

Original Article

Alcohol Use and Associated Factors Amidst COVID-19 Pandemic: A Cross-Sectional Study of Patients Attending General Out-Patients Department of a Tertiary Hospital, North Central Nigeria

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ABSTRACT

The psychological distress and the uncertainty about the future during and after crises like the COVID-19 pandemic may lead to increase in alcohol consumption which can worsen disease prognosis and outcome. Therefore, this study was undertaken to find the correlates of increased alcohol consumption during the COVID-19 pandemic in patients attending the General Out Patients Department in Jos University Teaching Hospital. It was a cross-sectional descriptive study among consecutive 361 patients above 18 years all who satisfied the inclusion criteria. The data was analyzed using SPSS Version 22. The mean age of the participants was 34±10 out of which 167 (46.3%) admitted to drinking alcohol and 194 (53.7%) did not drink alcohol. Of those who drink alcohol 65 (38.9%) had self-reported increased in alcohol consumption while 102 (61.1%) remained unchanged or decreased their intake. The proportion of participants who were self-employed was higher in the increased than in the no increased in alcohol consumption group (37.8% versus 62.2%, p-value<0.01). Similarly, alcohol use disorder (increased alcohol 71.7% versus no increased 28.3%, p-value<0.01), high perception of the impact of stress (increased alcohol 58.6% versus no increased 41.4%, p-value<0.01) and poor perceived quality of health (increased alcohol consumption 52.9% versus no increased 47.1%, p-value<0.01). The multinomial logistic regression revealed that those without alcohol use disorder were 2 times less likely (p = 0.03; CI = 0.173 – 0.916) and those with perceived low impact of COVID-19 stress (p = 0.001; CI = 0.052 – 0.316) to increase alcohol consumption. Special attention needs to be paid particularly to the most vulnerable groups by providing screening and brief intervention to reduce harmful use of alcohol.

Keyword: Alcohol use disorder, COVID-19 pandemic, Demographics, Increased alcohol use

INTRODUCTION

The COVID-19 pandemic has continued to pose serious public health challenges to the entire world and Nigeria is not exempted. The first case of COVID-19 was confirmed in Nigeria on February 27, 2020¹. The government of Nigeria imposed several actions to curb the viral spread including restricted movement, curfews and a nationwide lockdown, social and physical distancing, quarantine, and other precautionary measures such as handwashing and use of face masks. The imposition of the lockdown resulted in the loss of employment and economic distress. Consequently, a large proportion of people were deprived of their safety net and social support systems². The rapid spread of transmission, steady rise in the number of confirmed and suspected COVID-19 cases and inadequate resources such as Personal Protective Equipment (PPE), face masks and human personnel worsened the uncertainty about the novel virus which proved elusive in the early stage of the pandemic. The bombardment of infobesity and misinformation from traditional and social media further escalated the growing fear and psychological distress among the general populace³.

The psychological distress and the uncertainty about the future during and after crises like the COVID-19 pandemic can worsen patterns of alcohol use and alcohol-related harm. The relationship between increase in alcohol cravings after stress exposure also occur in those without alcohol use disorder⁴. It has been found that an increase in alcohol consumption is often used as a coping strategy for both chronic and specific stressful life events in people with or without Alcohol use disorder. Alcohol use is associated with many acute and chronic risks to health such as increased risk to weakening the immune system, and it makes an individual more susceptible to contracting infectious diseases including COVID-19^{4,5}. Consequently, heavy alcohol use leads to greater risk for patients to develop acute respiratory distress which is one of the most severe complication of COVID-19⁶.

Demographic factors have frequently been found to be

significantly associated with patterns of alcohol use and abuse⁷. A survey conducted in Australia found increased alcohol use to be significantly related to gender, age, educational status and income level, but not to marital status^{8,9}. Similarly, in a longitudinal study high risk in drinking was not moderated by marital status²⁵. On the other hand, in a systematic review a significantly lower rate of alcohol abuse was found among married people compared to those who were single or divorced¹⁹. Furthermore, it has been suggested that increased in drinking amidst the pandemic is more common in those who had alcohol use disorder before the pandemic, middle age, had an average or higher income, had lost their job, had experienced changes in sleep as well as reported depression and low mental well-being^{9,10}.

The multisystemic effects of both alcohol consumption and COVID-19 worsen disease prognosis and outcome. Despite this, only few studies have looked at the association of prior alcohol use disorder before the pandemic and changes in alcohol consumption during the pandemic, and its correlates in a clinical setting. Identifying the correlates of increased alcohol consumption during difficult time periods like COVID-19 pandemic which may not automatically normalise post pandemic is necessarily important. This will no doubt help clinicians to factor in screening of alcohol use during consultation. It will also help public health experts to create awareness on the need for cessation of alcohol abuse while instituting other measures to contain the spread of the infection. Therefore, this study is aimed at finding the correlates of increase in alcohol consumption during COVID-19 pandemic in patients attending the General Out Patients department of the Jos University Teaching Hospital.

MATERIALS AND METHODS

The descriptive cross-sectional study was carried out among patients attending the General Out Patients Department (GOPD) of the Jos University Teaching Hospital (JUTH) from June to August, 2020. This was

done after ethical approval was obtained from JUTH ethical committee. JUTH is located in the north central region of Nigeria. It offers both specialist and primary care services to in and out patients. Although the GOPD is situated within the Teaching Hospital, it offers primary health care services also in that a “walk-in” policy operates and no referrals are required before patients are attended to.

The minimum sample size was calculated by the Kish formula for cross sectional studies. Formula, $n = \frac{Z^2pq}{d^2}$ Where Z = standard score variance 1.96, this corresponds to 95% confidence level; P = prevalence rate of 28.6%¹¹, q = proportion of failure 1- p, d = degree of accuracy desired, estimated at 0.05 (5%)

$$n = \frac{1.96 \times 1.96 \times 0.286 \times 0.714}{0.05 \times 0.05} = 313$$

However, 361 patients were recruited using the convenient sampling method. All consecutive patients that satisfied the inclusion criteria (age 18 years attending the GOPD were included). Excluded were acutely ill patients and those who did not give consent.

All participants were asked “Compared to life prior to the coronavirus outbreak, how has your consumption of alcohol changed?” Response items included: (1) drinking the same amount; (2) drinking less alcohol; (3) drinking more alcohol; and (4) I don't drink alcohol. Participants who had not increased their alcohol consumption (remained same or decreased) were grouped together for the analyses. Those who responded either to item 1, 2 and 3 were further assessed with the alcohol abuse and dependence module of the Mini-International Neuropsychiatric Interview (MINI Plus). Its validation and reliability studies compared to the Structured Clinical Interview (SCID) for the DSM-IV and the Composite International Diagnostic Interview (CIDI) showed that it has high validity and reliability scores (Kappa scores for all diagnoses were above 0.70 with about 70% above 0.90) indicating excellent inter-rater reliability. When compared with SCID for DSM-IV, it has sensitivity of greater than 0.70 and specificity of above

0.85 for most diagnoses¹². It has also been validated in Nigeria with an inter-reliability of 0.86¹³. Alcohol use disorder was considered if participants met DSM-IV criteria for either abuse or dependence syndromes in the previous 12 months prior to COVID-19 pandemic. Perceived quality of life and satisfaction with health in the last 2 weeks were assessed using the WHOQOL-BREF “How would you rate your quality of life?” Response items included (1) Very poor (2) Poor (3) Neither poor nor good (4) Good (5) Very good. “How satisfied are you with your health?” With the same response items as above. These responses were dichotomised into 2: with poor comprising of responses 1, 2 and 3, while good as (4 and 5).

In addition, all participants were asked: “How much had COVID-19 impacted your day-to-day life?” with the five answer choices collapsed into two groups “0” (“Not at all”; “A little”; or “Much”) and “1” (“Very much”; “Extremely”).

Socio-demographic data was collected, including age, sex, marital status, employment and educational status, monthly income, religion, place of residence (urban or rural) chronic medical conditions.

Statistical Analysis

Data analysis was done using Statistical Package for Social Sciences (SPSS) programme version 23. Data were presented using simple frequency distribution tables and Pearson Chi-square test for qualitative variables with Fisher's exact or Yate's correction where applicable. Multiple logistic regressions using a stepwise selection process was employed to analyse those factors associated with increased alcohol consumption during the pandemic.

RESULTS

The study was made up of 361 participants with a mean age of 34±10 out of which 167 (46.3%) admitted to drinking alcohol and 194 (53.7%) did not drink alcohol. Of those who drink alcohol 65(38.9%) had increased self-reported intake amidst COVID-19 pandemic while, 102 (61.1%) remained unchanged or decreased

Table: 1 Alcohol use in the study sample

Alcohol use	Number (%)
No alcohol use	194 (53.7)
Use alcohol	167 (46.3)
Increased alcohol use	
Increased use	65 (38.9)
No increased use (Remained same or decreased use)	102 (61.1)

Table 2: Sample characteristics (overall and by alcohol consumption)

Characteristics	Overall-sample N (%)	Increased use in alcohol		Chi-square	Df	p-value
		No n (%)	Yes n (%)			
Sex						
Male	102(61.1)	57(55.9)	45(44.1)	2.976	1	0.08
Female	65(38.9)	45(69.2)	20(30.8)			
Age group (years)						
18-39	121(72.5)	69(57.0)	52(43.0)			
40-59	40(24.1)	27(67.5)	13(32.5)	5.354	2	0.06
60	6(3.4)	6(100.0)	0(0.0)			
Marital status						
Single	82(49.1)	42(51.2)	40(48.8)			
Married	76(45.5)	55(72.4)	21(27.6)	7.543	2	0.02
Others	9(5.4)	5(55.6)	4(44.4)			
Religion						
Protestants	94(56.3)	60(63.8)	34(36.2)			
Catholic	52(31.1)	32(61.5)	20(38.5)	4.397	3	0.22
Islam	11(6.6)	7(63.6)	4(36.4)			
African Religion	10(6.0)	3(30.0)	7(70.0)			
Educational Level						
No formal educ.	12(7.2)	8(66.7)	4(33.3)			
Primary	29(17.4)	20(69.0)	9(31.0)			
Secondary	43(25.7)	24(55.8)	19(44.2)	1.442	3	0.696
Tertiary	83(49.7)	50(60.2)	33(39.8)			
Employment Status						
Civil servant	71(42.5)	50(70.4)	21(29.6)			
Self employed	45(26.9)	17(37.8)	28(62.2)	14.107	2	0.001
Unemployed	51(30.5)	35(68.6)	16(31.4)			

Table 2 Continued :Sample characteristics (overall and by alcohol consumption)

Characteristics	Overall-sample N (%)	Increased use	in alcohol	Chi-square	Df	p-value
Place of residence						
Urban	136(81.4)	83(61.0)	53(39.0)	0.001	1	0.979
Rural	31(18.6)	19(61.3)	12(38.7)			
Monthly income						
30,000 naira	100(59.9)	52(52.0)	48(48.0)	8.8640	1	0.003
31,000naira	67(40.1)	50(74.6)	17(25.4)			
Alcohol use disorder						
Yes	53(31.7)	15(28.3)	38(71.7)	35.085		0.001
No	114(68.3)	87(76.3)	27(32.7)			
Perception of stress						
High	70(41.9)	29(41.4)	41(58.6)	19.573	1	0.001
Low	97(58.1)	73(75.3)	24(24.7)			
Perceived QOH						
Poor	51(30.5)	24(47.1)	27(52.9)			
Good	116(69.5)	75(64.7)	41(35.3)	6.010	1	0.014
Perceived QOL						
Poor	84(52.3)	52(61.9)	32(38.1)			
Good	83(49.7)	50(60.2)	33(39.8)	0.049	1	0.825

Table: 3 Multinomial logistic regression between increased in alcohol consumption and significant variables

Variables	B	Df	p-value	CI
Occupation	0.100	1	0.702	0.663 – 1.842
Monthly income	0.224	1	0.625	0.510 – 3.069
Low impact of COVID-19	-0.924	1	0.029	0.173 – 0.912
No alcohol use disorder	-2.056	1	0.000	0.052 – 0.316
Poor perceived QOH	-0.447	1	0.309	0.271 – 1.513
Single	1.580	1	0.132	0.260 – 1.607
Married	0.264	1	0.792	0.102 – 5.809

intake Table:1. The characteristics of the participants were similar between those with and without increased alcohol consumption except for employment status, alcohol use disorder, perception of the impact of stress amidst COVID-19 and perceived quality of health. The proportion of participants who were self-employed was higher in the increased than in the not increased in alcohol consumption group (37.8% versus 62.2%, p -value <0.01). Similarly, alcohol use disorder (increased alcohol 71.7% versus not increased 28.3%, p -value <0.01), high perception of the impact of stress (increased alcohol 58.6% versus not increased 41.4%, p -value <0.01) and poor perceived quality of health (increased alcohol consumption 52.9% versus not increased 47.1%, p -value <0.01) Table:2

Multinomial logistic regression was done on factors that were significantly associated with increased alcohol consumption, only those without alcohol use disorder were 2 times less likely ($p = 0.03$; CI = 0.173 – 0.916) and those with perceived low impact of COVID-19 stress ($p = 0.001$; CI = 0.052 – 0.316) were predictors of increased alcohol consumption Table: 3.

DISCUSSION

The rate of increase in alcohol consumption in this study was 38.9%. It is lower compared with a study carried out in United States of America (USA) but higher than that found in the United Kingdom¹⁴. This may be as a result of differences in the study sample and methods of data collection which may either be face to face or on-line basis.

In the UK sample, the increased alcohol consumption was apparent among younger adults¹⁴. It has been suggested that young people are in a vulnerable position in terms of alcohol use¹⁵. In addition, it could be that people of this age group might not take the pandemic risk seriously and still organised social meetings at home despite prohibitions. On the contrary, this study found no significant relationship between any age-group and increased alcohol consumption.

The relationship between gender and increased alcohol consumption during pandemic has been

inconsistent. Some studies had found that male gender predicts a higher risk of developing adverse drinking^{16,17} whereas others showed increase in rate of alcohol consumption in women compared to men¹⁸. However, this study demonstrated no significant association.

Some studies have found significantly lower rates of alcohol abuse among married people as compared to those who are single or divorced¹⁹. Likewise, this study showed a significant relationship between marital status and increased drinking of alcohol with the married less likely to engage in high-risk drinking compared to the singles or divorced.

The COVID-19 pandemic has been shown to have sweeping impact on income and employment. People with salaried jobs were far less likely to be affected than those with informal, daily wage jobs, which include a substantial proportion of the workforce in lower-income countries²⁰. Similarly, this study found an association between monthly income, self-employment status and increased alcohol consumption. Rates of alcohol use and alcohol use disorder vary with area of residence, which are usually higher in urban than in the rural areas²¹. There was no association between area of residence and increased alcohol use in this study.

Although there is no clear evidence linking COVID-19 with increased in alcohol use, research shows that those experiencing stress often report increased alcohol consumption and misuse²². When individuals experience periods of economic or psychological stress, they often consume more alcohol, resulting in increased symptoms of alcohol abuse and alcohol dependence²³.²⁴ Similarly, this study found a significant association between pre-existing alcohol use disorder, high perception self-reported COVID-19 related stress and increased consumption of alcohol.

In conclusion, alcohol remains an important social and health problem. Special attention needs to be paid, particularly to the most vulnerable groups such as people with alcohol use disorder, low income, unmarried, those with perceived low quality of health and perceived high impact of COVID-19 related stress. Therefore, it is necessarily important to Provide screening and brief interventions to reduce harmful use

of alcohol. This strategy should be part of the health services to make it stronger and more responsive to the needs of people affected by the pandemic.

Limitations

This study has limitations and is subject to different types of bias. The cross-sectional, retrospective nature of the study is potentially limited by recall. The sensitive nature of alcohol behaviour increases the risk that respondents were less likely to reveal their actual use as there was no corroboration to confirm. This study was done in a clinical setting, hence current findings cannot be generalised to the wider population. Further study should be carried out at the community level and also assess the reasons why people increased their rate of alcohol consumption amidst pandemic.

Conflict of interest: none

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