) than female (5,4%) students in the last 12 months were driving a car within one hour after they were drinking one or more alcoholic beverages. 31% of students were driving in a car with drunk driver in the last 12 months.

Table 4. Vehicle handling and ride with a driver after drinking alcohol beverages

Variable	On how many occasions in the last 12 months were you driving a car within one hour after you were drinking one or more alcoholic beverages?		
	Male	Female	Total
Yes N (%)	198 (22,2)	56 (5,4)	254 (13,2)
No N (%)	692 (77,8)	972 (94,6)	1664 (868,8)
Variable	On how many occasions in the last 12 months were you driving in a car with drunk driver?		
Yes N (%)	309 (34,7)	285 (27,8)	594 (31,0)
No N (%)	581 (65,3)	742 (72,2)	1323 (69,0)

Results of AUDIT scale were shown in the Table 5. In the group with no problems associated with alcohol consumption there are 80.7% of students (72.1% male, 88.1% female). The remaining 19.3% of students have some signs of risky behaviour. In all groups there are more male than female students.

Table 5. Risky drinking – AUDIT scale

AUDIT	Students		
	Male	Female	Total
No problems related to alcohol consumption N (%)	623 (72,1)	878 (88,1)	1501 (80,7)
Reasons for concern N (%)	140 (16,2)	87 (8,7)	227 (12,2)
Indications of serious problems N (%)	50 (5,8)	21 (2,1)	71 (3,8)
Most likely problem exists N (%)	51 (5,9)	11 (1,1)	62 (3,3)

Results of AUDIT scale by individual scientific fields of study are shown in Table 6. Students who study Biotechnical sciences (26.4%) and Technical sciences (25.8%) more than students who study other scientific fields are potential risk drinkers. At the biotechnical field of study there are the most young men (12.3%) by whom most likely a problem with the consumption of alcoholic beverages exists.

Table 6. AUDIT scale – scientific fields of study

Scientific field of study	Students – AUDIT scale		
	Male	Female	Total
Natural sciences			
No problems related to alcohol consumption n/N (%)	43/63 (68,3)	78/88 (88,6)	121/151 (80,1)
Reasons for concern n/N (%)	10/63 (15,9)	9/88 (10,2)	19/151 (12,6)
Indications of serious problems n/N (%)	7/63 (11,1)	1/88 (1,1)	8/151 (5,3)
Most likely problem exists n/N (%)	3/63 (4,8)	0/88 (0)	3/151 (2)
Technical sciences			
No problems related to alcohol consumption n/N (%)	273/396 (68,9)	153/178 (86)	426/574 (74,2)
Reasons for concern n/N (%)	74/396 (18,7)	21/178 (11,8)	95/574 (16,6)
Indications of serious problems n/N (%)	25/396 (6,3)	1/178 (0,6)	26/574 (4,5)
Most likely problem exists n/N (%)	24/396 (6,1)	3/178 (1,7)	27/574 (4,7)
Biomedical sciences			
No problems related to alcohol consumption n/N (%)	22/28 (78,6)	70/78 (89,7)	92/106 (86,8)
Reasons for concern n/N (%)	4/28 (14,3)	8/78 (10,3)	12/106 (11,3)
Indications of serious problems n/N (%)	1/28 (3,6)	0/78 (0)	1/106 (0,9)
Most likely problem exists n/N (%)	1/28 (3,6)	0/78 (0)	1/106 (0,9)
Biotechnical sciences			
No problems related to alcohol consumption n/N (%)	49/73 (67,1)	71/90 (78,9)	120/163 (73,6)
Reasons for concern n/N (%)	12/73 (16,4)	13/90 (14,4)	25/163 (15,3)
Indications of serious problems n/N (%)	3/73 (4,1)	4/90 (4,4)	7/163 (4,3)
Most likely problem exists n/N (%)	9/73 (12,3)	2/90 (2,2)	11/163 (6,7)
Social sciences			
No problems related to alcohol consumption n/N (%)	168/215 (78,1)	339/380 (89,2)	507/595 (85,2)
Reasons for concern n/N (%)	29/215 (13,5)	28/380 (7,4)	57/595 (9,6)
Indications of serious problems n/N (%)	10/215 (4,7)	9/380 (2,4)	19/595 (3,2)
Most likely problem exists n/N (%)	8/215 (3,7)	4/380 (1,1)	12/595 (2)

Table 6. – continued

Scientific field of study	Students – AUDIT scale		
	Male	Female	Total
Humanities and Art			
No problems related to alcohol consumption n/N (%)	68/89 (76,4)	167/183 (91,3)	235/272 (86,4)
Reasons for concern n/N (%)	11/89 (12,4)	8/183 (4,4)	19/272 (7,0)
Indications of serious problems n/N (%)	4/89 (4,5)	6/183 (3,3)	10/272 (3,7)
Most likely problem exists n/N (%)	6/89 (6,7)	2/183 (1,1)	8/272 (2,9)

Given the fact that there are obvious differences by gender, the association of alcohol consumption with the type of study was analyzed separately for male and female students.

Because of statistical analysis, categories »Indications of serious problems« and »Most likely problem exists« were merged together in the next table.

Table 7. AUDIT scale-male

Scientific field of study / MALE	Students – AUDIT scale			
	No problems related to alcohol consumption n/N (%)	Reasons for concern n/N (%)	Indications of serious problems / most likely problem exists n/N (%)	Total
Natural sciences	43(68,25)	10(15,87)	10(15,87)	63(7,29)
Technical sciences	273(68,94)	74(18,69)	49(12,37)	396(45,83)
Biomedical sciences	22(78,57)	4(14,29)	2(7,14)	28(3,24)
Biotechnical sciences	49(67,12)	12(16,44)	12(16,44)	73(8,45)
Social sciences	168(78,14)	29(13,49)	18(8,37)	215(24,88)
Humanities and Art	68(76,4)	11(12,36)	10(11,24)	89(10,3)
Total	623(72,11)	140(16,2)	101(11,69)	864(100)

Results of Chi-Square test is shown in the Table 9. According to our results differences in problem drinking in different scientific fields of study exist for female stu-

Table 8. AUDIT scale-female

Scientific field of study / FEMALE	Students – AUDIT scale			
	No problems related to alcohol consumption n/N (%)	Reasons for concern n/N (%)	Indications of serious problem / most likely problem exists n/N (%)	Total
Natural sciences	78(88,64)	9(10,23)	1(1,14)	88(8,83)
Technical sciences	153(85,96)	21(11,8)	4(2,25)	178(17,85)
Biomedical sciences	70(89,74)	8(10,26)	0(0)	78(7,82)
Biotechnical sciences	71(78,89)	13(14,44)	6(6,67)	90(9,03)
Social sciences	339(89,21)	28(7,37)	13(3,42)	380(38,11)
Humanities and Art	167(91,26)	8(4,37)	8(4,37)	183(18,36)
Total	878(88,06)	87(8,73)	32(3,21)	997(100,0)

Table 9. Problem drinking – scientific field of study

	Scientific field of study	Scientific field of study	
		Male	Female
Audit scale	P<0,001	P=0,3717	P=0,0280

dents. The majority of female students with possible drinking problem are found at Biotechnical sciences and Humanities and Art sciences.

DISCUSSION AND CONCLUSION

The reasons why alcohol consumption is in focus of many public health discussions are confirmed by our results as well. They show that great proportion (72,4%) of first year university students in Zagreb drink alcohol beverages. Almost every fifth student might have some reasons for concern about drinking alcohol. For the 5,9% of male and 1,1% of female students most likely a problem with the consumption of alcoholic beverages exists. Harms and risks resulting from motor vehicle crashes and driving with someone who is drunk present a fact that in the last 12 months 13,7% of students at least once were driving a car within one hour after they were drinking one

or more alcoholic beverages and 31% of students were driving in a car with drunk driver in the last 12 months.

Differences in problem drinking in different scientific fields of study exist in female subjects. All students have to be included in the strategy of health promotion and universal prevention programs. Croatia has drafted Croatian action plan on alcohol 2012–2020. The focus is put on ten areas: Awareness, responsibility and management; Response of health services; Local community and workplace; Traffic Safety; Availability and accessibility; Publicity; Price policy; Reducing the negative consequences of drinking and alcohol poisoning; Reducing the impact of unrecorded alcohol and Monitoring and supervision. Enabling students to increase control over their health, broadly defined, will help them make good decisions not only when it comes to drinking, but in all areas of their life. Student engagement and student leadership in this regard are critical for success. The evidence is clear that when students are actively engaged and supported to improve healthy behaviours, improvements are achieved.[6] The whole community should promote campus environment that facilitates positive mental health and promotes connectedness among students. The community should reinforce messages for a moderate alcohol use. Increasing the price of alcohol will also reduce consumption. Young people are very alcohol price sensitive.[7] Prevention interventions should include those activities that focus on providing students with the information and skills they need to make good decisions about drinking. Students need to be provided with basic education and awareness programs, social norms marketing campaigns, cognitive behavioural skills-based programs. Whole community especially parents should be aware of risks of heavy drinking and they should be involved in the community programmes. Screening students for at-risk or harmful drinking is an important early component of providing comprehensive health care services and for the provision of more in-depth interventions around drinking specifically. They can serve to initiate the intervention process that may lead to more comprehensive support later on through the broader health care system.[9] Screening for at-risk or heavy drinking should be built in as a normal part of school medicine screenings.

PROBLEMI PIJENJA MEĐU STUDENTIMA PRVE GODINE SVEUČILIŠTA U ZAGREBU

Sažetak – *Cilj* ovog rada bio je ispitati problem pijenja među studentima prve godine Sveučilišta u Zagrebu i utvrditi razlike unutar pojedinih znanstvenih studijskih područja.

Metode: Podaci prikazuju zdravstvene navike i uvid u provođenje preventivnih mjera od strane studenata prve godine Sveučilišta u Zagrebu, a dio su znanstvenog projekta »Karakteristike, razvoj i odrednice ovisničkog ponašanja u mladih 2009«. Ispitano je 1939 studenata, 900 muškaraca i 1039 žena), podijeljenih prema spolu i znanstvenom području studija. Rezultati: 72.4 posto studenata prve godine Sveučilišta u Zagrebu uzimalo je alkohol. Gotovo svaki peti student trebao bi biti zabrinut zbog pijenja alkohola, a 5.9% studenata i 1.1% studentica imaju zbog toga probleme. *Zaključak*: Razlika u pijenju kod studenata u različitim znanstvenim područjima studija postoji kod studentica. Skrining rizika za teško pijenje trebao bi biti provođen kao dio uobičajenog skrininga u školskoj medicini.
Svi student trebaju biti uključeni u strategiju promocije zdravlja i sveučilišne preventivne programe.

Ključne riječi: AUDIT, student, sveučilište.

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