

# Use of Complementary and Alternative Medicine Among Patients on Long Term Treatment in a Tertiary Health Institution in Jos Nigeria

## Abstract

**Background:** The use of Complementary and Alternative Medicine (CAM) is on the increase globally and found to be more pronounced among those with chronic illnesses even in the face of insufficient scientific evidence to support its efficacy. Hence, this study was conducted to assess the level of use of CAM and its predictors among patients on long term care in tertiary health institution. **Methods:** This was a cross-sectional study conducted among 176 patients accessing treatment for chronic medical conditions in Jos University Teaching Hospital using quantitative method of data collection. Epi Info statistical software version 7 was used for data analysis and a value of  $P < 0.05$  was considered statistically significant. **Results:** The median age of respondents was 50 (IQR 30–84) years with 83 (47.2%) being 51 years and above. Utilization of CAM was reported among 72 (40.9%) with herbal preparation ranking highest among 56 (77.8%) the respondents. Absence of side effects (AOR = 2.23; 95% CI = 1.6918–3.2135) and consistency with culture (AOR = 4.46; 95% CI = 1.4695–6.1851) were identified predictors of CAM use. **Conclusions:** This study has demonstrated a relatively high level of CAM use with perceived absence of side effects, peer influence, and consistency with culture predicting its use.

**Keywords:** Chronic disease, complementary therapy, long term care, Nigeria

## Introduction

Alternative Medicines (AM) are practices and products not currently considered an integral part of conventional medicine but when used as adjunct to conventional medical treatment is considered Complementary and Alternative Medicines (CAM).<sup>[1-5]</sup> CAM use is on the increase globally with findings from studies conducted in developed countries documenting varying degrees of use between 30% to 50% among adult population while limited studies have described its use in developing countries.<sup>[1,6,7]</sup> CAM use is reported to be driven by a complex interaction of psycho-social and cultural factors and found to be more pronounced among those with chronic illnesses even in the face of insufficient scientific evidence to support the efficacy of many of these CAM therapies.<sup>[2,4,8,9]</sup> Imperatively, the treatment outcomes of chronic conditions is hinged on adherence to prescribed conventional treatment while little or no attention is paid to CAM use and factors promoting its use in most clinical settings.<sup>[2]</sup>

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Hence, this study was conducted to assess the use of complementary and alternative medicines and its predictors among patients on long-term care.

## Methods

### Study setting

This study was conducted at the cardiology, endocrinology, hematology, nephrology, oncology, gastroenterology, pulmonology, and rheumatology out-patients clinics of Jos University Teaching Hospital (JUTH). JUTH is located in North central part of Nigeria with an estimated bed capacity of 600.

### Study population

The study population consisted of all adult patients attending cardiology, endocrinology, hematology, nephrology, gastroenterology, pulmonology and rheumatology out-patient clinics in Jos University Teaching Hospital, Jos for at least one (1) year for conditions such as hypertension, diabetes mellitus, sickle cell disease, chronic hepatitis infections, chronic kidney disease, peptic ulcer disease, chronic

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obstructive pulmonary disease, rheumatoid arthritis, malignancies etc.

### Study design

This was a cross-sectional study designed to assess the use of CAM and its predictors among patients accessing treatment for their medical conditions using quantitative method of data collection.

### Sample size estimation

The sample size for this study was determined using the appropriate sample size estimation formula for a cross-sectional study using a prevalence of CAM use of 85.7% from a previous study<sup>[10,11]</sup> This gave a sample size of 176 after addition of 5% to cater for incomplete responses.

### Criteria for inclusion in the study

All adult patients who had been attending their respective clinics for one year upwards registered and booked for appointments and had provided consent for participation were included in the study. While patients with visual and speech impairment that will require a third party involvement were excluded from the study. This was done to ensure that information obtained was volunteered by the patients and as such representative of the patient's personal opinions within the context of the study objective.

### Sampling technique

A stratified sampling technique was used in view of the fact that the respective out-patient clinics had varying populations of booked patients forming different strata. A list of all the patients who had met the inclusion criteria was obtained from the respective clinics monthly booking registers. Following which proportion to size technique was used to obtain the number of patients to be sampled from each of the clinics. This was done by dividing the number of patients who had met the inclusion criteria booked for each clinic for a two month period by total number of patients who met inclusion criteria booked for all the clinics (697) multiplied by the sample size of 176. Thereafter, the monthly booking registers for the respective clinics for the study period were used to allocate numbers to all the patients in ascending order forming the sampling frame from which computer-generated table of random numbers using WINPEPI statistical software was used to select determined number of patients for each clinic respectively without replacement.

### Data collection instrument

A semi-structured, interviewer-administered questionnaire adapted from previous studies was used in this study.<sup>[1,8,11]</sup> Cronbach alpha reliability assessment of the questionnaire was done using SPSS software version 20 where an overall Cronbach alpha score of 0.81 was obtained. Three research assistants were trained on the content and method of

administration of questionnaire prior to the commencement of the study by the principal researcher. The data collection instrument was pretested in a similar hospital setting within the state.

### Data collection procedure

The study participants were interviewed on their respective clinic days immediately after their respective clinic consultations for a period of two months. Verbal and written informed consents were obtained from all the respondents prior to the administration of the questionnaires. Confidentiality and anonymity of the information provided were assured and maintained.

### Ethical approval

Ethical clearance was obtained from Jos University Teaching Hospital Institutional Health Research Ethical Committee (JUTH/DCS/ADM/127/XXIX/1394).

### Grading of response

Alternative medicine was adjudged to be used as complementary to conventional treatment as detailed in a previous study.<sup>[2]</sup>

### Data analysis

The data obtained were processed and analyzed using Epi info statistical software version 7. Demographic characteristics of the respondents and reasons for use of CAM were categorized as explanatory variables while the outcome variable was the utilization of CAM. A two step approach to logistic regression was employed in identifying the predictors CAM use. Firstly, binary logistic regression was conducted by feeding each of the characteristics of the respondents designated as explanatory variables singly in the binary model. Furthermore, those found to have a probability value of  $<0.05$  while then fed cumulative in to the multiple logistic regression models as the second step. Crude and adjusted odds ratios as well as 95% confidence interval were used as point and interval estimates of the effects of the factors on the use of CAM while  $P < 0.05$  was considered statistically significant.

### Results

Assessment of the demographic characteristics of the respondents revealed that 83 (47.2%) were 51 years and above with a median age of 50 (IQR 30–84) years. Furthermore, 108 (61.4%) of the study participants were females with most (73.9%) being married. With regards to highest level of education attained, 95 (54.0%) had completed tertiary level of education while 98 (55.7%) were engaged in paid jobs as at the time of the study [Table 1].

In the study, 81 (46.0%) of the participants had been diagnosed of their conditions for more than 6 years with 48 (27.3%) having co-morbid conditions. Utilization of CAM was reported by 72 (40.9%) with 45 (62.5%) using it

**Table 1: Socio-demographic characteristics of the respondents**

Characteristics	Frequency ( <i>n</i> =176)	Percentage
Age group (years)		
≤50	93	52.8
51 and above	83	47.2
Median age (IQR)	50 (30-84) years	
Sex		
Female	108	61.4
Male	68	38.6
Marital status		
Single	23	13.1
Married	130	73.9
Separated/divorced	9	5.1
Widowed	14	8.0
Residence		
Peri-urban	70	39.8
Rural	38	21.6
Urban	68	38.6
Religion		
Christianity	134	76.1
Islam	33	18.8
Traditional	9	5.1
Highest level of education		
No formal education	32	18.2
Primary education	16	9.1
Secondary education	33	18.8
Tertiary education	95	54.0
Employment status		
Employed	98	55.7
Unemployed	78	44.3

IQR: Interquartile Range

for 13 months and more. The types of alternative medicine used included herbal preparation and herbal supplements by 56 (77.8%) and 45 (62.5%) respectively. Reasons adduced for use of CAM were absence of side effects (84.7%) and peer influence (66.7%) [Table 2].

The use of CAM was found to be predicted by perceived absence of side effects with its odds being 2.23 times (95% CI: 1.6918–3.2135) those who attributed side effects to it use. Furthermore, peer influence and consistency with culture and belief systems were also found to predict CAM use [Table 3].

## Discussion

The persuasive appeal of CAM is hinged on the assumptions of being natural and providing its users with connection to vitalism<sup>[2,12]</sup> In this study, the use of CAM was reported in slightly above a third of the respondents which is consistent with the findings of studies conducted

in Nigeria, Australia, Lebanon and Morocco.<sup>[2,5,13,14]</sup> However, varying levels of utilization of CAM were reported in other studies as those conducted in Canada, Nigeria, Singapore and Malaysia found lower levels of use of CAM while others reported a much higher rate of CAM use.<sup>[1,3,4,7,8,12,15-19]</sup> The seemingly high level of use of CAM reported in this study could be attributable to the strong ties that the participants may have with their cultures and belief systems. Furthermore, in Nigeria and others setting alike, desperation for cure of these chronic conditions could also be the driver for concomitant use of alternative medicines among those accessing conventional treatments. However, disaggregation of the chronic conditions was not done which is limitation in providing specific medical condition CAM utilization rate. The implication of the finding of this study on CAM use to practice is that regardless of the setting, a proportion of patients accessing treatments for chronic medical conditions will engage in CAM use which should be factored into drawing conclusions in the assessment of treatment outcomes.

A variety of types of CAM was reported to be used in this study which was similar to what was reported in other studies.<sup>[1,2,5,7,8,13,17,20]</sup> However, a range of other types of CAM such as Traditional Chinese Medicines (TCM), rituals and suction cups among others were reported in other related studies conducted across the different continents.<sup>[4,14,19]</sup> Evidently, the similarities this study shares with other studies could be attributable to the fact that cultural and environmental factors are central to the types of CAM use in any setting. It is, however, important that scientific inquiries are made into the efficacy and contribution of these CAM to treatment outcomes. It is important to state that self-reported approach to eliciting information on the use of CAM was employed in this study making under reporting a possibility.

Studies have reported conflicting findings on factors influencing the use of CAM across different settings. In this study, absence of side effects, peer influence, and consistency with cultures and beliefs were the identified predictors of CAM use. Whereas other studies found age, race, sex, level of education, employment status, income, marital status, duration of illness, presence of complication, and positive family history as influencers of CAM use.<sup>[8,13,16,18]</sup> The diversity of the identified factors influencing the utilization of CAM further reiterates the importance of use of setting and contexts related principles in structuring interventions targeted at addressing challenges posed by the use of CAM to the management of chronic medical conditions.

## Conclusions

This study has demonstrated a relatively high level of CAM use with perceived absence of side effects, peer influence and consistency with culture and beliefs predicting its use.

**Table 2: Level of Utilization of CAM among the respondents**

Characteristics	Frequency (n=176)	Percentage
Duration of illness		
≤5 years	95	54.0
6 year and more	81	46.0
Median duration (IQR)	5 (1-45) years	
Co-morbidity		
Present	48	27.3
Absent	128	72.7
Utilization of CAM		
Utilized	72	40.9
Not utilized	104	59.1
Duration of use (n=72)		
1-6 months	19	26.4
7-12 months	8	11.1
13 months and above	45	62.5
Type of alternative medicine use (n=72)*		
Herbal concoction	56	77.8
Herbal supplements	45	62.5
Yoga	2	2.8
Acupuncture	2	2.8
Others**	11	15.3
Reasons for utilization of CAM (n=72)*		
Absence of major side effects	61	84.7
Peer influence	48	66.7
Consistency with culture and belief system	21	29.2
Dissatisfaction with conventional medicine	9	12.5
Affordability	15	20.8
Accessibility	28	38.9

\*Multiple responses elicited, \*\*holy water, anointing oil, garlic, ginger preparation, turmeric & body part massage IQR (Interquartile Range)

**Table 3: Logistic regression of predictors of CAM use**

Factors	COR (95%CI)	P	AOR (95% CI)	P
Age group (years)				
51 and above	1.33 (0.7295-2.4355)	0.350		
≤50	Ref			
Sex				
Male	0.62 (0.3280-1.1546)	0.131		
Female	Ref			
Marital status				
Single	0.66 (0.2625-1.6699)	0.382		
Separated/divorced	0.01 (0.0000>1.0E12)	0.955		
Widowed	0.93 (0.3057-2.8352)	0.899		
Married	Ref			
Level of education				
Primary	0.77 (0.2255-2.6385)	0.679		
Secondary	0.84 (0.3113-2.2437)	0.722		
Tertiary	0.90 (0.3986-2.0113)	0.789		
No formal education	Ref			
Religion				
Islam	0.88 (0.4034-1.9111)	0.743		
Traditional	0.39 (0.0774-1.9251)	0.246		

*Contd...*

**Table 3: Contd...**

Factors	COR (95%CI)	P	AOR (95% CI)	P
Christianity	Ref			
Place of residence				
Rural	1.15 (0.5103-2.6092)	0.731		
Urban	1.42 (0.7181-2.7995)	0.314		
Peri-urban	Ref			
Current employment status				
Unemployed	0.83 (0.4543-1.5287)	0.556		
Employed	Ref			
Dissatisfaction with conventional medicine				
Yes	1.87 (0.4833-7.2018)	0.366		
No	Ref			
Co-morbidity				
Present	0.93 (0.4711-1.8245)	0.827		
Absent	Ref			
Duration of illness (years)*				
6 and above	1.92 (1.0448-3.5315)	0.036	2.06 (0.7739-5.4926)	0.148
≤ 5	Ref			
Side effects**				
Absent	2.83 (1.9885-5.1743)	<0.001	2.23 (1.6918-3.2135)	<0.001
Present	Ref			
Peer influence**				
Yes	3.93 (2.9987-8.7322)	<0.001	2.71 (1.3583-4.3751)	0.0008
No	Ref			
Consistency with culture and belief system**				
Yes	9.62 (5.1790-13.0240)	<0.001	4.46 (1.4695-6.1851)	<0.001
No	Ref			
Affordability*				
Yes	6.73 (1.8262-24.8270)	0.0042	0.90 (0.1540-5.2489)	0.906
Ref				
Accessibility*				
Yes	5.71 (2.2740-14.3174)	0.002	1.20 (0.2538-5.6422)	0.321
No	Ref			

COR=Crude Odds Ratio, AOR=Adjusted Odds Ratio, \*Statistically significant before adjustment but not after adjustment, \*\*Statistically significant after adjustment, Ref=Reference category

### Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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### Conflicts of interest

There are no conflicts of interest.

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