Evaluation of the level of risk due to alcohol consumption and associated factors, in first-entry students at a University Campus in Jalisco, Mexico

Evaluación del nivel de riesgo por consumo de alcohol y factores asociados, en estudiantes de primer ingreso a un Centro Universitario en Jalisco, México

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Abstract

Alcohol consumption in university students is considered a public health problem that can affect academic performance. The objective was to evaluate the level of risk for alcohol consumption in first-entry students at the University Campus of Biological and Agricultural Sciences of the University of Guadalajara. A questionnaire was applied that included: sociodemographic characteristics and alcohol consumption through the "Alcohol Use Disorders Identification Test" (AUDIT). The information was collected anonymously, obtaining their informed consent and guaranteeing their confidentiality. 589 students were surveyed, with an average age of 19.1 years, 53.2% women and 46.8% men, 86.4% reported having consumed alcohol, with tequila and beer being the preferred alcoholic beverages; it was observed that alcohol consumption did not influence the family relationship with their parents or the average high school grade; Regarding the AUDIT, 83% of the respondents did not present problems with alcohol consumption, 12.9% need a simple advice to reduce consumption, 3.1% evidenced risky consumption, and 1.0% showed risk of dependence; so it is necessary to implement strategies for comprehensive education in university life.

Alcohol consumption, AUDIT, University Students

Resumen

El consumo de alcohol en jóvenes universitarios es considerado un problema de salud pública que puede afectar el rendimiento académico. El objetivo fue evaluar el nivel de riesgo por el consumo de alcohol en estudiantes de primer ingreso al Centro Universitario de Ciencias Biológicas y Agropecuarias de la Universidad de Guadalajara. Se aplicó un cuestionario que contempló: características sociodemográficas y consumo de alcohol mediante la prueba "Alcohol Use Disorders Identification Test" (AUDIT). Se recabó la información de manera anónima obteniéndose su consentimiento informado y garantizando su confidencialidad. Se encuestaron 589 alumnos, con edad promedio de 19.1 años, 53.2% mujeres y 46.8% hombres, el 86.4% señaló haber consumido alcohol, siendo el tequila y la cerveza las bebidas alcohólicas preferidas; se observó que el consumo de alcohol no influyó en la relación familiar con sus padres ni en la calificación promedio del bachillerato; respecto al AUDIT, el 83% de los encuestados no presentó problemas con el consumo de alcohol, 12.9%, necesita un simple consejo para la reducción del consumo, 3.1% evidenció un consumo de riesgo, y 1.0% mostró riesgo de dependencia; por lo que es necesario que se implementen estrategias para la educación integral en la vida universitaria.

Consumo de alcohol, AUDIT, Universitarios

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1. Introduction

Alcohol consumption as a social practice is a public health problem that affects consumers regardless of age or sex, and is a topic of interest due to the short and long-term consequences. Alcohol is the main drug of initiation and with the greatest impact on psychosocial functioning (Cortaza-Ramírez *et al.*, 2022; Gogeascoechea-Trejo *et al.*, 2021; Morales-Quintero *et al.*, 2019), being diverse causes that intervene between alcohol consumption to illegal drugs; alcohol intake is associated with low risk perception and high social tolerance to its consumption (Instituto Nacional de Psiquiatría Ramón de la Fuente Muñoz, Instituto Nacional de Salud Pública, Comisión Nacional Contra las Adicciones, and Secretaría de Salud [INPRFM, INSP, CONADIC, and SS], 2017).

The factors that influence alcohol consumption, can be biological, personal, family, psychological, school, environmental, and social (Ahumada-Cortez *et al.*, 2017; Mancilla and Alfaro, 2022). The abuse in the consumption of alcoholic beverages is a factor that causes more than 200 diseases and disorders, it also causes disability and death at an early age (20 to 39 years). Diseases related by long-term constant alcohol abuse are mental disorders, liver cirrhosis, different types of cancer, cardiovascular diseases, trauma resulting from violence and car accidents (World Health Organization [WHO], 2018; Japan and Valley, 2022).

More than a quarter (26.5%) of the world's population aged 15-19 years are drinkers, representing 155 million adolescents (Pan American Health Organization/World Health Organization [PAHO/WHO], 2019). In Mexico, alcohol is used more frequently by young adults, especially in those attending higher level schools (Díaz *et al.*, 2008), data from the National Health and Nutrition Survey (ENSANUT) show that alcohol consumption in Mexican adolescents has an annual prevalence of 38.3% with a daily and monthly consumption pattern of 0.8 and 26.6% respectively and binge drinking is 22.3% in males and 14.7% in females (Shamah-Levy *et al.*, 2020).

Góngora *et al.* (2019), reported that the age of onset of alcohol consumption is between 12 to 17 years, other studies mention that alcohol consumption increases from 20 to 24 years, age at which young people are in the stage of professional training at the university level, which can cause poor academic performance, health problems, lower productivity, lag and school dropout (Betancourth *et al.*, 2017; Gogeascoechea-Trejo *et al.*, 2021; PAHO/WHO, 2019). The causes for initiation into alcohol consumption are multiple: social, family, group, individual and even curiosity factors (Góngora *et al.*, 2019).

The age at which first-time university students are found ranges from 18 to 20 years old, at this stage young people go through a process of social adaptation, new friends and professional academic development, they begin to socialize and have activities where they are exposed to the consumption of alcoholic beverages (Betancourth *et al.*, 2017), added to this, in the university stage young people assume greater academic responsibilities, stress levels increase due to schoolwork, there is a greater commitment and greater freedom, among others, which can lead to a greater risk in alcohol consumption (Pilco *et al.*, 2021; Carrión *et al*, 2022). Therefore, the objective of this study was to evaluate the level of risk for alcohol consumption in first-year students at the Centro Universitario de Ciencias Biológicas y Agropecuarias.

2. Methodology

A descriptive and cross-sectional study was carried out; the population of interest consisted of first-year students of the various undergraduate programs of the University Center for Biological and Agricultural Sciences (CUCBA) of the University of Guadalajara.

A questionnaire was used to collect data on two aspects: sociodemographic characteristics (age, sex, marital status, family relationship and average high school grade) and alcohol consumption by means of the *"Alcohol Use Disorders Identification Test (AUDIT)"*

The AUDIT is an instrument composed of 10 multiple-choice items that classifies the type of alcohol consumption of individuals into four risk levels according to the scores obtained: I) Low-risk drinking level (0 - 7), II) Scores appropriate for simple counseling focused on reducing risky drinking (8 - 15), III) Brief therapy and a continued approach is suggested (16 - 19) and IV) Diagnostic evaluation and possible treatment of alcohol dependence is required (20 - 40) (Bador *et al.*, 2001).

The purpose of the study was explained to the young people and the information was collected anonymously, obtaining their informed consent and guaranteeing their confidentiality. Students who provided incomplete data and those under 18 years of age were excluded from the study. The protocol of this study was approved by the Departmental College of the Department of Public Health and the Research Coordination of the University Center.

Data analysis was performed using descriptive statistics (frequencies, proportions and measures of central tendency) and the statistical significance of the differences observed was evaluated using Student's t-tests and chi-squared tests. (X^2).

3. Results

A total of 589 first year students participated in the study, 53.2% (n=313) were women and 46.8% (n=276) were men, with an average age of 19.1 + 2.3 with a median of 18 years, 99.2% indicated being single. According to the educational program to which the students entered, 219 belonged to Veterinary Medicine and Animal Science, 171 to Biology, 125 to Agronomy, 39 to Agribusiness and 35 to Food Science.

Regarding the consumption of alcoholic beverages, 86.4% (n=509) reported having consumed alcohol, with an average age of onset of consumption of 16.5 years ± 1.65 (SD) in women and 16.1 years ± 1.87 (SD) in men. The preferred types of beverages were tequila (41.3%) and beer (37.9%) followed by whiskey (18%) and vodka (14%).

When inquiring about consumption in the social and family context of the students, it was found that friends were the main group with whom they ingested alcoholic beverages (74.6%) being statistically significant (p<0.05), followed by family members (36.8%) and to a lesser percentage, work colleagues (8.1%). Seventy-one point three percent of the women and 75% of the men mentioned that they consumed alcoholic beverages at parties and meetings. Among the main reasons young people mentioned for consuming alcoholic beverages were to socialize with friends (44.7%), to socialize at parties and gatherings (49%) and/or to celebrate an achievement (24.6%).
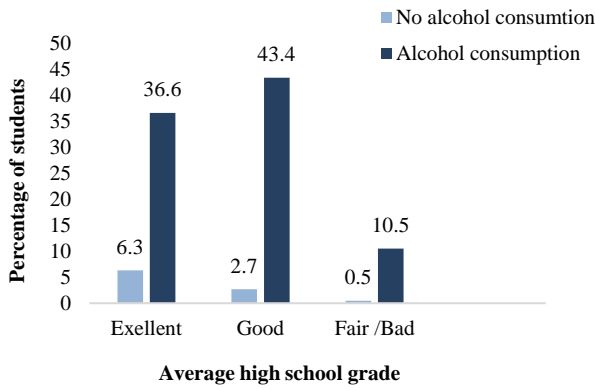
As for how the students surveyed consider their family relationship, 48.9% mentioned having an excellent relationship, 42.9% good, 7.7% fair, and 0.5% poor. When the family relationship with alcohol consumption was analyzed, it was observed that, although young people drink alcoholic beverages, this does not influence the type of relationship they have with their parents (Figure 1).

Graph 1 Family relationship and alcohol consumption among first-time CUCBA students
Source: Direct

Regarding the average grade obtained in high school, 42.9% (n= 253) had an average > 90 which was classified for this study as (Excellent), 46.1% (n= 271) obtained a grade between 80 and 89.9 (Good), and 11% (n= 65) presented a grade lower than 80 (Fair-Bad). When relating the average high school grade of the students with their alcohol consumption, no statistical difference was found (Graph 2).

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Graph 2 Alcohol consumption and average baccalaureate grade in first-time CUCBA students
Source: Direct

In relation to the prevalence of alcohol consumption according to the AUDIT test results, 83% (n=489) do not present problems with alcohol consumption, 12.9% (n=76) need simple advice to reduce consumption, 3.1% (n=18) present risky alcohol consumption and 1% (n=6) show risk of dependence. By gender, 47% of women were identified as having a low-risk level of alcohol consumption compared to 36% of men; however, the percentages are similar at level III where brief therapy and a continued approach are suggested (Table 1).

Consumption level	Feminine		Male		Total	
	n	%	n	%	n	%
I	277	47.0	212	36.0	489	83.0
II	29	4.9	47	8.0	76	12.9
III	8	1.4	10	1.7	18	3.1
IV	0.0	0.0	6	1.0	6	1.0
Total					589	100

I: Low-risk drinking level
II: Appropriate scores for simple counseling
III: Brief therapy and an ongoing approach suggested
IV: Diagnostic evaluation and possible treatment of alcohol dependence required.

Table 1 Type of alcohol consumption according to AUDIT by gender
Source: Direct

When comparing the results by bachelor's degree, it was observed that there is a greater number of first-time undergraduate students in Biology (90.1%) with low-risk consumption levels with significant statistical difference (p<0.05) in relation to Agribusiness students (69.2%), however, at level II the results show that the scores for Biology students are statistically lower (p<0.05) with respect to Agribusiness students (Table 2).

4. Discussion

The university population presents a high degree of vulnerability to alcohol consumption, due among other things to the access they have for the purchase of alcoholic beverages and the increase in situations that arise once they enter the university environment (Albarracín and Muñoz, 2008; Castaño-Pérez and Calderón-Vallejo, 2014). In the first years of study at university, alcohol consumption is often a tool used by young people to reduce their stress levels or negative feelings (Calvete and Estévez, 2009). The consequences of alcohol consumption at different levels of university life are reflected in poor academic performance, class absenteeism, depression and dropout problems (Albarracín and Muñoz, 2008; White *et al.*, 2000).

Bachelor's Degree						
Consumption level		AGR	AGN	BIO	CALI	MVZ	Total
I	n	100 a, b	27 b	154 a	27 a, b	184 a, b	489
	%	80.0	69.2	90.1	77.1	82.6	83.0
II	n	19 a, b	9 b	13 a	7 a, b	28 a, b	76
	%	15.2	23.1	7.6	20.0	12.8	12.9
III	n	3 a	3 a	4 a	1 a	7 a	18
	%	24	7.7	2.3	2.9	3.2	3.1
IV	n	3 a	0 a	0 a	0 a	3 a	6
	%	2.4	0.0	0.0	0.0	1.4	1.0
Total		125	39	171	35	219	589

I: Low-risk drinking level
II: Appropriate scores for simple counseling
III: Brief therapy and an ongoing approach suggested
IV: Diagnostic evaluation and possible treatment of alcohol dependence required.
AGR: Agronomy
AGN: Agribusiness
BIO: Biology
CALI: Food Science
MVZ: Veterinary Medicine and Animal Husbandry

Table 2 Type of alcohol consumption according to AUDIT by CUCBA undergraduate program
Source: Direct

In the present study the results of ever drinking alcohol consumption showed a high prevalence (86.4%), similar to what was found by Armendáriz *et al*., 2014 (92.2%) and Aguilar-Mena *et al*., 2019 (92.2%), and differing from what was reported in the studies conducted in university students by Rodríguez *et al*., 2022 (73.5%), López *et al*., 2022 (70.5%) and Cortaza-Ramírez *et al.,* 2022 (64.6%), where the percentages reported are lower.

Regarding the average age of onset of alcohol consumption, what was found in this study also coincides with what was reported in the National Survey on Drug, Alcohol, and Tobacco Consumption 2016-2017 (INPRFM, INSP, CONADIC, and SS, 2017), in which the age of onset is 16.7 years and to what was found by Rodríguez-de la Cruz *et al*, 2022 (16.6 years) and Cortaza-Ramírez *et al*., 2022 (16.3 years) which could be due, among other causes, to young people experiencing a transitional stage to adulthood.

In this study, the alcoholic beverages most preferred by young people were tequila (41.3%) and beer (37.9%), a result that corresponds to that reported in other studies (Puig-Nolasco *et al*., 2011; Telumbre and Sánchez, 2015); however, other authors report that beer is preferred by university students, probably because of its low cost and availability (Barrera *et al*., 2020; Caro *et al*., 2015; Cortaza-Ramírez *et al*., 2022). It was found that a high percentage of the surveyed students (74.6%) prefer to consume alcohol with their friends, similar data reported by Betancourt *et al*., 2017 (76.0%) and Cruz *et al*., 2018, where they mention that students seek to have fun outside the academic days and alcohol allows them to achieve such purpose.

Arrioja *et al*. (2017), consider that the social aspect is a predominant factor in alcohol consumption, the closest people (parents, relatives, partners and friends) become an influence for its consumption, that is, they function as a learning model. A high percentage of the students surveyed (91.8%) mentioned having an excellent/good family relationship, finding no association between alcohol consumption and the relationship of young people with their parents, which is consistent with the results of Sawyers *et al.* (2019), where 87% of university students indicated having a good relationship without showing association between this variable and alcohol consumption, however, Yeh *et al*. (2006), found that the relationship with parents does influence alcohol consumption, especially when young people have a conflictive coexistence with them and when the behavior is linked to their consumption.

On the other hand, regarding the relationship of the variables of average high school grade and alcohol consumption, no association was found in this study, however, Del Pino and Correa (2016), evidenced that those young people with average ≥ 9 tend to drink less alcohol while those with average of 7 find more reasons to ingest alcoholic beverages than those with grade of 9.

According to the AUDIT, it was identified that 83% of the students did not present problems with alcohol consumption, these results coincide with the study conducted by González *et al*. (2019), where the predominance of sensible consumption was identified and what was reported by Salomón (2020), where 70% of the students had an adequate consumption of alcohol, on the contrary, these data differ from those obtained by Cardona and Orjuela (2014), which show a higher risky consumption of alcohol.

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Conclusions

According to the results obtained from the AUDIT, the majority of students (95.9%), did not present problems with alcohol consumption and only a low percentage (4.1%) showed risky consumption and dependence to this substance, however, a high percentage of students indicated having consumed alcoholic beverages, which is worrisome because there are factors such as the influence of friends, a dysfunctional family environment, availability and easy access to alcoholic beverages that may favor their consumption and affect the academic performance of young people.

Therefore, it is necessary for the institution to design and implement intervention strategies regarding alcohol consumption that should be structured in a permanent support program within the University Center in order to strengthen comprehensive education from the first semesters until the end of the university stage and to know in depth the factors associated with alcohol consumption**.**

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