PSYCHOACTIVE SUBSTANCE USE AND LEVEL OF RISK AMONG A GERIATRIC POPULATION ACCESSING THREE PRIMARY CARE FACILITIES IN NIGERIA

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ABSTRACT

We aimed to assess the prevalence, correlates of psychoactive substance use including misuse of prescription medications and its associated harm among a group of elderly patients attending three primary care facilities in Benin-city, Edo state, Nigeria. The WHO ASSIST was administered to assess for psychoactive substance use and level of risk of some elderly participants. Lifetime prevalence and current prevalence of substance use was obtained. Among participants, 12.7% demonstrated moderate risk to alcohol use while 2.9% demonstrated high risk to its use. Fifteen percent (15%) demonstrated moderate risk to stimulant use while 1.2% demonstrated high risk to its use. Twenty-eight percent (28.3%) demonstrated moderate risk to opioid analgesic use while 0.6% demonstrated high risk to its use. Male gender was associated with a higher risk of tobacco use, alcohol use and stimulant use. Female gender was associated with a higher risk of sedative use. Only 3(1.7%) of these participants had received previous treatment for a substance use disorder.

Keywords: Elderly, primary care, substance use, prescription medication, level of risk

INTRODUCTION

The elderly are prone to some conditions which may predispose them to misuse of prescription drugs, alcohol and psychoactive substances (Kamel & Gammack, 2006; Pateinakis, Amygdalas, Pateinaki, & Pyrpasopoulou, 2013). A survey among persons 50 years and above in the US revealed that in the past year about 60% of their respondents had used alcohol, 2.6% marijuana and 0.6% cocaine (Blazer & Wu, 2009a) In another national survey of drug use conducted in the U.S, the authors reported a 12 months prevalence of 1.4% for non - prescription use of prescription pain killers among those aged 50 years and above. Among this

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subset, 1.7% met the criteria for abuse while 7.6% were dependent on these drugs (Blazer & Wu, 2009b). Furthermore, a review reported that the number of elderly seeking treatment for disorders related to substance use and misuse of prescription medications has increased in recent times (Wang & Andrade, 2013).

The burden of disease attributable to alcohol among those aged 70 years and above was estimated at 3.7% (Rehm, Mathers, Popova et al., 2009). This is of medical importance because the elderly are predisposed to comorbid medical conditions, necessitating prescription of several medications which may react adversely when used with some of these substances (Moore et al., 2006).

The aims of the study were to determine the prevalence of, and level of risk associated with psychoactive substance use and misuse of prescribed medications-, the socio demographic correlates of psychoactive substance use and misuse of prescribed medications and the treatment needs of elderly participants attending three primary health care facilities in Benin-City, Edo state, Nigeria.

METHOD

Setting and population

This is part of a larger study which aimed to ascertain the prevalence of psychoactive substance use and the level of risk associated with the use of psychoactive substances among adolescents and adult outpatient attendees of three primary care facilities in Benin-City, Edo state. This study was conducted from August 2016- April, 2017.

It was a descriptive cross sectional study conducted at three primary health care facilities in Benin-City namely: The General Practice Clinic (GPC), University of Benin Teaching Hospital (UBTH), the Medical Clinic (MC), Federal Neuropsychiatric Hospital (FNPH), and the General Out-Patient Department (GOPD) of the General Hospital, Benin City (GH).

The GPC unit (UBTH) which has a daily turnout of 220 patients, the MC unit of the FNPH which attends to about 10-15 patients per day and the GOPD section of the GH which all provide primary care services were utilized for the study.

For the purpose of this study, data only for those aged 60 years and above were analysed.

Eligibility: Patients aged 60years and above were recruited into the study.

Those with severe physical or mental illness, too intoxicated or those who have severe cognitive impairment that may impede questionnaire administration were excluded.

Participants were recruited at each center by systematic random sampling method.

Ethical consideration

Ethical approval was obtained from the Research and Ethical Committee of the Federal Neuropsychiatric Hospital, Benin City and the Ethics and Research Committee, University of Benin Teaching Hospital, Benin City. Additionally, permission was sought from the Director of Hospital services before patients were recruited from the State General Hospital.

Informed consent (both verbal and written) was obtained from participants before being recruited.

Confidentiality was maintained by obtaining data anonymously using serial numbers which were stored in a place inaccessible to those not involved in

the study. Participants were informed of their right to withdraw from the study at any point and that refusal to participate would not interfere adversely with their treatment. All participants were given appropriate intervention during the interview.

Measures

A clinician designed semi structured questionnaire to assess socio-demographic variables of participants and a history of previous treatment was utilized for the study**.** The variables were age, gender, religion, level of education, occupation, marital status and a previous treatment for substance use.

Misuse of prescription drug determined as medications taken for reasons other than prescription, or taken them more frequently or at higher doses than prescribed (WHO ASSIST Working Group, 2002)

The Alcohol, Smoking, Substance Involvement Screening Test (ASSIST)(WHO ASSIST Working Group, 2002).

An interviewer administered questionnaire that screens for all levels of problems or risky substance use. It obtains information about lifetime use of substances and use of substance with associated problems in the last three months. A risk score is provided for each substance and scores are grouped into low, moderate or high risk. A score of 0-3 depicts low risk for all substances except alcohol where a score of 0-10 depicts low risk and requires no intervention. A score of 4-26 depicts moderate risk with the exception of alcohol in which a score of 11-26 depicts moderate risk, requiring brief intervention. For all substances, a score greater than 26 shows high risk which requires intensive treatment according to the ASSIST algorithm.

Moderate risk scores depict harmful or hazardous use while high risk scores suggest a risk of dependence. This instrument has undergone testing in three phases to ensure feasibility, validity and reliability. Internal consistency (Cronbach's α) was above 0.80 for most domains of the ASSIST. Similarly, the ASSIST demonstrated good concurrent, construct and divergent validity with similar instruments (Humeniuk & Ali, 2006; Humeniuk et al., 2008) A pilot study was conducted prior to the main study. The participants employed in the pilot study were excluded from the main study. The results showed that the questionnaire was easy to administer and adaptable to the participants. An average administration time of about 10 minutes was observed for each interview which made its administration acceptable to the participants.

Procedure

Two research assistants trained on the administration of the ASSIST by Ayodele Fela-Thomas (A.F.T) administered questionnaire. Inter rater reliability was good with a value of 0.7 for (Cohen's kappa). Eligible participants were selected using systematic random sampling technique at the general outpatient hall while waiting to see the doctor. Interview was conducted in a secluded room within the outpatient clinic for privacy. All participants were given the appropriate treatment after discussing their scores with them at point of data collection. The attending physician was also informed of those who needed referral for intensive treatment.

Data analysis

Analysis was done using the Statistical Package for Social Sciences (SPSS) version 20. To explore the data, descriptive

statistics (frequency, mean, standard deviation) was utilized. Categorized ASSIST scores were used to categorize the level of risk and cross tabulated with the socio-demographic variables for chi square test of association. Fisher's exact test/ Bonferroni correction was implemented where appropriate. A significance level of <0.05 was set.

RESULTS

A total of 173 participants aged 60 years and above were recruited from the three primary care facilities. The socio-demographic variables of the participants are as shown in Table 1. Only 3 (1.7%) had received previous treatment for a substance use disorder.

Prevalence of Substance Use
Lifetime use

The most common ever used substance by these elderly participants was alcohol, with a lifetime prevalence of 70.5%. The least ever used substance was marijuana with a lifetime prevalence of 1.2%. (See Table 2.)

Current Use

The most commonly used psychoactive substance in the past three months by the

Table 1. Socio-demographic and clinical characteristics of participants

Variables N=173	N	%
GENDER		
Male	90	52
Female	83	48
AGE		
60-69	118	68.2
70-79	42	24.3
80-89	11	6.4
EDUCATION		
Nil Formal	19	11.0
Primary	88	50.9
Secondary	42	24.3
Tertiary	12	6.9
RELIGION		
Christian	160	92.5
Muslim	2	1.2
Atheism	1	0.6
Traditional	4	2.3
TRIBE		
Edo	126	72.3
Igbo	9	5.2
Yoruba	1	0.6
Others	15	8.7
PREVIOUS TREATMENT		
Yes	3	1.7
No	170	98.3

participants was opioid analgesics, with a point prevalence of 34.7%. The least used substance currently was marijuana with a prevalence of 0.6%. (See Table 2.)

Use in past three months
Among participants, 8(4.6%) used tobacco weekly (1-4 times per week) or daily while 24(13.9%) drank alcohol weekly or daily in the last three months. Similarly, 21(12.1%) of the participants used opioid pain medications weekly or daily in the past three months while 14(8.1%) used stimulants weekly or daily in the past three months. (Table not shown.)

Level of risk and treatment needs
Of the 173 elderly participants, 2.9% (n=5) demonstrated high risk of alcohol use requiring intensive treatment while 12.7% (n=22) demonstrated moderate risk (hazardous use) to alcohol use requiring brief intervention. Two (1.2%) demonstrated a high risk of use to stimulants, requiring more intensive treatment while 15.0% (n=26) were observed to be at moderate risk (hazardous use) of

stimulant use, requiring brief intervention. One (0.6%) demonstrated high risk to tobacco and opioid pain medication use respectively thus requiring intensive treatment. (See Table 3).

Socio-demographics and level of risk
Males demonstrated a higher risk to tobacco use (p<0.001), alcohol use (p<0.001) and stimulant use (p=0.014) compared to the females. Those with secondary level of education were more likely to have a high risk of tobacco use (p=0.011) and alcohol use (7.1%, p=0.004) compared to those with other levels of education.

A high risk of sedative use was associated with the female gender (p=0.020). (Table not shown).

Pattern of use and level of risk
Alcohol
All five participants whom demonstrated high risk to alcohol use had taken alcohol weekly (1-4 times per week) or daily in the past three months while 8 (36.4%) out of the 22 participants with moderate risk of alcohol use had consumed alcohol

Table 2. Lifetime and current psychoactive substance use

Variables (N=173)	Lifetime use				Current use			
	YES		NO		YES		NO	
	n	%	n	%	n	%	n	%
Tobacco	59	34.1	114	65.9	13	7.5	160	92.5
Alcohol	122	70.5	51	29.5	59	34.1	113	65.3
Marijuana	2	1.2	171	98.8	1	0.6	172	99.4
Cocaine	-	-	173	100	-	-	173	100
Stimulant	77	44.5	96	55.5	39	22.5	134	77.5
Inhalant	-	-	173	100	-	-	173	100
Sedatives	28	16.2	145	83.8	18	10.4	155	89.6
Hallucinogens	-	-	173	100	-	-	173	100
Heroine	73	42.2	100	57.8	60	34.7	113	65.3
Others		-	173	100	-	-	173	100

Table 3.   Level of risk of psychoactive substance use (substance use related harm)

Variable (N=173)	Low risk		Moderate risk		High risk	
	N	%	n	%	N	%
Tobacco	156	90.2	16	9.2	1	0.6
Alcohol	146	84.4	22	12.7	5	2.9
Marijuana	171	98.8	2	1.2	-	-
Cocaine	173	100.0	-	-	-	-
Stimulants	145	83.8	26	15.0	2	1.2%
Inhalant	173	100	-	-	-	-
Sedative	162	93.6	11	6.4	-	-
Hallucinogen	173	100	-	-	-	-
Heroine/opioid pain medication	123	71.1	49	28.3	1	0.6
Others	173	100	-	-	-	-

weekly or daily in the past three months (p=0.016). Similarly, all two participants (14.3%) who were observed to be at high risk of stimulant use consumed stimulants daily or weekly (1-4 times per week) in the past three months. (See Table 3).

DISCUSSION

The most commonly ever used psychoactive substances among the elderly participants in descending order were alcohol, stimulant (kolanut), opioid pain medications, tobacco, sedatives and marijuana. The most commonly used psychoactive substances in the past three months in descending order were opioid pain medications, alcohol, stimulants, sedatives, tobacco and marijuana. None of the participants reported the use of cocaine, inhalants and hallucinogens. Among participants, 2.9% demonstrated high risk for alcohol use while 12.7% demonstrated moderate risk for its use. High risk for stimulant use was demonstrated by 1.2% while 15% demonstrated moderate risk for its use. Similarly, 0.6% demonstrated high risk for opioid analgesic use

while 28.3% demonstrated moderate risk for its use. Regarding tobacco use, 0.6% of the participants demonstrated high risk while 9.2% demonstrated moderate risk for its use.

We observed that opioid analgesics and the use of sedatives was common among the participants, with a current prevalence of 34.7% and 10.4% respectively. This result is in line with the results reported in an epidemiological survey on the prevalence of benzodiazepine use conducted among those aged 65 years and older in Quebec, Canada (Voyer, Préville, Cohen, Berbiche, & Béland, 2010); however, differs from the findings of other studies, where lower prevalence rates of prescription pain medications were reported (Blazer & Wu, 2009b; Moore et al., 2009). The dissimilarity in findings may be due to methodological differences. For instance, the two studies were community surveys, whereas, ours was a sample of hospital outpatients that are more likely to have been prescribed medications at some time, or present with problems that may predispose them to abuse these medications (Boudreau et al., 2009; Simoni-Wastila & Yang, 2006). Again, methods

of assessment of outcomes of the studies differ, thus the findings may not be comparable.

We also reported that alcohol and tobacco use was common with a current prevalence of 34.1% and 7.5% respectively among participants. These values are quite smaller than the values reported in one study in which they found a prevalence of 45% and 14% respectively for both alcohol and tobacco use among their community based respondents (Moore et al., 2009). A plausible explanation for this discrepancy in findings may be due to the diagnostic criteria used in both studies. For instance, current prevalence was assessed in the past three months in this study as compared to the referenced one which was assessed in the last 12 months.

The wide acceptability of alcohol and the perceived health benefits albeit erroneously associated with its use may account for its common use among this cohort (Fillmore, Stockwell, Chikritzhs, Bostrom, & Kerr, 2007; Schmidt, Mäkelä, Rehm, & Room, 2010).

We observed that a significant number of these elderly participants exhibited hazardous use of alcohol (12.7%) and a smaller number were seen to be at a high risk of dependence (2.9%). These findings are comparable to the results obtained from other studies (Blazer & Wu, 2011; Reid, Fiellin, & O'connor, 1999). Some factors associated with the ageing process have been reported as risks for problematic drinking in later life (Dar, 2006). This is of significant health implication because of the effects of alcohol on the ageing body. In the elderly, alcohol reaches higher blood levels due to a decrease in body water and mass. Moreover, the rate of metabolism for alcohol is also reduced with age. Therefore, it accumulates in the body leading to intoxication even with lower amounts of intake (Caputo et al., 2012).

Male gender was significantly associated with the risk of alcohol, tobacco and stimulant use, a finding similar to reports from other studies (Teixidó-Compañó et al., 2018; Wilsnack, Wilsnack, Kristjanson, Vogeltanz-Holm, & Gmel, 2009).

It has been postulated that an interaction between biological, environmental and psychosocial factors may explain the preponderance of males indulging in psychoactive substance use as compared to females (Becker, McClellan, & Reed, 2017). Moreover, the physiological response of the female body to these substances, the clinical harm attributable to these drugs in females as compared to males and low societal tolerance for their use among the female gender may well explain their low level of use of psychoactive substances (Tuchman, 2010).

We reported that female gender was associated with a risk of sedative use, a result similar to that reported by other studies (Olfson, King, & Schoenbaum, 2015; Teixidó-Compañó et al., 2018). However, is in dissonance with the results obtained from a study among elderly patients in San Francisco. Contrary to our finding, their results showed that 16% of men and 9% of women reported misuse of sedatives in the last 30 days and female gender was not predictive of a risk of sedative misuse (Satre, Sterling, Mackin, & Weisner, 2011).

Regarding the association between female gender and increased risk of sedative use, this may be explained by the fact that females are more likely to present at health facilities with chronic medical conditions or other medical complaints which may in ardvertently affect sleep,

thus they are more likely to be prescribed these medications which may predispose them to the risk of misuse of such medications(Linnet et al., 2016).

Even though, a large number of the participants demonstrated low risk to most psychoactive substance use, a substantial number demonstrated hazardous and high risk use to some psychoactive substances. For instance, all five participants who demonstrated high risk to alcohol use consumed alcohol weekly or daily in the past three months, yet only 1.7% of the total participants had received treatment for their use of psychoactive substances prior to this study. This is similar to the findings of Compton et al, in a survey of drug abuse in the U.S. They noted that those seeking treatment for substance use disorder was still low (Compton, Thomas, Stinson, & Grant, 2007).

Currently, treatment provisions for substance use disorders in the elderly are scarce and few. Asides this, most treatment strategies are designed to cater for the younger ones with little or no provision for the elderly patients with psychoactive substance use disorders (Schultz, Arndt, & Liesveld, 2003). This is quite important for policy formulation as these individuals even though detected may not receive any intervention due to constraints associated with referrals to a specialized treatment facility. More so, that the effects of these substances are particularly detrimental in the elderly.

Limitations and strengths

The study had several limitations and some strengths. In terms of limitations, the sample size was small and it was of a cross sectional design. Also, the subjective method (self-report) of assessing psychoactive substance use may not represent the true extent of use by these elderly participants due to social desirability bias or minimization. There is also a lack of validation of the ASSIST questionnaire among the elderly population.

In terms of strengths, to the best of our knowledge, there exists no current study on psychoactive substance use and its risk of use among the elderly in the Nigerian environment. Also being a multicenter study, the results can be generalized.

CONCLUSION

We reported alcohol as the most commonly ever used substance among this cohort. The least used substance was marijuana. The most currently used substance was opioid analgesics. Among participants, 2.9% demonstrated high risk for alcohol use, 1.2% demonstrated high risk for stimulant use while 0.6% demonstrated high risk for opioids use.

Male gender was significantly associated with a higher risk of tobacco, alcohol and stimulant use. Female gender was associated with a higher risk of sedative use. Only 3(1.7%) of these participants had received previous treatment for a substance use disorder in the past.

Clinicians should routinely assess the elderly for psychoactive substance use, and adequate intervention given to those diagnosed with psychoactive substance use disorder. Health institutions, Mental health and Addiction therapy policy makers should consider making national policies for treatment of elderly persons with psychoactive substance disorders for a healthier life. Future studies with larger sample sizes are recommended.

CONFLICT OF INTEREST

Authors report no conflict of interest.

AUTHORS' ROLES

A. Fela-Thomas: designed study, supervised data collection, analyzed data and assisted in writing manuscript.

S. Olotu, was involved in study design, data collection and manuscript write up.

A. Osundina assisted with data collection and was involved with manuscript write up.

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