Original article

Social norms regarding alcohol use and associated factors among university students in Turkey

Anil Gündüz[1]
https://orcid.org/0000-0002-5159-238X

Sibel Sakarya[2]
https://orcid.org/0000-0002-9959-6240

Ekin Sönmez[3]
https://orcid.org/0000-0002-2874-4306

Cengiz Çelebi[4]
https://orcid.org/0000-0003-2684-7907

Hüseyin Yüce[5]
https://orcid.org/0000-0001-5525-7733

Yildiz Akvardar[6]
https://orcid.org/0000-0002-9195-737

[1] *Department of Clinical Psychology, Istanbul Kent University, Istanbul, Turkey.*
[2] *Department of Public Health, School of Medicine, Marmara University, Basibuyuk Campus, Istanbul, Turkey.*
[3] *Department of Psychiatry, Zonguldak Çaycuma State Hospital, Çaycuma/Zonguldak.*
[4] *Department of Psychiatry, Afyonkarahisar State Hospital, Merkez/Afyonkarahisar.*
[5] *Department of Mechatronics Engineering, Institute of Science and Technology, Marmara University, Kadıköy/Istanbul.*
[6] *Department of Psychiatry, School of Medicine, Marmara University Researcy And Educational Hospital, Pendik/Istanbul.*

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Abstract

Background: Misperceptions on the higher rates of peer alcohol use are predictive of increased personal use among university students. **Objectives:** This study aims to assess the prevalence, perceived peers' social norms and other predictors of alcohol use in a sample of Turkish university students. **Methods:** This study is established upon the baseline Turkish data on alcohol use of the project Social Norms Intervention for the prevention of Polydrug usE (SNIPE). The data was obtained by a self-reported, online questionnaire from 858 students of Marmara University who were registered to the study web page. **Results:** Alcohol use and drunkenness rates were 62.6%, and 40.9%, respectively. Twenty point two percent of students reported drinking alcohol at least once a week in the last two months. Majority of students (70.4%) reported that religion has an important or very important role in their lives. Perceived higher frequency of peer alcohol use (p<0.000) and drunkenness (p<0.000) were significantly associated with personal alcohol use frequency. Tobacco use rate was 60.2% and positively associated with alcohol use frequency (p<0.000). In all participants, male gender (OR: 1.56; 95% CI: 1.07-2.28), giving less importance to religion (OR: 20.91; 95% CI: 10.95-39.95), tobacco use everyday/almost everyday (OR: 17.88; 95% CI: 9.33-34.29), perceived positive peer attitude towards alcohol use (OR: 2.192; 95% CI: 1.25-3.82) and perceived higher frequency of peer alcohol use (OR: 3.487; 95% CI: 1.66-7.31) were found to be associated risk factors for alcohol use. Age (OR: 1.186, CI 95%: 1.03-1.36) and perceived positive peer attitude towards alcohol use (OR: 3.86, CI 95%: 1.84-8.09) were the additional risk factors among female student whereas perceived positive peer alcohol use frequency (OR: 8.08, CI 95%: 2.40-27.10) among male students. **Discussion:** As the first study conducted in Turkey applying social norms theory, our results indicate the noticeable misperceptions of students regarding their peers' alcohol use. Based on our results, targeting both tobacco and alcohol use, and a gender-sensitive approach employing social norms interventions may enhance the preventive strategies for risky alcohol use among university students.

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Keywords: Social norms, Alcohol use, Risk factors, University students.

Introduction

Harmful alcohol use is one of the significant mortality and morbidity associated risk factors. Compared to other WHO Europe Zone countries, alcohol use, heavy drinking rates, and alcohol use disorders in Turkey are among the lowest[1-3]. Lifetime alcohol use rate is 13% in the general population and 23.4% in males and 4.4% in females aged between 15-24 in Turkey based on the national resources[4]. Moreover, per-capita consumption is estimated to be around 17 liters of pure alcohol per year[5]. Nevertheless, recent decades saw an increasing trend in the consumption rates of both alcohol and other substances by youth[6,7]. The onset of alcohol use becomes earlier by age, which is a significant determinant of the development of alcohol-related health problems[8].

Lifetime alcohol and drug use among youth are associated with both immediate and long-term physical, psychological and behavioral disturbances[7,9] including risky and illegal behaviors, violence, development of alcohol use and related disorders and many other adverse social consequences[10]. University is a unique social medium characterized by vast interaction between peers. Moreover, peers become the most crucial social reference determining youth's attitude towards social aspects of life during university education, including alcohol use[11]. In Turkey, young people generally migrate from their hometowns to universities in large cities, which means not only a separation from parents' home but also an adjustment to a new cultural environment. On the one hand, the rather liberal atmosphere of university campuses can both bear the risk of dissemination of

Address for correspondence: Anil Gündüz. Istanbul Kent University, Department of Clinical Psychology. Cihangir Mahallesi, Sıraselviler Cd. No: 71, 34433 Beyoğlu/Istanbul.
Telephone: +905333511574. E-mail: anilgndz@gmail.com

alcohol and related risky behaviors, which tend to cluster together in that age group[12], but on the other hand, can serve as a medium for implementing preventive measures and health promotion activities with greater success.

Status of and preventive interventions related to alcohol consumption and related problems have been largely studied in university students[13-17], and various intervention approaches are targeting this population.

The Social Norms Approach developed by Perkins and Berkowitz[18] which can be summarized as the detection of social misperceptions or distorted norms which lead to engagement with risky or unhealthy behaviors or attitudes and the positive impact of providing corrective norms in their improvement. This approach has gained credibility in recent decades regarding promoting individual and social progress among university students[19,20]. It categorizes the two main sets of social norms as descriptive and injunctive norms. Descriptive norms indicate perceptions on the rates and frequency of a behavior, whereas injunctive norms refer to the assumed peer attitude towards that behavior. Studies reflect the influence of perceived descriptive norms on how much and how frequently alcohol is used among peers of a university student[11,21]. It is also stated that injunctive norms or misbelieves about how positive alcohol use is perceived also play an important role in increased alcohol consumption to a risky level[22,23].

As part of a European multisite project Social Norms Intervention for Polydrug usE (SNIPE)[24], this study aimed to assess the extent and nature of alcohol use and perceived social norms regarding alcohol use among university students in Istanbul, Turkey, and to examine the associated factors about perceived social norms and predicting factors of alcohol use.

Methods

Study design

This study is established upon the baseline Turkish data on alcohol use of the project SNIPE[21], funded by the European Commission (LS/2009-2010/DPIP/AG). SNIPE is a multisite, web-based project, aiming to survey university students' substance use and their perceived social norms about substance use, and secondly to utilize social-norms related personalized feedback. Project sites consisted of universities from seven European countries; Belgium, Denmark, The Slovak Republic, Spain, Turkey, and the United Kingdom. More detailed information on the project design and protocol can be found in Pischke *et al.*'s article[24]. This article is based on the baseline survey data on alcohol use from Turkish students. Students were recruited from Marmara University in Istanbul from a wide range of faculties including arts, business, education, engineering, humanities, medicine and so forth. Study participation was voluntary. Ethical approval of the study was obtained from Marmara University's Local Ethical Committee, and the permission to recruit university students was received from the university rectorate before data collection.

Sample and measures

The project was promoted via emails, face to face invitation in the campus, announcements laid out at the campus cafeterias, and printed flyers. The invitation was sent to all students of Marmara University. Students first registered on the SNIPE website, then a link to the survey webpage was emailed. 858 students were recruited for the study. (Each country aimed to recruit 2000 students, but since the other countries recruitment is less than ours, it was decided not to increase Turkey's recruitment). The data was obtained by a self-reported, online questionnaire developed for the project SNIPE which was translated into Turkish by researchers, who were experienced in the implementation of similar surveys.

The survey included questions on the student's personal use of alcohol, their attitudes towards the use of alcohol and their perceptions of peers' alcohol use behaviors (descriptive norms) and attitudes (injunctive norms). Sociodemographic data included age, gender, year of study, living situation (with parents or friends), the importance of religion in their life (very important-not important at all). Alcohol, Smoking, and Substance Involvement Screening Test (ASSIST)[25] was considered while developing the questionnaire. A pilot study was conducted with 15 medical intern volunteers to control possible comprehension problems for Turkish translation of survey. No further revisions were required due to any negative feedback.

Simultaneously with other study sites, the online survey was conducted in the autumn semester of 2011. Researchers did not have access to emails or any personal data of the participants. In line with the general protocol of SNIPE project, informative emails about the study and for registration were sent to students twice, and for all students and for those who registered to study, reminder emails were sent three times.

Age, sex, main area of study, year of education, accommodation, income, the importance of religion in their life, were the sociodemographic characteristics and typicality of the student ("How typical do you consider yourself as a student of Marmara University?") was one of the variables of the survey. The question about the frequency of alcohol use was 'How often did you use alcohol in the last two months?' and perceived peers' alcohol use frequency was asked as: 'How often in the last two months do you think most (at least 51%) of the students of your sex (female/male) at Marmara University used alcohol?'. Additionally, questions about perceived peer frequency of drinking to drunkenness "How often in the last two months do you think most (at least 51%) of the students of your sex at Marmara University drank enough alcohol to become drunk?". Attitudes of the students and perceived attitudes of peers towards alcohol use were assessed by "Which of the following best describes your attitude to using alcoholic beverages?" and "Which of the following do you think best describes the attitude of most (at least 51%) of the students of your sex at Marmara University to the use of alcoholic beverages?", correspondingly. Students' own attitudes for drunkenness were assessed by the question of "Which of the following best describes your attitude to people drinking enough alcohol to become drunk?". Perceived attitudes of peers were evaluated by "Which of the following do you think best describes the attitude of most (at least 51%) of the students of your sex at Marmara University to drinking enough alcohol to become drunk?".

Statistical analyses

Data regarding sociodemographic variables, rates of individual alcohol use and drunkenness, attitudes towards alcohol and being drunk, descriptive (perceived frequency alcohol use and drunkenness of peers) and injunctive social norms (perceived attitudes of peers towards alcohol and drunkenness) were assessed using descriptive statistics. For univariate analysis, Chi-square and one-way ANOVA tests were used. For comparison of multiple groups, a statistical significance level of 0.017 was accepted following Bonferroni correction (k = 3). Alcohol use was assessed within three groups as 'never used in a lifetime,' 'less than once a week in the last two months' and 'once or more than once a week in the last two months' for the univariate analysis. Predicting factors of individual alcohol use were assessed by logistic regression analyses in which, alcohol use was the dependent variable and where gender, age, income, faculty, typicality of the student, religiousness, the perceived descriptive and injunctive peer norms regarding alcohol use were independent variables. SPSS 22.0 was used as a software program to compute data.

Results

Four hundred and one (46.9%) male and 454 (53.1%) female students with the mean age 21.3 ± 3.1 participated in the study. Around half of the participants (51.2%) were in their first three years of education,

46.9% were living with their parents. Disposable income of students was on average 464 ± 127.50 Turkish Liras (app. 100 Euro). Majority of students (70.4%) reported that religion has an important or very important role in their lives. 63.4% expressed themselves as an atypical or very atypical student of the university as compared to the average (Table 1).

Tobacco, alcohol use and drunkenness rates were 60.2%, 62.6%, and 40.9%, respectively (Table 1). 37.4% of the students reported that they never used alcohol; whereas 20.2% of them drink alcohol once or more than once a week in the last two months.

Table 2 presents the relationship between alcohol use and sociodemographic data and social norms. Male students use alcohol more frequently than female students (p = 0.007), alcohol use increases with age (p = 0.028), higher disposable income is associated with more frequent alcohol use (p < 0.000), students who live with their parents drink less frequently (p < 0.000), as religion gets important in the students' life, alcohol use rate decreases (p < 0.000) and if the student considers him/herself as a typical student of university drink less (p < 0.000). Except for the perceived peer attitude towards alcohol use (p = 0.75) and drunkenness (p = 0.18); own attitude towards alcohol use (p < 0.000) and drunkenness (p < 0.000) and perceived frequency of peer alcohol use (p < 0.000) and drunkenness (p < 0.000) were significantly associated with alcohol use frequency. Tobacco use was also positively associated with alcohol use frequency (p < 0.000).

Living with parents compared to other living conditions was associated with lower rates of tobacco use (53.8% *vs.* 65.8%, p < 0,000), alcohol use (60.3% *vs.* 64.6%, p < 0,000) and being drunk (38.3% *vs.* 43.9%, p < 0,035) in the last two months.

Considering self as a typical student compared to an atypical student was significantly associated with lower rates of tobacco use (50.8% *vs.* 65.5%, p < 0.000), alcohol use (53.4% *vs.* 67.6%, p < 0.000) and being drunk (31% *vs.* 47.1%, p < 0.000) in the last two months.

The higher importance of religion in student's life is significantly associated with lower rates of tobacco use (56% *vs.* 70.3%, p < 0.000), alcohol use (48.9% *vs.* 94.9%, p < 0.000) and being drunk (27.7% *vs.* 73.4%, p < 0.000) in the last two months compared to lower importance of religion.

Logistic regression analysis was first run for all participants (n = 800) for the predictors of alcohol use. Afterward, the analysis was repeated for male and female students separately. The independent variables included in the logistic regression analysis were; age, disposable income, year of university education, student typicality, accommodation, faculty, religiousness, tobacco use frequency, descriptive and injunctive social norms. Table 3 summarizes predicting factors for alcohol use for all students. Male gender 1.56 (Cl 95%: 1.07-2.28), using tobacco every day/almost everyday 17.88 (Cl 95%: 9.33-34.29), less religiousness 20.91 (Cl 95%: 10.95-39.90), perceived positive peer attitude towards alcohol use 2.19 (Cl 95%: 1.25-3.82) and perceived positive peer alcohol use 3.48 (Cl 95%: 1.661-7.316) times increase the risk for alcohol use.

Table 4 and Table 5 present logistic regression analysis results for female (n = 428) and male (n = 372) students. Among both female and male students, using tobacco frequently increases the risk for alcohol use (OR: 83.54, CI 95%: 10.88-641.58; OR: 9.9, Cl 95%: 4.58-21.39, respectively). If religion is not so important for the student, alcohol use risk increased 50.99 (Cl 95%: 14.82-175.33) and 12.25 (Cl 95%: 5.55-27.04) times in males and females, respectively. Additionally, age (OR: 1.186, CI 95%: 1.03-1.36) and perceived positive peer attitude towards alcohol use (OR: 3.86, CI 95%: 1.84-8.09) were risk factors for alcohol use among female students whereas perceived higher peer alcohol use frequency (OR: 8.08, CI 95%: 2.40-27.10) was risk factor for alcohol use among male students.

Table 1. Sociodemographic characteristics and alcohol and tobacco use

(N = 858)	n (%)
Gender	
Male	401 (46.9)
Female	454 (53.1)
University education	
1th-3rd year of education	438 (51.2)
4th-6th year of education	417 (48.8)
Accommodation	
With Parents	402 (46.9)
Other	456 (53.1)
Self-typicality for being Marmara University student	
Very Typical/Typical	311 (36.4)
Atypical/Very atypical	544 (63.4)
Main study subject	
Arts	37 (4.4)
Business and Law	311 (36.9)
Engineering	134 (15.9)
Health and Medicine	58 (6.9)
Sports Science	10 (1.2)
Humanities	84 (10.0)
Media	64 (7.6)
Sciences	15 (1.8)
Social and Educational Sciences	130 (15.4)
Attitude toward religion	
Religion is very important/important	602 (70.4)
Religion is a bit important/not important	253 (29.6)
Age (mean ± sd)	21.33±3.115
Income (mean ± sd) (Euro)	464 (127.50)
Alcohol use	
Never used alcohol in lifetime	319 (37.4)
Less than once a week in the last two months	361 (42.4)
Once or more than once a week in the last two months	172 (20.2)
Tobacco use	
Never used in lifetime	339 (39.8)
Used Sometimes	256 (30.0)
Used everyday/almost everyday	257 (30.2)
Drunkenness	
Never in lifetime	501 (58.4)
Less than once a week in the last two months	315 (36.7)
Once or more than once a week in the last two months	36 (4.2)

Discussion

We aimed to find out the association between alcohol use, social norms, and other factors among university students. Our results contribute to the literature regarding the social norms being among the significant predictors of university student drinking. In our sample, variables accounted for alcohol use were demographics, religion, tobacco use, and social norms. Perceived peer descriptive norms, perceived peer injunctive norms, gender, religiousness, and tobacco use were the predictive factors for alcohol use.

Lifetime alcohol use rate was 62.6%, which makes our sample comparable to previously reported lifetime alcohol use among university students[26,27] and postgraduate students[28] in Turkey. However, German university students' alcohol use rates were ranged between 81.9 % and 90.2%[29], comparing our results to this higher frequency, a lower rate of alcohol use in our study might be due to alcohol is not freely allowed in university campuses in Turkey. It should be noted that alcohol use rate in our study is quite higher than Turkey's alcohol use rate in general population[1,5]. Male students had a higher lifetime alcohol use rate than female students, as same in other studies[6,7,27].

Religiousness was also related to alcohol use, which has been reported in studies conducted in Turkey[7,8], with 95.9% of students who never use alcohol defined religion as important or very

Table 2. Relationship between alcohol use, sociodemographic variables & social norms

	Alcohol use frequency in the last two months			p
	Never Used in life time n (%)	Less than once a week n (%)	More than once a week n (%)	
All students (n = 852)	319 (37.4)	361 (42.4)	172 (20.2)	
Gender (n = 849)				
Male	146 (36.5)	155 (38.8)	99 (24.8)	0.007
Female	171 (38.1)	205 (45.7)	73 (16.3)	
Age (mean ± sd)	20.98 ± 2.2	21.62 ± 3.9	21.37 ± 2.2	0.028
Disposable income (mean ± sd) (Euro) (n = 840)	33.40 ± 2.4	39.11 ± 2.5	51.4 ± 4.7	0.0001
Accommodation				
Parents	159 (49.8)	184 (51)	57 (33.1)	0.0001
Other	160 (50.2)	177 (49)	115 (66.9)	
Year of university education				
1 to 3 year	250 (78.4)	270 (74.8)	125 (72.7)	.324
4 to 6 year	69 (21.6)	91 (25.2)	47 (27.3)	
Attitude toward religion				
Religion is very important/important	306 (95.9)	234 (64.8)	59 (34.3)	0.0001
Religion is a bit important/not important	13 (4.1)	127 (35.2)	113 (65.7)	
Consideration of students' self-typicality for being Marmara University student (n = 850)				
Atypical	175 (54.9)	237 (66.0)	129 (75)	0.0001
Typical	144 (45.1)	122 (34.0)	43 (25)	
Own attitude towards alcohol use				
Never ok to use	293 (43.5)	303 (45)	77 (11.4)	0.0001
Ok to use	26 (14.5)	58 (32.4)	95 (53.1)	
Own attitude towards drunkenness				
Never ok to being drunk	307 (40.0)	336 (43.8)	124 (16.2)	0.0001
Ok to being drunk	12 (14.1)	25 (29.4)	48 (56.5)	
Perceived frequency of peer alcohol use (n = 835)				
Never used	62 (75.6)	14 (17.1)	6 (7.3)	0.0001
Less than once a week	142 (33.2)	215 (50.2)	71 (16.6)	
More than once a week	113 (34.8)	122 (37.5)	90 (27.7)	
Perceived frequency of peer drunkenness (n = 835)				
Never	55 (61.1)	28 (31.1)	7 (7.8)	0.0001
Less than once a week	207 (34.4)	272 (45.3)	122 (20.3)	
More than once a week	52 (36.1)	52 (36.1)	40 (27.8)	
Perceived peer attitude towards alcohol use				
Never ok to use alcohol	213 (38.2)	236 (42.3)	109 (19.5)	0.75
Ok to use alcohol	106 (36.1)	125 (42.5)	63 (21.4)	
Perceived peer attitude towards Drunkenness				
Never ok to being drunk	254 (39.1)	268 (41.3)	127 (19.6)	0.18
Ok to being drunk	65 (32)	93 (45.8)	45 (22.2)	

important in their lives. Low rates of alcohol use among Islamic countries have also been discussed related to religion prohibitions[8].

This research indicates that increased tobacco use frequency is strongly associated with higher rates of alcohol use and tobacco use increased the risk of alcohol use which was in accordance with literature[30].

In the present research, perceived alcohol use and perceived rate of drunkenness of peers are much higher than the actual level of consumption. When compared to the actual rate of lifetime abstinence, those who do not drink themselves (37.4%) are found to overestimate the rate of lifetime abstinence (75.6%), whereas it is underestimated by those who drink (24.4%). Most of the participants also believed that their peers' attitude towards alcohol consumption and being drunk were more acceptable than their own. Both findings reflect the significant role of misperceived social norms on alcohol use. Our findings were parallel to the degrees of overestimating misperceptions regarding perceived peer use of alcohol and peer attitudes towards alcohol use among university and college students in the other six European countries that collaborated for project SNIPE[21]. Similar overestimations were also found in studies conducted among university students[13,17,22,27,31] in other countries. These findings are in favor of the appropriateness of social norms approach for intervention, prevention, and improvement of alcohol-related problems among university students.

Alcohol use frequency is associated with the frequency of tobacco use and positive attitudes towards alcohol use and being drunk. Regarding social norms, the perception of peers' drinking more frequently or becoming drunk more frequently (descriptive norms) and perceived positive peer attitude towards alcohol use or drunkenness (estimating that majority of students approve it–injunctive norms) are associated with more frequent drinking.

In logistic regression analysis according to gender separately, different results were determined for male and female students. For male students, tobacco use, attitude towards religion and perceived higher peer alcohol use frequency (perceived descriptive norm) were found to be increasing the risk for alcohol use. Increasing

Table 3. Predictors of lifetime alcohol use among all students (logistic regression)

	β	OR	95% CI	p
(n = 800)				
Male	0.447	1.56	1.07-2.28	0.021
Age	0.071	1.07	0.99-1.15	0.064
Tobacco use				
Never used in lifetime		1		
Used Sometimes	1.495	4.46	3.00-6.63	0.0001
Used everyday/almost everyday	2.884	17.88	9.33-34.29	0.0001
Attitude towards religion				
Religion is very important/important		1		
Religion is a bit important/ not important	3.040	20.91	10.95-39.90	0.0001
Perceived peer attitude towards alcohol use				
Never ok to use alcohol		1		
Ok to use alcohol	0.785	2.192	1.256-3.826	0.006
Perceived peer alcohol use				
Never used		1		
Used alcohol	1.249	3.487	1.661-7.316	0.001

Table 4. Predictors for alcohol use among female students (logistic regression)

	β	OR	95% CI	p
(n = 428)				
Age	0.171	1.186	1.032-1.363	0.016
Tobacco use				
Never used in lifetime		1		
Used Sometimes	1.900	6.689	3.900-11.471	0.0001
Used everyday/almost everyday	2.857	83.549	10.880-641.588	0.0001
Attitude towards religion				
Religion is very important/important		1		
Religion is not important/ a bit important	2.506	12.259	5.556-27.048	0.0001
Perceived peer attitude towards alcohol use				
Never ok to use alcohol		1		
Ok to use alcohol	1.352	3.865	1.846-8.092	0.0001

Table 5. Predictors for alcohol use among male (logistic regression)

Variables	β	OR	95% CI	p
(n = 372)				
Tobacco use				
Never used in lifetime		1		
Used Sometimes	0.906	2.474	1.358-4.507	0.003
Used everyday/almost everyday	2.293	9.904	4.583-21.399	0.0001
Attitude towards religion				
Religion is important/ very important		1		
Religion is not important/a bit important	3.932	50.993	14.825-175.339	0.0001
Perceived peer alcohol use				
Never used		1		
Used alcohol	2.089	8.081	2.409-27.104	0.001

age, using tobacco, perceived positive peer attitude towards alcohol use (injunctive norm) were found to be increasing the risk of alcohol use among female students. These different findings may be interpreted through cultural reasons since women in Turkey tend to be more sensitive to social acceptability whereas men are more competitive in engaging risky behaviors. Cultural factors might also be one of the reasons why alcohol use is less frequent among women than men.

Our findings can drive several clinical implications. First of all, taking the close relationship between tobacco and alcohol use into account, planning primary and secondary preventive measures targeting both seems more effective. Moreover, dissemination of corrective messages regarding descriptive norms could help to decrease the rate of alcohol use and its consequences among university students. Finally, considering the different predictive factors associated with alcohol use in male and female students, a gender-specific approach can increase the success of social norms interventions.

This study has some limitations; the sample size of the study may limit the generalizability of our findings. We do not know the

distribution of alcohol use and social norms about alcohol use among non-participated students. As it was a cross-sectional study, causality was not explored. Nevertheless, this study presents perceived peer norms, and personal drinking behavior is found to be reciprocally related as in the literature, which implies the role of social norms approach in the prevention of alcohol use among university students.

Despite these limitations, this research proposes an assessment of the importance of various factors related to alcohol use among university students in Istanbul, Turkey. Social norms studies for alcohol and drug use are mostly from the United States of America and Europe, whereas this is the first social norms research in Turkey. Finally, the systematic assessment of the contributing variables may lead to improved understanding of the underlying processes associated with alcohol use and create further efficient interventions for strongly related components of problematic alcohol use.

Conclusion

Every two out of three university students used alcohol at least once in their lifetime, which is comparable to the youth alcohol use rate in Turkey. However, this result is significantly higher than Turkey's alcohol use rate in the general population. Our findings confirmed that gender (male), tobacco use, a low degree of religiousness and perceived positive peer social norms on drinking are the main factors contributing to alcohol use among university students. Gender differences seem to be an important aspect of social norms related to alcohol use. Social norms approach specific to gender may be more helpful to prevent problematic alcohol use among university students.

Ethical standards

Ethical approval of the study was obtained from Marmara University's Local Ethical Committee and the permission to recruit university students was received from the university rectorate before data collection

Conflict of interest

On behalf of all authors, the corresponding author states that there is no conflict of interest.

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