PREVALENCE OF ALCOHOL USE DISORDERS AMONG MEDICAL AND SURGICAL IN-PATIENTS AT A TEACHING HOSPITAL IN NORTH CENTRAL NIGERIA.

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ABSTRACT

Background: *Alcohol use disorders are common in Nigeria and often go undetected in medical and surgical in-patient settings. This study determined the prevalence and correlates of Alcohol Use Disorders (AUDs) among in-patients at a tertiary healthcare facility and ascertained case detection rate.*

Materials and Methods: *All patients admitted to the Medical and Surgical wards of the Jos University Teaching Hospital aged between 18 and 64 years, who were physically stable were screened for AUDs in the first stage while the Mini International Neuropsychiatric Interview (MINI) was used to provide current diagnoses of AUDs in the second stage. The identification of Alcohol Use Disorders by surgeons and physicians was assessed by reviewing the medical records of the patients.*

Results*: AUDs were observed in 9.3% of 214 participants surveyed. Seventeen (7.9%) participants were diagnosed with alcohol dependence. Of these, 7 (6.5%) were in the medical wards and 10 (9.4%) in the surgical wards. Case detection by physicians was low (20%). Being male (p<0.01), of younger age (p<0.04) and Christian (p<0.013) were associated with AUDs.*

Conclusion: *Educational interventions targeted at physicians are required to improve detection and care of AUDs in in-patient care in Nigeria.*

Keywords: *Alcohol Use Disorders, Alcohol Dependence, Alcohol Abuse, Case Detection.*

INTRODUCTION

Alcohol use is increasing among Nigerians, especially in adolescents (1, 2). Alcohol misuse is associated with behavioural and physical health problems; and alcohol use disorders are responsible for a considerable burden of diseases worldwide (3, 4). Alcohol dependence, the second most common mental disorder following major depression, is a pervasive problem in the United States and a major public health problem in many parts of the world(5).

Multiple studies have assessed alcohol abuse and dependence among medical, surgical and psychiatric inpatients. They show prevalence rates ranging from 7% to 47% (6-11). However, more recent studies have revealed that patients visiting general hospitals have an increased risk of having alcohol use disorders, with a prevalence rate ranging from 10.0% to 32.1%. This broad range of prevalence rates may reflect widely varying demographic factors, multiple criteria used in identification, and differing screening methods for alcohol use disorders across studies. Several studies used only screening questionnaires, chart reviews, or physician's clinical judgment to obtain diagnoses of alcohol use disorders (12).

An earlier study of alcohol use and abuse among medical and surgical in-patients in a military general hospital in Nigeria showed that the prevalence of alcohol use and cure were 49.8% and 14.8% (14) respectively. Goar et al (15) also reported an estimated prevalence rate of alcohol related problems of 39.4% with 28.8% with harmful drinking and 10.6% indulged in hazardous drinking (alcohol abuse) among HIV-infected patients attending an infectious disease clinic.

In general hospital practice, undetected alcohol problem may have undesirable consequences. For example, withdrawal symptoms including fever, tachycardia, sweating and tremors may be mistaken for an acute infective process. Similarly, a surgical patient misusing alcohol may present with problems during anaesthesia (14). Individuals with alcohol

use disorders comprise a significant proportion of in-patients in non-psychiatric wards (8, 12). Morbidity and mortality rates among such patients are high; unfortunately detection rates by physicians is poor (12, 16). This may be due to a number of factors like inadequate training, attitudinal barriers and perceived lack of skills. Thus physicians miss major opportunities for intervening; the unintended consequences may not only include increased morbidity and mortality, but also problems in the economic, social and legal realm (8).

This study aims not only to determine the prevalence of alcohol use disorders among in-patients of medical and surgical wards in a tertiary hospital, but also to ascertain the degree of case detection by physicians primarily caring for these patients.

PATIENTS AND METHODS

This is a cross-sectional descriptive study at Jos University Teaching Hospital. JUTH is a 601-bedded hospital that serves as a major referral centre for most of the states in the North Central, some states in the North Eastern parts of the country, and a walk-in hospital for members of the host community. It has two (2) male medical wards, two (2) female wards with a total capacity of 124 beds and one (1) male general surgical ward, a male orthopaedic ward, a female surgical ward as well as one female orthopaedic ward with a total capacity of 128 beds.

The study population consists of all patients admitted to the Medical and Surgical wards of the Jos University Teaching Hospital aged between 18 and 64 years who were physically stable. That is; they did not have loss of alterated consciousness that affected their ability to understand the nature of the study as well as follow or partake in the interview process and gave informed consent. We excluded patients managed as day-cases or on a short stay admission (24-48hours)

Using a prevalence of 0.15(14), an absolute standard error of 0.05 and a standard normal variance of 1.96, it was determined that a sample of 214 participants would be adequate, calculated using appropriate formula for proportions (17).

Ethical approval was received from the Ethics Committee of the Jos University Teaching Hospital (JUTH). Written informed consent was obtained after all respondents had been assured of confidentiality.

Consecutive inpatients of the medical and surgical wards were recruited into the study. In the first stage, a questionnaire inquiring demographic characteristics, types of admission (based on patients' major diagnoses on chart) and history of alcohol consumption, incorporating the Alcohol Use Disorder Identification Test (AUDIT) was administered using cut off of 8.

The AUDIT was developed as part of the WHO collaborative project on the detection and management of alcohol-related problems in primary health care, to identify hazardous and harmful alcohol use. Literature supports the use of AUDIT for less severe alcohol-related problems (18). The AUDIT is a self-rated 10-item questionnaire with each item scored 04, giving a total score of 40. Several studies using similar scores as this study have shown its validity and reliability in the detection of hazardous drinking, alcohol misuse, and alcohol dependence (19, 20). Depending on the cut-off and the criterion standards used, studies have reported sensitivities between 51 and 97%, and specificities between 78 and 96% (21). It has been used and validated in Nigeria by Adewuya, 2005 (22).

The alcohol use disorder module of the Mini International Neuropsychiatric Interview (MINI) was used in the second stage to provide current diagnoses of AUDs. The interviewer (researcher), received training on the use of the alcohol use disorder module of the MINI (13). A research assistant, who is a registrar in psychiatry versed in both Hausa and English Languages helped in interviewing subjects who could not speak English.

The MINI was designed as a brief structured interview for the major Axis I psychiatric disorders in DSM☐IV and ICD☐10. It can be used by clinicians, after a brief training session. Lay interviewers require more extensive training (23). The MINI has been found to be easy to use in routine clinical practice and to be acceptable to patients (24). It has been used in Nigeria for many studies (25, 26) and for AUDs among university students (17).

The identification of Alcohol Use Disorders by surgeons and physicians was assessed by reviewing the medical records of the patients. Patients were judged as having been identified to have alcohol use disorders if (a) their diagnoses included alcohol related disorders (e.g. alcoholic liver disease, alcohol gastritis, etc.); (b) their medications during admission includes detoxification agents (e.g., benzodiazepine to prevent withdrawal symptoms); or (c) they receive consultation-liaison referral for drinking problems.

All participants who screened positive on the Alcohol Use Disorder Identification Test (AUDIT) and those diagnosed with AUDs on Mini International Neuropsychiatric Interview (MINI) who were not detected by the attending surgeons or physicians were counseled adequately and referred to the Psychiatry Clinic of the hospital for further evaluation and care.

The Statistical Package for Social Sciences (SPSS) version 16.0 was used to analyse the data. The Chi squared test was used to compare two proportions and to investigate the differences between categorical variables and their association. Statistical significance was set at $p<0.05$.

RESULTS
A total of 214 participants were recruited into the study. The medical wards accounted for 108 participants (50.5%) while 106 participants (49.5%) were recruited from the surgical wards. Table 1 shows the distribution of socio-demographic characteristics of patients in the medical and surgical wards respectively.

Seventeen (7.9%) participants were diagnosed with alcohol dependence. Of these, seven (6.5%) were in the medical wards and 10 (9.4%) in the surgical wards. Using the alcohol use disorder module of the MINI, three (1.4%) participants were diagnosed with alcohol abuse. Of these two (1.9%) were in the medical wards, while one (0.9%) was in the surgical wards.

The prevalence of alcohol use disorders (both abuse and dependence) in the medical wards was 8.4%, while the prevalence in the surgical wards was 10.3%. The overall prevalence of alcohol use disorders in both medical and surgical wards was 9.3%.

Only 4 of the 20 participants diagnosed with AUDs in this study had previously had an alcohol use disorder diagnosed by the attending physician. Out of the total of 9 participants with AUDs in the medical wards, 3 (33.3%) were identified by the physicians, while only 1 (9.1%) of 11 participants with AUDs in the surgical wards were identified by surgeons. No significant difference in detection rates was observed (P=0.29).

Participants who were male (P<0.01), aged 30 years and below (P<0.04) and Christian (P<0.013) were more likely to have AUDs. However, no significant relationship was observed between marital status (P=0.47), educational status (P=0.51), employment status (P=0.97) and mean monthly income (P=0.82). See Table 2 A multivariate logistic regression showed that males were twenty one times significantly more likely to have AUDs compared to females. Though not significant, there was an increasing linear trend for AUDs as participants had more formal education. See Table3.

TABLES

Table 1: Socio-demographic characteristics of participants

CHARACTERISTICS	WARDS		
	Medical (n=108, %=50.5))	**Surgical (n=106, %=49.5)**	**Total (n=214, %=100.0)**
Sex			
Male	58(27.1)	63(29.4)	121(56.5)
Female	50(23.4)	43(20.1)	93(43.5)
Religion			
Islam	28(13.1)	19(8.9)	47(22.0)
Christianity	80(37.4)	87(40.7)	167(78.0)
Age group			
<20	2(0.9)	7(3.3)	9(4.2)
20-29	23(10.7)	31(14.5)	54(25.2)
30-39	23(10.7)	37(17.3)	60(28.0)
40-49	26(12.1)	16(7.5)	42(19.6)
50-59	19(8.9)	11(5.1)	30(14.0)
≥60	15(7.0)	4(1.9)	19(8.9)

Marital status			
Married	77(36.0)	67(31.3)	144(67.3)
Separated	3(1.4)	2(0.9)	5(2.3)
Widow/er	4(1.9)	2(0.9)	6(2.8)
Never married	24(11.2)	35(16.4)	59(27.6)
Employment status			
Unemployed	25(11.7)	17(7.9)	42(19.6)
Employed	74(34.6)	72(33.6)	146(68.2)
Student	3(1.4)	14(6.6)	16(8.0)
Retired	6(2.8)	3(1.4)	9(4.2)
Educational status			
No formal education	20(9.3)	12(5.6)	32(15.0)
primary	24(11.2)	37(17.2)	61(28.5)
Secondary	25(11.7)	27(12.6)	52(24.3)
Tertiary	39(18.2)	30(14.0)	69(32.2)
Mean monthly income			
≤ N38,000.00	46(33.8)	44(32.4)	90(66.2)
>N38,000.00	30(22.1)	16(11.8)	46(33.8)

Table 2: Comparison of socio-demographic characteristics of participants and presence of AUDs

SOCIO-DEMOGRAPHIC CHARACTERISTICS		AUD		STATISTIC		
		Yes n(%)	**No** n(%)	X^2	df	P
Sex	**Male**	18(14.9)	103(85.1)	10.051	1	0.01
	Female	2(2.2)	91(97.8)			
Age group	≤ 38	11(14.9)	63(85.1)	4.667	1	0.04
	>38	9(6.4)	131(93.6)			
Religion	Islam	0(0.0)	47(100.0)	6.209	1	0.013
	Christianity	20(12.0)	147(88.0)			
Marital status	Married	12(8.3)	132(91.7)	0.533	1	0.47
	Not married	8(11.4)	62(88.6)			
Educational status	No formal education	4(12.5)	28(87.5)	0.442	1	0.51
	Formal education	16(8.8)	166(91.2)			
Employment status	Unemployed	6(8.8)	62(91.2)	0.032	1	0.86
	Employed	14(9.6)	132(90.4)			
Monthly income	≤N38,000.00	11(12.2)	79(87.8)	0.054	1	0.82
	>N38,000.00	5(10.9)	41(89.1)			

Table 3: Multivariate logistic regression analysis of AUDs among study participants

Variables	Alcohol Use Disorders		P
	OR	95% CI	
Sex			
Female	1.0		
Male	21.63	2.67-175.49	0.004
Marital status			
Married	1.0		
Non married	1.37	0.33-5.74	0.664
Age group			
>38	1.0		
≤ 38	3.05	0.83-11.18	0.093
Employment status			
Employed	1.0		
Unemployed	1.33	0.21-8.32	0.758
Monthly income			
>N38,000.00	1.0		
≤38,000.00	1.14	0.37-3.51	0.599
Educational status			
No formal education	1.0		
Below secondary school	1.31	0.34-5.02	0.694
Secondary school	1.34	0.33-5.42	0.679
Beyond secondary school	1.83	0.46-7.33	0.394

DISCUSSION

We found that the overall rates for alcohol abuse and dependence was 1.4% and 7.9% respectively. While the prevalence for alcohol use disorders (AUDs) was 9.3%. Participants who were male, younger and Christian were more likely to have AUDs. AUDs were also commoner in the surgical compared to the medical wards. The detection rate for AUDs by physicians and surgeons was low, though a slightly higher though insignificant detection rate was observed in the physician group.

Our findings should be interpreted with the following limitations in mind; first, the screening instrument, AUDIT and MINI are both based on self-reports and participants may deny the consumption of alcohol and its complications. Secondly, the identification of alcohol use disorders (AUDs) by medical staff was determined by assessing their chart records rather than by direct interviews which may lead to underestimation of the detection rate. Third, the small sample size was moderate and located in only one tertiary hospital which may limit the generalisation of our findings.

The prevalence rate for AUDs in this study was much lower than that obtained from other local studies.(14, 15) In contrast, our rates were similar to rates from Turkey and Taiwan.(12, 27) Previous local reports had been limited in their validity by the lack of use of a diagnostic instrument. We saw that not all patients who were screen positive were eventually diagnosed as having AUD. As in previous report there was a tendency for males to be more likely to be diagnosed with AUDs. Younger participants and those who professed the Christian faith were significantly more likely to misuse alcohol. This is consistent with previous reports.(28)

One in five cases had previously been identified by medical staff. Physicians were five times more likely to correctly identify AUDs compared to surgeons. A number of reasons may be responsible for the higher detection rates by physicians compared to surgeons. First, many in-patients with AUDs in internal medicine wards are patients with long standing history of alcohol use with severe symptoms that physicians usually encounter. Hence, many of such patients come with alcohol related diagnoses with which physicians are familiar. In this study for example, out of the 4 participants detected with AUDs, two were with alcohol related diagnosis made by physicians. Another possible reason for the higher detection rates by physicians is the content of

their training. Although it is evident that there is inadequate medical school and residency training in addiction detection and care, trainees in an internal medicine residency program rotate through a psychiatry posting for at least two weeks during which they come into contact with patients with alcohol use disorders and other alcohol related problems. The case detection rate found in this study is similar to but slightly lower than that (25.4%) reported by Chen et al (12). In their study, none of the alcohol abuse subjects were correctly identified while only 15 alcohol dependent participants were identified. They found out that the only significant factor associated with correct identification of AUDs was the type of admission; internal medicine. The reason they gave for this was that most subjects in internal medicine are likely to be chronic alcoholics with severe symptoms that will lead to high detection. The highest AUDs identification rate (47.6%) recorded by the authors was in gastroenterological departments.

Studies have consistently demonstrated that alcohol dependence (and abuse) is highly prevalent, underdiagnosed, and subsequently undertreated (6-8). The reasons physicians fail to detect, assess and diagnose alcohol use disorders are multiple. Attitudinal barriers such as resistance to a medical model of addiction may pose the greatest obstacle (29). Patients' reluctance for assessment confounds the problem and diminishes clinicians' motivation to pursue the issue. Other reasons include inadequate medical school and residency training in addictions and a lack of adequate faculty role models who intervene and diagnose alcohol dependence (30). The likelihood that a physician will detect and address alcohol use disorders in patients varies according to the physician's field of training (8). All these factors are probably applicable to both physicians in medical wards and surgeons in surgical wards in this study. Although this study found no statistically significant difference in detection rates in overall AUDs and dependence among physicians and surgeons, physicians were twice more likely to detect alcohol abuse than surgeons.

CONCLUSION

Alcohol Use Disorders are common among inpatients studied and suggests that hospitalization offers a unique opportunity to identify alcohol use disorders. Participants with alcohol use disorders tend to be male, younger and Christian. The case detection rate among physicians and surgeons at the study site was low in keeping with other reports. Physicians were five times more likely to correctly identify alcohol use disorders compared to surgeons. This low detection rates have negative implications for management.

Conflicting Interest: All authors have no competing interests regarding this work to declare.

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