

Chapter 110

Excessive alcohol consumption in the COVID-19 pandemic: a causality investigation

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ABSTRACT

Along with the outbreak of COVID-19, prevention measures were introduced, especially those aimed at social distancing, to reduce the spread of the disease. However, due to such restriction measures and, in an already presumptuous way, the consumption of alcoholic beverages changed from the public to the household. This study aims to investigate the relationship between the COVID-19 pandemic and the consumption of alcoholic beverages by the population. From this perspective, such an investigation is justified by the growing increase in socio-emotional disorders in the context of social distancing, to

minimize any emotional symptoms. It refers to an original, cross-sectional epidemiological study, carried out through an online questionnaire, with 162 participants. The relationship between alcohol consumption and sociodemographic variables was observed: gender, age group, schooling, monthly income, and marital status; in addition to the variables: feeling alone, isolation affected, and anxiety/depression. The present study identified that people who only know how to read and write, and people who feel alone had a significant association with increased alcohol consumption during the pandemic. Married people tended not to change their alcohol consumption during the pandemic. The sociodemographic variables, gender, age group, monthly income, and the variables isolation affected, and anxiety/depression showed no significant association with the change in alcohol consumption. In the final analysis, education, marital status, and feeling alone were highlighted in association with increased alcohol consumption during the pandemic.

Keywords: Alcohol, Causality, COVID-19, Pandemic.

1 INTRODUCTION

Along with the outbreak of COVID-19 (CoronaVirus Disease-19) came the introduction of prevention measures, especially those aimed at social distancing (Garcia and Duarte, 2020; Qualls et al., 2017), to decrease the extent of the disease. Different actions have been taken in the country since the beginning of the pandemic, which has included the isolation of people to more restrictive measures, including the closure of shops, bars, nightclubs, concerts, and restaurants, among other places that promoted crowding (Petersen et al., 2020). However, due to such restriction measures and, in an already presumptuous way, the intake of alcoholic beverages changed from the public to the home level. In addition to this important change, the intensification of feelings of anxiety, fear, depression, boredom, and uncertainty, caused by the pandemic, may have affected this habit by people (Cisa, 2020; See Health, 2020).

The ingestion of ethylene derivatives is correlated with several diseases and more than 230 complications of its use, in addition to being a psychoactive, malignant, and harmful substance for almost all systems of the human organism. It is of paramount importance to emphasize that such a habit is one of the most important factors in the circumstances of impregnable deaths (Euro, 2022; WHO, 2018; Rehm et al., 2020); and if there is no safe dose for ingestion, the greater the amount of alcohol ingested, the greater the consequences for the body (Gamble et al., 2006), which becomes increasingly fragile and unable to perform immune functions (Szabo et al., 2006; Shokoohi et al., 2006), fundamental in this context in which we live, further enhancing the effects of the pandemic.

Numerous assumptions have been brought into the debate about the psychological impacts of alcohol abuse in the course of this epidemiological scenario in which we live (Ahmed et al., 2020). Different studies point out that the intake of such alcoholic beverages is closely related to various cognitive disorders (Pervin and Stephen, 2021). Especially in this period of collective absence, in which the sum of these factors can provoke anxious and depressive conditions, and foster attempts of extermination (Ahmed et al., 2020). In addition, the uncontrolled and increased use of alcohol in the long term can promote dependence on these substances. However, several studies in numerous countries have pointed to an increase in anxiety and pressure events linked to the ingestion of these substances, added to the psychological impacts of social distancing, so these are reflections of the pandemic (Haider et al., 2020; Verma et al., 2020; Smith et al., 2020; McCutcheon et al., 2020).

In this scenario, many children and adolescents are exposed to early alcohol consumption due to adults, and the restrictions proposed today, and it is estimated that such early and exacerbated presentation is associated with early initiation, either by socialization with the environment, by the accessibility brought by parents or by the impaired understanding in the face of such an immature presentation. (Sharman et al., 2019) and by exacerbating occurrences of aggression domestic (Valente et al., 2017). However, given these scenarios, it is not yet possible to estimate the consequences of such problems on the physical and mental well-being of the population over time, and these are still they are not fully known. On the other hand, it is also estimated that homestay accompanied by monitoring of guardians, as well as discipline and reactivity to the needs of young people, can reduce alcohol consumption by them (Gilligan et al., 2014; Conegundes et al., 2020).

In general, the search for such central nervous system depressants is done in the wrong way due to emotional issues such as stress. Such action caused by alcohol brings the impression of relaxation and this same effect is a great potential cause of incidents, especially at the wheel, which culminates in medical care. In this scenario in which we live, where the health program is already overloaded, the excessive use of alcohol can still contribute to its overcrowding (Kaysen et al., 2007).

In short, there has been an increase in alcohol intake throughout such a COVID-19 scenario, and this habit can have short- and long-term consequences for users. In the short term, crises and exacerbation of emotions stand out, and more chronically can be the cause of several serious diseases or even produce

complications in already established conditions. In addition, it is important to mention the recreational effect that alcohol may have provided for people in isolation who seek some distraction.

From this perspective, investigating the relationship between the COVID-19 pandemic and the increase in the consumption of alcoholic beverages by the population is justified by the fact of growing increase in socio-emotional disorders in the face of the scenario of social distancing, to minimize some emotional symptoms.

2 METHODOLOGY

2.1 STUDY DESIGN

Cross-sectional study with probabilistic sampling obeying methodological criteria (Estrela, 2018). This project was approved by the Ethics and Research Committee of the Faculdade de Medicina de Itajubá (FMIT) with opinion 5.367.022. All participants gave the Informed Consent Form (ICF).

2.2 STUDY LOCATION, POPULATION, AND SAMPLE

Data collection was performed in a virtual environment through an online questionnaire, with no locality limitation. The Gpower 3.1.9.2 program was used to calculate the sample quantity where a mean effect size was considered, the significance of 0.05, and test power of 80% degree of freedom 6 obtaining a minimum required amount of 152 people.

2.3 INCLUSION CRITERIA

The study included all those who spontaneously agreed to participate in the research, regardless of gender, aged over 18 years, and who signed the ICF until a minimum number of 152 participants was reached.

2.4 EXCLUSION CRITERIA

Individuals under 18 years of age, and individuals who did not agree to participate or did not sign the ICF.

2.5 PROCEDURES FOR DATA COLLECTION

Data collection was carried out between May and July 2022, through a questionnaire answered on a virtual platform, at a distance, reducing the discomfort that could be caused. the embarrassment of responding in person; Were 30 questions were elaborated that covered the following areas: (1) sociodemographic data; (2) questions related to emotional state; (3) alcohol consumption during the pandemic. The questions were written objectively and without estimated response time. Particulates from the study all those who agreed to participate and met the inclusion criteria.

2.6 INSTRUMENTS USED

Questionnaire in a virtual environment (Google forms).

2.7 DEPENDENT VARIABLE

Alcohol Consumption.

2.8 INDEPENDENT VARIABLES

Gender, age group, schooling, monthly income, marital status, social isolation, feeling alone, anxiety/depression.

2.9 DATA ANALYSIS STRATEGIES

In the analysis, the Chi-square test of the L x C table was used to verify the association between the variables, and the G test was used to verify the association if the samples are considered non-parametric, and for the analysis of houses, the post hoc residue test was used for the comparison. The residue test is considered non-significant if the score value is lower than 1.96 for each case or considered a significance level of 95% when the score obtained is between 1.96 and 2.575, and very significant or with a significance of 99% when the score obtained is greater than 2.575. The significance level used was 0.05 and for the residue test, a score of 1.96 was used, which guarantees a reliability of 95%. Minitab 16 was used to perform the chi-square test, and for the G test and the residue test, the Bioestat 5.0 program was used.

3 FINDINGS

Table 1 shows the relationship between alcohol consumption and sociodemographic variables: gender, age group, education, monthly income, and marital status; in addition to the variables: feeling alone, isolation, and anxiety/depression.

Among the study participants, 62.35% were women, and 37.65% were men. When evaluating the age group and alcohol consumption, it is observed that the majority, 71.6% of the sample are people from 18 to 30 years old; 11.11% are from 31 years to 40 years old, 15.43% are from 41 years old to 60 years old, and 1.85% are over 60 years old.

Within the variable schooling, it is observed that 43.83% of the interviewees are attending higher education and that 43.21% have completed higher education, 11.11% have completed primary education, 1.23% can read and write and 0.62% have incomplete primary education. Within this variable, we observed a high degree of significance, $p = 0.0335$ ($p < 0.05$) concerning alcohol consumption during the pandemic, having relevance for the study.

Among the interviewees, 19.14% do not have monthly income, 14.81% answered were that they receive up to 1 minimum wage, 30.25% receive from 1 to 2 minimum wages, 20.99% receive from 3 to 5

minimum wages, 9.88% receive above 5 minimum wages and 4.94% did not know how to answer. This variable presented a $p=0.2359$ value, not being significant for the study ($p>0.05$).

Regarding marital status, 21.6% of respondents are married, 70.99% are single, 6.17% are in a stable union, 0.62% are divorced and 0.62% are widowed. This variable presented a $p=$ value of 0.2091, not being significant for the study ($p>0.05$).

Regarding the emotional variable "Feeling alone", 49.38% of respondents answered that they somehow feel alone, and 50.62% do not feel alone. In this variable, we observed a high degree of significance, $p= 0.046$ ($p<0.05$) about alcohol consumption during the pandemic.

In the question about the impact of social isolation "Isolation Affected", 33.95% of respondents answered that social isolation did not affect their lives, and 66.05% answered that they were affected in some way by social isolation. This variable presented p value = 0.123, not being significant for the study ($p>0.05$).

About Anxiety/Depression, 46.91% of the interviewees answered that they do not have any psychoemotional disorder, and 53.09% answered that they do. This variable presented a $p=$ value of 0.799, not having a high degree of significance for the study ($p>0.05$).

According to the results of the Chi-Square test shown in Table 1, the association between feeling alone and alcohol consumption was verified, and according to the results of the nonparametric G test shown in Table 1, an association between schooling and alcohol consumption was verified.

Table 1 – Relationship between Alcohol Consumption and Independent Variables by the Chi-Square Test.

Consumo de Álcool											
	Aumentou		Diminuiu		Não se alterou		Não se aplica		Total		
	Fr	%	Fr	%	Fr	%	Fr	%	Fr	%	Valor p
Gênero											
Feminino	27	26.73%	33	32.67%	27	26.73%	0.151				
Masculino	12	19.67%	27	44.26%	6	9.84%					
Faixa Etária											
De 18 a 30 anos	31	26.72%	45	38.79%	14	12.07%	0.200*				
De 31 anos a 40 anos	3	16.67%	6	33.33%	5	27.78%					
De 41 anos a 60 anos	4	16.00%	8	32.00%	13	52.00%					
Mais que 60 anos	1	33.33%	1	33.33%	1	33.33%					
Escolaridade											
Cursando o ensino superior	23	32.39%	22	30.99%	7	9.86%	0.0335*				
Ensino primário completo	3	16.67%	8	44.44%	5	27.78%					
Ensino primário incompleto	1	100.00%	0	0.00%	0	0.00%					
Ensino superior completo	10	14.29%	30	42.86%	21	30.00%					
Sabe ler e escrever	2	100.00%	0	0.00%	0	0.00%					
Renda Mensal											
Não possui renda	9	29.03%	13	41.94%	1	3.23%	0.2359*				
Até 1	7	29.17%	9	37.50%	6	25.00%					
1 a 2	12	24.49%	15	30.61%	13	26.53%					
3 a 5	9	26.47%	9	26.47%	9	26.47%					
Acima de 5	1	6.25%	9	56.25%	2	12.50%					
Não sabe	1	12.50%	5	62.50%	2	25.00%					
Estado Civil											
Casado (a)	4	11.43%	14	40.00%	15	42.86%	0.2091*				
Solteiro (a)	33	28.70%	44	38.26%	12	10.43%					
União estável	2	20.00%	2	20.00%	4	40.00%					
Divorciado (a)	0	0.00%	0	0.00%	1	100.00%					
Viúvo (a)	0	0.00%	0	0.00%	1	100.00%					
Sentir Sozinho											
Não	13	16.25%	35	43.75%	19	23.75%	0.046				
Sim	26	31.71%	25	30.49%	14	17.07%					
Isolamento Afetou											
Não	8	14.55%	24	43.64%	14	25.45%	0.123				
Sim	31	28.97%	36	33.64%	19	17.76%					
Ansiedade/Depressão											
Não	17	22.37%	30	39.47%	14	18.42%	0.799				
Sim	22	25.58%	30	34.88%	19	22.09%					
Total Geral	39	24.07%	60	37.04%	33	20.37%					

* G-test (LxC contingency table). Source: Research data (2022).

Table 1 shows the association, by the Chi-Square test, between feeling alone and alcohol consumption, and according to the nonparametric G test, an association was also verified. between schooling and alcohol consumption.

Table 2 shows that in the variable schooling, the alcohol consumption of people who have completed higher education tends not to change (score $2.622 > 1.96$), and that alcohol consumption by people who can only read and write increased (score $2.1652 > 1.96$). On the other hand, people who are attending higher education did not change their alcohol consumption during the pandemic, significance (score - 2.7423 , value in modulo >1.96).

Observing the variable Age, people aged 31 to 40 years (score -2.0023 , valor in modulo > 1.96) were more likely not to decrease alcohol consumption during the pandemic.

Regarding Monthly Income, people who answered that they have an income above 5 minimum wages are more likely not to increase their alcohol consumption during the pandemic, presenting a high degree of significance (score - 1.9923 , value in module > 1.96).

Evaluating the variable Marital Status, married people represent only 20% of the sample, however, in Table 2 we observed a high significance (score $2.2911 > 1.96$) of this group not changing alcohol consumption during the pandemic.

Interestingly, the analysis of the variable "Feeling Alone" showed a high degree of correlation between those who answered "feel alone" with the increase in alcohol consumption in the pandemic (score 2.0896 , >1.96). Coherently, those who do not feel alone showed a high degree of correlation in not changing alcohol consumption (score 2.3434 , >1.96).

Table 2 – Correlation Analysis between Alcohol Consumption and Independent Variables by Residue Test

Gênero	Aumentou	Diminuiu	Não se alterou
Feminino	1.794	-1.3524	-0.5063
Masculino	-1.794	1.3524	0.5063
Faixa Etária	Aumentou	Diminuiu	Não se alterou
Menor que 18 anos	0.0767	1.1676	-1.0596
De 18 a 30 anos	-0.5924	0.6762	-0.0273
De 31 anos a 40 anos	0.2456	-2.0023	1.4698
De 41 anos a 60 anos	0.6135	-0.7846	0.0997
Mais que 60 anos	0.0767	1.1676	-1.0596
Escolaridade	Aumentou	Diminuiu	Não se alterou
Cursando o ensino superior	1.4	1.7158	-2.7423
Ensino primário completo	-0.5924	-0.7084	1.1455
Ensino primário incompleto	1.525	-0.5526	-0.9361
Ensino superior completo	-1.9015	-1.0286	2.622
Sabe ler e escrever	2.1652	-0.7846	-1.3291
Renda Mensal	Aumentou	Diminuiu	Não se alterou
Não possui renda	-0.0317	0.5048	-0.3984
Até 1 salário mínimo	0.8621	-1.3148	0.3199
1 a 2 salários mínimos	0.4771	0.2917	-0.6864
3 a 5 salários mínimos	0.6993	0.6253	-1.1736
Acima de 5 salários mínimos	-1.9923	0.4986	1.4122
Não sabe	-0.741	-1.3809	1.8519
Estado Civil	Aumentou	Diminuiu	Não se alterou
Casado (a)	-1.084	-1.5266	2.2911
Solteiro (a)	0.8891	1.0632	-1.7192
União estável	0.1694	0.5984	-0.6628
Sentir Sozinho	Aumentou	Diminuiu	Não se alterou
Não	-2.0896	-0.4951	2.3434
Sim	2.0896	0.4951	-2.3434
Isolamento Afetou	Aumentou	Diminuiu	Não se alterou
Não	-1.8096	-0.2394	1.869
Sim	1.8096	0.2394	-1.869
Ansiedade/Depressão	Aumentou	Diminuiu	Não se alterou
Não	-0.6693	0.2425	0.4108
Sim	0.6693	-0.2425	-0.4108
Nível alfa 0,05	1.96		
Nível alfa 0,01	2.575		

Source: Research data (2022).

In summary, the data presented in Table 2 demonstrate that the variables schooling and people with complete higher education were more likely not to be associated with the alteration of alcohol consumption during the pandemic. In turn, people without formal education (who can only read and write) were more likely to increase their alcohol consumption during the pandemic. Regarding marital status, being married was more likely not to present a change in alcohol consumption during the pandemic, and with loneliness, the person who does not feel alone has more likely not to have altered alcohol consumption, in parallel, the person who feels alone is more likely to increase alcohol consumption during the pandemic.

4 DISCUSSION

Investigating the relationship between the COVID-19 pandemic and the increase in alcohol consumption by the population is important in the context in which we live. In the present study, a positive correlation was identified between schooling, marital status, and feeling alone with alcohol consumption. People without formal education, who can only read and write, and people who feel alone showed a significant association with increased alcohol consumption during the pandemic. Interestingly, married people tended not to alter their alcohol consumption during this period. The sociodemographic variables, gender, age group, monthly income, and the variables isolation and anxiety/depression showed no significant association with alcohol consumption. It is noteworthy, therefore, in the final analysis, that schooling, cognitive status, and feeling alone were the variables that correlated with the increase in alcohol consumption during the pandemic.

International organizations, such as the WHO, emphasize the aspect of social vulnerability and the increase of unfavorable health habits such as alcohol consumption. The higher consumption of alcoholic beverages is related to various conditions and factors such as vulnerable social and personal ability, socioeconomic factors, family environment, local laws, and low schooling (PAHO, 2020).

A lower level of education was a variable of a greater propensity to increase the alcohol intake of study participants. Low schooling is a situation that concatenates other weaknesses, making the individual socially vulnerable, who often seeks improper resources to forget his condition. This is a worldwide reality, as demonstrated in the research of Meneses et al. (2019), that the Ecuadorian population with little study is more prone to chronic use and abuse of alcoholic beverages.

Interestingly, the result of "feeling alone" was related to an increase in alcohol consumption, which was not observed with married people, perhaps because there was no feeling of loneliness. The COVID-19 pandemic has had a wide and deep range of challenges in the mental health of the population at the individual, community, national and international levels (PAHO, 2020), with social isolation having important contributions in this emotional aspect. The consumption of alcohol enters into this aspect by providing relaxation, well-being, and relief from afflictions and stress, even if momentarily. In addition, for many people, alcohol is a resource of leisure and dispersion of reality, and this perception may have been intensified in the context of the pandemic (Carmo et al., 2018).

Research indicates that alcohol consumption by Brazilians occurs preferentially outside the home (Out of Home), explained by the social behavior of the human being, especially among singles and young people. Our study showed that the consumption of alcohol by the young adult population (up to the age of 30 years) tended not to change during the pandemic (38.79%), perhaps related to the restriction of social life. On the other hand, people aged 31 to 40 (< -1.96), were more likely not to decrease their alcohol consumption during the pandemic.

The present study has some limitations that should be addressed. It is a cross-sectional study that makes impossible the causal relationship between the variables explored and the outcome. The results represented only a sample of respondents and may not represent the current situation of the general population; therefore, the results cannot be generalized.

5 CONCLUSION AND FINAL CONSIDERATIONS

The present study identified that people with informal educational backgrounds, who can only read and write, and individuals who feel alone showed a significant association with increased alcohol intake during the pandemic; married people tended not to change their alcohol consumption during the pandemic. The sociodemographic variables, gender, age group, monthly income, and the variables isolation and anxiety/depression showed no significant association with changes in alcohol consumption. In the final analysis stood out schooling, marital status, and feeling alone correlated with the increase in alcohol consumption during the pandemic.

As a final consideration, longitudinal studies with multicenter approaches that have a quantitatively more robust sample can help in the production of results that more reliably reflect the reality of alcohol consumption during the pandemic. It is also interesting to evaluate the regionalization of the habit since cultural differences are known to interfere with the consumption of alcohol by the population.

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