

## RESEARCH

## Percepción de riesgo de consumo de alcohol y tabaco en universitarios del área de la salud

## Risk perception of alcohol and tobacco consumption in university students from the health area

## Percepção de risco do consumo de álcool e tabaco em universitários da área da saúde

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### Abstract

**Introduction:** Alcohol and tobacco consumption are a worldwide public health problem that affects adolescents and young people. Mexico is in tenth place with a per capita consumption of 7.2 liters of alcohol, and currently, approximately 14.9 million Mexican people are smokers. **Objective:** Evaluate the relationship between risk perception and alcohol and tobacco consumption in university students of health sciences at a public university in Tabasco, Mexico. **Methodology:** This is a descriptive correlational study, with a sample of 601 students selected by stratified probability sampling. Selection criteria: to be enrolled in nursing, medicine or dentistry programs; incomplete instruments and those who dropped out of the study were removed. The questionnaire of personal data and prevalence of alcohol and tobacco consumption, the questionnaire of risk perception towards licit drug consumption and the Audit test were applied, guaranteeing anonymity, data confidentiality and the right to refuse to participate. **Results:** The average consumption was 3.6 alcoholic beverages and 2.5 cigarettes per occasion. There was a statistically significant negative relationship between risk perception and number of cigarettes consumed ( $p < .05$ ) and alcohol consumption ( $p < .01$ ). **Conclusions:** The consumption of alcohol and tobacco is present in university students of health sciences; therefore, nursing interventions on the perception of risks of consumption should be established in order to have an impact on the phenomenon of addictions.

**Key words:** Alcohol drinking; Tobacco; Risk factors; Perception; Health Sciences Students (DeCS).

### Resumen

**Introducción:** El consumo de alcohol y tabaco son un problema de salud pública a nivel mundial que afecta a adolescentes y jóvenes. En México ocupa el décimo lugar con un consumo de 7.2 litros per cápita de alcohol y aproximadamente 14.9 millones de mexicanos son fumadores actualmente. **Objetivo:** Analizar la relación de percepción de riesgo y consumo de alcohol y tabaco en estudiantes universitarios de ciencias de la salud de una universidad pública en Tabasco, México. **Metodología:** Estudio descriptivo correlacional, en una muestra de 601 estudiantes seleccionados por muestreo probabilístico estratificado. Con criterios de selección: estar inscrito en el programa de enfermería, medicina u odontología, se eliminaron instrumentos incompletos o quien abandonó el estudio. Se aplicó cédula de datos personales y prevalencia de consumo de alcohol y tabaco, cuestionario de percepción de riesgo hacia el consumo de drogas lícitas y prueba Audit, garantizando anonimato, confidencialidad de datos y derecho de negarse a participar. **Resultados:** La media de consumo fue 3.6 en bebidas alcohólicas y 2.5 cigarrillos por ocasión. Existió relación negativa estadística significativa entre la percepción de riesgo con cantidad de cigarrillos consumidos con  $p < .05$  y consumo de alcohol con  $p < .01$ . **Conclusiones:** El consumo de alcohol y tabaco se encuentra presente en los estudiantes universitarios de ciencias de la salud, por ello, se deben establecer intervenciones de enfermería sobre la percepción del riesgo del consumo para impactar en el fenómeno de las adicciones.

**Palabras clave:** Consumo de bebidas alcohólicas, Tabaco, Factores de riesgo, Percepción, Estudiantes del área de la salud (DeCS).

### Abstrato

**Introdução:** O consumo de álcool e tabaco é um problema de saúde pública mundial que afeta adolescentes e jovens. No México, ocupa a décima posição com um consumo de álcool per capita de 7,2 litros e aproximadamente 14,9 milhões de mexicanos são atualmente fumadores. **Objetivo:** Analisar a relação entre a percepção de risco e o consumo de álcool e tabaco em estudantes universitários de ciências da saúde de uma universidade pública de Tabasco, México. **Metodologia:** Estudo descritivo correlacional, numa amostra de 601 estudantes selecionados por amostragem estratificada de probabilidade. Com critérios de seleção: ser matriculado no programa de enfermagem, medicina ou odontologia, instrumentos incompletos ou aqueles que



abandonaram o estudo foram eliminados. Foram aplicados um questionário de dados pessoais e prevalência do consumo de álcool e tabaco, um questionário de percepção de risco para o consumo de drogas lícitas e um teste de auditoria, garantindo o anonimato, a confidencialidade dos dados e o direito de recusar a participação.

**Resultados:** O consumo médio foi de 3,6 bebidas alcoólicas e 2,5 cigarros por ocasião. Houve uma relação negativa estatisticamente significativa entre a percepção de risco e o número de cigarros consumidos com  $p < .05$  e o consumo de álcool com  $p < .01$ . **Conclusões:** O consumo de álcool e tabaco está presente nos estudantes universitários de ciências da saúde, pelo que devem ser estabelecidas intervenções de enfermagem sobre a percepção de risco do consumo, a fim de ter um impacto no fenômeno das dependências.

**Palavras-chave:** Consumo de Bebidas Alcoólicas; Tabaco; Fatores de Risco; Percepção; Estudantes de Ciências da Saúde (DeCS).

## Introduction

The consumption of psychoactive substances in university students is increasingly present in most educational institutions; this practice is associated with some factors such as vulnerability and social environment, becoming a risk factor for young people, this situation increases the likelihood of consumption of substances such as alcohol or tobacco <sup>(1)</sup>. According to the World Health Organization (WHO) <sup>(2)</sup>, alcohol consumption is a public health problem, in 2016 more than half (57% or 3.1 billion people) of the world's population aged 15 years and older had abstained from drinking alcohol in the previous 12 months, yet about 2.3 billion people are current drinkers. More than half of the population drinks alcohol beverages in only three WHO regions (Americas, Europe, and Western Pacific) <sup>(2, 3)</sup>.

The problem has increased in recent years; several studies <sup>(1-4)</sup> carried out in Latin America showed that Chile ranks first in alcohol consumption with 9.6 liters per capita, while Mexico ranks tenth with a consumption of 7.2 liters per capita <sup>(3)</sup>. In addition, 63% of the people identified in a study as alcohol drinkers were adolescents and young people between 12 and 24 years of age <sup>(4)</sup>. In Mexico <sup>(5)</sup>, alcohol consumption of the general population once in their lifetime has remained stable between the 2011 and 2016 measurements. Regarding prevalence in the last year, this presented a decrease of two points, from 51.4% in 2011 to 49.1% in 2016, while prevalence in the last month showed a significant increase from 31.6% to 35.9%. In Tabasco, Mexico, 3.5% of the population aged 12 to



65 years consumes alcohol daily and 28.7% consumed alcohol in the last year. Per capita consumption was 9.5 in men and 1.6 in women in the 15 to 65 age group.

Similarly, tobacco consumption is considered a public health problem at the international level <sup>(6)</sup>, and is considered by the WHO <sup>(7)</sup> as a global epidemic, and is also estimated to be the leading preventable cause of different chronic diseases with high mortality risk, such as various types of cancer, respiratory problems, cardiovascular diseases and chronic obstructive pulmonary disease (COPD) <sup>(6, 8)</sup>. In Mexico, there are 14.9 million current smokers (3.8 million women, 11.1 million men), of whom 5.4 million smoke daily and 9.4 million smoke occasionally. Tabasco, Mexico, has a population of 1.7 million inhabitants aged 12 to 65 years (891,000 women, 832,000 men), unfortunately, 162 thousand are current smokers (25 thousand women and 137 thousand men), 40 thousand consume it daily and 121 thousand occasionally; regarding the age group approximately 50 thousand smokers are between 18 and 24 years old <sup>(9)</sup>. On the other hand, risk perception is defined <sup>(10)</sup> as those judgments or intuitions that one has about the dangerousness of a situation; with respect to drugs, risk perception is an important factor in preventing addictions; this perception is posed as a subjective barrier to substance use and, therefore, the higher the risk perception, the lower the consumption of licit and illicit drugs will probably be.

This research was focused on university students of health sciences, who due to their area of knowledge have the theoretical foundations of the latent damage of alcohol and tobacco consumption in the organism; the stage of life in which they find themselves plays an important role because they can be easily influenced by their peers <sup>(11, 12)</sup>. Therefore, this study represents an opportunity for the nursing discipline, providing information for the design of interventions that help in the promotion of health and prevention of consumption in this population. Based on the above, the purpose of this study was to analyze the relationship between risk perception and alcohol and tobacco consumption in university students of health sciences at a public university in Tabasco, Mexico.



## Methodology

This is a descriptive, cross-sectional, correlational study. The population consisted of 1,420 health sciences students from a public university in Tabasco, Mexico.

Stratified probability sampling was used (13). A sample of 601 students of both genders was considered, who met the following inclusion criteria: to be enrolled in one of the nursing, medicine or dentistry programs, to have agreed to participate in the research and to have signed the informed consent form. The instruments that were not completely answered and those that decided to abandon the study were eliminated. A Personal Data and Prevalence of Alcohol and Tobacco Consumption Questionnaire (CDPCAT) were used, divided into three sections: a) personal aspects, b) aspects related to alcohol consumption and c) aspects related to tobacco consumption.

The Questionnaire of Perception of Risk towards Licit Drug Use (CPRCDL) developed by Uribe, Verdugo and Zacarías (14) was applied. It is composed of 38 items that evaluate the negative consequences of alcohol consumption, the negative attitude towards licit drug consumption, the consumption of licit drugs to have friends and new sensations, the consumption of licit drugs for coping and belonging, and the negative consequences of tobacco consumption. The response options are Likert-type, scored from 1 to 5, where 1 is totally disagree and 5 is totally agreed, with an acceptable internal consistency, with Cronbach's Alpha of .78. The Alcohol Use Disorders Identification Test [AUDIT], developed by the WHO (15), was also applied; it is composed of 10 multiple-choice items that examine excessive alcohol consumption, and determines the types of alcohol consumption (sensible, dependent and harmful). The minimum score is zero and the maximum score is 40. This instrument has been used in Mexican university students (16), reporting acceptable reliability of .80. Cronbach's Alpha of .75 was obtained in this study.

The research was authorized by the Institutional Research Ethics Committee (Folio 0606) and the director of the educational institution. The application of the instrument was carried out in a group and face-to-face manner from February to March 2019, with an estimated time of 10 minutes per group. The study complied with the Regulations



of the General Health Law on Health Research on Humans in Mexico <sup>(17)</sup>. Title II for the ethical aspects of research on human subjects was considered, the dignity of the participants was respected (Article 13), anonymity and voluntary participation were guaranteed, and the research was risk-free (Articles 14 and 17). Informed consent was obtained from each participant, any doubts regarding the research were cleared up, confidentiality was guaranteed and the opportunity to withdraw consent at any time without any school repercussions was guaranteed (Articles 20 and 21, 57 and 58).

The data obtained were processed using the Statistical Package for the Social Sciences (SPSS) version 22.0 for Windows. Descriptive statistics such as frequencies and percentages, measures of central tendency and variability were used, and Spearman's correlation coefficient was used to determine the association between variables.

## Results

With regard to the sociodemographic variables, 65.1% of the sample was female; 42.2% of the university students were in their first and/or second semester. Regarding the major they were studying, 34.1% were in nursing, 33.8% in medicine and 32.1% in dentistry (Table 1).

Table 1: Sociodemographic data, university students - 2019 (n = 601).

Variables	f	%
Sex:		
Female	391	65.1
Male	210	34.9
Semester:		
First and second	254	42.2
Third and fourth	176	29.6
Fifth and sixth	118	19.6
Seventh and eighth	32	5.4
Ninth and tenth	21	3.5
Bachelor's Degree:		
Nursing	205	34.1
Medicine	203	33.8
Dentistry	193	32.1

Source: Own development.



Regarding sociodemographic data and variables related to alcohol consumption, we considered students who consumed alcohol (73.5%) and tobacco (34.9%) once in their lifetime, and those who consumed alcohol (51.6%) and tobacco (19.3%) in the last year.

The average age of the university students was 19.5 years (SD=1.9), on average they started consuming alcohol at 16.6 years (SD=2.0), the average consumption was 3.9 (SD=3.3) alcoholic beverages on a single occasion. Alcohol consumption scores were the highest average for sensible consumption with 3.2 (SD=2.2), followed by harmful consumption with 1.4 (SD=2.4). With respect to tobacco use, the average age of onset was 16.9 years (SD=2.3), and they smoked an average of 2.5 (SD=2.4) cigarettes on a single occasion (Table 2).

Table 2: Sociodemographic data, alcohol and tobacco use in college students - 2019 (n = 601).

Variable	n	$\bar{X}$	Average	SD	Value	
					Minimum	Maximum
Age (years)	601	19.5	19.0	1.96	17	35
Age of onset of alcohol consumption*	442	16.6	17.0	2.0	7	24
Quantity of beverages consumed**	310	3.9	3.0	3.3	1	21
General AUDIT **	310	5.1	4.0	4.5	1	24
Sensible drinking**	310	3.2	2.0	2.2	1	10
Dependent drinking**	310	0.5	.0	1.0	0	7
Harmful drinking **	310	1.4	.0	2.4	0	14
Age of onset of tobacco use*.	210	16.9	17.0	2.3	8	26
Quantity of cigarettes**	116	2.5	2.0	2.3	1	17

Source: Own development.

\*Sample of university students who have ever consumed alcohol and tobacco once in their lifetime.

\*\*Sample of university students who consumed alcohol and tobacco in the last year.

With respect to the prevalence of alcohol consumption, it was found that 73.5% consumed alcohol once in their lifetime, 51.6% in the last year, 28.0% in the last month, and only 11.6% in the last week. In relation to the prevalence of tobacco use, it was found that 34.9% used tobacco once in their lifetime, 19.3% in the last year, 12.0% in the last month and only 7.7% in the last week. In the last year, 48.4% did not consume alcohol, and 80.7% did not consume tobacco; the licit drug most consumed by the students was alcohol (Table 3).



Table 3: Prevalence of alcohol and tobacco use in college students - 2019 (n = 601).

Prevalence of consumption	Yes		No	
	f	%	f	%
Alcohol consumption:				
Once in their lifetime	442	73.5	159	26.5
In the last year	310	51.6	291	48.4
In the last month	168	28.0	433	72.0
In the last week	70	11.6	531	88.4
Tobacco use:				
Once in their lifetime	210	34.9	391	65.1
In the last year	116	19.3	485	80.7
In the last month	72	12.0	529	88.0
In the last week	46	7.7	555	92.3

Source: Own development.

With respect to the risk perception indexes and their dimensions, it was observed that the overall index of the university students reported a high average of 69.4 (SD=11.6), that is, the majority had a high perception of risk with respect to alcohol and tobacco use. Regarding the dimensions, the highest averages were negative consequences of tobacco use with 82.5 (SD=17.2), followed by negative attitude towards drug use with 81.3 (SD=18.9) and negative consequences of alcohol use with 78.6 (SD=18.8) (Table 4).

Table 4: Alcohol and tobacco risk perception indexes - 2019 (n= 601).

Variable	$\bar{x}$	Average	SD	Value	
				Minimum	Maximum
Risk perception index	69.4	68.4	11.6	28	100
Negative consequences of alcohol consumption*	78.6	80.6	18.8	0	100
Negative attitude towards drug use*	81.3	87.5	18.9	0	100
Use of licit drugs to have friends and new sensations*	48.2	46.4	25.2	0	100
Licit drug use as coping and belonging*.	63.0	63.6	20.6	0	100
Negative consequences of tobacco consumption*.	82.5	91.7	17.2	0	100

Source: Own development.

Table 5 shows the association between risk perception and alcohol and tobacco consumption, which shows a statistically significant positive relationship between risk perception ( $r_s=0.10$ ,  $p<.05$ ) and age of onset of alcohol





consumption of the participants, suggesting that the older the age, the higher the risk perception of consumption. Similarly, a statistically significant negative relationship was identified between risk perception with respect to the amount of alcoholic beverages consumed ( $r_s = -0.18$ ,  $p < .01$ ), the amount of cigarettes consumed ( $r_s = -0.23$ ,  $p < .05$ ) and alcohol consumption ( $r_s = -0.20$ ,  $p < .01$ ), that is, when the university student has a higher risk perception with respect to the amount of alcoholic beverages and cigarettes, therefore, the level of alcohol consumption may decrease.

Table 5: Correlation of alcohol and tobacco consumption with the risk perception index - 2019 (n = 601).

Variables	1	2	3	4	5	6	7
1 Age	1						
2 Age of onset of alcohol consumption	.33**	1					
3 Quantity of alcoholic beverages consumed	.05	-.20**	1				
4 Age of onset of tobacco use	.44**	.54**	-.11	1			
5 Quantity of cigarettes consumed in a typical day	-.11	-.10	.34**	-.30**	1		
6 Alcohol consumption (AUDIT)	.05	-.19**	.58**	-.10	.26**	1	
7 Risk perception	-.01	.11*	-.18**	.02	-.23*	-.20**	1

Source: Own development.

\*  $p = 0.05$ ; \*\*  $p = 0.01$ .

## Discussion

This study made it possible to analyze the relationship between risk perception and alcohol and tobacco consumption in a sample of university students in the area of health sciences at an educational institution in Tabasco, Mexico. It was found that the participants started consuming alcohol and tobacco on average at 16 years of age, this age is lower than that reported by several studies <sup>(5, 18-19)</sup>, that indicated that alcohol and tobacco consumption began between 17 and 24 years of age; this is probably due to the fact that young people are in a transition stage between adolescence and adulthood, or to the influence of the relationship events in the society



in which they develop at this stage of life, where they encounter new behaviors with which they may feel comfortable.

Similarly, health sciences students tend to consume an average of four alcoholic beverages and three cigarettes occasionally; these findings are similar to those reported in some studies <sup>(18, 20)</sup>, but differ from another <sup>(12)</sup> where the amounts of beverages consumed were higher, this may be due to the socioeconomic context in which university students live. On the other hand, the prevalence of alcohol consumption reported in this study are lower than those reported in other studies conducted in university students <sup>(18, 20-22)</sup>, which may be due to the interaction with various factors such as sex, marital status, geographical area, as well as other cultural variables that depend on the environment or climatic zones with higher temperatures in which each study was conducted.

Regarding the type of alcohol consumption, considering it from sensible to harmful, the data reported were similar to some studies <sup>(18, 23)</sup>, and higher than those reported by other studies <sup>(16, 24-25)</sup>. These differences may be due to various factors that influence alcohol consumption, such as the academic workload, high information density, ease of access to alcoholic beverages and financial independence <sup>(26)</sup> of university students, situations that university students may present and that may vary depending on the type of courses; however, it has been seen that alcohol consumption has increased especially in health sciences students <sup>(20, 24, 26)</sup>.

In relation to tobacco consumption, it was observed that the prevalence identified in this study were lower in comparison with other studies <sup>(18, 20, 22, 27)</sup>; this is probably due to the fact that alcohol is the drug most consumed by young university students, in addition to the fact that tobacco consumption occurs mostly in young people who already have a well-established use of other drugs such as alcohol, which may increase the possibility of poly-drug use <sup>(28-29)</sup>. It should be considered that university students are in a stage of adaptation to new competitive lifestyles, social and economic independence, as well as in some cases living far from home, which may be factors that favor unhealthy lifestyles such as alcohol and tobacco consumption <sup>(25, 28, 30)</sup>.



With respect to the risk perception average towards high alcohol and tobacco consumption, higher averages were observed among the dimensions: negative attitude towards drugs, negative consequences of tobacco and negative consequences of alcohol. This shows that most of the students had a high perception of the negative consequences of drug, alcohol and tobacco use, but despite this, they continue to consume and even on some occasions the consumption is high. These results are higher than those reported in other studies <sup>(18, 20, 31)</sup> and may be due to the sample size and various environmental factors. However, it should be considered that despite being health science students, specific knowledge about drug abuse is not incorporated in the curricula, which may suggest that knowledge about the effect of these substances may be deficient <sup>(26)</sup>.

With respect to the general objective of the study, a statistically significant negative relationship was identified between risk perception and the amount of alcoholic beverages consumed, the amount of cigarettes consumed and alcohol consumption; the data are similar to a study <sup>(32)</sup> conducted with university students of health sciences in northern Mexico; this similarity may be due to the fact that both samples belong to the same field of study, in addition to sharing certain similarities in both school contexts and the consumption environment.

The findings of this study are relevant to have a broader picture of the situation experienced by university students of health sciences, who are often the students with the highest level of alcohol and tobacco consumption <sup>(26)</sup>, therefore, these results may favor the creation of programs aimed at reducing the consumption of alcohol and tobacco in this population, in addition to developing a greater health promotion approach by nursing staff to increase the perception of risk.

Some limitations of this study are that it was carried out in a public institution and in health sciences careers, so the results cannot be generalized. Likewise, the results should be taken with caution due to the cross-sectional nature of the data, which is why it is not possible to analyze the causality of the variables included in this research.



## Conclusions

According to the results obtained, it can be concluded that the average age of onset of alcohol and tobacco consumption continues to decrease. The quantities of alcoholic beverages and cigarettes consumed are considered low. Despite the fact that most of the population presented a consumption that is classified as sensible, there is a percentage that reported a harmful type of use, which is worrying, because according to the interaction with some factors such as stress, influence of friends and ease of acquisition, the consumption patterns can be modified and deteriorate the academic situation of the students to the point of abandoning their studies.

According to the results obtained, it can be concluded that the average age of onset of alcohol and tobacco consumption continues to decrease. The quantities of alcoholic beverages and cigarettes consumed are considered low. Despite the fact that most of the population presented a consumption that is classified as sensible, there is a percentage that reported a harmful type of use, which is worrying, because according to the interaction with some factors such as stress, influence of friends and ease of acquisition, the consumption patterns can be modified and deteriorate the academic situation of the students to the point of dropping out of school.

Prevalence of alcohol consumption was higher than those for tobacco. Perceived risk of licit drug use in this population was considerably high. A significant statistical correlation was identified between risk perception and the amount of alcoholic beverages consumed, number of cigarettes consumed in a typical day, and alcohol consumption.

The findings can help nurses and professionals in the area of addiction treatment to be more aware of the risks of the use of different psychoactive substances, so that they can educate individuals and the community about the harms of substance use. This implies the need to follow up with young people to see if their pattern of alcohol and tobacco consumption changes positively, in order to achieve a decrease in such consumption during their time at university; for example, this research found that the levels of risk perception are high and despite this young people show varying levels of consumption. The results presented show a problem that is not addressed in most educational institutions, but that can be perceived; therefore, it is necessary that nurses and multidisciplinary teams



have the possibility to design and carry out interventions that help to strengthen the perception of the risk of substance use, not only of alcohol and tobacco, but also of other drugs.

It is necessary to continue research on this subject, because so far there is little scientific evidence available, especially for this population; furthermore, longitudinal studies should be implemented in order to evaluate the causality of substance use. It is also recommended that prevention actions be carried out with university students since their first semesters and that these actions continue on a permanent basis to ensure that the effects of the interventions last longer.

## Conflict of interest

The authors declare that they have no conflicts of interest.

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