

**Binge drinking by university students: student profile and risk and protection factors****O binge drinking por universitários: perfil do estudante e fatores de risco e proteção****Binge drinking por parte de los estudiantes universitarios: perfil de los estudiantes y factores de riesgo y protección****Received: 06/10/2020****Approved: 06/03/2021****Published: 14/10/2021****Elce Cristina Côrtes Rebouças<sup>1</sup>****Thaís Nunes Pereira<sup>2</sup>****Daiana Kelly Moraes Lisboa<sup>3</sup>****Roger Luiz da Silva Almeida Filho<sup>4</sup>**

This is a quantitative study carried out between 2017 and 2018 at a state public university in the state of Bahia. It aimed to evaluate the practice of binge drinking among university students. A self-administered questionnaire and descriptive and inferential analysis were used. 150 university students participated, 52% of the women and 48% of the men who reported drinking alcoholic beverages, with a mean age of 23.2 years (sd±3.6). There was an association between drinking to alleviate anxiety and the practice of binge drinking ( $p=0.01$ ); for moderate use of alcohol, it was reported not feeling anything or feeling drowsy after drinking, while for those who made use of it heavily, the feeling was of joy ( $p<0.0001$ ). In the typical consumption pattern of binge drinking, 41% were women and 59% were men. The statistically significant differences were: regarding males – having suffered or caused damage to others ( $p=0.04$ ); as for the female gender – having social benefits ( $p=0.0001$ ) and hiding from parents that they abused alcohol ( $p=0.01$ ). The observed risk factors: gender, early onset of alcohol use, university admission and peer influence. The protective factors: being married and being religious. The university needs to understand its role in this scenario, including cultural activities and offering access to knowledge about risks and the reduction of alcohol consumption among university students.

**Descriptors:** Binge drinking; Students; Academic performance; Universities.

Este é um estudo quantitativo realizado entre 2017 e 2018 em uma universidade pública estadual da Bahia, com o objetivo de avaliar a prática de *binge drinking* em universitários. Utilizou-se questionário autoaplicável e análise descritiva e inferencial. Participaram 150 universitários, sendo 52% mulheres e 48% homens que afirmaram ingerir bebidas alcoólicas, com média de idade de 23,2 anos (dp±3,6). Houve associação entre beber para amenizar a ansiedade e a prática do *binge drinking* ( $p=0,01$ ); no uso moderado do álcool relatou-se não sentir nada ou sentir sonolência após o consumo da bebida, enquanto os que faziam uso nocivo, a sensação era de alegria ( $p<0,0001$ ). No padrão de consumo típico do *binge drinking*, 41% eram mulheres e 59% eram homens. As diferenças estatisticamente significantes foram: quanto ao sexo masculino – ter sofrido ou causado prejuízos a terceiros ( $p=0,04$ ); quanto ao sexo feminino – possuir benefício social ( $p=0,0001$ ) e esconder dos pais que faziam uso excessivo do álcool ( $p=0,01$ ). Os fatores de risco observados: sexo, início precoce do uso do álcool, ingresso na universidade e influência dos pares. Já os fatores de proteção: estar casado e ter religião. A universidade precisa entender seu papel nesse cenário incluindo atividades culturais e ofertando acesso a conhecimento sobre riscos e a redução do consumo de álcool nos universitários.

**Descritores:** Consumo excessivo de bebidas alcoólicas; Estudantes; Desempenho acadêmico; Universidades.

Este es un estudio cuantitativo realizado entre 2017 y 2018 en una universidad pública estatal de Bahia, con el objetivo de evaluar la práctica del *binge drinking* por estudiantes universitarios. Se utilizó un cuestionario autoadministrado y un análisis descriptivo e inferencial. Los participantes fueron 150 estudiantes universitarios, 52% mujeres y 48% hombres que declararon consumir bebidas alcohólicas, con una edad media de 23,2 años (sd±3,6). Hubo una asociación entre beber para aliviar la ansiedad y la práctica del *binge drinking* ( $p=0,01$ ); en el consumo moderado de alcohol informaron no sentir nada o sentirse somnolientos después de beber, mientras que los que hicieron un consumo perjudicial, se sintieron felices ( $p<0,0001$ ). En el patrón de consumo típico del *binge drinking* el 41% eran mujeres y el 59% eran hombres. Las diferencias estadísticamente significativas fueron: para el sexo masculino - haber sufrido o causado daño a otros ( $p=0,04$ ); para el sexo femenino - tener beneficios sociales ( $p=0,0001$ ) y ocultar a los padres el consumo excesivo de alcohol ( $p=0,01$ ). Los factores de riesgo observados fueron: el sexo, el inicio temprano del consumo de alcohol, el ingreso en la universidad y la influencia de los compañeros. Los factores de protección fueron: estar casado y tener religión. La universidad tiene que entender su papel en este escenario incluyendo actividades culturales y facilitando el acceso a los conocimientos sobre los riesgos y la reducción del consumo de alcohol entre los estudiantes universitarios.

**Descritores:** Consumo excesivo de bebidas alcohólicas; Estudiantes; Rendimiento académico; Universidades.

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## INTRODUCTION

**A**lcohol (ethanol) consumption is widespread among university students<sup>1-3</sup>. University admission, which usually occurs when the individual emerges into adulthood, is associated with a high rate of alcohol consumption. Studies show that the use of alcohol by university students ranges from 64% to 90%<sup>4-6</sup>. This situation raises, over time, a lot of concern on the part of parents, educators and researchers, since the use of alcohol is related to a series of disorders, not only for those who use this psychoactive substance, but also for people around them. These problems impact multiple aspects of young people's lives, which include physical, social, legal and economic consequences<sup>7</sup>.

Alcohol use by women has increased over time as a result of various sociocultural changes, and it is quite high among young women, especially for those who have attained higher education. Despite this, some studies indicate that there are no statistically significant differences in the number of university students of both sexes in the use of alcoholic beverages<sup>5,6,8</sup>. In turn, there is evidence of greater susceptibility of females to disorders caused by the use of alcohol<sup>9,10</sup>, including sociocultural ones<sup>11</sup>.

There is no safe amount for alcohol intake, even when consumed in doses considered low, and neurotoxication and changes in perception can occur<sup>12</sup>. However, excessive consumption brings additional concerns, as most of the problems associated with the use of alcoholic beverages are related to its harmful use, that is, excessive consumption.

In the case of university students, the consumption of this type of beverage and its excessive intake is very frequent<sup>13,14</sup>, with evidence of cognitive impairment<sup>13</sup>, an aspect that requires extra attention when it comes to individuals undergoing professional training. Cognitive changes can result from brain damage.

Changes in the brain in case of early and excessive exposure to ethanol can occur and, above all, in young people, in which this structure is still in formation<sup>15</sup>, considering that some of these damages may be irreversible<sup>16,17</sup>.

There is a widespread practice among young people, known by the term binge drinking, which refers to excessive and episodic consumption of alcohol, alternating between periods of heavy consumption and abstinence, common among students. A study reports a prevalence of 57% of this practice among university students<sup>7</sup>.

The criteria to determine and classify binge drinking are not a consensus in the scientific community<sup>13</sup>. Other terms used to classify it are heavy drinking, heavy episodic drinking and risky single-occasion drinking. The most used criterion to determine it is based on the number of doses ingested on one occasion, known as 5+/4+ (5+ doses for men and 4+ doses for women)<sup>13,18</sup>.

Another recurrent parameter is a blood alcohol concentration of at least 0.8%. This concentration varies with the number of doses, dose pattern, weight and duration of consumption, generally corresponding to the intake of 5+ doses for men and 4+ doses for women in most individuals<sup>7</sup>.

Binge drinking is associated with various risk behaviors, such as drunk driving, unprotected sex, absenteeism, vandalism, legal problems and accidents<sup>6,7,19</sup>. The negative consequences of this practice are not exclusively acute, there are a series of losses related to its chronic effect, such as: liver disease, depression, anxiety, relationship problems, and others<sup>7,13,19</sup>. In addition, harmful alcohol consumption is considered by the World Health Organization as the third risk factor for premature death<sup>20</sup>.

The factors that seem to account for the increase in this behavior among university students are the search for sex, the possibility of living new experiences, greater autonomy, peer influence and individual characteristics<sup>7,19</sup>. This practice is observed in both sexes, however it is statistically associated with males. However, it has been increasing among women<sup>21</sup>.

The practice of binge drinking by university students still lacks studies that point out the role that admission to these institutions plays in this increasingly frequent behavior. There is a lack of works that seek to establish the profile of students who perform this practice and implications for their academic performance. Thus, this study aims to evaluate the practice of binge drinking among university students.

## METHODS

This is a primary cross-sectional study, with a quantitative approach and an analytical epidemiological profile, carried out with students from the Universidade do Estado do Sudoeste da Bahia - UESB, campus of Vitória da Conquista, between 2017 and 2018. UESB is a public state institution of higher education located in Southwestern region of the state of Bahia. The Vitória da Conquista campus offers 22 undergraduate courses in different areas of knowledge.

In this research, only students of legal age enrolled in the last years (between the 3<sup>rd</sup> and 6<sup>th</sup> year) of the undergraduate courses were included.

The criterion to consider binge drinking in this study was 5+/4+, that is, the consumption of 4 or more doses by women and 5 or more doses by men on a single occasion and at least once a month<sup>13,18</sup>.

The minimum sample of students enrolled in the last years of the various undergraduate courses was determined by random probability<sup>22</sup>.

The questionnaires were constructed and organized by the researchers in three parts: (1) Sociodemographic information: sex, age, income, and others; (2) Multifactorial aspects of alcohol consumption: age of first sip, people with whom the university student drinks with, motivations, among others; and, (3) Risk behaviors, damages suffered or caused to third parties. Participants took, on average, 10 minutes to answer all the questions proposed in the research instrument.

Academic performance is considered in this study as the execution and results obtained by the student in the various activities necessary for the completion of the undergraduate course, such as exams and performance of activities requested by professors. Information on the students' academic performance was obtained from questions aimed at this purpose, available in part three of the questionnaires.

In this work, the term sex will be used instead of gender<sup>23,24</sup>, since sexual dimorphism in response to the use of ethanol is a consequence of the anatomical-physiological differences between the two genders<sup>25,26</sup>.

For data analysis, initially, descriptive statistics were performed to establish means, standard deviation, absolute and relative frequencies. The Chi-square test was used to examine the consumption of alcohol by university students, the factors associated with this practice, and to verify possible differences between sexes in the different parameters studied. The t-test was used to compare age and alcohol consumption between male and female students. The statistical level of confidence was  $p < 0.05$  and, based on the results obtained, an inferential analysis was performed. All analyzes were performed using Microsoft Excel<sup>®</sup>.

At the time of application of the research, objectives, procedures, ethical issues were explained, of which the participants signed the Informed Consent Form (ICF). All participating students were informed of the relevance of their collaboration to the research and of the guarantee of anonymity of the information provided. The Research Ethics Committee of UESB approved this study under No.: 1,875,430.

## RESULTS

From a population of 1635, 176 individuals were considered as a sample. In turn, 209 university students were surveyed, of which 10 were excluded for not filling the survey correctly. Among 199 university students, 150 (78 women and 72 men) reported drinking alcoholic beverages, with a mean age of 23.2 years ( $sd\pm 3.6$ ) (Table 1).

**Alcohol consumption - moderate consumption x binge drinking**

The data showed that among students who reported using alcohol at the time of the survey, 52% were women and 48% were men. It was found that 60% of it was compatible with binge drinking. Among alcohol users, the majority (64%) lived in other cities; 69% did not work, had studying as their only occupation and 85% did not receive social benefits. The sociodemographic data of individuals who reported drinking alcohol are shown in Table 1.

**Table 1.** Sociodemographic information of university students who reported consuming alcohol. UESB-Vitória da Conquista/BA, 2017-2018.

Variables	Moderate (60)	Binge (90)	Total (150)	p
<b>Age (years)</b>	23.2 $\pm$ 3.6 <sup>§</sup>	23.6 $\pm$ 3.7 <sup>§</sup>	23.2 $\pm$ 3.6 <sup>§</sup>	0.484 <sup>θ</sup>
<b>Sex</b>				0.001 <sup>λ</sup>
Female	41	37	78	
Male	19	53	72	
<b>Marital status</b>				0.03 <sup>λ</sup>
Married/Civil union	5	0	5	
Single	55	90	145	
<b>Living at family home</b>				0.122 <sup>λ</sup>
Yes	39	48	87	
No	20	42	62	
<b>Family income</b>				0.005 <sup>λ</sup>
Up to 3 minimum wages	50	56	106	
5 or more minimum wages	10	34	44	
<b>Supported by whom</b>				0.246 <sup>λ</sup>
Parents	33	64	97	
Own resources	17	21	38	
Did not answer	10	5	15	
<b>Participate in any religion</b>				0.02 <sup>λ</sup>
Yes	34	34	68	
No	25	56	81	
Did not answer	1	0	1	

<sup>§</sup> mean $\pm$ DP; <sup>θ</sup>Test t; <sup>λ</sup>Chi-Squared Test.

Students were aware of the consequences of alcohol use. In fact, 95% said they knew that alcohol could be addictive, 90% said that it could induce behavior change, 95% said they knew it was dangerous to drive after drinking, and 43% believed it could compromise their studies. They also demonstrated that they were fine with their personal choices, 70% said they had chosen the respective undergraduate courses for personal achievement, and 75% reported being satisfied with the chosen course.

It was observed that 91% stated that they had a family member who consumed alcoholic beverages and 69% believed that they had not been influenced by the consumption of alcohol. Pleasure was mentioned by 77% as motivation for using alcohol. Statistical analyzes showed an association between drinking to alleviate anxiety and the practice of binge drinking ( $p=0.01$ ). Students who drank alcohol moderately reported feeling nothing or feeling drowsy

after consumption, while those who made harmful consumption reported feelings of joy ( $p < 0.0001$ ).

Most (85%) of respondents reported that the university should offer more cultural and leisure activities to minimize the use of alcohol by students, 57% said that their social life intensified after entering the university. Table 2 presents the multifactorial aspects of alcohol use.

**Table 2.** Multifactorial aspects of alcohol use by university students. UESB-Vitória da Conquista/BA, 2017-2018.

Variables	Moderate (60)	Binge (90)	Total (150)	p
<b>Did you consume alcohol before getting in?</b>				0.003 <sup>λ</sup>
Yes	44	82	126	
No	16	8	24	
<b>Did your consumption of alcohol increase?</b>				0.001 <sup>λ</sup>
Yes	17	49	66	
No	43	39	82	
Did not answer	0	2	2	
<b>age of first sip</b>				0.008 <sup>λ</sup>
16 -	22	53	75	
16 +	37	36	73	
Did not answer	1	1	2	
<b>Family member that consumes alcohol</b>				0.097 <sup>λ</sup>
Yes	52	85	137	
No	8	5	13	
<b>Type of alcoholic drink</b>				0.239 <sup>λ</sup>
Beer	14	19	33	
Wine	7	3	10	
Several	34	62	96	
Others	0	2	2	
<b>Who do you drink with?</b>				<0.0001 <sup>λ</sup>
University classmates	33	78	111	
Friends/Family/Alone	27	12	39	
<b>Does university favor alcohol consumption?</b>				0.091 <sup>λ</sup>
Yes	20	42	62	
No	40	47	87	

<sup>λ</sup>Chi-Squared Test

The negative consequences associated with the excessive use of alcohol were: adopting risk behaviors, suffering or caused harm to others, failing to carry out undergraduate activities as a result of the use of alcohol, losses in performing exams and academic work (Table 3).

**Table 3.** Consequences of alcohol consumption. UESB-Vitória da Conquista/BA, 2017-2018.

Variables	Moderate (n=60)	Binge (n=90)	Total (n=150)	p
<b>Had any risky behavior, suffered or caused damage</b>				0.0001 <sup>λ</sup>
Yes	6	36	42	
No	53	54	104	
Did not answer	1	0	1	
<b>Had confused thinking</b>				0.001 <sup>λ</sup>
Yes	26	63	89	
No	34	27	61	
Did not answer	1	0	1	
<b>Showed academic loss</b>				0.01 <sup>λ</sup>
Yes	4	20	24	
No	56	69	125	
Did not answer	1	1	2	
<b>Failed to fulfill academic activities</b>				0.002 <sup>λ</sup>
Yes	3	21	24	
No	57	69	126	

<sup>λ</sup>Chi-Squared Test

### Binge drinking – analysis between genders

Of the university students who presented a consumption pattern typical of binge drinking, they showed that among these 41% were women and 59% were men, all single; 67% were from other municipalities; 53% lived with a family member; 71% only studied, and were supported by their parents; 62% had a family income of up to 3 minimum wages; 17% received some type of social benefit and 62% had no religion.

The comparative analysis of data between sexes showed that in few factors statistically significant differences were observed. These factors were: regarding the male gender - having suffered or caused damage to others (p=0.04); as for the female gender - having social benefits (p=0.0001) and hiding from their parents that they abused alcohol (p=0.01). The other aspects evaluated did not show statistically significant differences between genders (Tables 4 and 5).

**Table 4.** Multifactorial aspects of alcohol use between the genders among university students. UESB-Vitória da Conquista/BA, 2017-2018.

Variables	Women (n=37)	Men (n=53)	Total (n=90)	p
<b>Did you consume alcohol before entering university?</b>				0.331 <sup>λ</sup>
Yes	35	47	82	
No	2	6	8	
<b>Did your consumption of alcohol increase?</b>				0.863 <sup>λ</sup>
Yes	21	28	49	
No	16	23	39	
Did not answer	0	2	2	
<b>Age of first sip</b>				0.184 <sup>λ</sup>
16 -	19	34	53	
16 +	18	18	36	
Did not answer	0	1	1	
<b>Family member that consumes alcohol</b>				0.377 <sup>λ</sup>
Yes	34	51	85	
No	3	2	5	
<b>Was influenced on the use of alcohol</b>				0.672 <sup>λ</sup>
Yes	11	18	29	
No	26	35	61	
<b>Social life intensified after entering university</b>				0.371 <sup>λ</sup>
Yes	21	35	56	
No	16	18	34	
<b>Type of alcoholic drink</b>				0.288 <sup>λ</sup>
Beer	8	11	19	
Wine	0	3	3	
Several	24	38	62	
Others	5	1	6	
<b>Who do you drink with?</b>				0.222 <sup>λ</sup>
University classmates	34	44	78	
Friends/Family/Alone	3	9	12	
<b>Does your parents know you consume alcohol?</b>				0.011 <sup>λ</sup>
Yes	30	51	81	
No	6	1	7	
Did not answer	1	1	2	
<b>Does university favor alcohol consumption?</b>				0.507 <sup>λ</sup>
Yes	19	23	42	
No	18	29	47	
Did not answer	0	1	1	

<sup>λ</sup>Chi-Square Test

**Table 5.** Consequences of alcohol use between the sexes among university students. UESB-Vitória da Conquista/BA, 2017-2018.

Variables	Women (n=37)	Men (n=53)	Total (n=90)	p
<b>Suffered damage or caused damage to others</b>				0.0431 <sup>λ</sup>
Yes	13	23	36	
No	24	40	54	
<b>Had confused thinking</b>				0.606 <sup>λ</sup>
Yes	27	36	63	
No	10	17	27	
<b>Showed academic loss</b>				0.279 <sup>λ</sup>
Yes	6	14	20	
No	30	39	69	
<b>Did not answer</b>	1	0	1	
<b>Failed to fullfil academic activities</b>				0.748 <sup>λ</sup>
Yes	8	13	21	
No	29	40	69	

<sup>λ</sup>Chi-Square Test

## DISCUSSION

Among students who reported using alcohol, 60% had consumption compatible with binge drinking, a high percentage. Recent studies carried out in Brazil<sup>6,14</sup> and in other countries<sup>7</sup> showed a variation of 30 to 70% in the proportion of university students who used this drug excessively. This variation may be related to the different criteria used to determine binge drinking, or even to the undergraduate course analyzed. Medicine courses are related to a large number of practitioners of this practice<sup>5</sup>.

The risk factors observed were sex, early exposure to ethanol, admission to university and peer influence. There was no statistically significant difference in the number of men and women who reported alcohol use, but harmful use was associated with males, which is in agreement with other national<sup>6,8,14</sup> and international<sup>7</sup> investigations.

The changes observed, over time, in the social roles attributed to the sexes and the emergence of more sociocultural opportunities for women allowed them more access to practices that were previously related to the male sex, such as the consumption of alcoholic beverages. However, despite these cultural changes, the use of alcohol, especially excessive use, continues to endorse practices considered traditionally male, the media even plays a role in reinforcing this idea, as it links masculinity to the excessive consumption of this substance<sup>19</sup>.

Although excessive use of alcohol has been associated with males, the number of female students who claimed to use this drug harmfully was high. Indeed, 40% of binge drinking practitioners were female. A strong motivation among women, especially younger ones, to drink "like men" is to produce a feeling of power, status and equality, a manifestation of women's liberation and empowerment<sup>19</sup>.

Women are more susceptible to the harmful effects of alcohol<sup>5,9,10</sup> as a result of the anatomical and physiological differences between the sexes<sup>5,25</sup>. This greater female susceptibility may not be restricted to drug use. A study in animals showed that, after chronic exposure to ethanol, abstinence did not reverse the damage caused and induced neurodegeneration in hypothalamic areas of females<sup>9</sup>.

70% of those who practiced binge drinking claimed to have started drinking alcoholic beverages before the age of 16, which is in accordance with studies conducted in other countries that associated the harmful use of ethanol with its early consumption<sup>7,19,27</sup>.



University admission was also shown to be a risk factor for excessive alcohol use, which despite only 8% starting at college, 54% of participants increased their intake after admission to an undergraduate course. Indeed, the levels of alcohol consumption by university students is higher than that observed among non-college students in the same age group<sup>6,7</sup>. This may be related to the fact that the years dedicated to an undergraduate course, usually between the ages of 18 and 24, coincide with the beginning of adult life, which presupposes social and cultural functions compatible with this stage of life, such as working and start a family. The option for higher education leads to a delay in the performance of sociocultural roles<sup>7</sup> and, among students who reported alcohol abuse, 71% had academic life as their only occupation and were supported by their parents.

On the other hand, the emergence of adult life is also associated with autonomy, such as being able to live alone or with peers, having access to previously restricted practices, such as the use of alcohol. Autonomies that are not postponed with admission to the university, which, as a more liberal space, allows young people to experience new liberties<sup>28,29</sup>. The university also favors coexistence with peers, and these seem to play an important role in the use of ethanol. A worldwide review study points to the association between alcohol abuse and the influence of this behavior among peers<sup>7</sup>. The data here confirmed that 87% of students who performed binge drinking reported drinking with their university colleagues.

It was found that having a religion and being married were protective factors associated with the practice of binge drinking. Other investigations also pointed out a stable relationship and religion as preventive factors for this behavior<sup>6,7</sup>. Religion has this function, probably, because some prohibit the use of alcoholic beverages or recommend moderate use<sup>7</sup>. In this study, none of the individuals who declared themselves married claimed to carry out this practice, this data is in accordance with a study carried out in the United States of America<sup>30</sup> which demonstrated that a stable relationship reduces the risk of binge drinking.

Since some studies carried out both in Brazil<sup>5</sup> and in other countries<sup>7</sup> have shown that living with parents worked as a protective factor against the harmful use of ethanol, the data obtained in this research has not demonstrated this relationship. However, it was observed that 91% of college students who abused alcohol had a family member who also consumed alcoholic beverages. Thus, instead of observing a protective effect of parents against alcohol consumption, it was found that its use by a family member acts as an increased risk for the use of this substance, which was also verified in another study<sup>30</sup>.

When analyzing the negative consequences associated with alcohol use among individuals who reported moderate consumption and among those who reported excessive consumption, statistically significant associations were observed between excessive alcohol use and personal or third-party harm. In fact, the results showed that the excessive use of ethanol was associated with the fact that the young person presented risk behaviors (drunk driving, unwanted or unprotected sex), suffered or caused damage to others (long and short term physical illnesses, material damage to third parties and institutions, fights, sexual violence and noise complaints).

There was an association between excessive consumption and having confused reasoning and academic losses (impairments in taking exams and academic work). There is impairment of cognitive functions in individuals who make harmful use of alcohol and these impairments may be persistent even with abstinence<sup>13</sup>. Since these individuals are in the process of academic and professional training, these cognitive changes can compromise the quality of the individual's training and put their professional performance at risk.

The comparative evaluation between sexes showed that there was no difference between them in practically all the parameters studied. There was an association between harmful consumption and males, but there were no statistically significant differences between sexes in age at onset, in increased drinking after entering university, and in the fact of drinking with peers at the university. Similarity was also observed in the losses suffered and caused to third

parties. These findings raise concerns considering the direction that women are taking in relation to alcohol use, as they are more vulnerable to the damage caused by it.

The only garment that was statistically associated with females was hiding alcohol abuse from parents. This must be related to the social representations of the sexes, with the fact that the harmful use of this type of beverage is understood as a practice inherent to the male sex and the patriarchal organization of families in many cultures<sup>11</sup>. The use of alcoholic beverages needs to be understood as a habit that harms the individual, regardless of sex, as it can have negative consequences in the short and long term.

The consumption of alcoholic beverages is a public health problem that brings socioeconomic concerns at any stage of the user's life and for any level of consumption, even when ingested in small quantities, it can trigger damage. However, consumption by young people poses greater concerns, since in these cases, the brain is still in process of formation and exposure to ethanol can irreversibly alter the development of this structure<sup>15-17</sup>.

It is essential to design strategies aimed at the female audience, seeking to raise awareness about the use of this drug and clarify that excessive drinking is not an efficient tactic to demonstrate equality, as already pointed out in another study<sup>19</sup>. But, on the contrary, it is a risky behavior that can bring more problems and losses than gains. Strategies aimed at weakening the association between the consumption of alcoholic beverages and males are needed, including tactics that train resistance to this association made by the media<sup>19</sup>.

Universities need to get involved in this cause. Undergraduate courses need to introduce education and prevention programs for the use of alcohol and other drugs<sup>6</sup> in their syllabus, as well as offer courses, mini-courses, workshops and events that make students aware of the consequences of alcohol use, as well as disseminate strategies that minimize damage. Also, cultural activities can also be alternatives that enable healthy living among students and dissociate interaction between peers and the consumption of alcoholic beverages.

## CONCLUSION

The study allowed us to demonstrate that, despite women not being the same as men in the practice of binge drinking, a large number of women do it. In addition, there is a trend towards convergence in the number of men and women in the excessive consumption of alcoholic beverages.

It was possible to trace the profile of students who reported excessive use of alcohol: they are single, predominantly male; do not practice any religion; are well-informed about the risks of using alcohol; already consumed this substance before entering university; started using it before 16 years of age; increased consumption after entering higher education; drink for pleasure and with university colleagues; they are at peace with their professional choices; have a family income greater than five minimum wages; they do not work, are supported by their parents; have already adopted some risky behavior; suffered or caused some kind of harm to others, including academically.

This work allowed us to establish risk factors (sex, early exposure to ethanol, university admission and peer influence) and protection (having a religion and being married) associated with the harmful use of alcohol. And it was also possible to demonstrate a relationship between these behavior and academic prejudices on the part of practitioners.

Universities need to understand their role in this scenario and, even if this practice does not occur within campuses, individuals who exhibit it constitute the university community. It is essential that these institutions make use of the mechanisms at their disposal to create tactics aimed at reducing consumption of alcoholic beverages by students or reducing damage caused by this drug.

The present study was conducted on a university campus in a single municipality, which is a methodological limitation and makes it difficult to generalize the data. The inexistence of validated instruments for the understanding of alcohol consumption by university students

may be another limitation. However, the results shown are significant and can guide actions aimed at reducing the practice of excessive alcohol use by university students. It is suggested to carry out similar studies with larger geographic ranges.

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**Associated Publisher:** Vania Del Arco Paschoal

### ACKNOWLEDGEMENTS

To the Universidade Estadual do Sudoeste da Bahia (UESB) for the financial support with the scholarship for Scientific Initiation and to Gabriela Freitas Silva Bitencourt for all the revision.

### CONTRIBUTIONS

**Elce Cristina Côrtes Rebouças** contributed to the design, collection and analysis of data, writing and review. **Thaís Nunes Pereira** and **Daiana Kelly Moraes Lisbôa** collaborated in the design, collection and analysis of data. **Roger Luiz da Silva Almeida Filho** contributed with data analysis and revision.

### How to cite this article (Vancouver)

Rebouças, ECC, Pereira TN, Lisbôa DKM, Almeida Filho RLS. Binge drinking by university students: student profile and risk and protection factors. REFACS [Internet]. 2021 [cited in *insert day, month and year of access*]; 9(4):880-93. Available from: *insert access link*. DOI: *insert DOI link*.

### How to cite this article (ABNT)

REBOUÇAS, E. C. C.; PEREIRA, T. N.; LISBÔA, D. K. M.; ALMEIDA FILHO, R. L. S. Binge drinking by university students: student profile and risk and protection factors. **REFACS**, Uberaba, MG, v. 9, n. 4, p. 880-93, 2021. Available from: *insert access link*. Access in: *inset day, month and year of access*. DOI: *insert DOI link*.

### How to cite this article (APA)

Rebouças, E.C.C., Pereira, T.N., Lisbôa, D.K.M., & Almeida Filho, R.L.S. (2021). Binge drinking by university students: student profile and risk and protection factors. *REFACS*, 9(4), 880-93. Retrieved in: *insert day, month and year of access* from *insert access link*. DOI: *insert DOI link*.

