

Prevalence and factors associated with binge drinking among Brazilian young adults, 18 to 24 years old

Prevalência e fatores associados ao consumo excessivo episódico de álcool entre adultos jovens brasileiros de 18 a 24 anos

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ABSTRACT: *Objective:* To evaluate the prevalence and factors associated with binge drinking (BD) among young Brazilians. *Methods:* This cross-sectional study used data from the 2013 National Health Survey. The sample consisted of 7,823 young people aged between 18 and 24 years. The outcome was BD: four or more doses on one occasion for women and five doses or more for men. Sociodemographic, health and behavioral explanatory variables were considered. Binary Logistic Regression was used, with estimation of odds ratio (OR) and 95% confidence intervals (95%CI). *Results:* The prevalence of BD among young Brazilians was 17%, with regional differences. The associated factors with a higher chance of BD were: 21 and 24 years old (OR = 1.35; 95%CI 1.08 – 1.70); employed (OR = 1.27; 95%CI 1.01 – 1.61); report tiredness (OR = 1.53; 95%CI 1.19 – 1.97) and currently smoking (OR = 4.10; 95%CI 2.95 – 5.70). Women (OR = 0.43; 95%CI 0.34 – 0.54) and participating in religious activities (OR = 0.67; 95%CI 0.53 – 0.84) were associated with a lower chance of BD. *Conclusions:* A national study evaluating the profile of young Brazilians who present episodes of binge drinking is important to favor the implementation of public prevention policies aimed at this specific population.

Keywords: Young adult. Binge drinking. Risk factors. Health risk behaviors.

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RESUMO: *Objetivo:* Avaliar a prevalência e fatores associados ao consumo excessivo episódico de álcool (CEEA) entre jovens brasileiros. *Métodos:* Neste estudo transversal, utilizaram-se dados da Pesquisa Nacional de Saúde de 2013. A amostra foi de 7.823 jovens com idade entre 18 e 24 anos. O desfecho foi o CEEA de quatro ou mais doses em uma ocasião para mulheres e de cinco doses ou mais para homens. Foram analisadas variáveis explicativas sociodemográficas, de saúde e comportamentais. Utilizou-se regressão logística binária, com estimação do *odds ratio* (OR) e intervalos de confiança de 95% (IC95%). *Resultados:* A prevalência de CEEA entre jovens brasileiros foi de 17%, com diferenças regionais. Foram associados a uma maior chance de CEEA: ter entre 21 e 24 anos (OR = 1,35; IC95% 1,08 – 1,70); exercer atividades remuneradas (OR = 1,27; IC95% 1,01 – 1,61); relatar cansaço (OR = 1,53; IC95% 1,19 – 1,97) e fumar atualmente (OR = 4,10; IC95% 2,95 – 5,70). Ser do sexo feminino (OR = 0,43; IC95% 0,34 – 0,54) e participar de atividades religiosas (OR = 0,67; IC95% 0,53 – 0,84) associaram-se a menor chance de CEEA. *Conclusão:* Torna-se importante um estudo nacional que avalie o perfil dos jovens brasileiros que apresentam CEEA para favorecer a implantação de políticas públicas de prevenção voltadas para essa população específica.

Palavras-chave: Adulto jovem. Bebedeira. Fatores de risco. Comportamentos de risco à saúde.

INTRODUCTION

Alcohol abuse is a public health issue worldwide, and its prevalence has increased over the past 20 years, causing damage to families and civil society. The World Health Organization (WHO), in 2014, showed that 3.3 million people died due to alcohol consumption around the world, with 320 thousand young people between 15 and 29 years of age¹⁻³.

Brazilian studies reveal that alcohol is the substance that is most consumed by young people, and it may represent an important factor for the adoption of other health risk behaviors, such as drinking and driving, engaging in unprotected sexual activity, committing violence, and suicide⁴⁻⁷.

A pattern of consumption that is currently widely exploited by young people is binge drinking (BD)⁸, characterized worldwide by the consumption of five or more doses in one occasion⁹.

Studies indicate that this pattern of consumption has the highest prevalence at the end of adolescence, usually in the early 20s, coinciding with the age of entry and permanence at university. Young adults (18 to 24 years old) who are out of university tend to have slightly lower rates¹⁰.

BD among young people has several impacts, both from the point of view of morbidity and mortality and the increase in the rates of traffic accidents or aggressions, as well as consequences that go beyond health risks, such as important social and economic losses^{4,11}. In addition, BD in this age group seems to be a risk factor for alcohol dependence in adulthood¹⁰.

With regard to the risk factors associated with BD, it is possible to point to age, gender¹², religion¹³, schooling¹⁴ and smoking¹⁵, and which, when combined, reveal the profile of the group that is most susceptible to practicing this type of consumption.

This topic is more recent in Brazil, although it represents a relevant issue in the area of public health. Most national studies on the subject use populations of university students, which is quite understandable, since this is a period when young people figure out who they are, and in which there is a consequent change in behavior, even with regard to being able to belong to the group^{4,7}.

On the other hand, little has been explored on alcohol consumption in the general population aged 18 to 24, including those young people who are out of university. In general, this age group comprises a period of transition from adolescence to adulthood. There is a greater risk for the initiation of consumption behaviors, as young adults have special characteristics, such as the search for autonomy and personal identity, the need to experience new sensations and peer pressure¹⁵. These traits may point to a specific profile that deserves further study. Aggravating factors must be outlined, in order to support public policies for control and harm reduction from BD.

The aim of this study was to assess the prevalence and factors associated with BD among young Brazilians aged 18 and 24 years in a nationally-based sample, according to data from the National Health Survey (*Pesquisa Nacional de Saúde* - PNS) in 2013.

METHOD

This is a cross-sectional, population-based study, based on secondary PNS data. PNS is a national and home-based survey conducted in partnership with the Brazilian Institute of Geography and Statistics (*Instituto Brasileiro de Geografia e Estatística* - IBGE), in 2013. Its target population consists of residents of permanent private households, and its demographic coverage includes the entire national territory¹⁶.

The sampling plan used was sampling by clusters in three stages, with stratification of the primary sampling units. Census sectors or set of sectors formed the primary sampling units (PSUs); households formed the second stage units; and residents 18 and older formed the third stage units.

Of the total sample of 64,348 households drawn, 60,202 Brazilians aged 18 or older responded to individual questionnaires with questions related to alcohol consumption. Among them, 7,823 were aged between 18 and 24 years old and comprised the sample of this study. The PNS sample was calculated to estimate the indicators for each of the geographical levels initially, which were thought of as dissemination domains. They are the following: Brazil, Greater Region, Federation Unit (FU), Metropolitan Region (MR), Capital and the rest of the FUs. It should be noted that the sample was influenced by the weighting, according to the weights established by the PNS, in an attempt to correct problems related to the low number of respondents in some sectors. Thus, some regions had their sample inflated, without changing the representativeness and validity of the data obtained¹⁷.

The outcome studied was BD, which is characterized worldwide by the pattern of consumption, in the last 30 days, of four or more doses of alcohol on one occasion for women and five doses or more for men.

Sociodemographic aspects were investigated as possible factors associated with BD: gender (male/female), age group (18 to 20 years old/21 to 24 years old), living with a spouse or partner (no/yes), education (incomplete high school/completed high school/completed more than high school), socioeconomic class (classified, according to the Brazilian Association of Research Companies, in A/B, C, D and E)¹⁸ and whether they are performing paid work (no/yes).

Health-related variables were also analyzed, all through self-reported information (with the answer option no or yes): sleep problems and/or tiredness and lack of disposition, diagnosis of depression and report of having suffered violence in the past year. The variables related to life habits were: practice of physical activity in the last 30 days, current consumption of tobacco and participation in religious services or activities.

An estimate of the prevalence of BD was carried out among young adults in each Brazilian capital, illustrated by means of a thematic map, in addition to a descriptive analysis of all variables studied. To check for differences in the prevalence of BD between the compared groups, Pearson's χ^2 test was performed.

To assess the possible factors associated with BD, a binary logistic regression model, both simple and multiple, was used. For the entry of variables in the multiple analysis, the forward method was adopted and, as a reference, a p value less than 0.20 in the univariate analysis was adopted. In the final model, only variables with a significance level of 5% or less remained. The values of the odds ratio (OR), with a confidence interval of 95% (95%CI) were estimated. The goodness of fit of the model was assessed using the Hosmer-Lemeshow statistic. The probabilities of a young person having BD were calculated according to the equation of the final logistic model.

All analyses were performed using the STATA 12.0 program and it took into account the weightings imposed by the study's sample design. The PNS project was approved by the National Research Ethics Commission (*Comissão Nacional de Ética em Pesquisa - CONEP*), under process No. 328,159, of June 26, 2013.

RESULTS

It was observed that 46.8% of the young adults analyzed stated that they currently consume alcoholic beverages, of which 30.1% indicated the frequency of consumption to be once or more per month. Among them, 51.2% drank at least one day a week, and consumed an average of six drinks on a single occasion. They started drinking on average at the age of 16, and 20.3% reported driving right after drinking (data not shown in table).

The prevalence of BD among young Brazilians was 17%. It was higher (above 20%) in the North and Northeastern (Amapá, Piauí and Bahia) and Center West (Goiás and Mato Grosso do Sul) states, in addition to Rio Grande do Sul (Figure 1).

According to Table 1, 51.7% of young people were women and 55.5% were between 21 and 24 years old. About 70% had no partner and 28.7% had not completed high school.

It was found that 51.6% of the interviewees belonged to socioeconomic class C. More than half of the young people were employed (56%). Just over 20% of young people reported problems with sleep and 26.2% said they felt tired and unwell (Table 2). The prevalence of depression at some point in their life was 3.2%. It was observed that 5.1% of young people cited an episode of violence in the last 12 months. The prevalence of physical activity in the last 30 days was 45.5%. A total of 10.5% of young people said they currently smoke. In addition, 66% claimed to attend religious activities.

The factors associated with BD in the univariate analysis were: being male, being 21 to 24 years old, not living with a partner, having less than a high school education, being employed in the last 12 months, reporting tiredness problems, having suffered some sort of violence in the past 12 months, practicing physical exercise, currently smoking, and participating in religious services or activities (Tables 1 and 2).

Considering the multiple analysis (Table 3), the factors that remained associated with BD were: sex, age, living with a partner, being employed, tiredness and lack of disposition, smoking, and participation in religious services or activities. Young people aged between 21 and 24 years old had 1.35 more chance of BD (OR = 1.35; 95%CI 1.08 – 1.70) when compared to those aged between 18 and 20 years old. Young people currently engaged in paid

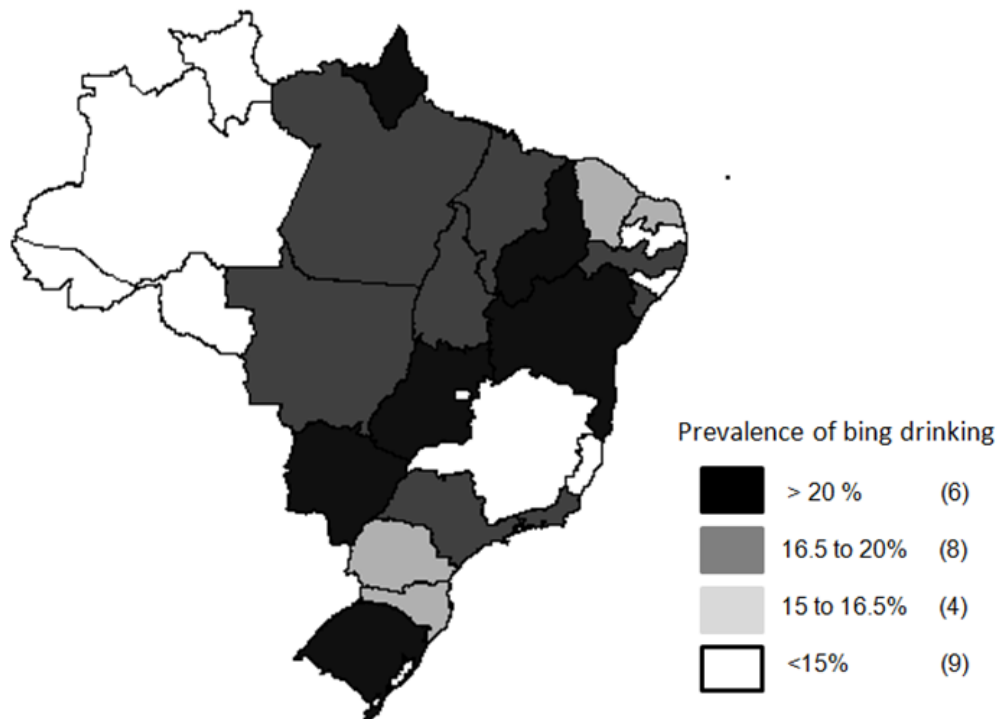


Figure 1. Thematic map of the prevalence of binge drinking among young adults (18 to 24 years old), by state and Federal District, according to data from the National Health Survey (PNS), Brazil, 2013.

activities (OR = 1.27; 95%CI 1.01 – 1.61), who reported tiredness and lack of disposition (OR = 1.53; 95%CI 1.19 – 1.97) and who currently smoked (OR = 4.10; 95%CI 2.95 – 5.70) were also more likely to have BD. On the other hand, there was a lower chance of BD among women (OR=0.43; 95%CI 0.34 – 0.54), when compared to men. Participating in religious services or activities reduces the chance of a BD episode by 33% (OR = 0.67; 95%CI 0.53 – 0.84), compared to not participating in this type of activity.

With regard to the final model, the prevalence of BD was estimated considering different profiles, as shown in Figure 2. Women aged 18 to 20 who lived with a partner, were not currently employed, did not report fatigue problems, did not currently smoke, and tended to participate in religious activities were only 7.4% likely to engage in BD. On the other hand,

Table 1. Characterization of sociodemographic data and their association with binge drinking among young adults, according to data from the National Health Survey (PNS), Brazil, 2013.

	Percentage	Prevalence BD	OR (95%CI)
Sex			
Male	48.3	24.5*	1.00
Female	51.7	10.1	0.35 [0.28 – 0.43]
Age			
18 to 20 years old	44.5	14.5*	1.00
21 to 24 years old	55.5	19.1	1.08 [1.03 – 1.14]
Lives with a partner			
No	70.5	18.1*	1.00
Yes	29.5	14.5	0.76 [0.60 – 0.97]
Education level			
Incomplete high school	28.7	21.4*	1.37 [1.02 – 1.85]
Completed high school	55.1	14.9	0.86 [0.66 – 1.19]
Completed higher education	16.2	16.5	1.00
SEC			
A and B	17.4	19.1	1.00
C	51.6	16.4	0.83 [0.60 – 1.13]
D and E	31.0	17.0	0.87 [0.63 – 1.19]
Employed			
No	44.0	13.9*	1.00
Yes	56.0	19.6	1.50 [1.19 – 1.91]

*p value <0.05; BD: binge drinking; SEC: socioeconomic class; OR: odds ratio; 95%CI: 95% confidence interval.

among men aged 21 to 24 who did not have a partner, were currently employed, reported fatigue problems, currently smoked and did not usually participate in religious activities, this probability rose to 80%.

DISCUSSION

The prevalence of BD among young Brazilians was 17%, varying according to the region of the country. Factors associated with the increase in this prevalence have been shown to be in

Table 2. Characterization of health and lifestyle data and their association with binge drinking among young adults, according to the National Health Survey (PNS), Brazil, 2013.

	Percentage	Prevalence of BD	OR [95%CI]
Sleep problems			
No	78.4	16.6	1.00
Yes	21.6	18.4	1.13 [0.89 – 1.46]
Tiredness/lack of disposition			
No	73.8	16.1*	1
Yes	26.2	20.4	1.33 [1.05 – 1.70]
Diagnosis of depression			
No	96.8	17.1	1.00
Yes	3.2	15.4	0.88 [0.50 – 1.54]
Violence in the last 12 months			
No	94.9	16.6*	1.00
Yes	5.1	25.4	1.70 [1.07 – 2.72]
Performs physical activity			
No	54.5	14.5*	1.00
Yes	45.5	20.2	1.50 [1.18 – 1.89]
Current smoker			
No	89.5	13.9*	1.00
Yes	10.5	44.1	4.90 [3.55 – 6.75]
Religious activities			
No	34.3	22.5*	1.00
Yes	65.7	14.2	0.57 [0.46 – 0.71]

*p value <0.05; BD: binge drinking; SEC: socioeconomic class; OR: odds ratio; 95%CI: 95% confidence interval.

the age group between 21 and 24 years old, being employed, reporting problems of tiredness and lack of disposition, and currently smoking. On the other hand, women and those participating in religious services and activities had a lower chance of this pattern of consumption.

When analyzing BD around the world, we can see that the prevalence in Brazil was relatively similar, although slightly lower, to that found in the population of the same age group living in the province of Córdoba, in Argentina, in 2013 (25.5%)¹⁴, or among young people in the United States between 2005 and 2015 (ranging from 17.7% at 18 years old to 32.1% at 24 years old)¹⁹, in addition to residents aged 16 to 35 in the urban region of Israel in 2017 (22%)²⁰.

Table 3. Multivariate analysis assessing factors associated with binge drinking among young adults, National Health Survey (PNS), Brazil, 2013.

	OR [95%CI]
Sex	
Male	1.00*
Female	0.43 [0.34 – 0.54]
Age	
18 to 20 years old	1.00*
21 to 24 years old	1.35 [1.08 – 1.70]
Lives with a partner	
No	1.00*
Yes	0.74 [0.57 – 0.96]
Employed	
No	1.00
Yes	1.27 [1.00 – 1.61]
Tiredness or Lack of Disposition	
No	1.00*
Yes	1.53 [1.19 – 1.97]
Current smoker	
No	1.00*
Yes	4.10 [2.95 – 5.70]
Religious activities	
No	1.00*
Yes	0.67 [0.53 – 0.84]

OR; 95% CI: 95% confidence interval.

With regard to regional distribution, another study evaluated BD using PNS data in 2013. However, the age range used in the present study, also observed a higher prevalence of excessive consumption in the states of Bahia, Mato Grosso do Sul, Amapá, Goiás and Piauí¹¹. Thus, it can be inferred that the high rates found in these places reflect a pattern of consumption by the population and not specifically by young adults. However, the findings of the present study are worth noting in the state of Rio Grande do Sul, which also showed high prevalence of BD among young people (above 20%), although it was one of the states with the lowest prevalence in the general Brazilian population, according to Garcia and Freitas¹¹. This result points to an emphasis on alcohol abuse among young people in this state in comparison to other age groups, demonstrating the importance of going deeper into the characteristics related to alcohol consumption of the population of that state, in this specific age group. Further research is necessary to better understand this finding, however, it is known that regional differences, such as economic characteristics, access to education and the health system, as well as cultural differences, may be related to the Brazilian population's alcohol consumption²¹.

Among the associated factors, the present study found that men were more likely to consume alcohol in an excessive and episodic way than women. Despite the difficulties in comparisons, due to the fact that few studies have analyzed the age range of this investigation, other studies have shown similar results, revealing a higher prevalence of alcohol abuse among men compared to women¹². According to Garcia and Freitas¹¹, this difference between the sexes is explained by the fact that men abstain less from alcoholic beverages and drink alcohol with great frequency and quantity. Another possible explanation for this

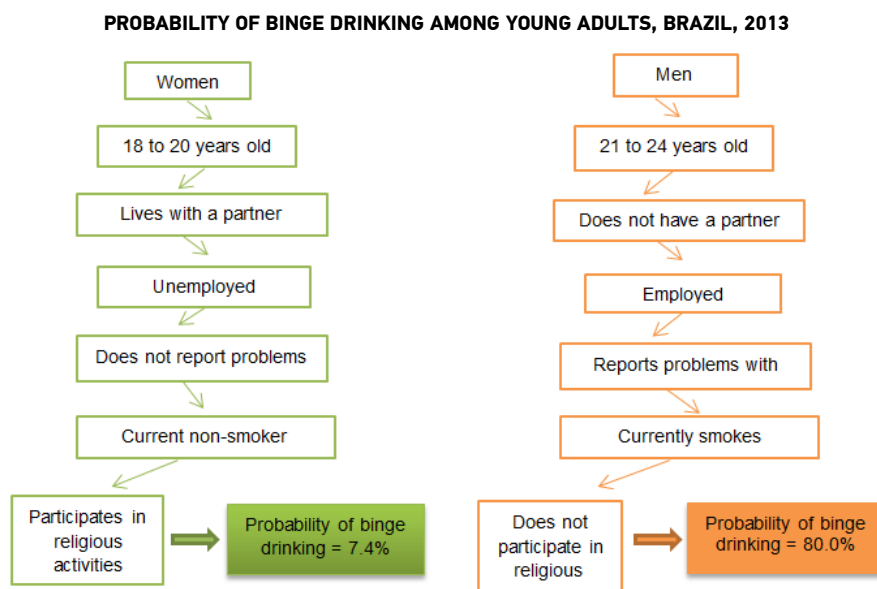


Figure 2. Diagram of probabilities of heavy episodic drinking, according to the final logistic regression model, among young adults (18 to 24 years old), according to data from the National Health Survey (PNS), Brazil, 2013.

difference by gender is the patriarchal culture and the relationship between drinking and moments of fun and fraternization, which are more stimulated among men^{8,22}. Thus, considering the role imposed on women in a conservative society, excessive alcohol consumption could be associated with failure to fulfill the role of a wife or mother who takes care of children and keeps order at home¹³. On the other hand, there are studies in the literature that show a trend in the increase in the use and abuse of alcoholic beverages among women. For Villacé et al.¹⁴, this rise among women may be linked to changes in society in recent times, with an increase in female independence and employment outside the home, however, this pattern was not yet observed in this nationwide study.

Similar to the results found in this study, a survey conducted with university students from Health courses in Rio Grande do Sul found that the profile of alcohol consumption and the practice of binge drinking were prevalent among those who did not have any type of relationship. This means that being single provided a greater chance of engaging in BD. These authors emphasize that episodes of excessive consumption are associated with the frequency young people go to parties and events with a greater supply of alcoholic beverages. This usually happens with young singles, favoring a high prevalence in this specific group²³.

Being employed was another factor associated with greater chances of BD. According to Silva et al.²⁴, an increase in economic power can generate easier access to alcohol and other drugs. Corroborating these results, Esser et al.²⁵ highlighted an association between higher income and excessive drinking, pointing again to the possible association between BD and consumption power.

Another finding of the present study was the association between fatigue and BD. According to Araújo et al.²⁶, the consumption of alcoholic beverages aims to reduce, even if only temporarily, the stress caused by work, and is used as a form of relaxation. Consuming alcohol is a means of socializing for individuals, and serves as a factor that favors human interactions, which would only be possible with the presence of these drinks. Otherwise, stress and problems would persist and negatively influence the harmony of the environment. On the other hand, it is important to note that, although the use of alcohol is considered a factor of socialization and reduction of stress, its excessive consumption is associated with behaviors that have serious consequences, such as traffic accidents due to drunk driving, involvement in fights, unprotected sex and use of other psychoactive substances²⁴.

Having a religious connection was a protective factor for BD. Ferreira et al.²⁷ affirm that churches have a fundamental role with regard to individual behavior. Church leaders assign roles and standards of conduct to all who follow their religion; among these rules include the strong campaign against the use of legal and illegal drugs. Other studies have underlined this association^{6,13}, indicating that young people who practice some religious activity end up sharing previously established values and beliefs that tend to strongly condemn the practice of drinking alcoholic beverages. It is worth highlighting that a religious connection can promote the learning of values linked to the individual's personality, such as valuing life, and oppose the destruction that is linked to the use of drugs and alcohol.

Another factor that showed an association with BD was smoking. It is well known that the consumption of one substance can trigger the consumption of others. Thus, one can observe the increase risk behaviors among young people, starting with the use of legal substances, such as alcohol and tobacco, and illegal substances, such as marijuana, for example^{15,28}. For Simões et al.²⁹, tobacco consumption, use of illicit drugs and physical and social well-being resulted in positive and negative impacts on the level of alcohol consumption, which may indicate a direct relationship between these two variables. A study conducted in California from 2015 to 2016 found that participants reported an increased perception of pleasure when smoking cigarettes and drinking alcohol. One possible explanation is the combined pharmacological effects of nicotine, found in tobacco smoke, and alcohol, leading to increased pleasure during simultaneous use of alcohol and nicotine. This intensification of pleasure may be an explanation for the associations between smoking and having episodes of BD³⁰.

Among the harmful consequences of excessive alcohol use, becoming involved in violent situations can be highlighted. Although this factor did not remain in the final model, a univariate analysis showed an association between having suffered some sort of violence in the last 12 months and BD among young Brazilians. Discussing this relationship, a review of the literature published in 2017 investigated the relationship between alcohol consumption and physical violence. Several articles concluded that alcohol consumption is a predictor of physical violence, both for the perpetrating adolescent and for the victim of violence. The authors point out that having been a victim of violence in childhood and adolescence can also lead adolescents to alcohol consumption³¹. The present study, given its transversal nature, is not able to point out the cause of this association, that is, if the fact of having suffered violence led the youth to abusively consume alcohol or if the cause is the opposite. However, Laranjeira et al.³² argue that alcohol consumption is, at the very least, an important facilitator of situations of violence and affirm that there is no lack of scientific evidence of its participation in homicides, suicides, domestic violence, sexual crimes, pedestrian accidents and accidents involving drunk drivers. According to these authors, 15 to 66% of all homicides and serious assaults are cases in which the aggressor, the victim or both had ingested alcoholic beverages. The emphasis is on violence against women, since 13 to 50% of the cases of rape and indecent exposure, in addition to 52% of domestic violence cases, are linked to alcohol. The authors point out that one way of prevention, in view of this relationship, is the implementation of environmental interventions, such as control over the price of alcoholic beverages and their points of sale, and control over the products to be sold, avoiding promotions and advertising. These actions could reduce the link between alcohol and violence³².

With regard to the limitations presented in the present study, the fact that it is a cross-sectional study stands out, which makes it impossible to raise possible causal hypotheses. In addition, as the data involve responses to a questionnaire, there is a tendency for participants to omit risky behavior, which can lead to the underestimation of BD. It is worth mentioning that, in the case of secondary data, some information relevant to the study of possible associated factors, such as the influence of peers or family members, could not be analyzed.

It can be concluded that a high prevalence of BD was observed among young Brazilians. The present investigation was important in highlighting the profile of these young people in a sample with national coverage. This can favor the implementation of public prevention policies aimed at this specific population, in addition to educational practices aimed at non-adherence or interruption of this risky behavior, which must be treated not only in a curative way, but with educational strategies.

REFERENCES

1. World Health Organization. Health consequences. In: World Health Organization, editor. Global Status Report on Alcohol and Health 2014. Geneva: WHO; 2014, p. 46-58.
2. Popova S, Rehm JR, Patra J, Zatonski W. Comparing alcohol consumption in central and eastern Europe to other European countries. *Alcohol* 2007; 42(5): 465-73. <https://doi.org/10.1093/alcalc/agl124>
3. Yakovle E. Alcoholism and mortality in Eastern Europe, IZA World of Labor, Institute for the Study of Labor (IZA) 2015; 168.
4. Pedrosa AAS, Camacho LAB, Passos SRL, Oliveira RVC. Consumo de álcool entre estudantes universitários. *Cad Saúde Pública* 2011; 27(8): 1611-21. <https://doi.org/10.1590/S0102-311X2011000800016>
5. Imai FI, Coelho IZ, Bastos JL. Consumo excessivo de álcool, tabagismo e fatores associados em amostra representativa de graduandos da Universidade Federal de Santa Catarina, 2012: estudo transversal. *Epidemiol Serv Saúde* 2014; 23(3): 435-46. <https://doi.org/10.5123/S1679-49742014000300006>
6. Silva LVER, Malbergier A, Stempliuik VA, Andrade AG. Fatores associados ao consumo de álcool e drogas entre estudantes universitários. *Rev Saúde Pública* 2006; 40(2): 280-8. <https://doi.org/10.1590/S0034-89102006000200014>
7. Paiva PCP, Paiva HN, Lamounier JA, Ferreira EF, César CAS, Zarzar PM. Consumo de álcool em binge por adolescentes escolares de 12 anos de idade e sua associação com sexo, condição socioeconômica. *Ciênc Saúde Coletiva* 2015; 20(11): 3427-35. <https://doi.org/10.1590/1413-812320152011.18792014>
8. Gomes K, Amato TC, Bedendo A, Santos EL, Noto AR. Problemas associados ao binge drinking entre adolescentes das capitais brasileiras. *Ciênc Saúde Coletiva* 2019; 24(2): 497-507. <https://doi.org/10.1590/1413-81232018242.35452016>
9. Siqueira L, Smith VC. Binge Drinking. *Pediatrics* 2015; 136(3): e718-e726. <https://doi.org/10.1542/peds.2015-2337>
10. Tavolacci M-P, Berthon Q, Cerasuolo D, Dechelotte P, Ladner J, Baguet A. Does binge drinking between the age of 18 and 25 years predict alcohol dependence in adulthood? A retrospective case-control study in France. *BMJ Open* 2019; 9: e026375. <https://doi.org/10.1136/bmjopen-2018-026375>
11. Garcia LP, Freitas LRS. Consumo Abusivo de Álcool no Brasil: Resultados da Pesquisa Nacional de Saúde 2013. *Epidemiol Serv Saúde* 2015; 24(2): 227-37. <https://doi.org/10.5123/S1679-49742015000200005>
12. Machado IE, Monteiro MG, Malta DC, Lana FCF. Pesquisa Nacional de Saúde 2013: relação entre uso de álcool e características sociodemográficas segundo o sexo no Brasil. *Rev Bras Epidemiol* 2017; 20(3): 408-22. <https://doi.org/10.1590/1980-5497201700030005>
13. Guimarães MO, Paiva PCP, Paiva HN, Lamounier JA, Ferreira EF, Zarzar PMPA. Religiosidade como possível fator de proteção do binge drinking por escolares de 12 anos de idade: um estudo de base populacional. *Ciênc Saúde Coletiva* 2018; 23(4): 1067-76. <https://doi.org/10.1590/1413-81232018234.04872016>
14. Villacé MB, Fernández AR, Costa Júnior ML. Consumo de álcool de acordo com características sociodemográficas em jovens de 18 e 24 anos. *Rev Latino-Am Enfer* 2013; 21(5). <https://doi.org/10.1590/S0104-11692013000500018>
15. Abreu MNS, Caiiffa WT. Influência do entorno familiar e do grupo social no tabagismo entre jovens brasileiros de 15 a 24 anos. *Rev Panam Salud Publica* 2011; 30(1): 22-30.
16. Brasil. Ministério da Saúde. Pesquisa Nacional de Saúde 2013. IBGE. Percepção do estado de saúde, estilo de vida e doenças crônicas. Brasil, Grandes Regiões e Unidades da Federação. Rio de Janeiro: Fundação Oswaldo Cruz; 2014.

17. Souza-Júnior PRB, Freitas MPS, Antonaci GA, Szwarcwald CL. Desenho da amostra da Pesquisa Nacional de Saúde 2013. *Epidemiol Serv Saúde* 2015; 24(2): 207-16. <https://doi.org/10.5123/S1679-49742015000200003>
18. Associação Brasileira de Empresas de Pesquisa. Critério de Classificação Econômica Brasil 2018 [Internet]. Associação Brasileira de Empresas de Pesquisa [acessado em 29 ago. 2019]. Disponível em: <http://www.abep.org/criterio-brasil>
19. Patrick ME, Terry-McElrath Y, Miech RA, Schulenberg JE, O'Malley PM, Johnston LD. Age-Specific Prevalence of Binge and High-Intensity Drinking among US Young Adults: Changes from 2005 to 2015. *Alcohol Clin Exp Res* 2017; 41(7): 1319-28. <https://doi.org/10.1111/acer.13413>
20. Levison D, Rosca P, Vilner D, Brimberg I, Stall Y, Rimom A. Binge drinking among young adults in an urban tertiary care emergency department in Israel. *Isr J Health Policy Res* 2017; 6: 34. <https://dx.doi.org/10.1186%2F13584-017-0156-1>
21. Bortoluzzi MC, Traebert J, Loguercio A, Kehrig RT. Prevalência e perfil dos usuários de álcool de população adulta em cidade do sul do Brasil. *Ciêns Saúde Coletiva* 2010; 15(3): 679-85. <https://doi.org/10.1590/S1413-81232010000300010>
22. Laranjeira R, Pinsky I, Zaleski M, Caetano R. I Levantamento nacional sobre os padrões de consumo de álcool na população brasileira. Brasília: Secretaria Nacional Antidrogas; 2007.
23. Pelicioli M, Barelli B, Gonçalves CBC, Hahn SR, Scherer JI. Perfil do consumo de álcool e prática do beber pesado episódico entre universitários brasileiros da área da saúde. *J Bras Psiquiatr* 2017; 66(3): 150-6. <https://doi.org/10.1590/0047-2085000000164>
24. Silva FC, Oliveira AP, Mundim FL, Alves TA, Silva AN, Silva LLC, et. al. Consumo de álcool e fatores de risco associados entre estudantes de uma universidade federal brasileira, 2014. *Hygeia* 2016; 12(23): 1-10.
25. Esser MB, Guy Jr. GP, Zhang K, Brewer RD. Binge Drinking and Prescription Opioid Misuse in the U.S., 2012–2014. *Am J Prev Med* 2019; 57(2): 197-208. <https://dx.doi.org/10.1016%2Fj.amepre.2019.02.025>
26. Araújo JS, Silva SED, Conceição VM, Santana ME, Souza RF. A bebida alcoólica no contexto laboral: um diálogo mediado pelas representações sociais. *Tempus* 2012; 6(3): 217-33. <http://dx.doi.org/10.18569/tempus.v6i3.1165>
27. Ferreira LN, Bispo Júnior JP, Sales ZN, Casotti CA, Braga Junior ACR. Prevalência e fatores associados ao consumo abusivo e à dependência de álcool. *Ciêns Saúde Coletiva* 2013; 18(11): 3409-18. <https://doi.org/10.1590/S1413-81232013001100030>
28. Barrenechea MA, González EC, López JMQ, González AB, Cortés FJM, Saiz AC. Prevalencia del consumo de tabaco en adolescentes. Influencia del entorno familiar. *An Pediatr (Barc)* 2007; 66(4): 357-66. <https://dx.doi.org/10.1157/13101240>
29. Simões C, Matos MG, Batista-Foguet J. Consumo de Substâncias na Adolescência: Um Modelo Explicativo. *Psic Saúde Doenc* 2006; 7(2): 147-64.
30. Thrul J, Gubner NR, Tice CL, Lisha NE, Ling PM. Young adults report increased pleasure from using e-cigarettes and smoking tobacco cigarettes when drinking alcohol. *Addict Behav* 2019; 93: 135-40. <https://doi.org/10.1016/j.addbeh.2019.01.011>
31. Carvalho AP, Silva TC, Valença PAM, Santos DFBE, Colares V, Menezes VA. Consumo de álcool e violência física entre adolescentes: quem é o preditor? *Ciêns Saúde Coletiva* 2017; 22(12): 4013-20. <http://dx.doi.org/10.1590/1413-812320172212.06172016>
32. Laranjeira R, Duailibi SM, Pinsky I. Álcool e violência: a psiquiatria e a saúde pública. *Rev Bras Psiquiatr* 2005; 27(3): 176-7. <http://dx.doi.org/10.1590/S1516-44462005000300004>

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