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Pattern of Complementary and Alternative Medicine (CAM) Among Hypertensive Patients in Northern Nigeria

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Abstract

Background: Hypertension is the most common cardiovascular diseases worldwide. The frequency of utilization of CAM is increasing worldwide and is well documented in both African and other global populations. The objective of this study was to investigate the prevalence and correlates of CAM use among hypertensive patients.

Materials and methods: The study was conducted at the department of medicine of Murtala Muhammad General Hospital of Kano State, Nigeria. A cross-sectional study was conducted, on 208 patients, using a semi structured questionnaire on the use of CAM among hypertensive patients. Data analysis was done using Microsoft Office Excel 2007 and SPSS V16.

Results and conclusion: The frequency of CAM use in this study was (67.8%) and the use of CAM was significantly associated with marital status, duration of diagnosis, knowledge of antihypertensives and ability to pay for drugs, $p < 0.05$. This study showed that there is high prevalence of CAM use among hypertensive patients in a northern Nigerian community .

Keywords: Complementary and alternative medicine; hypertensive patient; pattern; utilization.

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Introduction

Hypertension is a clinical and family health problem [1] and is the principal cardiovascular disease worldwide [2]. It is defined currently as systolic and/or diastolic blood pressures ⩾ 140/90 mmHg in tandem with The Eighth Joint National Committee on prevention, detection, evaluation and treatment of high blood pressure report: Matters arising [3]. In recent years there has been increasing concern about the burden of non-communicable diseases especially cardiovascular diseases and particularly hypertension in sub-Saharan African countries [4]. In Nigeria, hypertension is the most common non-communicable and cardiovascular disease [5]. The consequences of this preventable epidemic of hypertension will be substantial on the individual and family dynamics resulting in individual and family suffering, stress, distress and dysfunction [6]. The prevalence of hypertension in populations has been reported to differ geographically [7] since it may be influenced by family socio-biological and other diverse factors [8].

In Nigeria, the estimated prevalence reported by Mendis et al was 42.8% [2]. The prevalence range of 8%-46% was reported in a systematic review of prevalence of hypertension in adult Nigerians[5], 22.5% - 31.0% was reported in Abia state non-communicable disease

survey[5], 26.4% was reported among patients with family history of cardiovascular diseases in Umuahia, Abia state [6] and 42.7%, were reported among obese adult in primary care clinic in South-east Nigeria [6], and 18.4%, was reported in obese adult patients in semi-urban hospital in Eastern Nigeria [6].

Complementary and Alternative Medicine is any practice that is perceived by its users to have the healing effects of medicine, but does not originate from evidence gathered using the scientific method[9,10,11], is not part of biomedicine[9,11,13] or is contradicted by scientific evidence or established science[9,10,11].

The frequency of utilization of CAM is increasing worldwide and is well documented in both African and other global populations to be between 20 - 80% [14]. *In an ethnobotanical survey conducted by Nurudeen et al. (2013) [15] at Sokoto, Nigeria, it was shown that a large number of medicinal plants are used in Sokoto state to treat hypertension.*

The objective of this study was to investigate the prevalence and correlates of CAM use among hypertensive patients attending hypertension clinic of the Murtala Muhammad General Hospital of Kano State, Nigeria.

Methodology

Study design

A cross-sectional descriptive study design was used to address the research goals. The study population were interviewed using a semi structured questionnaire.

Study area

Kano is a city in Nigeria and the capital of Kano State in Northern Nigeria, in the Sahelian geographic region south of the Sahara. Kano is the commercial nerve center of Northern Nigeria and is the second largest city in Nigeria after Lagos. According to the 2006 census, Kano is the most populous state in Nigeria, with about 9,383,682 million people. The Kano urban area covers 137 km^2.

Study site

The study was conducted in hypertension outpatients' clinic at Murtala Muhammad General Hospital of Kano State, Nigeria. It is a government owned General Hospital in Kano Municipal local government area of Kano State, Nigeria. It is located at Muhammad Abdullai Wase Way, Kano, Kano State. It offers general care to Kano populace as well as other people from outside the states.

Sample size calculation

Calculation of sample size for this study is based on the findings of Trevisol DJ et al, 2000[20] that the percentage of patients with controlled hypertension has been reported to vary between 5.4% and 58% worldwide, with minimum number of 78 samples.

Data collection procedure

A pilot study was carried out to ensure a comprehensive analysis for a range of perspectives, to detect any possible problems associated with the format, wording, and measurement, and to make sure that the respondents comprehend the instructions and questions. Data was collected using a validated semi structured questionnaire. Three main variables were used; 1. Socio-demographic data, 2. Clinical hypertension related variables, 4. CAM profile of hypertensive patients.

Data analysis

The data collected was entered and analysed using Microsoft Office Excel 2007 and SPSS V16. The descriptive analysis was done using the Microsoft Office Excel 2007. While, the statistical tests of association were done using the SPSS V16.

Ethical approval for the study was sought from the hospital research and ethics committee.

Results

The mean age of the study population (mean ± SD) was 50.1±10.7 years. Age of the patients ranged from 21-80, with the majority 67 (32.2%) falling within 41-50 years of age. One Hundred and twenty-five (60.1%) were female patients. Majority of the patients 62 (29.8%) had a monthly income of ₦11,000-₦50,000 only. Majority 174 (83.6%) of the patients were married and 73 (35.1%) had tertiary level of education (Table 1).

The duration of the illness of most of the patients 84 (40.4%) fall within 2-5 years. Majority 182 (87.6%) of the patients were on once daily drug dosage and most 187 (87.5%) of the patients took their antihypertensive agents once daily. The medication bills of 126 (60.6%) patients were paid by their families. Also, 185 (88.9%) of the patients had not experience any kind of adverse drug reactions with their medications (Table 2). More than half

of the patients were reported to be CAM users (Figure 1).

Majority of those using CAM were of the age range of 41-50 years (31.9%), female (64.5%), married (78.7%) and of secondary level of education (33.3%). However, only being married was found to be statistically associated with CAM use (Table 3).

The result also shows that majority of those using CAM were diagnosed with hypertension more than 10 years away from the time of the study (79.8%), were also reported to not have been improving with their antihypertensives medications (77.7%), and relied on their families for their medications (73.8%). All these were found to be statistically associated with CAM use (Table 4).

Table 1: Socio-Demographic and Clinical-Related Variables of the Study Population

VARIABLES	N = 208	PERCENTAGE
AGE		
21-30	8	3.8
31-40	42	20.2
41-50	67	32.2
51-60	59	28.4
61-70	2	0.9
71-80	6	2.9
SEX		
Female	125	60.1
Male	83	39.9
MONTHLY INCOME		
≥ ?100,000	13	6.3
? 51,000-? 100,000	40	19.2
? 11,000-? 50,000	62	29.8
≤ ?10,000	42	20.2
Blanks	51	24.5
MARITAL STATUS		
Married	174	83.6
Divorced	6	2.9
Widow	28	13.5
Single	-	-
FAMILY SIZE		
Nuclear	132	63.5
Extended	61	29.3
Blanks	15	7.2
EDUCATIONAL LEVEL		
Non-formal	53	25.5
Primary	14	6.7
Secondary	67	32.2
Tertiary	73	35.1
Blanks	1	0.5

Table 2: Clinical-Related Variables of the Study Population

VARIABLES	N = 208	PERCENTAGE
DURATION OF DIAGNOSIS		
2-5 years	84	40.4
6-10 years	72	34.6
≥11 years	52	25.0
DOSAGE FREQUENCY OF THE ANTIHYPERTENSIVE AGENT		
Once daily	182	87.5
Twice daily	26	12.5
MODE OF PAYMENT FORTHE ANTIHYPERTENSIVE		
Self	82	39.4
Family	126	60.6
IMPROVEMENT WITH ANTIHYPERTENSIVE AGENT USE		
Yes	207	99.5
No	-	-
Blanks	1	0.5
UNTOWARDS EFFECTS WITH ANTIHYPERTENSIVE AGENT USE		
Yes	25	12.1
No	183	87.9

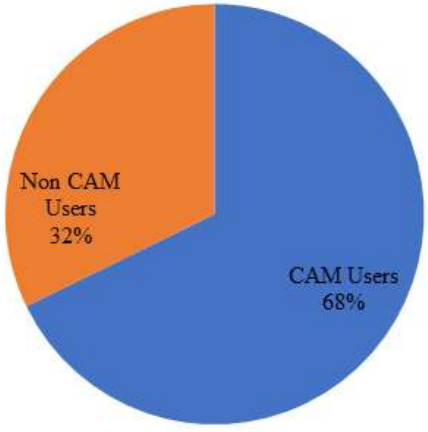

Figure 1: The prevalence of CAM Use among the Study Population

Table 3: Relationship between Socio-Demographic data and CAM Use

		CAM USE			
VARIABLES	**N (208)**	**YES (141)**	**NO (67)**	X^2	***P*-VALUE**
AGE				**1.061**	**0.588**
21-30	8	5(3.5%)	39(4.5%)		
31-40	42	24(17.0%)	18(26.9%)		
41-50	67	45(31.9%)	22(32.8%)		
51-60	59	37(26.2%)	23(34.3%)		
61-70	25	25(17.7%)	-		
71-80	6	5(3.5%)	1(1.5%)		
SEX				**3.603**	**0.069**
Male	125	50(35.5%)	33(49.3%)		
Female	83	91(64.5%)	34(50.7%)		
MONTHLY INCOME				**3.358**	**0.187**
≥100,000	13	6(4.3%)	7(10.4%)		
51,000-100,000	40	2417.0%)	16(23.9%)		
11,000-50,000	62	38(26.9%)	24(35.8%)		
≤10,000	42	31(21.9%)	11(16.4%)		
Blanks	51	42(29.8%)	9(13.4%)		
MARITAL STATUS				**7.635**	**0.022***
Married	174	111(78.7%)	63(94.0%)		
Divorced	6	4(2.8%)	2(3.0%)		
Widow	28	26(18.4%)	2(3.0%)		
Single	0	-	-		
EDUCATIONAL LEVEL				**5.977**	**0.113**
Non-formal	53	41(29.1%)	12(17.9%)		
Primary	14	10(7.1%)	4(5.9%)		
Secondary	67	47(33.3%)	20(29.9%)		
Tertiary	73	42(29.8%)	31(46.3%)		
Blanks	1	1(0.7%)	-		

**There is statistically significant relationship between the variable and CAM use $p < 0.05$*

Table 4: Relationship between Clinical Variables and CAM Use

		CAM USE			
VARIABLES	**N (208)**	**YES (141)**	**NO (67)**	X^2	***P*-VALUE**
Duration of Diagnosis				**7.635**	**0.023***
<5 years	55	35(63.6%)	20(36.4%)		
5-10 years	101	63(62.4%)	38(37.6%)		
>10 years	84	67(79.8%)	17(20.2%)		
ANTIHYPERTENSIVE KNOWLEDGE				**10.870**	**0.001***
Yes	96	54(56.3%)	42(43.7%)		
No	112	87(77.7%)	25(22.3%)		
MODE OF PAYMENT				**5.306**	**0.021***
Self	82	48(58.5%)	34(41.5%)		
Family	126	93(73.8%)	33(26.2%)		
IMPROVEMENT WITH ANTIHYPERTENSIVE				**0.477**	**0.490**
Yes	207	140(67.6%)	67(32.4%)		
No	1	1(100%)	0(0%)		
UNTOWARDS EFFECTS WITH ANTIHYPERTENSIVE USE				**1.808**	**0.179**
Yes	25	14(9.9%)	11(16.4%)		
No	183	127((90.1%)	56(83.6%)		

**There is statistically significant relationship between the variable and CAM use $p < 0.05$*

CAM = Complementary and Alternative Medicine

Discussion

Most of the patients were of the age range of 41-50. This is expected as the onset of systemic hypertension is usually within this age bracket. This is in contrast to a study conducted by Amal and Syed [17]. Surprisingly, even though essential hypertension is higher in males than females, majority of the population were female. This is similar (65.9%) to a study conducted by Jelana *et al* [18].

The ₦11,000-₦50,000 monthly income of the study population is in line with the average monthly earning of many Nigerians. The fact that majority of the patients were married is also in line with the tradition of the Hausa community. Usually, people within the age group of the patients should be married unless there is strong reason not to. The finding that majority of the patients had tertiary level of education is an indication of how the contemporary people of Hausa land embrace Western education.

The frequency of CAM use in this study (67.8%) is less than what was reported *in Sokoto Nigeria (84.0%)*[19], *and is higher to what was* reported by a study conducted at Lagos University Teaching Hospital (39.1%)[20] and higher than the one obtained in the study conducted in Ibadan Nigeria (29%)[21]. The reported frequencies of CAM use in the general population (irrespective of disease entity) from different parts of the world include 40% in the US[22], 38.5% among the Indian community of Chatsworth in South Africa[23] and 48.5% in Australia[24]. However, this finding is similar to what Shafiq *et al* reported in a cohort study that as many as 63.9% of their hypertensive subjects in a clinic in India took herbal medicines[25], while in Morocco 80% of patients with hypertension and diabetes used medicinal plants to treat their ailments[26]. The high prevalence of CAM use in our study is likely because before the advent of orthodox medicine in Nigeria, herbal medicines had been the mainstay of treatment for various ailments and were dispensed by traditional herbalists involved in their

cultivation and preparation. The observed high use of herbal remedies in this study may be linked to this cultural background and history.

This study found no statistically significant relationship between CAM use and socio-demographic variables with exception of marital status. This is similar to a study carried out in hypertensive patients attending an urban tertiary care center in Nigeria [20] where CAM use was found to be independent of demographic variables. However, it differs from the finding of a study conducted at a tertiary hospital in Imo State, South-East, Nigeria [27] where age, marital status, educational level and monthly income were the determinants of CAM use in the study. Our finding also differs from the American and Australian studies, which both found several associations between demographic factors and CAM usage [22, 24]. Notably, college education and wealth were predictors common to both the US and Australian studies.

This study found statistically significant relationship between CAM use and duration of the disease, p =0-021. Majority of CAM users as displayed in table 4 were those diagnosed with hypertension more than 10 years ago from the time of the study. However, this differs from the study carried out in hypertensive patients attending an urban tertiary care center in Nigeria [20] where CAM use was found to be independent of duration of the illness, duration of clinic attendance or initial B.P at presentation. The statistically significant relationship between CAM use and late onset of the disease is expected. This probably happened because the patients were disappointed with conventional treatment and wanted to try everything that may help them.

CAM use is associated with low knowledge of antihypertensives and family funding of medications, p= 0.001 and 0.021 respectively. Low knowledge level and poverty are two factors that can predispose patients to increase CAM use.

Conclusion

This study have reinforced a high prevalence of CAM use among hypertensive patients of up to 68% in a northern Nigerian community. Marital status, duration of hypertension, knowledge of antihypertensives and ability to pay for antihypertensives are associated with increase CAM use. This study is the first of its kind to be conducted in Kano Metropolis of Northern Nigeria.

Limitations

A relatively small sample size. The study only targeted the outpatients diagnosed with essential hypertension and treated for hypertension in the General Hospital of Kano metropolis.

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