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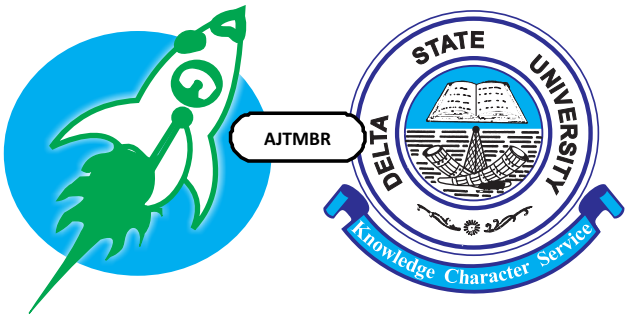

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ISSN: 2141-6397

Vol. 7, No. 1, December 2024

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The African Journal of Tropical Medicine and Biomedical Research is a multidisciplinary and international journal published by the College of Health Sciences, Delta State University of Abraka, Nigeria. It provides a forum for Authors working in Africa to share their research findings on all aspects of Tropical Medicine and Biomedical Sciences and to disseminate innovative, relevant and useful information on tropical medicine and biomedical sciences throughout the continent. The journal will publish original research articles, reviews, editorials, commentaries, short reports, case reports and letters to the editor. Articles are welcome in all branches of medicine and dentistry including basic sciences (Anatomy, Biochemistry, Physiology, Pharmacology, Psychology, Nursing etc) and clinical sciences (Internal Medicine, Surgery, Obstetrics and Gynaecology, Dental surgery, Child Health, Laboratory Sciences, Radiology, Community Medicine, etc). Articles are also welcome from social science researchers that document the intermediating and background social factors influencing health in countries of Africa. Priority will be given to publication of articles that describe the application of the principles of primary health care in the prevention and treatment of diseases.

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The title page should include the following information: 1. the title and sub-title; 2. the name(s) of the author(s); 3. the affiliation(s) of the author(s); 4. name and address of the corresponding author and 5. three to six key words for indexing and retrieval purposes.

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Original Research- The journal welcomes articles reporting on original research, including both quantitative and qualitative studies. Full-length articles should generally not exceed 3000 words, excluding abstract, tables, figures, and references. The subject matter should be organised under appropriate headings and sub-headings as itemized above.

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Table of Contents

Socio-economic and Clinical Correlates amongst Hypertensive Patients utilizing Complementary and Alternative Medicines (CAM) in A Tertiary Health Institution in Niger Delta, Nigeria.

Afamefuna FU[1], Yowin DG[2], Anyanwu EB[3]

Abstract

Introduction: World over, patronage of CAM products is on the increase, even when more potent conventional therapies with less side effects are continually being researched and produced. This study aimed at determining the socio-economic and clinical correlates of hypertensive patients utilizing CAM products in a tertiary health institution in Delta State.

Materials and Methods: A total of 572 participants diagnosed with essential hypertension that met the study criteria were studied. A half of the participants (286) were on conventional treatment only (Group A) while the other half (286) were on conventional treatment and CAM (Group B). Types of CAM products used, reasons for utilization, sources of CAM product knowledge and Family support for use were studied.

Results: Age group, marital status, higher levels of education, social class group, monthly level of income, body mass index, family history of hypertension and duration of hypertension were significantly associated with CAM utilization.

Conclusion: Family influence, higher body mass index as well as the duration of hypertension are strong predictors of utilization of CAM products amongst hypertensive patients.

Key words: Complementary and alternative medicine, Hypertension

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INTRODUCTION

Complementary and Alternative Medicine (CAM) as a group of diverse medical and healthcare systems, practices and products have been in use for several decades, the report of its use have been hinged more on cultural inclinations.[1] One of the compelling reason for this is the fact that until very recently, this aspect of care was not taught in medical schools.[2(1)] Consequently, many clinicians are either unaware of this group of therapy and their practice or they do not understand the rationale for the health-seeking behaviour warranting their utilization. Whatever the explanation, the patronage of CAM globally, is on the increase. In Africa and globally the prevalence of CAM utilization has been shown to range between 20 - 80%.[2]

It is true that socio-demographic and clinical characteristics of patients constitute some of the determinants for CAM use, but it is difficult to completely ascertain what has driven this high level of patronage of unconventional health products and practices known as CAM even when we now have more potent conventional therapies with fewer side effects.[3]

Several factors such as gender, beliefs and medication costs have been shown by various researchers [4 – 7] to be determinants for CAM utilization.

Despite the fact that the use of CAM is increasing, there is paucity of scientific evidence to support their efficacy or elucidate on their potential for adverse effects and drug interactions.[8] Therefore, both physicians and patients may lack knowledge of the efficacy and potential risks of CAM remedies.

Aims and Objectives

The Aim of the Study: is to assess the socio-economic and clinical correlates of CAM utilization amongst hypertensive patients in a tertiary hospital setting in the Niger Delta region.

Specific objectives are to determine the relationships of CAM utilization with socio-economic status, age beliefs and family influences amongst hypertensive participants.

MATERIALS AND METHODS

This is a comparative cross-sectional survey of all patients with hypertension attending the Family Medicine Clinic of the Delta State Teaching Hospital (DELSUTH) Oghara. The hospital is a 180-bed tertiary center with facilities for inpatient and outpatient care. It is located at Oghara the headquarter of Ethiope West Local Government Area of Delta State.

Inclusion Criteria were Adults of 18 years and above, that are diagnosed clinically with essential hypertension for at least three months and are on conventional medical treatment for at least three months. The willingness to participate in the study with an ability to give informed consent was also considered important inclusion criterion.

Exclusion Criteria: Those not included were; Pregnant patients with hypertension, those having acute or debilitating disease or diagnosed with secondary Hypertension. All who declined participation in the study were excluded too.

The instrument was an interviewer-administered questionnaire consisting of 3 parts.

The first part consisted of socio-demographic data. Social class was graded according to the British classification into A (higher managerial administrative and professional), B (intermediate managerial administrative and professional), C (supervisory, clerical and junior managerial administrative and professional, and skilled manual workers), D (semi-skilled and unskilled manual workers) and E (pensioners, casual and lowest grade workers, and unemployed).[9] The level of income of subjects was determined using the Nigerian National Minimum wage act approved by the Nigerian National Assembly.[3] According to the act, low-level income earners ranged from salary grade levels 01 to 07 (<₦60,000 basic), middle-level income earners ranged from salary grade level 08 to 15 (≥₦60,000 – ₦165,000 basic), and high-level income earners ranged from salary grade level 16 to 17 (≥₦165,000 basic).

The second part consisted of hypertension-related data. Anthropometric indices (weight in Kilogrammes [Kg], height in meters [m], and body mass index in Kg/m^2) were taken and recorded. Obesity was defined as body mass index $\geq 30 Kg/m^2$. Blood pressure at initial presentation at the clinic (as recorded in the case notes), and current blood pressure (using standard method) were documented. Blood pressure control was defined based on the JNC8 criteria of blood pressure level of ≤140/90mmHg in patients 18 to 59 years of age without major co-morbidities and in patients 60

years or older who have diabetes, chronic kidney disease or both conditions, and blood pressure level of ≤150/90mmHg in patients 60 years or older who do not have diabetes or chronic kidney disease.[10]

The third part modified from a standard questionnaire format on the use of CAM by cancer patients in Nigeria.

The data obtained was sorted, coded and entered into the spread-sheet of the Statistical Package for Social Sciences (SPSS 22). Analysis of frequency was done and presented using frequency tables, proportions and charts. Bivariate analysis was done using Chi square (X^2), Z-score and Student T-test. Statistical significance was set at p-value < 0.05.

Ethical approval was obtained from the Ethic Board of the DELSUTH Oghara.

RESULTS

Table 1 shows the socio-demographic characteristics of the study population. 572 participants diagnosed with essential hypertension were studied. A half of the participants (286) were on conventional treatment only (Group A) while the other half (286) were on conventional treatment and CAM (Group B). The mean ages of the participants were 61.8±13.3 and 59.1±12.0 in Group A and Group B respectively which was comparable. Most of the participants in both groups were females (328[57.3%]), married (404[70.6%]), Almost all the participants were of the Christian extraction. (525[91.8%]) Over half of the participants were low level income earners (375[65.6%]), and belong to lower social class (406[71.0%]), while less than half, had post-secondary/tertiary education (212[37.1%]). There were comparability (p>0.05) in the age group (18-39years and 60-79years), sex, marital status (single and divorced/separated), highest level of education (primary, post-primary/ secondary and post-secondary/ tertiary), social class group (social class A, C and D), monthly level of income (₦60,000-165,000) and religion of the participants in Group A and Group B respectively.

Table 1: Socio-demographic characteristics of the study population

Variables	Group A (N=286) n (%)	Group B (N=286) n (%)	z-score	p-value
Age Group (years):				
18-39	13(4.5)	9(3.1)	0.87	0.384*
40-59	111(38.8)	146(51.0)	2.94	0.003
60-79	127(44.4)	111(38.8)	1.36	0.174*
≥80	35(12.2)	20(7.0)	2.13	0.033
Mean age	61.8±13.3	59.1±12.0	1.98ṫ	0.293*
Sex:				
Male	125(43.7)	119(41.6)	0.51	0.610*
Female	161(56.3)	167(58.4)	0.51	0.610*
Marital Status:				
Married	189(66.1)	215(75.2)	2.39	0.017
Single	6(2.1)	1(0.3)	1.90	0.057*
Widow/Widower	80(28.0)	49(17.1)	3.10	0.002
Divorced/Separated	11(3.8)	21(7.3)	1.82	0.069*
Highest Level of Education:				
No formal education	58(20.3)	26(9.1)	3.78	< 0.0001
Primary	76(26.6)	82(28.7)	0.56	0.575*
Post-primary/Secondary	57(19.9)	61(21.3)	0.41	0.682*
Post-secondary/Tertiary	95(33.2)	117(40.9)	1.90	0.057*
Social Class Group:				
Social class A	10(3.5)	9(3.1)	0.23	0.818*
Social class B	25(8.7)	45(15.7)	2.55	0.011
Social class C	37(12.9)	40(14.0)	0.37	0.711*
Social class D	131(45.8)	133(46.5)	0.17	0.865*
Social class E	83(29.0)	59(20.6)	2.32	0.020
Monthly Level of Income (naira):				
Below 60,000	204(71.3)	171(59.8)	2.90	0.004
60,000 – 165,000	60(21.0)	77(26.9)	1.67	0.095*
Above 165,000	22(7.7)	38(13.3)	2.18	0.029
Religion:				
Traditional	4(1.4)	3(1.0)	0.38	0.704*
Christian	268(93.7)	257(89.9)	1.67	0.095*
Islam	4(1.4)	8(2.8)	1.17	0.242*
None	10(3.5)	18(6.3)	1.55	0.121*

ṫ = t-test statistic

Figure 1 shows the sources of CAM knowledge among participants. The most common source of knowledge about CAM was family members (110[38.5%]); followed by friends (100[35.0%]), migrant advertisers (57[19.9%]), mass media (30[10.5%]), religious group (21[7.3%]), other patients (11[3.8%]), health personnel (6[2.1%]), providers/dealers (2[0.7%]) and CAM practitioner (1[0.3%]) in descending order respectively.

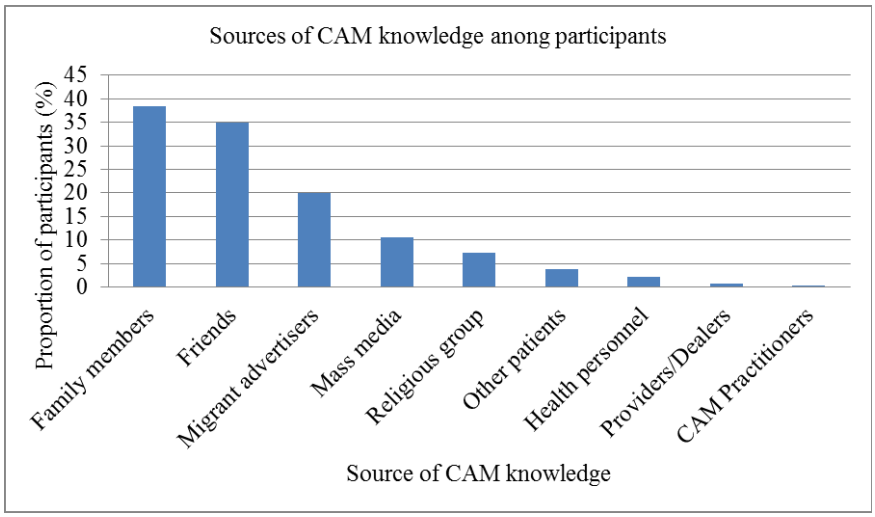

Figure 1: A Bar Chart showing Sources of CAM knowledge among participants

Figure 2 shows the types of CAM utilized among participants. The most common type of CAM utilized was biological products (277[96.9%]); followed by physical therapy (19[6.6%]), others (17[5.9%]), spiritual therapy (13[4.5%]) and alternate systems (4[1.4%]) in descending order respectively. Others comprised of bloodletting, local scarification, urine therapy and detoxification therapy.

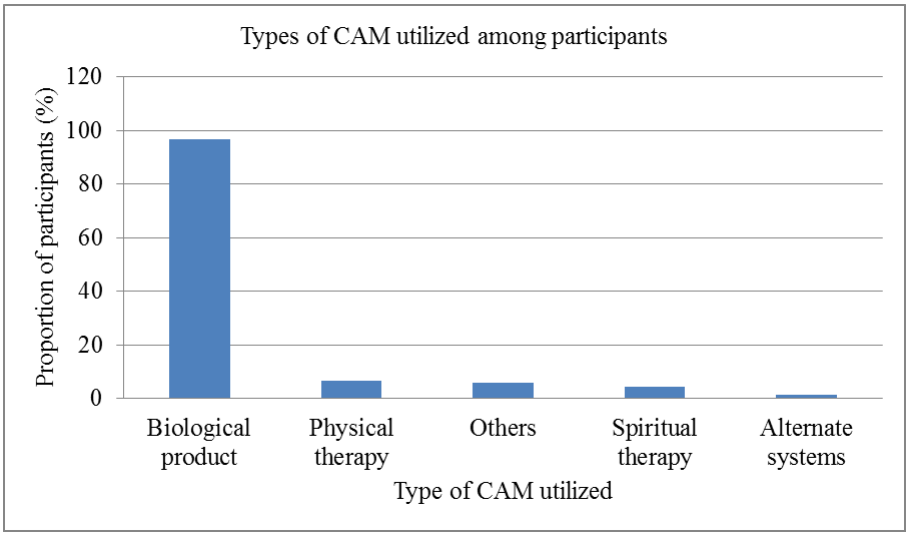

Figure 2: Bar Chart showing Types of CAM utilized among participants

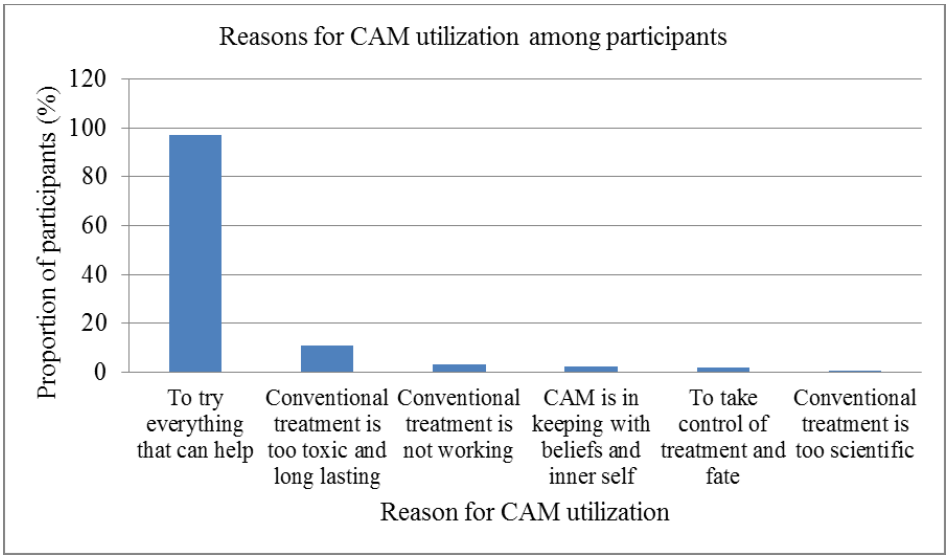

Figure 3: Bar Chart indicating Reasons for CAM utilization among participants

Table 2 shows the factors influencing CAM utilization among participants. Age group, marital status, highest level of education, social class group, monthly level of income, body mass index, family history of hypertension and duration of hypertension were significantly associated with CAM utilization ($p<0.05$). Sex, religious group, duration of current conventional treatment, application of lifestyle measures, type of therapy and adherence to conventional treatment were not significantly associated with CAM utilization ($p>0.05$). Participants who were within the middle age bracket (146[56.8%]), married (215[53.2%]), in social class D (133[50.4%]), diagnosed of hypertension for 1-5years duration (141[50.2%]), middle level income earners (77[56.2%]), obese (123[56.7%]) and had post-secondary/tertiary education (117[55.2%]) and family history of hypertension (135[55.6%]) were most likely to utilize CAM.

Table 2: Factors influencing CAM utilization among participants

Variables	Number Interviewed	Current CAM Use		Chi-square
		Yes n (%)	No n(%)	
Age Group (years):				
18-39	22	9(40.9%)	13(59.1%)	X^2=8.77; df=2
40-59	257	146(56.8%)	111(43.2%)	p=0.012*
60-79	238	111(46.6%)	127(53.4%)	
≥80	55	20(36.4%)	35(63.6%)	
Sex:				
Male	244	119(48.8%)	125(51.2%)	X^2=0.26; df=1
Female	328	167(50.9%)	161(49.1%)	p=0.612
Marital Status:				
Married	404	215(53.2%)	189(46.8%)	X^2=15.82; df=3
Single	7	1(14.3%)	6(85.7%)	p=0.001*
Widow/Widower	129	49(38.0%)	80(62.0%)	
Divorced/Separated	32	21(65.6%)	11(34.4%)	
Highest Level of Education:				
No formal education	84	26(31.0%)	58(69.0%)	X^2=14.84; df=3
Primary	158	82(51.9%)	76(48.1%)	p=0.002*
Post-primary/Secondary	118	61(51.7%)	57(48.3%)	
Post-secondary/Tertiary	212	117(55.2%)	95(44.8%)	
Social Class Group:				
Social class A	19	9(47.4%)	10(52.6%)	X^2=9.96; df=4
Social class B	70	45(64.3%)	25(35.7%)	p=0.041*
Social class C	77	40(51.9%)	37(48.1%)	
Social class D	264	133(50.4%)	131(49.6%)	
Social class E	142	59(41.5%)	83(58.5%)	
Monthly Level of Income (naira):				
Below 60,000	375	171(45.6%)	204(54.4%)	X^2=9.28; df=2
60,000-165,000	137	77(56.2%)	60(43.8%)	p=0.010*
Above 165,000	60	38(63.3%)	22(36.7%)	
Religious Group:				
Traditional	7	3(42.9%)	4(57.1%)	X^2=3.99; df=3
Christian	525	257(49.0%)	268(51.0%)	p=0.262
Islam	12	8(66.7%)	4(33.3%)	
None	28	18(64.3%)	10(35.7%)	
Body Mass Index (Kg/m^2):				
<18.5	9	3(33.3%)	6(66.7%)	X^2=11.39; df=3
18.5-24.9	162	65(40.1%)	97(59.9%)	p=0.010*
25.0-29.9	184	95(51.6%)	89(48.4%)	
≥30	217	123(56.7%)	94(43.3%)	

Family History of Hypertension:				
Yes	243	135(55.6%)	108(44.4%)	X^2=5.22; df=1
No	329	151(45.9%)	178(54.1%)	p=0.022
Duration of Hypertension (year):				
<1	93	28(30.1%)	65(69.9%)	X^2=31.88; df=8
1-5	281	141(50.2%)	140(49.8%)	p=<0.0001*
6-10	89	59(66.3%)	30(33.7%)	
11-15	56	29(51.8%)	27(48.2%)	
16-20	21	11(52.4%)	10(47.6%)	
21-25	9	8(88.9%)	1(11.1%)	
26-30	14	5(35.7%)	9(64.3%)	
31-35	6	4(66.7%)	2(33.3%)	
36-40	3	1(33.3%)	2(66.7%)	
Duration of Current Conventional Treatment (year):				
<1	229	98(42.8%)	131(57.2%)	X^2=9.12; df=4
1-5	294	158(53.7%)	136(46.3%)	p=0.058
6-10	35	22(62.9%)	13(37.1%)	
11-15	10	6(60.0%)	4(40.0%)	
16-20	4	2(50.0%)	2(50.0%)	
Use of Lifestyle Measures:				
Yes	120	69(57.5%)	51(42.5%)	X^2=3.42; df=1
No	452	217(48.0%)	235(52.0%)	p=0.065
Type of Therapy:				
Monotherapy	207	103(49.8%)	104(50.2%)	X^2=0.01; df=1
Combination therapy	365	183(50.1%)	182(49.9%)	p=0.931
Adherence to Conventional Treatment:				
Yes	305	155(50.8%)	150(49.2%)	X^2=0.18; df=1
No	267	131(49.1%)	136(50.9%)	p=0.675

Table 3 shows the determinants of CAM utilization among participants. Body mass index and duration of hypertension were found to be the independent predictors of CAM utilization ($p<0.05$).

Table 3: Determinants of CAM utilization among participants

Variables	Adjusted odds ratio (AOR)	95% C.I	p-value
Age	1.10	0.77-1.57	0.616
Marital status	1.10	0.92-1.31	0.307
Highest level of education	0.91	0.76-1.10	0.333
Social class	1.08	0.88-1.33	0.463
Monthly level of income	0.86	0.63-1.17	0.328
Body mass index	0.78	0.63-0.96	0.019*
Duration of hypertension	0.88	0.77-0.99	0.037*
Family history of hypertension	1.19	0.83-1.71	0.351

DISCUSSION

There were various sources for the knowledge of CAM products as a form of treatment observed amongst the participants. Family members and migrant advertisers were the most common sources of CAM knowledge among the participants (Figure 1), this observation that is consistent with findings from previous studies on sources of information for CAM utilization.[5, 6, 11 – 13] This observation is not surprising in Nigeria where people display and sell their CAM products and practices within the community (e.g. from house to house, in public buses and coaches, on the streets, markets, schools and even health centres) despite the existence of government regulatory agency.[14,15]

The most common type of CAM utilized among the participants was biological products (Fig. 2). In addition, garlic (*Allium sativum*) was the most common CAM product utilized among the participants. This observation is consistent with the findings in other global studies as well as in Nigeria among patients with hypertension.[4, 5, 6, 8, 13] One common belief expressed by participant in previous work is that natural (biological) products are safe because of their "naturalness".[2] In some other studies[16, 17], addition of garlic with allicin as the active ingredient has been shown to reduce cardiovascular events by lowering plasma cholesterol, blood pressure and inhibiting platelet aggregation.[16, 17] This may explain the popularity of biological products and garlic as the most commonly utilized CAM type and product respectively.

The most common reasons for CAM utilization among participants were to try everything that could help and that conventional treatment was too toxic and long lasting (Figure 3). This finding is in line with the most common reasons reported in previous studies among hypertensive and

family practice patients.[5, 11] These reasons may explain the relevance of CAM to hypertensive patients who may have become overwhelmed with the continuous intake of medicine without "cure". This misconception of "cure" was demonstrated by Oke and Bamidele (2004). They reported in a survey that about 21% of their respondents were of the opinion that they would achieve a permanent cure of hypertension only from CAM practitioners.[18]

In this study, socio-demographic characteristics associated with CAM utilization were age group, marital status, level of education, social class group and monthly level of income while the clinical characteristics were body mass index, family history of hypertension and duration of hypertension (Table 3). The participants in the middle age brackets, majority of which were obese and were in the middle income level as well as having family history of hypertension were found to utilize CAM products the most. This finding is consistent with the observations in previous works.[1, 3, 4, 11] The health seeking behavior the middle age brackets and probable influence of spouses on the health seeking choices of an ill partner may have been responsible for the association.

The association between higher BMI and CAM utilization seen in this study, is in keeping with findings in other studies.[8, 19] This may be related to the regular advertisement of the efficacy of some herbal products and nutritional supplements with regards to weight reduction which readily meets the desires of those finding other methods of weight reduction. Moreover, the majority of obese utilize CAM products for the benefit of improved physical wellbeing which could have included weight reduction.

In majority of the respondents, the aim of trying anything that can be of help was a strong reason for CAM utilization (fig. 3). It is important to note that very often, many people with chronic conditions like hypertension that utilize CAM products, do so concurrently with their conventional treatment.[1–4] This concurrent use of conventional and CAM therapies is risky not only because of the potential for unwanted side effects and serious adverse effects that could arise from drug interactions as a result of combination of these therapies but also the reduction in efficacy.[20] Another possible reason strengthening this concomitant use may be attributable to published work on biological products such as Garlic and other herbs like ginger and Aloe Vera that have been reported to have significant influence on concurrently administered cardiovascular drugs including antihypertensive medications thereby reducing their efficacy.[23] Nonetheless drawing this thin line in other CAM products is crucial.

CONCLUSION:

Our study demonstrates that, family influence, higher body mass index as well as the duration of hypertension are strong predictors of utilization of CAM products amongst hypertensive patients.

Recommendations;

1. Physicians and other healthcare professionals should be willing to proactively engage patients regarding their current or intended use of CAM especially in those with long standing history of hypertension and obese clients. Also significant family member(s) taken into consideration when counselling our clients during clinical encounters on the ills of concurrent use of CAM therapies.
2. There should be improved legislation and sustained effort by the relevant government agency for the regulation and control of CAM products and

practices in Nigeria.

Limitations;

This hospital based research finding has only looked at a small aspect of the population and may not reflect the exact situation of the general population of hypertensive patients utilizing CAM products. However it does draw attention to the reality that some factors influence a concomitant utilization.

Conflicting interests:

There is no conflicting interest in this work

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Afamefuna FU, Yovwin DG, Anyanwu EB. Socio-economic and Clinical Correlates amongst Hypertensive Patients Utilizing Complementary and Alternative Medicines (CAM) in a Tertiary Health Institution inNiger Delta, Nigeria. Afr. J. Trop. Med. & Biomed. Res. 2024; 7(1) 51-62
https://dx.doi.org/10.4314/ajtmbr.v7i1.8