

Investigation of alcohol consumption in a hospital during the COVID-19 pandemic

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Objective: to investigate the alcohol consumption pattern among health professionals during the COVID-19 pandemic. **Methodology:** a cross-sectional study carried out in a children's and public hospital from Belo Horizonte. A sociodemographic questionnaire and the Alcohol Use Disorder Identification Test were used. **Results:** a total of 271 health professionals participated in the study: 91.2% women, aged between 30 and 49 years old (67.9%), single (48.9%), professing some religion (87.4%) and with graduate studies (40%). 65.3% drink alcoholic beverages. Beer was the most consumed beverage (35.6%). Consumption frequency was from 2 to 4 times a month (55.9%), and they drink from 1 to 2 shots (62.3%). Among the main reasons listed for alcohol consumption are leisure/recreation (29.5%), relaxation (21.3%) and confinement/tension due to the pandemic (5.1%). Among the participants, 14.1% reported that they initiated or had an increase in alcohol consumption during the pandemic. There was a significant association for risky use among the respondents who have family members that consume alcohol ($p < 0.001$). **Conclusion:** the study showed that alcohol consumption among health professionals is frequent. It is essential that health institutions have action policies focused on promoting healthy lifestyle habits.

Descriptors: COVID-19; Alcohol Consumption; Health Personnel.

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Investigação do consumo de bebidas alcoólicas em um hospital durante a pandemia da COVID-19

Objetivo: investigar o padrão de consumo de bebidas alcoólicas entre os profissionais de saúde durante a pandemia da COVID-19. **Metodologia:** estudo transversal realizado em um hospital infantil e público em Belo Horizonte. Utilizou-se um questionário sociodemográfico e o *Alcohol Use Disorder Identification Test*. **Resultados:** participaram do estudo 271 profissionais de saúde, sendo 91,2% mulheres, 67,9% com idade entre 30 e 49 anos, 48,9% solteiros, 87,4% professam religião, 40% possuem pós-graduação. 65,3% consomem bebidas alcoólicas. A cerveja foi a bebida mais consumida (35,6%). Frequência de consumo de 2 a 4 vezes no mês (55,9%), com ingestão de 1 a 2 doses (62,3%). Entre os principais motivos listados para o consumo de álcool temos lazer/recreação (29,5%), relaxar (21,3%) e confinamento/tensão pela pandemia (5,1%). Entre os participantes, 14,1% relataram que iniciaram ou aumentaram o consumo de álcool durante a pandemia. Houve associação significativa para o uso de risco entre os entrevistados que têm familiares que consomem álcool ($p < 0,001$). **Conclusão:** o estudo evidenciou que a ingestão de bebidas alcoólicas entre os profissionais de saúde é frequente. É fundamental que haja nas instituições de saúde políticas de ação com foco na promoção de hábitos saudáveis de vida.

Descritores: Pandemia COVID-19; Consumo de Bebidas Alcoólicas; Profissionais da Saúde.

Investigación sobre el consumo de alcohol en un hospital durante la pandemia de COVID-19

Objetivo: investigar el patrón de consumo de alcohol de los profesionales de la salud durante la pandemia de COVID-19. **Metodología:** estudio transversal realizado en un hospital infantil y público de Belo Horizonte. Se utilizó un cuestionario sociodemográfico y el *Alcohol Use Disorder Identification Test*. **Resultados:** participaron en el estudio 271 profesionales de la salud, 91,2% son mujeres, 67,9% tienen edades entre 30 y 49 años, 48,9% son solteros, 87,4% profesan una religión, 40% tienen posgrado. 65,3% consumen bebidas alcohólicas. La cerveza fue la bebida más consumida (35,6%). Frecuencia de consumo de 2 a 4 veces al mes (55,9%), 62,3% toman de 1 a 2 dosis. Entre los principales motivos enumerados para el consumo de alcohol se encuentran el ocio/esparcimiento (29,5%), la relajación (21,3%) y el confinamiento/tensión por la pandemia (5,1%). El 14,1% de los participantes informó que comenzó a consumir alcohol o aumentó su consumo durante la pandemia. Hubo una asociación significativa entre el consumo de riesgo y tener familiares que consumen alcohol ($p < 0,001$). **Conclusión:** el estudio mostró que el consumo de alcohol entre los profesionales de la salud es frecuente. Es fundamental que las instituciones de salud cuenten con políticas de acción dirigidas a promover hábitos de vida saludables.

Descritores: Pandemia de COVID-19; Consumo de Bebidas Alcohólicas; Personal de Salud

Introduction

Alcohol is a psychoactive substance with addictive properties and records of its consumption in various cultures date back thousands of years ago and for different purposes. Its effects are determined by the volume consumed, consumption patterns and, to a lesser extent, quality of the alcoholic beverage⁽¹⁾.

Abusive consumption of alcoholic beverages is one of the main public health problems in the world and, annually, 3 million deaths are due to its harmful use, which represents 5.3% of the deaths worldwide⁽¹⁻²⁾. Excessive intake is associated with high morbidity and mortality rates, in addition to causing significant social and economic losses for individuals and society in general⁽¹⁻³⁾.

The recent pandemic caused by the 2019 coronavirus (COVID-19) and social isolation have implications that exert impacts on health behaviors, which include alcohol consumption. One mechanism suggests that increased psychological distress triggered by reduced household income, job losses, financial difficulties and uncertainty about the future during and after crises such as the COVID-19 pandemic may worsen alcohol use patterns and increase the harms attributable to consumption⁽²⁻³⁾.

Several psychological, behavioral and environmental manifestations are related to the abuse of psychoactive substances, mainly in stressful situations generated by a pandemic, for example⁽⁴⁻⁵⁾. According authors⁽⁶⁾, many workers drink alcoholic beverages as a way of coping with the adversities of the work environment, as well as for the feelings of relaxation and pleasure caused by alcohol.

This research aimed at investigating the alcohol consumption pattern among health professionals during the COVID-19 pandemic.

Methodology

This is a cross-sectional and descriptive research study with a quantitative approach for the identification and correlation of alcohol consumption among health professionals during the pandemic.

The study was carried out with 271 health professionals from the multiprofessional team of a public children's hospital belonging to the Hospital Foundation of the State of Minas Gerais (*Fundação Hospitalar do Estado de Minas Gerais*, FHEMIG), which is a reference for the care of infectious and parasitic diseases in the state. A sample calculation of the population of 908 health workers was performed and considered 5% precision and a 95% confidence level, resulting in the respective final sample.

The inclusion criteria listed health professionals who provide direct patient care, including medical residents in Pediatrics and multiprofessional residents. As exclusion criteria, employees distanced from care activities during the collection period and those who exercised administrative functions were considered.

The research was submitted to the Research Ethics Committee of the Hospital Foundation of the State of Minas Gerais, following the determinations of Resolution 466/12 of the National Council of Research Ethics (*Conselho Nacional de Ética em Pesquisa*, CONEP/CNS) and approved under opinion number 4,130,301.

Data collection was carried out between July and November 2020. Prior contact was made with the professionals with the purpose of clarifying the study objectives and requesting each professional to sign the Free and Informed Consent Form (FICF). Subsequently, instruments for obtaining data were distributed and, after filling-out, they were collected. Secrecy of all the information provided was ensured, and it was guaranteed that the data would only be disclosed for scientific purposes and without any financial cost to the participants.

The instrument used for data collection consisted of a questionnaire with diverse information on the workers' sociodemographic and occupational profiles, which included information regarding gender, age, race, marital status, religion, schooling, family income, professional category, sector of activity and working hours. The second part of the instrument consists of the Alcohol Use Disorders Identification Test (AUDIT), created by the World Health Organization (WHO) and validated in Brazil to identify alcohol consumption levels. AUDIT evaluates the different alcohol use levels, from non-use to probable addiction, in addition to consumption in the last 12 months. It can be carried out in the form of an interview or by self-application, and its questions correspond to the main ICD-10 diagnostic criteria⁽⁷⁾.

AUDIT consists of 10 questions, with each one having a margin from 0 to 4, allowing a final score of 0 to 40 points, which can be grouped into four ordinal categorical variables: Zone I – scores from 0 to 7 identify low-risk drinking or nondrinkers; Zone II – scores between 8 and 15 indicate risky consumption; Zone III – scores between 16 and 19 refer to harmful use or high-risk consumption; and Zone IV – scores between 20 and 40 indicate probable addiction⁽⁷⁾.

For the statistical analysis, a database was created in Microsoft Excel® (2016) and obtained data were analyzed in the STATA software, version 12.0. The data were presented in absolute (n) and relative (%) frequencies. The statistical test used was chi-square (χ^2) to assess the association of the categorical variables with

the dependent variable. The significance level (p-value) was set at 0.05 for all analyses.

Results

A total of 271 health professionals participated in the study. In relation to the sociodemographic characteristics, 91.2% were women, 67.9% had age between 30 and 49 years old (67.9%), 39.6% self-declared white-skinned, 48.9% were single, 87.4% professed some religion, 40% had graduate studies and 55.7% informed income between 1 and 2 minimum wages, according to Table 1.

Table 1 - Sociodemographic characteristics of the health professionals working in a children's hospital. Belo Horizonte, MG, Brazil, 2020

Variables	n	%
Gender		
Female	229	91.2
Male	22	8.8
Age Group (years old)		
18 - 29	42	16.7
30 - 49	171	67.9
50 - 59	38	15.1
60+	1	0.4
Ethnicity		
White	106	39.6
Black	53	19.8
Brown	105	39.2
Asian	4	1.5
Marital Status		
Single	132	48.9
Married	126	46.7
Stable Union	12	4.4
Religion		
Yes	236	87.4
No	34	12.6
Schooling		
Technical Education	80	29.6
Higher Education	82	30.4
Graduate Studies	108	40.0
Family Income		
1 - 2 minimum wages	150	55.7
3 - 4 minimum wages	117	43.5
5+ minimum wages	2	0.8

Table 2 presents the occupational profile of the health professionals, of whom 44.6% were nursing technicians, 16% nurses and 9.7% physicians. In relation

to the sector of activity, 49.2% were allocated to a Pediatrics inpatient unit and 25% to a Pediatric Intensive Care Unit. In the sample, 78.9% work during the day, 31.7% with an hour load equal to or greater than 60 hours, followed by 31.3% with less than or equal to 36 hours.

Table 2 - Characterization and profile of the health professionals working in a children's hospital. Belo Horizonte, MG, Brazil, 2020

Variables	n	%
Professional category		
Social worker	2	0.7
Nurse	43	16
Pharmacist	6	2.2
Physiotherapist	14	5.2
Nutritionist	6	2.2
Physician	26	9.7
Psychologist	2	0.7
Nursing technician	119	44.6
Pharmacy technician	2	0.7
Radiology technician	4	1.5
Resident physician (Pediatrics/Subspecialties)	19	7
Multiprofessional resident (Nursing, Pharmacy, Physiotherapy and Nutrition)	21	8
Others [†]	3	1.5
Sector		
Pediatric Intensive Care Center	67	25
Pediatric Inpatient Unit	132	49.2
Pediatric Emergency Room	32	11.9
Pediatric Clinic	9	3.4
Pediatric Imaging/Radiology	4	1.5
Pharmacy	5	1.9
Laboratory	6	2.2
Not specified [†]	13	4.9
Shift		
Day	213	78.9
Night	39	14.5
Day/Night	18	6.6
Weekly hour load		
< 36 hours	84	31.3
40 - 50 hours	83	31
> 60 hours	85	31.7
Other hour load	16	6

*Others = Speech Therapy, Occupational Therapy and Pedagogy; [†]Not specified = Pharmacy sector, Imaging/Radiology and Laboratory sector

Regarding the variables of the pattern about the consumption of alcoholic beverages, 65.3% drink alcohol, 68.5% had family members with the habit of

alcohol consumption, and 14.1% started or increased consumption of alcoholic beverages during the COVID-19 pandemic. Among the most consumed beverages, we have beer (35.6%), followed by wine (27.5%), with consumption frequency from 2 to 4 times a month

(55.9%), and consumption of 1 to 2 shots (62.3%). Among the main reasons listed for alcohol consumption are leisure/recreation (29.5%), relaxation (21.3%) and confinement/tension due to the pandemic (5.1%), according to Table 3.

Table 3 - Alcohol consumption pattern among the health professionals working in a children's hospital. Belo Horizonte, MG, Brazil, 2020

Variables	n	%
Does the family drink alcohol?		
Yes	185	68.5
No	85	31.5
Do you drink some alcoholic beverage?		
Yes	177	65.3
No	94	34.7
Most consumed drink(s)?		
Beer	57	35.6
Wine	44	27.5
Beer and wine	30	18.8
Beer, wine and other spirits	29	18.1
How often do you drink?		
Once a month or less	30	19.5
2 - 4 times a month	86	55.9
2 - 3 times a week	31	20.1
4+ times a week	7	4.5
How many shots do you typically drink?*		
1 or 2	164	62.3
3 or 4	59	22.5
5 or 6	28	10.6
7, 8 or 9	12	4.6
10+	-	-
Reasons for drinking alcohol		
Stress	10	7.3
Anxiety	7	5.1
Confinement/Tension due to COVID-19 isolation†	7	5.1
Leisure/Recreation	40	29.5
Tiredness	6	4.5
Relaxation	29	21.3
Liking	17	12.5
Socializing	20	14.7
Started or increased consumption during the COVID-19 pandemic†		
Yes	37	14.1
No	225	85.9

*Shot quantification according to the AUDIT instrument; †COVID-19 pandemic = timespan considered from March to November 2020

Table 4 shows the result of the AUDIT test compared to the sociodemographic and professional profile variables. There was a significant association

for risky use among the interviewees that have family members who consume alcoholic beverages ($p < 0.001$).

Table 4 - Sociodemographic characteristics, profile of the health professionals and alcohol consumption (AUDIT) in a children's hospital. Belo Horizonte, MG, Brazil, 2020

Variables	Consumption levels (AUDIT) n (%)				p-value
	Non-drinkers/ Low risk	Risky use	Harmful use	Probable addiction	
Gender					0.931
Female	193 (77)	35 (14)	1 (0.4)	-	
Male	19 (7.6)	3 (1)	-	-	
Age group (years old)					0.977
18 - 29	37 (14.6)	5 (2)		-	
30 - 49	142 (56.3)	28 (11)	1 (0.4)	-	
50 - 59	32 (13)	6 (2.3)	-	-	
60+	1 (0.4)	-	-	-	
Ethnicity					0.233
White	93 (34.7)	13 (4.8)	-	-	
Black	40 (14.9)	12 (4.5)	1 (0.4)	-	
Brown	90 (33.6)	15 (5.6)	-	-	
Asian	4 (1.5)	-	-	-	
Marital status					0.476
Single	108 (40)	24 (8.8)	-	-	
Married	110 (40.8)	15 (5.6)	1 (0.4)	-	
Stable Union	11 (4)	1 (0.4)	-	-	
Religion					0.293
Yes	203 (75)	32 (12)	1 (0.4)	-	
No	26 (9.6)	8 (3)	-	-	
Schooling					0.624
Technical Education	68 (25.1)	11 (4.1)	1 (0.4)	-	
Higher Education	71 (26.3)	11 (4.1)	-	-	
Graduate Studies	91 (33.7)	17 (6.3)	-	-	
Shift					0.754
Day	178 (66)	34 (12.6)	1 (0.4)	-	
Night	34 (12.6)	5 (1.8)	-	-	
Day/Night	17 (6.2)	1 (0.4)	-	-	
Family Income					0.297
1 - 2 minimum wages	125 (46.5)	24 (8.9)	1 (0.4)	-	
3 - 4 minimum wages	101 (37.5)	16 (6)	-	-	
5+ minimum wages	2 (0.7)	-	-	-	
Weekly hour load					0.866
< 36 hours	57 (21.3)	10 (3.7)	-	-	
40 - 50 hours	70 (26.1)	12 (4.5)	-	-	
> 60 hours	100 (37.3)	18 (6.7)	1 (0.4)	-	
The family drink alcohol					<0.001*
Yes	146 (54.1)	38 (14.1)	1 (0.4)	-	
No	83 (30.7)	2 (0.7)	-	-	
You drink some alcoholic beverage					<0.001*
Yes	136 (50.1)	40 (14.8)	1 (0.4)	-	
No	94 (34.7)	-	-	-	

*Chi-Square Test

Discussion

The global scenario of the COVID-19 pandemic is generating different economic implications, emotional disorders such as anxiety, insomnia, fear and stress, socio-family problems and all these factors exert impacts on health behaviors, which include abusive consumption of alcoholic beverages⁽²⁻³⁾.

The investigation of alcohol consumption among health professionals is little explored. Most of the studies include adolescents, university students or the general population⁽⁸⁻¹⁰⁾.

In this study, more than half of the health professionals drank alcoholic beverages and this percentage is similar to a study⁽⁵⁾ carried out with workers from Family Health teams in the municipality of Uberlândia, Minas Gerais; however, it is important to emphasize that the aforementioned study was not conducted in the pandemic context.

The impact of the pandemic on alcohol consumption and possible related harms is still unknown. Alcohol abuse poses many acute and chronic health risks and lowers the immune system defenses, making individuals more susceptible to contracting infectious diseases, including COVID-19 itself⁽²⁻³⁾.

According to the current study, alcohol consumption was more frequently found in women, nursing technicians, adults, of white race, single, in people that professed some religion, and with hour loads equal to or greater than 60 hours, corroborating a cross-sectional study carried out with Nursing professionals in a public hospital from Minas Gerais⁽⁴⁾ and a similar one in Rio de Janeiro⁽¹¹⁾.

The higher consumption of alcoholic beverages in this population profile is related to the fact that women constitute the main workforce in health services⁽⁴⁻¹¹⁾. However, some authors already point to the increase in alcohol consumption in the female population^(1,10-12). It is interesting to point out that only two studies were found in the literature that investigated the relationship between alcohol use in the hospital environment, encompassing other professional categories^(5,13).

It is noted that 87.4% of the health professionals in this study professed some religious belief and that a survey carried out with Nursing students from a city in inland São Paulo found that the chances of alcohol consumption were lower among those who stated having a religion⁽¹⁴⁾. An integrative literature review⁽¹⁵⁾ showed that spirituality and religiousness are protective factors for not using alcohol or reducing its consumption, as well as for preventing relapses during the detoxification process from abusive use⁽¹²⁾.

Beer was the most consumed beverage by the participants of this study, followed by wine, and this data

is similar to the latest WHO Global Report on Alcohol and Health for Latin American countries and Brazil⁽¹⁾. The highest frequency of alcohol consumption in the sample was from 2 to 4 times a month with a mean of 1 to 2 shots and was similar to a research study carried out with Primary Health Care workers⁽⁵⁾. The higher consumption of beer and wine is due to the easy access to these types of drinks, as they are more economical than other fermented and distilled products, in addition to being found everywhere⁽¹⁶⁾.

It is important to emphasize that abusive alcohol consumption implies high morbidity and mortality rates, that ethanol is a psychoactive, immunosuppressive and toxic substance for cells and tissues⁽¹⁻³⁾ and that, according to the World Health Organization, there is no safe limit for the consumption of alcoholic beverages, as the harms to health are greater and proportional to the amount ingested⁽¹⁻³⁾.

The reasons listed by the interviewees for alcohol consumption were varied and were mostly related to leisure/recreation, relaxation, socializing and liking. The COVID-19 pandemic scenario was also cited as a triggering reason for alcohol consumption by 5.1% of health professionals.

In the AUDIT test score, 15% of the participants presented risky use of alcoholic beverages, which reflects recent data from studies that associate the higher consumption of alcoholic beverages in the general population in the face of the COVID-19 pandemic⁽¹⁻³⁾.

Risky alcohol use had a significant association among the participants who had family members who consumed alcoholic beverages. In a cross-sectional study carried out with students in the country⁽¹⁷⁾, it was described that the first contact with alcohol occurs through family members and at socializing events. In turn, other authors pointed out that the frequency of excessive alcohol consumption is much higher among adolescents who had family members that consumed alcoholic beverages⁽¹⁶⁻¹⁸⁾.

The investigation of the consumption of alcoholic beverages among health professionals has several implications at work, as it can help to identify and prevent problematic alcohol use through educational actions to promote healthy habits and lifestyles.

Among the limitations of this study, we mention the possible omission of information due to the stigma on the use of licit drugs, the cross-sectional design, which does not allow correlating consumption of alcoholic beverages with the variables associated with it and the restriction of the research scenario to a single institution, which precludes generalizing the results to the entire population, in addition to the few studies carried out in a hospital environment.

Conclusion

The results found in this study indicate that consumption of alcoholic beverages is frequent among health professionals in a population mainly comprised by female professionals, nursing technicians, adults, of white race, single, with some religion, with graduate studies, incomes from 1 to 2 minimum wages and hour loads equal to or greater than 60 hours.

The most consumed beverage was beer, followed by wine, and the main reason for consumption was leisure/recreation. The confinement and tension generated by the pandemic was also cited as a triggering reason for alcohol consumption. There was a significant association for risky use among the health professionals who have family members with alcohol consumption habits.

It is imperative that new studies investigate the alcohol consumption pattern among health professionals. It is fundamental that health institutions have action policies focused on promoting healthy lifestyle habits.

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Authors' contribution

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