BINGE DRINKING AND ASSOCIATED FACTORS IN PRIMARY HEALTH CARE USERS DURING THE COVID-19 PANDEMIC

BINGE DRINKING E FATORES ASSOCIADOS EM USUÁRIOS DA ATENÇÃO PRIMÁRIA À SAÚDE DURANTE A PANDEMIA DA COVID -19

BINGE DRINKING Y FACTORES ASOCIADOS EN USUARIOS DE ATENCIÓN PRIMARIA A LA SALUD DURANTE LA PANDEMIA DE LA COVID-19

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ABSTRACT

Objective: to describe the occurrence of binge drinking and the factors associated with this pattern of alcohol use among users of Primary Health Care units in the city of São Paulo during the COVID-19 pandemic. **Method:** a cross-sectional study with 3,250 users, conducted by telephone, using the Alcohol Use Disorders Identification Test-Concise (AUDIT-C) and a sociodemographic form as instruments. **Results:** of the total number of participants, 61% consumed alcoholic beverages, and of these, 18.5% had a binge drinking pattern. Of this portion, 55.16% were women, with a mean age of 42 years (SD = 13.79), and 31.52% consumed alcohol weekly. The associated factors identified were region of origin, depression, bipolar affective disorder, occupation, and physical activities. **Conclusion:** this study allowed mapping the occurrence of binge drinking in a sample of PHC users, elucidating factors to be considered in the care of this population. However, more studies on a larger territorial scale are needed to provide support for the development of strategies to address the consequences for the mental health of the population resulting from the COVID-19 pandemic

Palavras-chave: Primary Health Care; Excessive Alcohol Consumption; Alcohol Consumption; COVID-19; Mental Health.

RESUMO

Objetivo: descrever a ocorrência de binge drinking e os fatores associados a esse padrão de uso de álcool em usuários de unidades de Atenção Primária à Saúde da cidade de São Paulo durante a pandemia de COVID-19. Método: estudo transversal, com 3.250 usuários, realizado via telefone, utilizando como instrumentos o Alcohol Use Disorders Identification Test-Concise (AUDIT-C) e formulário sociodemográfico. Resultados: do total de participantes, 61% consumiam bebida alcoólica, e desses, 18,5% apresentavam padrão de binge drinking. Desta parcela, 55,16% eram mulheres, com média de idade de 42 anos (DP = 13,79), sendo que 31,52% faziam esse uso de forma semanal. Os fatores associados identificados foram: região de procedência, depressão, transtorno afetivo bipolar, ocupação e atividades físicas. Conclusão: este estudo permitiu mapear a ocorrência do binge drinking em uma amostra de usuários da APS, elucidando fatores a serem considerados no cuidado a essa população. Entretanto, são necessários mais estudos em maior escala territorial que forneçam subsídios para o desenvolvimento de estratégias que permitam enfrentar as consequências para a saúde mental da população decorrentes da pandemia de COVID-19

Keywords: Atenção Primária à Saúde; Consumo Excessivo de Bebidas Alcoólicas; Consumo de Bebidas Alcoólicas; COVID-19; Saúde Mental.

RESUMEN

Objetivo: describir la ocurrencia de binge drinking y los factores asociados a este patrón de uso de alcohol en usuarios de unidades de Atención Primaria de Salud de la ciudad de São Paulo durante la pandemia de COVID-19. Método: estudio transversal, con 3.250 usuarios, realizado a través de llamadas telefónicas, utilizando como instrumentos el Alcohol Use Disorders Identification Test-Concise (AUDIT-C) y un formulario sociodemográfico. Resultados: del total de participantes, el 61% consumía bebidas alcohólicas, y de estos, el 18,5% presentaban un patrón de binge drinking. De este grupo, el 55,16% eran mujeres, con una media de edad de 42 años (DE = 13,79), y el 31,52% realizaban este consumo de forma semanal. Los factores asociados identificados fueron: región de procedencia, depresión, trastorno afectivo bipolar, ocupación y actividades físicas. Conclusión: este estudio permitió mapear la ocurrencia del binge drinking en una muestra de usuarios de APS, elucidando factores a considerar en el cuidado de esta población. Sin embargo, se necesitan más estudios a mayor escala territorial que proporcionen aportes para el desarrollo de estrategias que permitan abordar las consecuencias para la salud mental de la población derivadas de la pandemia de COVID-19.

Palabras clave: Atención Primaria de Salud; Consumo Excesivo de Bebidas Alcohólicas; Consumo de Bebidas Alcohólicas; COVID-19; Salud Mental.

INTRODUTION

Alcohol is the most widely consumed psychoactive substance in the world, and its use patterns can be considered problematic when they cause physical, psychological, or social symptoms, changes in the individual's various contexts, and difficulties in solving pre-existing problems due to its use[1,3]. Multiple factors influence alcohol consumption patterns, including the amount consumed. Quantifying the amount of alcohol consumed is based on the concept of a standard dose, which corresponds to 14 grams of pure alcohol[1].

Based on this measurement, consumption patterns are defined, including binge drinking, in which an individual ingests approximately 60 grams of alcohol on a single occasion[4,5]. Binge drinking is recognized as a problematic consumption and, in the last decade, has been described as one of the most reported patterns worldwide. In Europe, the prevalence of this type of consumption was 26% in 2016[4]; in the United States, 18% in 2017[6], while in Latin American territories, such as Brazil, the prevalence in 2019 was approximately 19%[5].

In the context of the COVID-19 pandemic, alcohol consumption has increased due to restrictions recommended by the World Health Organization, including social distancing, quarantine, and social isolation[7], exacerbating stress and anxiety[8]. In some European territories, an increase in binge drinking was observed during the period of social isolation, with an increase of up to 6% in the adult population[9]. This increase has also been documented by other authors in specific populations, such as students, with an increase of 7% during the period[10].

In the southern region of the Americas, approximately 70% of individuals reported episodes of binge drinking, and 13% reported an increase in alcohol consumption[11]. In Brazil, although there is little literature addressing this consumption pattern associated with restrictive measures during the COVID-19 pandemic, it is clear that this period had an impact on alcohol consumption behavior, as demonstrated by studies carried out in the initial months of the restriction[12]. Given this epidemiological situation, it is difficult to analyze the occurrence of binge drinking in the country, given the scarcity of studies during the COVID-19 pandemic. This reflects the importance of intensifying the mapping of binge drinking in Brazil, through research that aims to quickly identify these users.

The importance of this study lies in the need to understand and monitor binge drinking in Brazil, especially during a period of health crisis, such as the COVID-19 pandemic, which has had a direct impact on alcohol consumption behavior. Studies focused on binge drinking in specific contexts are essential to provide information that helps in the formulation of public policies and in the development of preventive and treatment strategies, aiming to promote health and reduce the impacts of alcohol consumption on society, in addition to preparing the population with healthy coping mechanisms in situations of health crisis.

Thus, the present study aims to describe the occurrence of binge drinking and the factors associated with this pattern of alcohol consumption in users of Primary Health Care units in the city of São Paulo during the COVID-19 pandemic.

METHOD

Study design and period

This is a cross-sectional study with a quantitative approach, carried out between December 2020 and March 2022, with users of Primary Health Care (PHC) units in the city of São Paulo. The units were intentionally selected, considering the analysis of the heterogeneity of the population and the population coverage of each unit, criteria evaluated together with the regional health coordinators of the East, Southeast, West and Central part of the city of São Paulo.

We interviewed 3,250 users registered in the medical agendas of the PHC units selected for the research, who met the following inclusion criteria: being over 18 years old, having a scheduled appointment at the PHC unit, and understanding enough Portuguese to understand the questions. The exclusion criteria were having any condition that prevented adequate understanding of the questions asked by the interviewer over the phone or presenting violent communication with the interviewer.

Measuring instruments

Alcohol use pattern classification was performed using the AUDIT-C, a version validated in Brazil with reliability indices ($\propto$ = 0.89–0.92)[13]. This instrument stands out for having a shorter application time compared to the AUDIT[14]. The three questions of the AUDIT-C have five response options each, allowing the user to score between 0 and 4 points per answer, with a total possible score of 0 to 12 points[13]. For the classification of binge drinking, only the answers to the third question were considered.

The third question assesses the frequency of consumption of 4 or more doses in a single event for females and five or more doses for males. The response options are: "never", "less than once a month", "monthly",

"weekly", and "every day or almost every day", considering the last quarter of the isolation period during the COVID-19 pandemic. Users who indicated answers other than "never" were classified as having a binge drinking pattern.

A sociodemographic data form was also used, providing information such as: race/color, marital status, education, occupation, income, health habits, pre-existing clinical conditions (including COVID-19), deaths due to complications from COVID-19 of a close friend or family member of the user and the reason that led the user to the PHC unit, according to the date provided in the medical diary in which the user was registered.

Data collection procedure

The data collection procedure was carried out in two stages: training and outreach. The training, provided by the research coordinator, consisted of 8 hours dedicated to training on the Research Electronic Data Capture (RED-Cap) platform, outreach techniques, and administering questionnaires to users. All users registered at the units, who had appointments scheduled with family health doctors, were contacted by telephone and invited to participate in a survey on mental health during the pandemic. This survey lasted an average of 10 minutes per call. For data collection, a question was asked about alcohol use. If the user reported not consuming alcoholic beverages, they were asked about possible exceptions, such as consumption on special occasions. If the answer was no, the user was directed to fill out the form on sociodemographic data, and the call was ended. If consumption was confirmed, this pattern of use was classified using a specialized instrument, followed by the sociodemographic questionnaire, and the telephone contact was then ended

Data analysis and processing

Data were collected and managed on the REDCap platform and analyzed using the R statistical program, version 4.0.2. Descriptive analysis was performed using absolute and relative frequencies, in addition to measures of central tendency. Inferential analysis included the Kruskal-Wallis test to explore the relationship between age and binge drinking. In addition, the Chi-square test and Fisher's exact test were used to assess the relationship between the pattern of use and sociodemographic variables. The directionality of this association between the variables was verified using ordinal logistic regression, selecting variables with a p-value less than 0.075, including region of origin, depression, bipolar affective

disorder, alcohol consumption during the pandemic, occupation, and physical activity.

Ethical aspects

The study was approved by the Research Ethics Committee of the Municipal Health Department of São Paulo, under opinion number 4.342.49/2020, complying with all legal requirements set forth in Resolution No. 466/2012. The Free and Informed Consent Form was obtained from all participants of the research before the interviews were conducted.

RESULTS

Of the 3,250 users interviewed, 61% (n = 1,985) reported drinking alcohol. Among these, only 18.5% (n = 368) were classified as binge drinking. The average age of the interviewees who presented this pattern was 42 years (SD = 13.79), with a female predominance of 55.16%. The majority were registered at the primary care unit of the Central (62.5%), were white (41.87%), single (43.32%), completed high school (38.36%), were in formal employment (64.58%) and had a family income between 1 and 2 minimum wages (40.84%) (Table 1).

Regarding mental disorders, more cases of depression were reported, totaling 17.66%, followed by bipolar affective disorder, with 2.17%. Regarding health habits, the largest proportion of individuals did not practice physical activity, representing 59.84%, and the most reported diseases were hypertension, with 32.51%, and gastric problems, reaching 25.41%. Additionally, 39.01% of participants reported the death of family members or close friends due to complications from COVID-19. Regarding the experience with the disease itself, 19.18% had COVID-19 and, of this percentage, 0.82% required hospitalization, as shown in Table 2.

Regarding the consumption of alcoholic beverages, beer was the most reported, with 74.18% of indications. Among the interviewees, 40% showed no change in the amount consumed during the pandemic. Regarding the "binge" pattern, 5.16% of users did this type of consumption every or almost every day, while 31.52% maintained this pattern weekly (Table 3).

When analyzing the variables related to binge drinking during the COVID-19 pandemic, it is worth noting that the region of origin significantly influenced this behavior. Users monitored in the East and South regions were more likely to engage in this type of consumption: in the East region, weekly (60.87%) and almost every day (13.04%), while in the South, monthly (56%). On the other hand, the West and Central regions had the lowest

Table 1 – Sociodemographic profile of users of primary health care units in the city of São Paulo, classified as binge drinking during the COVID-19 pandemic. São Paulo, SP, Brazil, 2022. (n = 368)

Variables		n	%
Gender	Men	165	44,84
	Women	203	55,16
Region of origin	Central	230	62,5
	East	36	9,78
	South	57	15,48
	West	45	12,23
	White	152	41,87
	Yellow	5	1,38
Color/race	Indigenous	2	0,55
	Brown	150	41,32
	Black	54	14,88
	Single	159	43,32
	Live together	82	22,34
Marital status	Married	81	22,07
	Divorced/separated	35	9,54
	Widower	10	2,72
	Did not complete high school	102	27,95
Education	Illiterate	3	0,82
	Complete higher education	48	13,15
	Incomplete higher education	31	8,49
	Complete postgraduate studies	11	31,01
	Incomplete postgraduate studies	1	0,27
Occupation	Unemployed	101	27,52
	Retired	23	6,27
	Employed	237	64,58
	Student	6	1,63
	< 1 MW	67	20,12
	1-2 MW	136	40,84
Family income	2-5 MW	108	32,43
	5-10 MW	18	5,41
	10-20 MW	3	0,90
	> 20 MW	1	0,30

*MW: minimum-wage.

Table 2 – Description of self-reported clinical characteristics of users of primary health care units in the city of São Paulo during the COVID-19 pandemic. São Paulo, SP, Brazil, 2022. (n = 368)

Variables		n	%
Clinical status and health habits	Practice physical activity	117	40.16
	Does not practice physical activity	219	59.84
	Hypertension diagnosis	119	32.51
	Diabetes diagnosis	46	12.57
	Cholesterol diagnosis	72	19.67
	Diagnosis of gastric problems	93	25.41
	COVID-19 diagnosis	70	19.18
	Admission due to COVID-19	3	0.82
	ICU admission due to COVID-19	2	0.67
Death of family member/friend due to COVID-19	Yes	142	39.01
	No	222	60.99

*UTI: Unidade de terapia intensiva.

consumption (50%) and almost daily consumption (25%) (Table 4).

Regarding alcohol consumption during the pandemic, it was noted that users who reported a reduction in alcohol consumption had a higher frequency of binge drinking per month (36.04%). Those who indicated an increase in alcohol consumption during the pandemic demonstrated a higher frequency of binge drinking per week (42.42%). Likewise, individuals who did not practice physical activities had a higher monthly binge consumption (32.88%). Regarding occupation, employed users showed a higher weekly binge use (33.33%), while students showed the highest binge consumption almost every day (33.33%) (Table 4).

After correlating the variables using ordinal logistic regression, it was observed that users of primary care units in the South region were 81.4% less likely to exhibit binge drinking behaviors compared to those from the East region, followed by those from the Central and West regions, with reductions in odds of 75.3% and 83.1%, respectively. When examining mental disorders, it was evident that individuals diagnosed with depression had a 65.4% probability of engaging in excessive alcohol consumption, while those diagnosed with bipolar disorder had a 36.6% probability. Among other variables analyzed, the practice of physical activity also stood out as a factor associated with lower rates of alcohol consumption (Table 5).

rates of binge drinking, with consumption less than once a month (42.22% and 34.72%, respectively). An association was also found between binge drinking and mental disorders, indicating that users diagnosed with depression had a higher weekly consumption frequency (31.35%) compared to those without this diagnosis. In addition, users with bipolar affective disorder recorded higher weekly

Table 3 – Alcohol consumption profile of users of primary health care units in the city of São Paulo during the COVID-19 pandemic. São Paulo, SP, Brazil, 2022. (n = 368)

Variables		n	%
Most common drink during the pandemic	Beer	270	74,18
	Cocktail	8	2,20
	Distilled	48	13,19
	Wine	30	8,24
	Decreased	111	31,71
	It remained the same	140	40,00
Consumption during the pandemic	Increased	99	28,29
	Less than once a month	124	33,70
	Monthly	109	29,62
Binge use	Weekly	116	31,52
	Every/almost every day	19	5,16

DISCUSSION

This study analyzed the occurrence of binge drinking and the factors associated with this pattern of alcohol consumption among users of Primary Health Care units in the city of São Paulo during the COVID-19 pandemic, with most of the sample being women. Women tend to be more frequently screened in health surveys due to the relationship between men and women and health environments, which reveals that men tend to have less adherence to these services, showing an average number of annual consultations 71 times lower (0.06) than women (4.3)[15].

Furthermore, it is possible that problematic use was more prevalent in the female population, given that changes were taking place in Brazil that showed a decreasing difference in harmful alcohol use between genders, with an increase from 38% to 47% in men and from 17% to 27% in women between 2006 and 2012 (16). This scenario was exacerbated during the COVID-19 pandemic, as a result of the search for strategies to cope with a series of changes that exacerbated inequities experienced by women, such as the overload of responsibilities in caring for families, job loss, and changes in well-being related to mental health, factors that ended up influencing the increase in alcohol consumption, as has been evidenced[17].

This study found that people diagnosed with depression and bipolar disorder were more likely to binge drink, which is consistent with data presented in other geographic contexts, in which researchers have shown that people diagnosed with previous mood disorders, such as depression[8] and/or bipolar affective disorder[18], were more likely to increase their alcohol consumption, specifically binge drinking, compared to people who did not have these conditions. This is because stressful factors can trigger crisis situations, exacerbating the frequency and intensity of mood swings and unhealthy behaviors, which can influence the use of psychoactive substances, such as alcohol.

It was evident that alcohol use was one of the most used coping strategies by the population during the pandemic. However, other healthier strategies were also relevant, including physical activity, which was shown to be a potential protective factor against binge drinking, since people who reported practicing physical activity had lower rates of this consumption.

During the COVID-19 pandemic, authors pointed out that the practice of physical activity was one of the main coping strategies used by the young population[19] and that, additionally, it contributed to a reduction of approximately 30% in the risk of presenting depressive and anxiety symptoms in the general population[20], which reinforces the inference that physical activity can become a protective factor for reducing the problematic use of alcoholic beverages, considered one of the mental health problems intensified during this period.

Regarding the type of beverage most associated with binge drinking, beer stands out, which was also observed in another Brazilian study, which indicated that beer was the most consumed beverage by university binge drinkers and that the choice of this beverage may be correlated with the fact that it is more affordable, more socially accepted and has greater media engagement in its promotion[21]. In conjunction with these use facilitators, beer is still the main beverage chosen at times of celebrations, meetings with friends and other social events[22], in addition to having a wide availability of sizes and brands, which may be an attraction for its consumption.

The data showed that users who declared themselves as students were more likely to engage in binge drinking. This fact was highlighted by the 1st National Survey on Alcohol, Tobacco and other Drugs, conducted among university students from 27 Brazilian capitals in 2010, which stated that 36% of the students interviewed had binge drinking in the 12 months prior to the survey and at least 25% in the last 30 days[23]. However, some studies have shown that binge drinking decreased during the pandemic period, indicating that the context of restrictions on events, suspension of academic activities and,

Table 4 – Binge drinking and associated factors among users of primary health care in the city of São Paulo during the COVID-19 pandemic. São Paulo, SP, Brazil, 2022. (n = 368)

Binge use		Less than once a month		Monthly		Weekly		Every/almost every day		p-value
		n	%	n	%	n	%	n	%	
Region of origin	East	1	4.35	5	21.74	14	60.87	3	13.04	0.05*
	South	4	16.00	14	56.00	6	24.00	1	4.00	
	Central	75	34,72	66	30,55	63	29,16	12	5,55	
	West	19	42,22	9	20,00	16	35,56	1	2,22	
Depression	Yes	104	34,32	94	31,02	95	31,35	10	3,30	0,005*
	No	20	30,77	15	23,08	21	32,31	9	13,85	
Bipolar affective disorder	Yes	123	34,17	108	30,00	112	31,11	17	4,72	0,039**
	No	1	12,50	1	12,50	4	50,00	2	25,00	
	Parda	35	31,53	40	36,04	31	27,93	5	4,51	0,030*
Alcohol consumption during the pandemic	Decreased	60	42,86	37	26.43	36	25.71	7	5.00	
	It remained the same	25	25.25	26	26.26	42	42.42	6	6.06	
	Increased	38	37.62	27	26.73	30	29.70	6	5.94	0.055*
	Casado	11	47.83	4	17.39	6	26.09	2	8.70	
Occupation	Unemployed	73	30.80	76	32.07	79	33.33	9	3.80	
	Retired	1	16.67	2	33.33	1	16.67	2	33.33	
	Employed	63	28.77	72	32.88	70	31.96	14	6.39	
	Student	60	40.82	36	24.49	46	31.29	5	3.40	0.060**
Physical activity	No	63	28,77	72	32,88	70	31,96	14	6,39	
	Yes	60	40,82	36	24,49	46	31,29	5	3,40	0,060**

*Chi-squared test; ** Fisher's Exact Test.

Table 5 – Ordinal logistic regression model for binge drinking and associated factors among users of primary health care units in the city of São Paulo during the COVID-19 pandemic, São Paulo, SP, Brazil, 2022. (n = 368)

Variables	OR	LowerCI	HigherCI	p-value
South region	0.186	0.059	0.571	0.004
Central region	0.247	0.099	0.599	0.002
West region	0.169	0.061	0.461	0.001
Depresion (Yes)	1.654	0.927	2.965	0.089
Bipolar affective disorder (Yes)	2.036	0.439	9.758	0.365
Alcohol consumption remained the same	0.796	0.497	1.274	0.342
Alcohol consumption has increased	1.429	0.851	2.406	0.178
Retired	1.002	0.393	2.536	0.996
Employed	1.337	0.847	2.118	0.214
Student	2.951	0.552	17.044	0.209
Physical activity (Yes)	0.762	0.505	1.149	0.195

consequently, of social spaces in which drinking was very common, may have motivated this change[24].

When analyzing the binge pattern by territoriality, it is highlighted that users in the East region used this more frequently. This can be explained by the vulnerability found in this region, since, according to the survey by the State Data Analysis System (Seade) of 2020, this region has the lowest average monthly per capita income, in addition to concentrating the second largest proportion of people with incomplete elementary education in the city of São Paulo[25].

During the pandemic, many people have experienced changes in the way they consume alcohol. This study presents data on self-perceived consumption during this period, indicating that even among those who reported reducing or maintaining consumption before and

during the COVID-19 pandemic, the binge drinking pattern remained. Considering that self-perceived increased or decreased alcohol consumption may be based on the early stages of the pandemic, and that binge drinking was measured based on the last three months, these data may differ. In fact, people may have reduced or maintained their alcohol consumption during the pandemic, but over time, this situation may have changed. Adaptation to the new context, for example, may have led to a return to consumption patterns like those seen before the pandemic[8]. In addition, users may have changed the way they consumed alcohol, but due to lack of knowledge about their consumption patterns, they did not realize that they were still using alcohol in a way that was considered problematic (binge drinking).

This study has limitations that should be mentioned. The first refers to the application of the AUDIT-C instrument, where alcohol consumption is self-reported by the user, who may be unaware of the number of doses, leading to a possible distortion of the amount consumed. Furthermore, due to the pandemic context, the survey was conducted by telephone, a method unfamiliar to some users who feared possible fraud and, therefore, refused to participate in the survey or provided incomplete data. However, it is worth highlighting that mapping binge drinking and the main associated factors in areas of the city of São Paulo allows for the early identification of the most affected groups and, consequently, provides support for the development of strategies or programs in primary care, which minimize the effects on mental health, especially alcohol consumption in the context of pandemics or emergencies, such as COVID-19.

Given the impacts of binge drinking exacerbated by the COVID-19 pandemic, future research should explore different dimensions of this phenomenon to support the creation of more effective public health policies. Longitudinal studies could monitor the evolution of alcohol consumption patterns and determine whether binge drinking, which intensified during the pandemic, persists or changes in the post-pandemic context. Furthermore, analyzing the prevalence of this pattern of use in vulnerable populations, such as university students and healthcare workers, could reveal specific risk groups.

CONCLUSÕES

The information obtained in this study demonstrated that factors such as territoriality, diagnosis of mental disorders, changes in consumption patterns during this period, occupation and the practice of physical activity were the main factors associated with this practice. This provides highly relevant data for identifying population groups that suffered more intensely from the consequences of the pandemic period and, therefore, information that can guide actions in the context of PHC.

However, on a larger territorial scale, since this is a recent event, there are few specific studies aimed at tracking binge drinking during the pandemic in Brazil. Given this information, new studies are needed to provide data that develop effective strategies to address this situation in the context of PHC, as one of the consequences to the mental health of the population resulting from the COVID-19 pandemic.

In Nursing, this information demonstrates the need for professionals to act as care agents, aware of changes in alcohol consumption during the COVID-19 pandemic, and capable of developing actions to mitigate associated losses.

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