

The Research on Alcohol Consumption Among Students

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Abstract. Despite the development of students' alcohol drinking behavior, the situation of overdrinking among students has not decreased and is increasing. This report examines the reasons of student excessive drinking and the relationship between alcohol drinking and absenteeism. By using linear regression model on a data of a group of secondary school students studying math and Portuguese to analyze the relationship between age, gender, intimacy, time go out with friends and alcohol consumption, and the correlation between alcohol consumption and absenteeism. Explain dataset of a survey based on UK student through descriptive analysis. The results show that alcohol intake increases as students growing up; more time students spent to go out with friends, more alcohol they consume; boys consume more alcohol than girls at the same age and overdrinking makes students absent from school. The harm of excessive drinking to students and the factors related to interpersonal communication, emotions during socialization and family affect alcohol consumption of students are discussed in this paper.

Keywords: student; excessive drinking; linear regression model; descriptive analysis

1. Introduction

Excessive alcohol consumption is also known as overdrinking, which causes plenty of adversely effects. Existing research and data shows that the number of students with the behavior of alcoholism is increasing. Students' overdrinking also has a large amount of negative short- and long-term influence since young people have a higher risk benefit from alcohol consumption, they have higher rates of excessive drinking or overeating, and more frequent adverse consequences of acute intoxication [1].

It has short-term effects such as absenteeism and the drop in grades proposed by White and Hingson [2]. Porter and Pryor states that students' overdrinking negatively severely affects student-faculty interaction [3]. The negative consequences of students' hangover after overdrinking, such as headache, dizziness and gastrointestinal discomfort, make them unable to be in a proper physical and mental condition to study in a short period of time, further affecting their grades and the relationship between students and teachers. In addition, Bonomo et al. found that violent and sexual behavior come with overdrinking, in 12 months, there are 17% of teenagers were involved in accidents or were injured after drinking, 15% of them had sex that they regret or is unsafe [4]. These consequences influence students' physical and mental health in varying degrees. Some of them might not remember what they had done due to alcohol blackout which means temporary memory loss after overdrinking.

In the long-term, alcoholism causes changes in the function of brain, cognitive deficits and even deaths found in the research from White and Hingson [2]. O'Keefe et al. stated that, in America, the third leading cause of premature death is overdrinking [1]. Overdrinking is also associated with obesity, cigarette addiction and other substance abuse according to the study by Boden and Fergusson [5]. Cigarette and drugs are used by young individuals to make them more excited at the party, the mixed used of alcohol, cigarette and drugs undoubtedly increases the harm to teenagers since the harmful substances involved. Another finding from Gruber's research is the behavior of teenager early alcohol consumption will lead to later alcohol abuse, teenagers who early drink take greater risks from alcohol abuse such as car accidents, violence and drug addiction [6]. Grant and Dawson found that adolescents aged 14 and under who have alcohol consumption have a lifetime dependence rate of over 40% and a lifetime abuse rate of just over 11% on alcohol [7]. The negative influence from occasional excessive drinking may be minor and reversible, but the harm chronic excessive alcohol consumption due to alcohol addiction will be serious and should not be ignored.

Drinking excessively by students has many causes, which complicates thinking and analysis. There is a general perception that various factors such as students' psychological status, family situation and the culture of university(school) and society are associate with student excessive drinking.

Practically, most reasons come from interpersonal relationships. In the research from Borsari and Carey, they indicated that interpersonal process strongly influenced students' alcohol consumption [8]. In the research by Henry et al. friendship is the main factor in interpersonal process that affect students using alcohol. Students' own alcohol consumption is related to the number of their friend use alcohol [9]. Young individuals are easily influenced by their friends to drink since they are not mature enough in their mindset. They usually cannot resist the drinking invitation from friends or are stimulated by their friends' words during drinking, leads to excessive alcohol consumption. At the same time, the emotion of students generated during socialization also influences their alcohol intake to some extent. In the results of O'Hare's study, students used alcohol to relief themselves when they were lonely, depressed or had interpersonal conflicts [10]. Additionally, relieving tension, improving confidence and improving expression are some of the reasons of alcohol intake found by Read et al. [11].

Students' family environment, parents' perceptions and the education they give to children have a correlation with students' attitude towards alcohol. Abar and Turrisi concluded that in the study results, the education parents give adolescents influences their choice of friends from early development stages to even early adulthood of adolescents Abar [12]. Parents play vital role in the process of teenagers growing up, a proper education and guidance at an early age is helpful for perception and handling of alcohol, which help them to avoid overdrinking.

Alcohol abuse has always been a social issue of concern. It is the most serious public health problem facing American universities indicated by Wechsler et al. [13]. Drinking alcohol can be considered to have developed into a culture in campus. Hallett et al. stated the environment of university increases the need of alcohol and the motivation to drink [14], and Lewinsohn et al. claimed that this situation has spread to high school [15]. According to Olsson et al.'s research, a school which has effectively education and function can also offset the disadvantages caused by other areas of life [16]. However, the behavior of students' excessive alcohol consumption has not been effectively solved so far since it involves various aspects of reasons. It is worth pondering the motives of excessive alcohol consumption among students.

2. Methodology

Based on positivism, this report will explore the factors relate to excessive alcohol consumption and analyze the relationship between them by quantitative research.

2.1. Data

The information in this paper is derived from secondary data from different surveys of various student groups.

Student Alcohol Consumption (UCI Machine Learning, 2016): the dataset from Kaggle is based on secondary school student group. The data analyzed is part of original dataset. This survey obtains following information of students: age, gender, if they have intimate relationship, time they go out with friends, alcohol consumption per week and the times of absence from school. Regarding to the factors in the data shown in Table1, the hypothesis proposed is boys consume more alcohol than girls; the amount of alcohol consumption increases as students' age and go out time with their friends increase; students drinks more when they are in intimate relationship; alcohol consumption leads to absenteeism.

Table 1. Information of Student Alcohol Consumption

	Gender	Age	Intimacy	GOT	Absence	Alcohol
Maximum	-	22	-	5	75	10
Minimum	-	15	-	1	0	2
Mean	1.473	16.696	1.334	3.109	5.709	3.772
Variance	0.250	1.628	0.223	1.239	64.050	3.938

Reason for Student Hard to not Overdrinking (Stewart, 2019): This is an investigation into the reasons for students find it is difficult not to overdrinking. Survey subject are 655 students over 18 years old study in UK. It includes psychology, social and financial factors related to this problem.

2.2. Analysis plan

Linear regression model and descriptive analysis will be used as main method. In the first set of data (Student Alcohol Consumption), using Alcohol as dependent variable, Age, Intimacy, Gender and GOT (go out time) as independent variable. Hence, using Absence as dependent variable and Alcohol as independent variable. During calculation, mark female as 1, male as 2, having an intimacy as 1 and not having intimacy as 2 to facilitate statistics and calculation. After selecting variables, the relationship between variables will be analyzed using linear regression model. In the procedure of analysis, when $p \leq 0.05$, variables relationship has significant in statistics. Linear regression analysis is conducted through SPSS.

About the second dataset (Reason for Student Hard to not Overdrinking), percentage of the number of students for each factor will be demonstrated through bar chart to intuitively reflect the main reason of student finding difficult not to excessively consume alcohol.

3. Results and Discussion

3.1. Self-factors of adolescents

From Table2, in the linear regression analysis with Gender, Age, Intimacy and GOT as independent variables and Alcohol as dependent variable, the model formula is

$$Alcohol = -2.363 + 1.091 * Gender + 0.149 * Age + 0.041 * Intimacy + 0.641 * GOT \quad (1)$$

Gender, Age, Intimacy and GOT can explain the 23.6% change in Alcohol since the R^2 value is 0.236. According to the regression coefficient of the independent variables, it can be concluded that Gender, Age and GOT have significant positive relationship with Alcohol, but no effect relationship between Intimacy and Alcohol.

Table 2. Linear regression result of Gender, Age, Intimacy, GOT and Alcohol

	Non-standardized Coefficient		Standardized Coefficient	t	p	VIF	R^2	Adjusted R^2	F
	B	Standard error	Beta						
Constant	-2.363	1.195	-	1.978	0.049*	-			
Gender	1.091	0.177	0.275	6.156	0.000**	1.017	0.236	0.228	F(4,390)=30.132, p=0.000
Age	0.149	0.07	0.096	2.112	0.035*	1.045			
Intimacy	0.041	0.189	0.01	0.214	0.83	1.038			
GOT	0.641	0.08	0.336	8.034	0.000**	1.023			

Dependent Variable: Alcohol, D-W Value: 1.879, * $p < 0.05$ ** $p < 0.01$

The significant positive relationships between these variables means that the amount of alcohol consumption is indeed influenced by the gender, age and time they go out with friends of students.

Compared to girls, boys consume more alcohol. Lewinsohn, Rohde and Seeley also stated the same view, in general, boys drink more frequently and in a higher quantity than girls and start drinking at an earlier age.

The amount of alcohol intake increases as teenagers growing up. In a research based on students in Canada, there is a significant increase in alcohol consumption among students between grades 9 and 12, the same thing is boys are more likely than girls to be heavy alcohol drinkers. Chassin et al. concluded that nearly 75% students have consumed alcohol before graduating from high school though data and survey.

Besides, students have higher alcohol intake as they spending more time going out with their friends. In a survey of teenagers drinking behavior in the United States, most of the student drinking alcohol in order to have fun with their friends.

3.2. Study and overdrinking

Table3 shows the linear regression result with Alcohol as independent variable and Absence as dependent variable. The formula of the linear regression model is:

$$Absence = 3.559 + 0.559 * Alcohol \tag{2}$$

Because R² value is 0.019, Alcohol can explain the 1.9% changes in Absence, it can be deduced that Alcohol has significant positive relationship with Absence.

Table 3. Linear regression result of Alcohol and Absence

	Non-standardized Coefficient		Standardized Coefficient	t	p	VIF	R ²	Adjusted R ²	F
	B	Standard error	Beta						
Constant	3.599	0.858	-	4.192	0.000**	-	0.019	0.017	F (1,393)
Alcohol	0.599	0.201	0.139	2.776	0.006**	1			=7.707, p=0.006

Dependent Variable: Absence, D-W Value: 1.855, * p<0.05 **p<0.01

Alcohol drinking affect life in school, the times student absents from school increases as the amount of alcohol consumption. A study on alcohol intake and academic performance showed that the number of students skipping the classes is influenced by the intensity of drinking, the higher the intensity, the more classes they skip.

3.3. Hard to not overdrinking

Figure 1 is a bar chart of a survey about why students in UK easily excessively drinking.

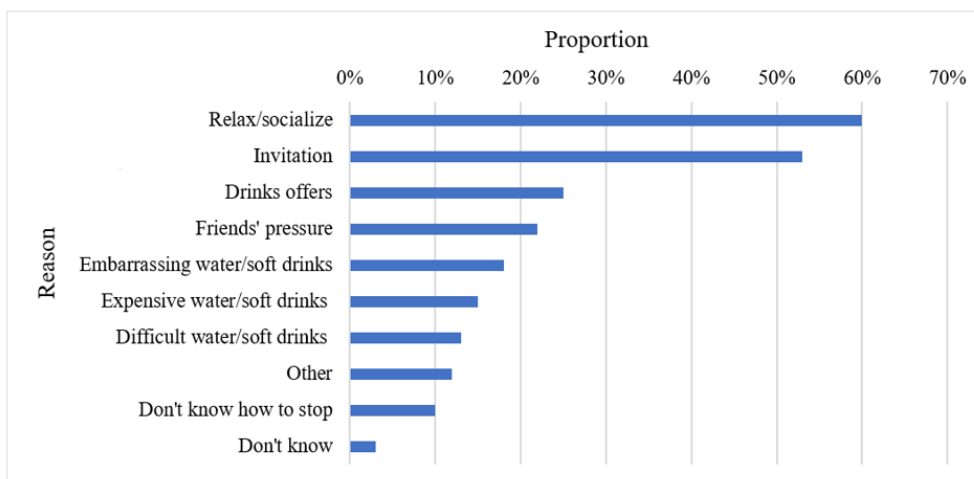


Figure 1. Reasons of hard to not overdrinking

From figure 3, the main reason is alcohol helps them to relax and socialize (60%); a relatively large number of students overdrink because of the invitation from friends (53%) and the pressure brought by friends (22%); some of these reasons are the attractive alcohol drinks offers (25%) and the high price of soft drink and water in club and bar (15%); it is also embarrassed (18%) or difficult (13%) for students to get soft drink and water; a small number of students lack of self-control find it is hard for themselves to control alcohol intake.

3.4. Drinking motives

More and more existing research and studies proved that most of teenagers have drunk alcohol. As adolescent growing up, they have access to alcohol and the amount of alcohol increases at the same time. In the same age group, boys consume more alcohol than girls through data and consensus. The reasons of difference might be the difference of the natural character between boys and girls, most of the girls are shy compared to boys naturally, however, girls are calmer and more cautious at the same time, further causing girls drink less in general.

Most of the students consume alcohol and even excessive drinking for friendship and social reasons. Students usually cannot resist the tempting invitation from friends, especially with the frequent invitations. Alcohol can excite students and further improve their expression ability to chat with their friends and alcohol can make them relaxed and happy, but these features will cause overdrinking when they lack self-control and ways to drink less alcohol. Drinking games among teenagers used at party to promote the intake of large amount of alcohol among teenagers has been shown to be associate with excessive drinking.

Students' drinking behavior influenced by the environment they are in. When the people around students are all using alcohol, students are more easily to start drinking and drink more. Some of the student even think that if they refuse alcohol, then they will not be able to have friendship according to survey. This is due to the prevailing drinking culture in campus. During drinking with friends in club, some students will feel embarrassed to order soft drink or water and worried about they will be laughed at because of drinking soft drink. There are a few students mentioned that soft drink and water is usually expensive and hard to find in clubs, in the meantime, the alcoholic beverages offer is tempting. Additionally, daily alcohol advertising can stimulate consumption, which will lead to overdrinking. Students may lack of discrimination ability of those advertising and are influenced by them.

Excessive drinking has negative impact on students' study achievement, overdrinking leads to skipping classes. This phenomenon is correlated with the negative effects of alcohol on human body, it is hard for students to study in a good status after hangover. Meanwhile, related research found that students' alcohol consumption is influenced by their class schedule, both the rates of drinking and the amount of alcohol consumed were high on Thursdays, although they seem to be affected by the timing of the Friday school day and the duration of the school day. The Friday classes before 10 a.m. may reduce alcohol consumption.

The results prove that the hypotheses are correct except for one of them. Whether student is in an intimate relationship has no effect on drinking alcohol. In this analysis, the selected data and factors are consistent with the purpose and analysis model. In further studies, there is a need to use data from a wider range of survey respondents and to consider a wider range of factors to analysis, such as the education level of students' parents, whether their parents are alcoholics and whether the relevant policy set by school and government are stringent.

4. Conclusion

Through calculation and analysis, the following points can be concluded. The amount of alcohol consumption increases as students growing up and the time that they spent to go out with friends increasing. Intake of alcohol is influenced by gender, usually boys drink more than girls. Excessive alcohol consumption has non negligible negative impact on academic performance. Students' own

factors, friendship, sociocultural and social factors are all related to excessive drinking, which makes the work of preventing students from excessive drinking complicated and difficult.

The still-increasing number of students excessive alcohol consumption and the cases of accidents, injuries, health and life hazards caused by alcohol abuse among students means that this problem must be addressed seriously. Obviously, parents and school are the main guides and educators to lead students having a proper perspective on alcohol. Although the government and schools have intervention policies, the solution to this problem requires the joint assistance of all sectors of society, and more in-depth research to provide authoritative results and suggestions on excessive drinking

References

- [1] O'Keefe, J., Bhatti, S., Bajwa, A., DiNicolantonio, J. and Lavie, C., "Alcohol and Cardiovascular Health: The Dose Makes the Poison...or the Remedy," *Mayo Clinic Proceedings*, Volume 89, Issue 3, 382 – 393 (2014).
- [2] A, W. and R, H., "The burden of alcohol use: excessive alcohol consumption and related consequences among college students," *Alcohol Res.* 2013;35(2):201-18 (2013).
- [3] Porter, S. and Pryor, J., "The Effects of Heavy Episodic Alcohol Use on Student Engagement, Academic Performance, and Time Use," *Journal of College Student Development* 48(4), 455-467 (2007).
- [4] Bonomo, Y., Coffey, C., Wolfe, R., Lynskey, M., Bowes, G. and Patton, G., "Adverse outcomes of alcohol use in adolescents," *Addiction*, 96: 1485-1496 (2001).
- [5] Boden, J. and Fergusson, D., "The Short- and Long-Term Consequences of Adolescent Alcohol Use," In *Young People and Alcohol* (eds J.B. Saunders and J.M. Rey) (2011).
- [6] Gruber, E., DiClemente, R., Anderson, M. and Lodico, M., "Early Drinking Onset and Its Association with Alcohol Use and Problem Behavior in Late Adolescence," *Preventive Medicine*, Volume 25, Issue 3, Pages 293-300 (1996).
- [7] Grant, B. and Dawson, D., "Age at onset of alcohol use and its association with DSM-IV alcohol abuse and dependence: results from the national longitudinal alcohol epidemiologic survey," *Journal of Substance Abuse*, Volume 9, Pages 103-110 (1997).
- [8] Borsari, B. and Carey, K., "Peer influences on college drinking: A review of the research," *Journal of Substance Abuse*, Volume 13, Issue 4, Pages 391-424 (2001).
- [9] Henry, K., Slater, M. and Oetting, E., "Alcohol use in early adolescence: the effect of changes in risk taking, perceived harm and friends' alcohol use," *Journal of Studies on Alcohol*, 66(2), 275–283 (2005).
- [10] O'Hare, T., "Alcohol expectancies and excessive drinking contexts in young adults," *Social Work Research*, Volume 22, Issue 1, Pages 44–50 (1998).
- [11] Read, J., Wood, M., Kahler, C., Maddock, J. and Palfai, T., "Examining the role of drinking motives in college student alcohol use and problems," *Psychology of Addictive Behaviors*, 17(1), 13–23 (2003).
- [12] Abar, C. and Turrissi, R., "How important are parents during the college years? A longitudinal perspective of indirect influences parents yields on their college teens' alcohol use," *Addictive Behaviors*, Volume 33, Issue 10, Pages 1360-1368 (2008).
- [13] Wechsler, H., Dowdall, G., Maenner, G., Gledhill-Hoyt, J. and Lee, H., "Changes in Binge Drinking and Related Problems Among American College Students Between 1993 and 1997 Results of the Harvard School of Public Health College Alcohol Study," *J Am Coll Health*, 47(2):57-68 (1998).
- [14] Hallett, J., McManus, A., Maycock, B., Smith, J. and Howat, P., "Excessive drinking – an inescapable part of university life? A focus group study of Australian undergraduates," *Open Journal of Preventive Medicine*, 4, 616-629 (2014).
- [15] LEWINSOHN, P., ROHDE, P. and SEELEY, J., "Alcohol consumption in high school adolescents: frequency of use and dimensional structure of associated problems," *Addiction*, 91: 375-390 (1996).
- [16] Olsson, G., Låftman, S. and Modin, B., "Problematic familial alcohol use and adolescents' heavy drinking: can conditions in school compensate for the increased risk of heavy drinking among adolescents from families with problematic alcohol use," *Drugs: Education, Prevention and Policy* 0:0, pages 1-9 (2019).

- [17] Feldman, L., Harvey, B., Holowaty, P. and Shortt, L., "Alcohol use beliefs and behaviors among high school students," *Journal of Adolescent Health*, Volume 24, Issue 1, 48 - 58 (1999).
- [18] Chassin, L., Hussong A., Barrera M., Jr., Molina B.S.G., Trim R. and Ritter J, "Adolescent Substance Use," In *Handbook of Adolescent Psychology* (eds R.M. Lerner and L. Steinberg) (2004).
- [19] O'Malley, P., Johnston, L. and Bachman, J., "Alcohol Use Among Adolescents," *Alcohol Health Res World*, 22(2):85-93 (1998).