



## PATTERNS OF ALCOHOL CONSUMPTION AND SOCIO-DEMOGRAPHIC FACTORS AMONG WOMEN IN NORTH CENTRAL NIGERIA

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### Abstract

The patterns of alcohol consumption among females is of enormous public health concerns, as harmful consumption poses danger to their health, welfare, children and to the civil society. The study objectives were to determine the current prevalence of alcohol use, the related socio-demographic factors and the patterns of alcohol consumption. It was a descriptive cross-sectional study in Jos North Local Government Area, carried out from March to July, 2017 after ethical clearance was obtained. A multistage sampling technique was employed to select the participants who were age 18 years and above. A total of 272 females with an age range of 18 to 60 years responded. The mean age was  $28.8 \pm 8.6$  years. Majority 112(41.2%) were in the age group of 25-34 years. Most of them were never married 168 (61.8%), protestants 151(55.4%) and had secondary education 97(35.7%). About half of them were employed (148(54.4%) with 167(61.4%) of them earned an average monthly income of 20,000 naira or less. One hundred and fifty nine (58.5%) use alcohol in the family. The estimated prevalence of life time use, current use and abstention were 79.4%, 41.2% and 20.6% respectively. Of the current users 35(31.1%) were low risk while hazardous, harmful and dependent users were 30(26.8%), 21(18.8%) and 26(23.2%) respectively. The sociodemographic variables associated with current alcohol use were history of family use ( $\chi^2 = 3.088$ ,  $df = 1$ ,  $p = 0.01$ ) and educational status ( $\chi^2 = 8.797$ ,  $df = 3$ ,  $p = 0.03$ ). These findings call for immediate advocacy and sensitization of awareness concerning prevention, treatment and rehabilitation to stem the tide of deleterious patterns of alcohol consumption among females in the community.

**Keywords:** Alcohol use, patterns, prevalence, sociodemographic, women.

### Introduction

Alcohol consumption among Nigerian women was not popular some few decades ago.<sup>1</sup> In contemporary Nigeria society the drinking landscape is shifting with the prevalence of alcohol use is not only high but increasing among women.<sup>2</sup> Researchers attributed the change to proliferation of breweries in the early 1980's and modernization.<sup>3,4</sup> Recent studies blamed the influence of marketing efforts directed towards young women, including in the digital spheres as well as the creation of drinks specifically designed for them.<sup>5,6</sup>

The increase in alcohol consumption among females has public health concerns because it affects their health and welfare and poses dangers to their children and to the civil society.<sup>7</sup> Relative to men, women are

at greater risk of developing early negative alcohol-related diseases such as liver inflammation, cardiovascular diseases, cancer and neurotoxicity.<sup>8,9</sup> Female's body structure and chemistry make it such that women take longer to metabolize alcohol.<sup>23</sup> Hence, they are more vulnerable than men to the long term effects of alcohol. Women also experience unique negative social consequences of alcohol use such as increased domestic violence and stigma.<sup>10, 11</sup> The effects of sigma are particularly important for women. This could prevent them from accessing treatment and also making it difficult to determine the extent to which women use alcohol.<sup>7</sup>

The prevalence rates of alcohol consumption among women differ by country; life time prevalence ranges

from 1 % to 40%, and current drinking from none to 30%.<sup>2, 15</sup> A recent study, using data from the World Health Organization survey found that 10% of women sampled were current drinkers with the highest national rate of 30% reported in Burkina Faso.<sup>12</sup> In another study the prevalence of alcohol use in the previous year among women was estimated at 30% in Botswana and 47% in Namibia.<sup>20, 24</sup> In Nigeria, 5.3% of women reported previous year alcohol use in a national study.<sup>13</sup> On the contrary Mamman and co-researchers found 34% prevalence of current alcohol use among women in a rural Yoruba community.<sup>31</sup> According to a survey conducted in rural and urban communities in western Nigeria it was found that the prevalence of lifetime use of alcohol among females was 20% and current use was 7.4%.<sup>14</sup> The differentials in the prevalence in the patterns of use may have been as a result of the study population, sample size and instrument used. In addition, stigma, religious beliefs, social norms and gender roles may have contributed to the underreporting of alcohol use in the region.<sup>7</sup>

Although the rates of alcohol consumption is lower and life time abstention is very high among African women compared to women in western countries<sup>2,20</sup>, a deleterious patterns of heavy drinking and episodic binge drinking have been reported African women that calls for concerted effort to stem the tide. For instance, among women who drink in South Africa, Zambia and Chad have reported prevalence of 30-50% binge drinking.<sup>2</sup> The proportion of heavy drinking varied between 4% in Ghana to 41% in Chad. In a population based study, a prevalence of 38% of heavy drinking was found among current females drinkers in Nigeria and 20% in Uganda.<sup>15, 16</sup> In another study carried out by Olley and Ajiteru in Nigeria, a current prevalence of 54% of alcohol use was found among female students, while 7.7% and 5% were hazardous and harmful users respectively.<sup>17</sup> Adewuya and colleagues found prevalence of 1.1% alcohol abuse and 0.8% for alcohol dependence.<sup>18</sup> Worthy of note is that the negative health effects and social consequences of alcohol use are dependent on the amount of alcohol consumed and the pattern of use over time.<sup>23</sup>

The pattern of alcohol consumption in women varies according to socio-demographic variables such as age, being single, higher socioeconomic status and higher education<sup>12</sup>. Other factors are those that promote enabling environment for alcohol consumption, which include minimal regulation of alcohol companies, resulting in increased availability and distribution of

alcoholic beverages, undue influences on national alcohol policies and high levels of social tolerance towards female drinking.<sup>12</sup> It has also been observed that women who have been sexually abuse are more likely to use alcohol and to use it earlier, more often and in greater quantities.<sup>19</sup>

Robust research has showed that harmful patterns of alcohol consumption are strongly associated with increased morbidity and mortality.<sup>23</sup> Despite these enormous public health concerns, empirical information related to alcohol consumption among women in north central Nigeria is scanty. Hence, this study was undertaken to determine the current prevalence, the socio-demographic factors associated with alcohol drinking and the patterns of alcohol consumption.

## Materials and Methods

This study is part of a community based survey that was conducted from March to July 2017 in Jos North Local Government Area of plateau state, which is located in north central Nigeria. Jos North has an estimated population of 437,217<sup>33</sup> and is divided into 12 political wards. The people residents here are predominantly Berom, Jarawa, Anaguta and other ethnic groups on the Plateau.

The sample size for the study was calculated using Kish formula for cross sectional studies. A sample size of 272 was estimated. Formula  $n = Z^2pq/d^2$

Where: Z = standard score variance = 1.96 which correspond to 95% confidence level

P = prevalence rate of 23%, q = proportion of failure = 1-p, d = degree of accuracy desired estimated at 0.05(5%),  $n = 1.96^2 \times 0.23 \times 0.77 / 0.05^2 = 272$ .

Multistage sampling technique was employed to select the respondents after ethical clearance was obtained. In the first stage, Jos North was purposively selected. Simple random sampling was used to select two wards and one community from the list of communities in each of the wards. One consented eligible adult was selected at the time of data collection from each household. If there were more than one adult in a household balloting was used for selection. This was done until the sample size of 272 was reached with 136 respondents from each community.

The socio-demographic variables were collected using a profoma design by the researchers. Current alcohol use was determined by positive answer to the question "Do you ever drink alcohol nowadays, including drinks you brew or make at home?" Those who

answered yes to this question were administered Alcohol Use Disorder Identification Test (AUDIT) to determine the patterns of alcohol use. The AUDIT is a cross-culturally validated instrument for assessment of alcohol use in the general population. The pattern of alcohol consumption was based on AUDIT total score; 0-7 low risk, 8-15 hazardous, 16-19 harmful and  $\geq 20$  was considered as probable alcohol dependence. Those who answered yes to "Have you always been a non-drinker of alcohol?" were considered as life time non-drinkers (abstainers). The category of life-time drinkers was those who had not always been a non-drinker and current drinkers.

The data generated was coded and entered using Statistical Package for Social Science 20 (SPSS 20). Frequencies and proportions were computed. Chi square was used to test for association between categorical variables and logistics for variables that were statistically significant. The statistical significance level was set at  $p \leq 0.05$  at 95% confidence interval.

## Results

A total of 272 females with an age range of 18 to 60 years responded. The mean age was  $28.8 \pm 8.6$  years. Majority 112(41.2%) were in the age group of 25-34 years. Most of them were never married 168(61.8%), protestant 151(55.5%) and had secondary education 97(35.7%). About half of them were employed 148(54.4%) with 167(61.4%) of them on an average monthly income of 20,000 naira or less. One hundred and fifty nine (58.5%) use alcohol in the family as indicated in Table 1.

The prevalence of life time use, current use and abstainers were 79.4%, 41.2% and 20.6% respectively. Of the current users majority 35(31.1%) were low risk. Hazardous, harmful and dependence users were 30(26.8%), 21(18.8%) and 26(23.2%) respectively as showed in Table 2.

The socio-demographic variables significantly associated with current alcohol use were family use ( $\chi^2 = 3.088$ ,  $df = 1$ ,  $p = 0.001$ ) and educational level ( $\chi^2 = 8.797$ ,  $df = 3$ ,  $p = 0.03$ ) **Table. 3**. Logistic regression revealed that current use of alcohol was less likely in those with family use compared to those

without family use, those with secondary education were more likely to be current users of alcohol compared to those with tertiary education **Table 4**.

**Table 1: Socio-demographic variables**

Age group	272(N)	100 (%)
18-24	96	35.3
25-34	112	41.2
35-44	44	16.2
45-60	20	7.4
<b>Total</b>	<b>272</b>	<b>100</b>
<b>Marital Status</b>		
Never Married	168	61.8
Married	74	27.2
Previously Married (widows, divorce, separated)	30	11.0
<b>Educational Status</b>		
No Formal Education	23	8.5
Primary	61	22.4
Secondary	97	35.7
Tertiary	91	33.5
<b>Religion</b>		
Protestants	151	55.5
Catholic	80	29.4
Islam	23	8.5
Others	18	6.6
<b>Employment Status</b>		
Unemployed	124	45.6
Employed	148	54.4
<b>Average Monthly Income (Naira)</b>		
$\leq 20,000$	167	61.4
$\geq 21,000$	105	38.6
<b>Family Use of Alcohol</b>		
Yes	113	41.5
No	159	58.5
<b>Total</b>	<b>272</b>	<b>100</b>

**Table 2: Prevalence and Pattern of Current Alcohol Use**

	Number	Percentage (%)
<b>Life Time Alcohol prevalence</b>		
Life-time use	216	79.4
Abstainers	56	20.6
<b>Total</b>	<b>272</b>	<b>100</b>
<b>Current Alcohol Prevalence</b>		
Current user	112	41.2
Non-user	160	58.8
<b>Total</b>	<b>272</b>	<b>100</b>
<b>Pattern of alcohol use</b>		
Low risk	35	31.3
Hazardous	30	26.8
Harmful	21	18.8
Dependent	26	23.2
<b>Total</b>	<b>112</b>	<b>100</b>

**Table 3: Association Between Current Use of Alcohol and Socio-demographic Factors**

Sociodemographic variables	Current Users n = 112, freq. (%)	Non-users n = 160, freq. (%)	p ≤ = 0.05	Total N = 272
<b>Age group (years)</b>				
18-24	40(14.7)	56(20.6)	0.08	96(35.3)
25-34	53(19.5)	59(21.7)		112(41.2)
35-44	11(4.0)	33(12.1)		44(16.2)
45-60	8(2.9)	12(4.4)		20(7.4)
<b>Marital Status</b>				
Never Married	66(23.4)	102(37.5)	0.188	168(61.8)
Married	29(10.7)	45(16.5)		74(27.2)
Previously Married	17(6.3)	13(4.8)		30(11.0)
<b>Religion</b>				
Protestant	57(21.0)	94(34.6)	0.03*	151(55.5)
Catholic	37(13.6)	43(15.8)		80(29.4)
Islam	12(4.4)	11(4.0)		23(8.5)
Others	6(2.2)	12(4.4)		18(6.6)
<b>Educational Status</b>				
No formal Education	13(4.8)	10(3.7)	0.03*	23(8.5)
Primary	31(11.4)	30(22.4)		61(22.4)
Secondary	30(11.0)	67(24.6)		97(35.7)
Tertiary	38(14.0)	53(19.5)		91(33.5)
<b>Employment Status</b>				
Unemployed	46(16.9)	78(28.7)	0.21	124(45.6)
Employed	66(24.3)	82(30.1)		148(54.4)
<b>Average Monthly Income</b>				
≤ 20, 000	73(26.8)	94(34.6)	0.28	167(61.4)
≥ 21, 000	39(14.3)	66(24.3)		105(38.6)
<b>Family Use of Alcohol</b>				
Yes	61(22.4)	52(19.1)	0.01*	113(41.5)
No	51(18.8)	108(39.7)		159(58.5)

\*Statistically significant

**Table 4: Logistic Regression of current use of alcohol with significant sociodemographic factors**

Sociodemographics	Current use of alcohol		$\chi^2$	Df	P	OR	95% C.I.
	Yes	No					
<b>Educational level</b>			8.797	3	0.048		
No formal education	13(4.8)	10(3.7)				0.5	0.211-1.401
Primary	31(11.4)	30(22.4)				0.7	0.363-1.381
Secondary	30(11.0)	67(24.6)				1.5	0.857-2.920
Tertiary	38(14.0)	53(19.5)				1.0	
Total	112	160					
<b>Family use</b>			3.088	1	0.001		
Use alcohol	61(22.4)	52(19.1)				0.4	0.246-0.676
None	51(18.8)	108(39.7)				1.0	
<b>Total</b>	<b>112</b>	<b>160</b>					

## Discussion

The prevalence of abstention from alcohol use was 20.6%, life time and current use were 79.4% and 41.2% respectively. The Abstention prevalence was low compared to 40.7% found in western part of Nigeria.<sup>31</sup> It was also inconsistent with a study that utilized data from world health survey from 20 African countries, where a high rate of 59.4-99.8 % abstention was recorded though Nigeria was not part of this study<sup>2</sup>. The life time prevalence of 79.4% found in this study is higher compared to 64.0% found by Mamman and colleagues<sup>31</sup> and 20.0% found in a study conducted in Osun state in Nigeria<sup>14</sup> these two studies were however conducted in 2002. A current prevalence rate of 41.2% is within the range of 32.7% to 54.0% found in some previous studies in Nigeria.<sup>15,31</sup> These variation may be explainable by differences in socio-cultural factors, geographical location, study sample and methods.

The pattern of alcohol consumption among current users in this study is alarming as only 31.3% were low risk users, while the remaining were; 26.8% hazardous, 18.8% harmful and 23.2% dependent drinkers. This finding is in line with similar studies in Nigerian that found women who consumed alcohol to be either hazardous or harmful drinkers.<sup>15,21</sup> It has been suggested that women have increased their consumption of alcohol because of societal change in gender roles.<sup>20</sup> In addition, the recent marketing efforts targeting young women by creating drinks specifically designed for them as well as linking it use to being sexy, high self-esteem, thinness, glamour and relationship.<sup>5</sup>

There was no significant association between age and current alcohol use. However, the predominant age group of current drinkers was 18-34 years, which is similar to findings in western countries, where the peak age of alcohol consumption is 16-28 years.<sup>32</sup> This is however contrary to a previous report, where the peak age for alcohol consumption was 30-40 years<sup>15</sup>. This may have been contributed by easy accessibility of alcohol and lack of implementation of the minimum drinking age by both the government and the brewers in Nigeria

Studies have shown that divorced, separated or unmarried women drink more alcohol compared to married women.<sup>25, 26, 27</sup> This study also found that the proportion of unmarried women who were current drinkers was higher than the married (difference not significant). On the other hand, Adusi-Poku et al reported that married women drink more than any other group and suggested that this may be as a result

of self medication due to stress involve in mothering and that of their employers.<sup>28</sup>

There was no clear relationship between religion and current drinking of alcohol. This is at variance with the study of Mamman and colleagues who found that current drinking status was associated with religion.<sup>31</sup> The difference in the report by these two studies might be the homogeneity of the study sample, which was predominantly Christians. Furthermore, the current use of alcohol in deception by taking alcohol herbal mixture for health benefits by those who are restrained by socio-religious factors may have contributed.<sup>5</sup>

A positive association between education and likelihood of current drinking has been established.<sup>2</sup> similarly, in this study, a relationship between educational status and current drinking was found. This is further consistent with studies from the west where a relationship between higher level of education and current drinking among women have been documented.<sup>29,30</sup> The association could be a result of a greater economic independence and probably have developed a different lifestyle. Howbeit, this study found no relationship between current drinking and monthly income or employment status. This is in agreement with those of Hamer and Vaglum who found that consumption of alcohol was not related to employment or personal income in women.<sup>27</sup>

It has been found that consumption of alcohol by women is more specifically related to accessibility variables such as a close relationship with a current user that to a general accessibility to alcohol beverages in the community.<sup>27</sup> Similarly in this study an association between current drinking of alcohol and family use was found. However, those with family use were less likely to be current users compared to family that do not use. Apart from accessibility that influence use of alcohol in the family, the family drinking norm also exerts a serious influence on drinking behavior. For instance, permissive attitudes in a family with respect to alcohol consumption have great effects on the attitude of family members toward drinking and their behavior.<sup>22</sup>

## Conclusion

This study found a high prevalence of current alcohol consumption and deleterious patterns of alcohol use among the women. The younger age group of 18-34 years, who had secondary education with no history of family use, was mostly affected.

## Recommendations

The need for immediate cost-effective interventions to avoid or halt the development of alcohol related physical, social and psychological problems should be instituted. Further research on knowledge, attitude and practice of alcohol consumption, of a more robust sample size in the region is recommended.

## Limitations

The study had some limitations. The small sample size and restriction of the study population to Jos posed limit to generalise the result in the region. A diagnostic tool was not use in this study. The potential for under or over reporting of alcohol consumption in the participants was not done. There was neither estimation of blood alcohol concentration nor verification of the self-reported information.

## Conflict of interests

The authors declare no conflict of interests.

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