

## Epidemiology of Alcohol Use Disorders among Psychiatric Patients in a Tertiary Hospital in Nigeria

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### Abstract

**Objective:** To study the epidemiology of alcohol use disorders (AUD) among psychiatric patients attending a tertiary hospital in Nigeria.

**Methods:** Via a systematic sampling method, 470 consenting subjects were selected. The Alcohol Use Disorders Identification Test (AUDIT) and the Beck's Depression Inventory (BDI) were administered to each participant. One hundred and eighty five subjects had a score of at least 5 on the AUDIT or 18 on the BDI; and hence proceeded to the next stage of the study.

**Results:** The prevalence of AUD was higher in males than females; as well as in Christians more than members of other religious persuasion represented in this study and the differences were statistically significant. The other socio-demographic variables examined were not significantly associated with alcohol use disorder.

**Conclusion:** The negative health effects of Alcohol are well documented. The rising tide of alcohol use disorders with their attendant cascade of consequences remain a growing challenge to all societies; most especially the future generation.

**Keywords:** Prevalence; Socio-demographic; Alcohol; Study; Disorder; Association

### Introduction

In all its varieties, Alcohol is as ubiquitous as any product can be in Africa today [1]. Alcohol use disorders (AUD) namely Alcohol abuse and Alcohol dependence have a major impact on public health [2]. With a documented global prevalence rate of 1.7% in 2003, alcohol use disorders remain one of the leading causes of disease burden worldwide [3,4]. The use and abuse of Alcohol is one of such issues that are hardly accorded significant attention by the government of our country especially in the Niger Delta region. It is equally assumed that the average riverside dweller needs to consume Alcohol as part of his daily routine [5].

The deleterious impact of AUDs is far reaching, affecting not only the patients, their relatives and caregivers, but also their employment opportunities and the society at large [6]. Patients visiting general hospitals are also at an increased risk of AUD [7].

The Niger Delta region of Nigeria, the seat of Nigeria's prosperous oil industry has been plagued with violent crimes of increasing propensity for almost twenty years now and most of these acts of violence with their rising trend have been attributed to the use of psychoactive substances of which alcohol is one [8-10].

Unfortunately in spite of WHO warnings on the multiple negative health consequences of Alcohol which is on the increase, most of the studies done in Nigeria have to a large extent concentrated on

prevalence rates of alcohol without exploring the socio-demographic factors associated with this malady [11-13]. Worse still, most of the studies were done in Western Nigeria.

Therefore it becomes imperative to study the epidemiology of patients suffering from alcohol use disorders who are attending a tertiary hospital in the Niger Delta region of Nigeria. Results from this study will strengthen our advocacy against this monster and guide policy matters and health care providers in stemming the tide of this nightmare that is destroying our society.

### Materials and Method

This study was conducted at the general outpatient clinic of the University of Port Harcourt Teaching Hospital (UPTH) from February 2011-July 2011. This paper is part of that larger study.

### Instruments

Instruments utilized in this study include the Alcohol Use Disorder Identification Test (AUDIT), the Beck's Depression Inventory (BDI), Composite International Diagnostic Interview (CIDI) and a socio-demographic questionnaire prepared by the authors.

The Alcohol Use Disorder Identification Test (AUDIT) contains 10-items with a minimum score of 0 and maximum of 4 assigned to each item. It has been validated for use in alcohol related studies both in the developed world and in Nigeria and a score of 5 is considered a good cut off point to indicate the presence of AUD in a patient [14-17].

The Beck's Depression Inventory (BDI) is a questionnaire comprising 21 items [18]. It is an established instrument used in screening for depression and has been revised based on the diagnostic criteria of the Diagnostic and Statistical Manual (DSM IV) [19,20]. The BDI (2nd edition) has been positively correlated with the Hamilton Depression Rating Scale (HDRS) with a good Pearson Coefficient of 0.71. Its test-retest reliability (=0.93) and internal consistency (=0.91) are quite high [21]. Each subject is expected to choose one of 4 statements; the one that best explains his/ her feelings in the previous forth-night and each option carries a score of 0-3. The total score of all the items (0-63) indicates the severity of the depression. The BDI has been revalidated in Nigeria and a score of at least 18 indicates a Depressive Disorder [22,23].

The CIDI helps provide diagnoses based on the ICD-10 and the DSM-IV criteria. It is an invaluable instrument used in the study of the epidemiology of psychiatric disorders. The validity of the instrument, its inter-rater as well as test-retest reliability is excellent [24]. Many researchers have used it successfully in Nigeria [22-25].

The paper and penal form of the CIDI (version 3.0) was utilized in this work. The diagnosis of major depression and alcohol use disorders were made by comparing the symptoms generated by CIDI with the criteria spelt out in the DSM-IV.

**Procedure**

This is a 2 stage study. The first stage entails administering the AUDIT and BDI instruments to the 470 participants. Using the CIDI, diagnosis of major depression was made. One hundred and eighty five (185) subjects who met the criteria for the second stage scored 5 or more on AUDIT and 18 or more on BDI.

The sampling method used to recruit the subjects was the systematic type. The first patient was selected randomly from the first 4 eligible patients who attended the clinic on the first day of the study. Thereafter, every fourth eligible patient who attended the clinic was enlisted until the end of each clinic day. This exercise continued for many days until the full complement of sample required was achieved. It is important to note that the ethical committee of the institution (UPTH) gave a written approval for this work to be done. Also, informed consent was obtained from the subjects. Analysis of data was carried out with the aid of the Statistical Package for Social Sciences (SPSS) at 5% level of significance and 95% confidence interval.

Using the chi-square or Fisher's exact (2-tailed) test, categorical variables were analyzed; while continuous variables (e.g. BDI scores) were compared by the student's t-test. Degree of association between socio-demographic variables and Alcohol use Disorders were assessed using multivariate correlation analysis.

**Results**

As shown in the table below, the prevalence of Alcohol Use Disorders (AUD) was highest among the 38-47 years age group (18.9%) and least among the 68-77 years age group. However there wasn't any significant association between AUD and age. More males (23.0%) suffered from AUD than females (3.9%). This was shown to be significant ( $X^2=38.762$ ,  $df=1$ ,  $p<0.05$ , odds ratio (OR)=7.38, 95% confidence interval (CI), 3.49 to 16.01). The prevalence rate of AUD among the Ibos was 9.1%; the prevalence rate of AUD among the south-south ethnic groups was as follows: Ikwerre 13.1%, Ijaw 17.9%, Ogoni 16.3 % and other minorities 15.2%. The prevalence rates of AUD among those from the Yoruba, and other ethnic groups were 3.8%, 25.0% and 26.7%, respectively. This gives an AUD prevalence rate of 15.0% for those from the South-South ethnic groups (which include Ikwerre, Ijaw, Ogoni, other south-south ethnic groups), though this was not statistically significant it was higher than the 9.7% among the non-South-South ethnic groups (which includes Ibo, Yoruba and other ethnic groups).

The difference in rates of Alcohol Use Disorders among the cohort based on their marital status was not statistically significant ( $X^2=0.10$ ,  $df=1$ ,  $p$  value=0.919). Of all the subjects who professed the Islamic faith, none was diagnosed with Alcohol Use Disorders (AUD); this was significant. Fifty six (12.6%) of the patients who professed Christianity met the criteria for AUD while three (60%) of those of other religious categories had AUD; these included two Traditionalists and an Eckist ( $X^2=13.42$ ,  $df=2$ ,  $p<0.05$ ). 13.9% of the subjects who had tertiary education also met the criteria for AUD. The prevalence rate of AUD was least among those without any formal education (8.3%). Sixteen (10.7%) of those with secondary education had AUD while 5 (12.2%) of those with Primary education had AUD. These differences were not statistically significant ( $X^2=0.10$ ,  $df=3$ ,  $p$  value=0.778). When employment status was considered, the largest prevalence rate of 13.4% for AUD was noticed among the students, this was followed by the employed 12.6% and then the unemployed 10.9%. These differences in the prevalence of Alcohol Use Disorders among these groups were not significant ( $X^2=10.621$ ,  $df=5$ ,  $p$  value=0.059). On the basis of average monthly income there was no significant difference between the various sub-groups and the development of alcohol use disorders. Those who earned less than thirty thousand naira per month had the largest prevalence rate of AUD (12.7%) while those that earned greater than one hundred thousand naira per month had the least prevalence of AUD (11.1%) ( $X^2=4.539$ ,  $df=4$ ,  $p$  value=0.338) (Table 1).

Variable	Without AUD N%	With AUD N%	Total	X <sup>2</sup>	Df	P value
<b>Age groups</b>						
18-27	129 (92.1)	11 (7.9)	140	9.23	5	
28-37	143 (85.6)	24 (14.4)	167			
38-47	77 (81.1)	18 (18.9)	95			
48-57	43 (93.5)	3 (6.5)	46			
58-67	15 (83.3)	3 (16.7)	18			

68-77	4 (100.0)	0 (0.0)	4			
<b>Gender</b>						
Male	164 (77.0)	49 (23.0)	213	38.78	1	0.000*
Female	247 (96.1)	10 (3.9)	257			
<b>Ethnicity</b>						
Ibo	160 (90.9)	16 (9.1)	176	8.42	6	
Ikwerre	73 (86.9)	11 (13.1)	84			
Ijaw	23 (82.7)	5 (17.9)	28			
Ogoni	41 (83.7)	8 (16.3)	49			
Other South-South	78 (84.8)	14 (15.2)	92			
chnic groups						
Yoruba	25 (96.2)	1 (3.8)	26			
Others	11 (73.3)	4 (26.7)	15			
<b>Marital status</b>						
Married	220 (87.3)	32 (12.7)	252	0.01	1	0.919
Presently	191 (87.6)	27 (12.4)	218			
unmarried**						
<b>Religion</b>						
Christianity	387 (87.4)	56 (12.6)	443	13.42	3	0.001*
Islam	22 (100.0)	0 (0.0)	22			
Others	2 (40.0)	3 (60.0)	5			
<b>Education level</b>						
Tertiary	230 (86.1)	37 (13.9)	267	1.1	3	0.778
Secondary	134 (89.3)	16 (10.7)	150			
Primary	36 (87.8)	5 (12.2)	41			
No formal education	11 (91.7)	1 (8.3)	12			
<b>Employment</b>						
Unemployed	49 (89.1)	6 (10.9)	55	10.62	2	0.059
Student	84 (86.6)	13 (13.4)	97			
Employed	278 (87.4)	40 (12.6)	318			
<b>Average monthly income in naira</b>						
≤ 30,000	288 (87.3)	42 (12.7)	330	4.539	2	0.338
>30,000-100000	91 (87.5)	13 (12.5)	104			
>100,000	32 (88.9)	4 (11.1)	36			

**Table 1:** Association between socio-demographic variables and AUD, \*\*Includes widowed, divorced and separated and single, \* Significant.

## Discussion

Most of the subjects in this study were in their early and middle adulthood. Interestingly, it is this group of young adults that has been reported as being at greatest risk for drug abuse in general and alcohol abuse particularly [26]. The higher proportion of females than males in this study, probably lends credence to the notion that women utilize health care services more than men [27].

The Ikwerres, Ogonis and Ijaws were well represented among the subjects. These are the main South-South ethnic groups in Port Harcourt. Over all, the South-South ethnic groups occupied a greater proportion since Port Harcourt is a major cosmopolitan city in the South-South region with a high level of oil explorative activities. Port Harcourt is considered as a centre of the regional economy mainly driven by oil. The sizeable proportion of Ibos is understandable because they are indigenes of the neighbouring states and are considered as an enterprising group with excellent ability for adaptability to any environment which they find themselves. The higher proportion of Christians among the subjects was as expected because Christianity is the predominant religion in the South- South region of Nigeria.

The prevalence of 12.6% for Alcohol Use Disorders (AUD) in this study is in consonance with the prevalence rates ranging from 10% to 32% reported in alcohol literature among patients attending general hospitals [7,28]. It is also comparable to the 16.5% and 11.4% reported in two separate studies among non-psychiatric patients in a general hospital in Taiwan [2,7] and to the 17% reported among inpatients in Port Harcourt [5].

However this is higher than the 1.7% earlier reported in western Nigeria which has a significant Muslim population [29]. The rising use of alcoholic beverages and the location of this study could explain this. Christianity does not have stringent sanctions against the use of alcohol. Apart from the evangelical Christians who limit alcohol use, most other denominations within Christendom are liberal with Alcohol use. Christianity is the predominant religion in southern Nigeria and more so in the South-South and South-East regions of Nigeria in comparison to the South-West region where there is a significant proportion of Muslims, whom by reason of their religion would not take Alcohol. Moreover, Alcohol advertising has witnessed monumental rise despite government's efforts to curb the aggressive advertising of Alcohol by modern brewing companies [30]. Commonly the following slogans are heard in the streets or written on very large bill boards with attractive jingles in the mass media:

'Guinness is good for you', 'seaman's aromatic schnapps the original prayer drink', 'shine shine bobo star', 'Gulder the ultimate' etc. A new trend has also emerged where young men gather in beer parlors in the guise of watching football matches on big-screened television sets in the company of other football fans but end up being inebriated with Alcohol. Occasionally there are incidents of road traffic accidents and street fights involving people that are coming back from these so-called viewing centres. Selling Alcohol as a tonic is an old strategy, probably arising from the old belief that traditional beverages are a source of food and serve as an elixir. Also the claims that Alcohol has beneficial health benefits seem exaggerated and this perception is widespread among the populace.

The finding that prevalence rates of AUD in the United States increased with successive younger age groups was not replicated [31]. This could have resulted from socio-cultural differences. Moreover this study was carried out in a location that is adjacent to a university

community which has a predominantly youthful population. The permissive and largely egalitarian nature of the university environment with relative belief in equality may have contributed to this.

The fact that males were more represented than females among the patients who met the criteria for AUD supports the finding elsewhere that women develop fewer alcohol-related problems than men because they drink less than men. Some have attributed the women's lesser propensity to drink alcohol to the correspondingly greater sanctions against drinking imposed on women than men by society [30]. Another related theory is the view that alcohol drinking by males is a more acceptable behavior than by females, especially in Africa. This societal disapproval of alcohol use among the female gender makes it more difficult for women to seek help for their alcohol related problems.

The difference between the prevalence rates of AUD among the respondents who are indigenes of the South-South ethnic groups and those of non-indigenes was not statistically significant. It is possible that by virtue of association and adaptation, the non-indigenes have come to acquire similar social lifestyle including drinking behavior from associates of the host ethnic communities.

Similar to other findings [6], there was no statistically significant difference between prevalence rates of AUD among sub-groups of other socio-demographic groups (e.g. marital status, employment and income). Furthermore, the fact that no subject of Islamic persuasion met the criteria for AUD could be attributed to their religious belief. The intake of alcohol is forbidden in Islam and the tendency to conceal its use among the faithful who secretly indulge in this habit for fear of sanctions is high.

## Limitation

This is a hospital based study; therefore its application to the general population should be done with caution.

## Conclusion

The adverse physical and psychological consequences of AUD are myriad and long lasting. Therefore, it is recommended that Alcohol Use Disorders should be highlighted in the practice and training of family physicians and psychiatrists to improve efficiency in the diagnosis and treatment of these conditions. This would go a long way to sharpen their index of suspicion and ensure appropriate screening of vulnerable patients. Appropriate referral mechanisms should also be instituted in our general hospitals to aid prompt intervention by mental health workers.

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