Published in final edited form as:

J Child Adolesc Subst Abuse. 2018 ; 27(2): 119–124. doi:10.1080/1067828X.2017.1420513.

Alcohol-Related Injuries Among Eastern Croatian University Students

Ivan Miskulin^a, Corinne Peek-Asa^b, and Maja Miskulin^a

^aJosip Juraj Strossmayer University of Osijek, Osijek, Croatia

^bUniversity of Iowa, Iowa City, IA, USA

Abstract

The aim of this study was to describe the alcohol consumption patterns and to identify the association of injury with excess drinking among Croatian students. This cross-sectional study was conducted among 845 university students by the use of the WHO AUDIT questionnaire. A total of 39.9% of the university students reported some level of excess drinking and 21.3% reported that injury to themselves or others occurred as a result of their alcohol use. Conclusively, these results demonstrate a significant need for comprehensive programs to reduce alcohol intake and associated alcohol problems, as well as programs to reduce injuries among Croatian university students.

Keywords

alcohol drinking; Croatia; injury; students; university

Introduction

Excessive use of alcohol is a leading factor in poor health and contributes substantially to the health care burden. Each year, alcohol use is responsible for approximately 3.3 million premature deaths worldwide (Davoren, Demant, Shiely, & Perry, 2016; World Health Organization, 2014). Injuries—both unintentional and intentional—account for more than one-third of the burden of disease attributable to alcohol consumption. Alcohol increases injury risk for those who are intoxicated, but also those who fall victim to their behavior (Cherpitel et al., 2009).

In 2012, 5.9% (or one in every 20) of all global deaths were attributable to alcohol (7.6% for men, 4.0% for women). In the same year, 5.1% of the global burden of disease and injury, as measured in disability-adjusted life years (DALYs), was attributable to alcohol. The comparable estimates of the global burden of disease attributable to different risk factors in

CONTACT Professor Maja Miskulin, MD, PhD, maja.miskulin@mefos.hr, Josip Juraj Strossmayer, University of Osijek, Faculty of Medicine Osijek, Cara Hadrijana 10 E, 31 000, Osijek, Croatia.

ORCID

Ivan Miskulin <http://orcid.org/0000-0001-7238-2341>

Corinne Peek-Asa <http://orcid.org/0000-0001-9472-2538>

Maja Miskulin <http://orcid.org/0000-0001-7330-3019>

1990 and 2010 suggest that, globally, alcohol-attributable deaths and DALYs have increased. This increase has changed the estimated ranking of harmful use of alcohol as a leading cause of death and disability from eighth place in 1990 to fifth in 2010 (World Health Organization, 2014). In the European Union, alcohol was the third most significant risk factor for ill health and premature death, behind tobacco and high blood pressure (Hoekstra, 2009).

Accurate evaluation of the impact of alcohol consumption on people's health and well-being is more complex than simply ascertaining the amount of alcohol consumed. In order to measure drinking patterns to account accurately for the previously mentioned impact of alcohol consumption on people's health and well-being, a composite measure of drinking patterns, the patterns of drinking score (PDS) was developed by the World Health Organization. PDS reflects within a population how people drink instead of how much they drink. Strongly associated with the alcohol-attributable burden of disease in a country, PDS is measured on a scale from 1 (least risky pattern of drinking) to 5 (riskiest pattern of drinking) (World Health Organization, 2014). In Croatia, the established PDS is 3 (World Health Organization, 2010). According to WHO, the adult per capita consumption of alcohol in Croatia was 12.2 liters per year, which exceeded consumption in the European Region of 10.9 liters by 1.3 liters. Furthermore, Croatia was similar in consumption to the neighboring countries of Slovenia (11.6 liters), Serbia (12.6), and Hungary (13.3 liters) (World Health Organization, 2014). Given the high per capita consumption of alcohol in Croatia and established PDS value, the alcohol-attributable burden of disease is a clear priority.

In Croatia the written national policy on alcohol was adopted in 2010. National legal minimum age for on-and off-premise sales of all alcoholic beverages is 18 years. National maximum legal blood alcohol concentration when driving a vehicle for general population is 0.05% but 0.00% for young drivers (all drivers with less than two years of driving experience and all drivers younger than 24 years) and professional drivers. There are also legally binding regulations on alcohol advertising, product placement, alcohol sponsorship, and sales promotion (World Health Organization, 2014).

The Alcohol Use Disorders Identification Test (AUDIT) is a tool developed by the World Health Organization to facilitate screening of excess drinking (Gunby, Carline, Bellis, & Beynon, 2012). In a wide variety of settings, the AUDIT as a 10-item screening tool has shown a sensitivity and specificity generally between 80% and 95% (Heather et al., 2011). Recent studies have confirmed that AUDIT is useful in screening at-risk drinking and alcohol use disorders among university students (Hagman, 2016; Kwon et al., 2013). Among studies that employed the AUDIT scale, the proportion of students reporting hazardous alcohol consumption ranged from 26% to 82% (Beenstock, Adams, & White, 2011; Gunby et al., 2012; Hallett et al., 2012; Heather et al., 2011; Kypri, McGee, Saunders, Langley, & Dean, 2002; Moreno, Christakis, Egan, Brockman, & Becker, 2012; Reavley, Jorm, McCann, & Lubman, 2011; Thom, Herring, & Judd, 1999).

Social transition and war in Croatia have increased unemployment and rates of substance abuse, referring to the harmful or hazardous use of psychoactive substances, including alcohol and illicit drugs, and a decrease in prevention programs has placed younger

populations at increased risk for abuse (Abatemarco et al., 2004; Ray & Ksir, 2001). Croatian university students represent a significant portion of the population in which substance abuse has remained widely unreported. Many current university students were children during the war, and these early childhood experiences could influence drinking patterns now that they are young adults (Jernigan, 2001). The aim of this study was to describe the alcohol consumption patterns within the Eastern Croatian student population and to identify the association of injury with excess drinking.

Methods

Participants

A cross-sectional survey using an anonymous self-report questionnaire was conducted among university students at the Josip Juraj Strossmayer University of Osijek, Croatia. The university is the leading academic institution in Eastern Croatia and has an annual student body of approximately 17,000 students, more than 98% of whom are from Croatia. The majority of students are 19 to 26 years old, but because many students returned to studies after the war and due to unemployment, 10% of students are older.

The anonymous questionnaire was distributed to 12 of 16 faculties (departments) during classes selected to represent all departments. Classes with students in their second and fourth years of study were selected, which the Bologna process recognizes as undergraduate (second-year) and graduate (fourth-year) students. We chose second- and fourth-year students as participants in order to explore possible connections between the duration of student life and the prevalence of alcohol abuse among university students who were students for two or three years and those who were students for four or more years. Students were instructed by researchers that the survey was voluntary, and a returned questionnaire was considered consent to participate. In order to ensure anonymity, the researchers brought printed questionnaires to the chosen participants along with the box for the collection of filled questionnaires at the beginning of the class. It took about 15 minutes to fill out the entire questionnaire and then students were instructed to put these filled questionnaires in the box that was positioned in the back of the classroom area and could not be opened or seen through. The researchers collected boxes that contained filled questionnaires at the end of class. The Ethical Board of the Faculty of Medicine, Osijek, Croatia, approved the study.

A total of 1,230 questionnaires were delivered and 845 returned for an overall response rate of 68.7%. The sample size of 845 participants represented 5.0% of the total student population and was a representative cross-faculty sample based on class year and gender. Response rates were similar for each faculty. Among study participants, there were 50.5% males and 49.5% females with a mean age of 22.1 ± 1.7 years. A total of 45.8% were in their second year of study (mean age 20.8 ± 1.2 years) and 54.2% were in their fourth year (mean age 23.1 ± 1.2 year).

Measures

We used the AUDIT, developed by the World Health Organization, as a screening instrument to detect drinking problems (Babor, Higgins-Biddle, Saunders, & Monteiro, 2001). The

AUDIT tool includes 10 questions about recent alcohol use, alcohol dependence symptoms, and alcohol-related problems. The first through eighth questions are scored on a five-point scale from 0 to 4, while questions nine and ten are scored on a three-point scale of 0, 2, and 4. AUDIT has been validated among university students (Kokotailo et al., 2004). Based on established guidelines, a summary score classified participants into four categories: 0–7 indicated minimal or no drinking; 8–15 indicated hazardous drinking, defined as a pattern of substance use that increases the risk of harmful consequences for the user and refers to patterns of use that are of public health significance; 16–19 indicated harmful drinking, defined as a pattern of alcohol consumption that is highly likely to already be causing harm, either physical or mental; and, 20 or more indicated alcohol dependence, defined as a cluster of behavioral, cognitive, and physiological factors that typically include a strong desire to drink alcohol and difficulties in controlling its use (Conigrave, Hall, & Saunders, 1995; Heather et al., 2011). Any score above 8 indicates some level of harmful alcohol intake (i.e., excess drinking).

One question (AUDIT Question 9) asks about connections between alcohol consumption and alcohol-related injury: “Have you or someone else been injured as a result of your drinking?” Additional questions in our questionnaire included gender, age, and year of study. The questionnaire was validated on a small group of university students from Eastern Croatia during the previous academic year.

Data analysis

Normality of data distributions was tested with the Kolmogorov-Smirnov test, and the χ^2 -test was used to determine differences in the distribution of categorical variables. Spearman’s correlation coefficient was calculated to test the correlation between Question 9 in AUDIT referring to alcohol-related injury and Question 1 in AUDIT referring to frequency of drinking, Question 2 in AUDIT referring to typical quantity of alcohol intake and Question 3 in AUDIT referring to frequency of heavy drinking. On all statistical analyses, two-sided *p*-values of 0.05 or less were considered significant. Analyses were run in SPSS.

Results

Of the 845 students who participated, 60.1% reported low-risk drinking or abstinence, and 39.9% had AUDIT scores of 8 or more, which indicates some level of excess drinking. Among those students above this cutoff, 70.9% were in the hazardous alcohol use range, 14.2% were in the harmful range, and 14.9% were in the dependent range. More male than female subjects had some level of alcohol problem ($\chi^2 = 90.014$; $df = 3$; $p < 0.001$), as did a higher number of elder than younger students ($\chi^2 = 30.701$; $df = 3$; $p < 0.001$). Year of study also had a significant difference, with a higher proportion of fourth-year students reporting low risk of alcohol problems ($\chi^2 = 9.164$; $df = 3$; $p = 0.027$) (Table 1).

Among all subjects, 21.3% reported that injury to themselves or others occurred as a result of their alcohol use, including 30.7% of males and 11.7% of females ($\chi^2 = 45.278$; $df = 1$; $p < 0.001$). Second-year students (24.0%) did not differ from fourth-year students (19.0%) by injury frequency ($\chi^2 = 3.173$; $df = 1$; $p = 0.077$) (Table 2).

Only 2.2% of students with low drinking risk reported injury to themselves or others due to their drinking, compared to 50.1% of students above the cutoff for risky drinking ($\chi^2 = 278.247$; $df = 1$; $p < 0.001$). The proportion of subjects who reported that injuries occurred as a result of their alcohol use increased with increasing level of harm, ranging from 38.1% in the hazardous category to 68.8% in the harmful category to 90.0% in the dependent category ($\chi^2 = 356.303$; $df = 3$; $p < 0.001$). Spearman rank correlation between the frequency of drinking (Question 1 in AUDIT) and alcohol-related injury (Question 9 in AUDIT) was $r = 0.399$ ($p < 0.001$). Spearman rank correlation between the typical quantity of alcohol intake (Question 2 in AUDIT) and alcohol-related injury (Question 9 in AUDIT) was $r = 0.379$ ($p < 0.001$). Spearman rank correlation between the frequency of heavy drinking (Question 3 in AUDIT) and alcohol-related injury (Question 9 in AUDIT) was $r = 0.429$ ($p < 0.001$).

Discussion

In this sample of Eastern Croatia University students, 39.9% reported high-risk alcohol use. This proportion is similar to findings from the United Kingdom (1996) and the United States (2010), where alcohol problems were reported among 37.2% and 35.4% of young adults, respectively. A 2002 study in New Zealand reported alcohol problems among 59.2% of young adults, and results in Australia have ranged from 26.0% to 34% (Hallett et al., 2012; Kypri et al., 2002; Moreno et al., 2012; Reavley et al., 2011; Thom et al., 1999). A 2008–2009 study in seven universities in England revealed that 61% of university students scored positive (8 or more) on the AUDIT, and two studies in the same period that included one university in the northern area of England found that 71.2% and 82.0% of students reported hazardous drinking patterns (Beenstock et al., 2011; Gunby et al., 2012; Heather et al., 2011).

Among all students in our study, 21.3% reported that injury to themselves or others occurred as a result of their alcohol use. Similar results were reported in a study from New Zealand in which alcohol-related injury was reported by 25.8% of students, and both of these results are higher than an injury prevalence of 9% found among students in the United States (Kypri et al., 2002; Moreno et al., 2012).

More male than female students reported injury associated with their alcohol intake, which is consistent with previous literature (Kypri et al., 2002; Mundt, Zakletskaia, & Fleming, 2009). More second-year (undergraduate) than fourth-year (graduate) students reported injury associated with their drinking. Drinking during the early years of education, when students may be living independently for the first time, may pose a higher risk for injury. Universities may need to be particularly vigilant with alcohol reduction programs for first- and second-year students. Some evidence-based programs already exist, and these have focused on intervention early in university life, as this period has been identified as a sensitive period in students' lives with great possibility to successfully affect student alcohol use patterns and prevent potential abuse (Carey, Carey, Henson, Maisto, & DeMartini, 2011; Riordan, Conner, Flett, & Scarf, 2015; Suffoletto, Callaway, Kristan, Kraemer, & Clark, 2012).

Injury associated with alcohol intake increased markedly with severity of alcohol problems, with more than 90% of respondents categorized as alcohol dependent reporting that their drinking had caused injury. This relationship is consistent with studies from Belarus and the United States (Murphy et al., 2010; Welcome, Razvodovsky, & Pereverzev, 2010). In young populations, excessive alcohol consumption is a priority because it is related to other at-risk behaviors, including drinking and driving, sexual assault, aggression, and unprotected sexual activity (Cherpitel, Bond, & Ye, 2006). Although controversial, some studies have identified alcohol as a gateway leading to substance abuse (Gmel & Rehm, 2003; Windle, 2003).

One unique feature of this sample is that these students were children during the Homeland War in Croatia in the 1990s, and war suffering is likely to have had a strong impact on these results. Namely, studies suggest that traumatic experiences in childhood, including war, cause early life stress and might serve as antecedents of health decline throughout the life span, including the occurrence of substance abuse (Alastalo et al., 2013; Giordano, Ohlsson, Kendler, Sundquist, & Sundquist, 2014). For example, a study in a national population of Swedish adolescents and young adults (ages 15 to 26 years) showed that individuals exposed to childhood stressors had more than twice the risk of drug use disorder than those who were not (Giordano et al., 2014).

A limitation of this study includes the potential of self-report bias, which we aimed to reduce by conducting an anonymous survey and using a validated scale. Self-selection of participants based on alcohol use is also possible, although participants and nonparticipants were similar based on age, gender, and year of study. The survey question on injuries asked only about injury associated with alcohol use and asked about injury to both the participant and others. We thus have a very specific measure of injuries that is not generalizable to overall risk to any specific individual. More comprehensive measures of alcohol-related problems exist, such as the Brief Young Adult Alcohol Consequences Questionnaire (B-YAACQ). We opted to use the AUDIT survey because it has substantially fewer questions so was more acceptable in the university environment, and also because AUDIT is frequently used and allowed comparison with multiple studies. However, more comprehensive tools might help further identify risk factors and causal pathways in future studies.

The high prevalence of alcohol use among university students in Eastern Croatia and the strong association with injury indicates a significant need for comprehensive preventive approaches to alcohol use. These approaches should be focused on intervention in early university years as a critical period in students' lives during which they are especially prone to alcohol abuse.

References

- Abatamarco DJ, West B, Zec V, Russo A, Sosiak P, Mardesic V. Project Northland in Croatia: A community-based adolescent alcohol prevention intervention. *Journal of Drug Education*. 2004; 34:167–178. DOI: 10.2190/HKLN-EXWB-8QPX-W8B8 [PubMed: 15638217]
- Alastalo H, von Bonsdorff MB, Rääkkönen K, Pesonen AK, Osmond C, Barker DJP, ... Eriksson JG. Early life stress and physical and psychosocial functioning in late adulthood. *PLoS ONE*. 2013; 8:e69011.doi: 10.1371/journal.pone.0069011 [PubMed: 23861956]

- Babor, TF., Higgins-Biddle, JC., Saunders, JB., Monteiro, MG. AUDIT: The Alcohol Use Disorders Identification Test, guidelines for use in primary care. 2. Geneva, Switzerland: World Health Organization; 2001.
- Beenstock J, Adams J, White M. The association between time perspective and alcohol consumption in university students: Cross-sectional study. *European Journal of Public Health*. 2011; 21:438–443. DOI: 10.1093/eurpub/ckp225 [PubMed: 20068027]
- Carey KB, Carey MP, Henson JM, Maisto SA, DeMartini KS. Brief alcohol interventions for mandated college students: Comparison of face-to-face counseling and computer-delivered interventions. *Addiction*. 2011; 106:528–537. DOI: 10.1111/j.1360-0443.2010.03193.x [PubMed: 21059184]
- Cherpitel CJ, Bond J, Ye Y. Alcohol and injury: A risk function analysis from the Emergency Room Collaborative Alcohol Analysis Project (ERCAAP). *European Addiction Research*. 2006; 12:42–52. DOI: 10.1159/000088582 [PubMed: 16352902]
- Cherpitel, CJ., Borges, G., Giesbrecht, N., Hungerford, D., Peden, M., Poznyak, V., Room, R., Stockwell, T. Alcohol and injuries: Emergency department studies in an international perspective. Geneva, Switzerland: World Health Organization; 2009.
- Conigrave KM, Hall WD, Saunders JB. The AUDIT questionnaire: Choosing a cut-off score. *Alcohol Use Disorder Identification Test*. *Addiction*. 1995; 90:1349–1356. DOI: 10.1111/j.1360-0443.1995.tb03552.x [PubMed: 8616463]
- Davoren MP, Demant J, Shiely F, Perry IJ. Alcohol consumption among university students in Ireland and the United Kingdom from 2002 to 2014: A systematic review. *BMC Public Health*. 2016; 16:173.doi: 10.1186/s12889-016-2843-1 [PubMed: 26895824]
- Giordano GN, Ohlsson H, Kendler KS, Sundquist K, Sundquist J. Unexpected adverse childhood experiences and subsequent drug use disorder: A Swedish population study (1995–2011). *Addiction*. 2014; 109:1119–1127. DOI: 10.1111/add.12537 [PubMed: 24612271]
- Gmel G, Rehm J. Harmful alcohol use. *Alcohol Research & Health: The Journal of the National Institute on Alcohol Abuse and Alcoholism*. 2003; 27:52–62. [PubMed: 15301400]
- Gunby C, Carline A, Bellis MA, Beynon C. Gender differences in alcohol-related non-consensual sex: Cross-sectional analysis of a student population. *BMC Public Health*. 2012; 12:216.doi: 10.1186/1471-2458-12-216 [PubMed: 22433420]
- Hagman BT. Performance of the AUDIT in detecting *DSM-5* alcohol use disorders in college students. *Substance Use & Misuse*. 2016; 51:1521–1528. DOI: 10.1080/10826084.2016.1188949 [PubMed: 27438676]
- Hallett J, Howat PM, Maycock BR, McManus A, Kypri K, Dhaliwal SS. Undergraduate student drinking and related harms at an Australian university: Web-based survey of a large random sample. *BMC Public Health*. 2012; 12:37–44. DOI: 10.1186/1471-2458-12-37 [PubMed: 22248011]
- Heather N, Partington S, Partington E, Longstaff F, Allsop S, Jankowski M, ... St Clair Gibson A. Alcohol use disorders and hazardous drinking among undergraduates at English universities. *Alcohol and Alcoholism*. 2011; 46:270–277. DOI: 10.1093/alcalc/agr024 [PubMed: 21450698]
- Hoekstra, M. Handbook for action to reduce alcohol-related harm. Copenhagen, Denmark: WHO Regional Office for Europe; 2009.
- Jernigan, DH. Global status report: Alcohol and young people. Geneva, Switzerland: World Health Organization; 2001.
- Kokotailo PK, Egan J, Gangnon R, Brown D, Mundt M, Fleming M. Validity of the alcohol use disorders identification test in college students. *Alcoholism, Clinical and Experimental Research*. 2004; 28:914–920. DOI: 10.1097/01.ALC.0000128239.87611.F5
- Kwon US, Kim JS, Kim SS, Jung JG, Yoon SJ, Kim SG. Utility of the alcohol consumption questions in the Alcohol Use Disorders Identification Test for screening at-risk drinking and alcohol use disorders among Korean college students. *Korean Journal of Family Medicine*. 2013; 34:272–280. DOI: 10.4082/kjfm.2013.34.4.272 [PubMed: 23904957]
- Kypri K, McGee R, Saunders JB, Langley JD, Dean JI. Interpretation of items in the AUDIT questionnaire. *Alcohol and Alcoholism*. 2002; 37:465–467. DOI: 10.1093/alcalc/37.5.465 [PubMed: 12217939]

- Moreno MA, Christakis DA, Egan KG, Brockman LN, Becker T. Associations between displayed alcohol references on Facebook and problem drinking among college students. *Archives of Pediatrics and Adolescent Medicine*. 2012; 166:157–163. DOI: 10.1001/archpediatrics.2011.180 [PubMed: 21969360]
- Mundt MP, Zakletskaia LI, Fleming MF. Extreme college drinking and alcohol-related injury risk. *Alcoholism, Clinical and Experimental Research*. 2009; 33:1532–1538. DOI: 10.1111/j.1530-0277.2009.00981.x
- Murphy DA, Shetty V, Herbeck DM, Der-Martirosian C, Urata M, Yamashita DD. Adolescent orofacial injury: Association with psychological symptoms. *Psychology, Health & Medicine*. 2010; 15:574–583. DOI: 10.1080/13548506.2010.507770
- Ray, O., Ksir, C. *Drugs, society, and human behavior*. 9. Boston, MA: McGraw-Hill; 2001.
- Reavley NJ, Jorm AF, McCann TV, Lubman DI. Alcohol consumption in tertiary education students. *BMC Public Health*. 2011; 11:545–553. DOI: 10.1186/1471-2458-11-545 [PubMed: 21740593]
- Riordan BC, Conner TS, Flett JAM, Scarf D. A brief orientation week ecological momentary intervention to reduce university student alcohol consumption. *Journal of Studies on Alcohol and Drugs*. 2015; 76:525–529. DOI: 10.15288/jsad.2015.76.525 [PubMed: 26098027]
- Suffoletto B, Callaway C, Kristan J, Kraemer K, Clark DB. Text-message-based drinking assessments and brief interventions for young adults discharged from the emergency department. *Alcoholism: Clinical and Experimental Research*. 2012; 36:552–560. DOI: 10.1111/j.1530-0277.2011.01646.x
- Thom B, Herring R, Judd A. Identifying alcohol-related harm in young drinkers: The role of accident and emergency departments. *Alcohol and Alcoholism*. 1999; 34:910–915. DOI: 10.1093/alcalc/34.6.910 [PubMed: 10659728]
- Welcome MO, Razvodovsky YE, Pereverzev VA. Prevalence study among university students in Belarus: To what extent do foreigners experience alcohol problems? *World Academy of Science, Engineering and Technology*. 2010; 45:454–457.
- Windle M. Alcohol use among adolescents and young adults. *Alcohol Research & Health: The Journal of the National Institute on Alcohol Abuse and Alcoholism*. 2003; 27:79–85. [PubMed: 15301402]
- World Health Organization. *European status report on alcohol and health 2010*. Copenhagen, Denmark: WHO Regional Office for Europe; 2010.
- World Health Organization. *Global status report on alcohol and health–2014 ed*. Geneva, Switzerland: WHO Press, World Health Organization; 2014.

Table 1

Problem drinking among eastern croatian university students.

	Sample N (%)	Average AUDIT Score Median (Range)	Low Risk of Alcohol Problems ^a N (%)	Hazardous Alcohol Use ^a N (%)	Harmful Alcohol Use ^a N (%)	Alcohol Dependency ^a N (%)	<i>p</i> ^b
Gender							
Male	427 (50.5)	9 (0–31)	193 (45.2)	154 (36.1)	36 (8.4)	44 (10.3)	<0.001
Female	418 (49.5)	4 (0–26)	315 (75.4)	85 (20.3)	12 (2.9)	6 (1.4)	
Age group							
Younger (19–23 yrs.)	702 (83.1)	5 (0–31)	443 (63.1)	190 (27.1)	40 (5.7)	29 (4.1)	<0.001
Older (24–30 yrs.)	143 (16.9)	9 (0–31)	65 (45.4)	49 (34.3)	8 (5.6)	21 (14.7)	
Year of study							
Second	387 (45.8)	6 (0–31)	223 (57.6)	109 (28.2)	32 (8.3)	23 (5.9)	0.027
Fourth	458 (54.2)	5 (0–31)	285 (62.2)	130 (28.4)	16 (3.5)	27 (5.9)	

^aBased on AUDIT scores, low risk = scores of 0–7; hazardous use = scores of 8–15; harmful use = scores of 16–19; alcohol dependence = scores of 20–40;

^b χ^2 -test.

Table 2

Prevalence of injury to themselves or others as a result of alcohol intake among eastern croatian university students.

	Injury as a Result of Excessive Alcohol Use		Total	p^a
	Yes <i>N</i> (%)	No <i>N</i> (%)		
Gender				
Male	131 (30.7)	296 (69.3)	427 (50.5)	<0.001
Female	49 (11.7)	369 (88.3)	418 (49.5)	
Year of study				
Second	93 (24.0)	294 (76.0)	387 (45.8)	0.077
Fourth	87 (19.0)	371 (81.0)	458 (54.2)	
AUDIT total score				
0–7	11 (2.2)	497 (97.8)	508 (60.1)	<0.001
8–15	91 (38.1)	148 (61.9)	239 (28.3)	
16–19	33 (68.8)	15 (31.2)	48 (5.7)	
20–40	45 (90.0)	5 (10.0)	50 (5.9)	

^a χ^2 -test.