

Original Article

Prevalence and Correlates of Complementary and Alternative Medicine Use among Cancer Patients in Usmanu Danfodiyo University Teaching Hospital, Sokoto, Nigeria

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ABSTRACT

Background: The rate of complementary and alternative medicine (CAM) use among cancer patients is on the increase worldwide. This is due to the innate urge among humans to try new and alternative ways of medicine, especially where conventional medicine failed to provide satisfactory solution such as in sickle cell disease and cancer. **Objective:** To assess the prevalence and correlates of CAM use among cancer patients in Usmanu Danfodiyo University Teaching Hospital (UDUTH), Sokoto, Nigeria. **Materials and Methods:** A cross-sectional study was conducted among 240 cancer patients selected by systematic sampling technique from July to September 2016. Data were collected using a semi-structured standardized questionnaire. **Results:** The mean age of the study participants was 45 ± 13.7 years. Majority, 159 (66.3%) of the 240 respondents, were CAM users, with the most common methods being prayer (30.8%) and herbal therapy (28.3%). Majority of CAM users (64.2%) did not derive any benefit from CAM use, but rather reported adverse effects such as nausea and vomiting (52.5%) and diarrhea (44.2%). Physicians were unaware of CAM use in most cases (87.4%), and this was majorly attributed to the physicians not asking them about CAM use. Male sex and absence of comorbidities were the predictors of CAM use identified. **Conclusion:** The prevalence of CAM use is high among cancer patients in UDUTH, Sokoto, Nigeria, but the physicians were largely unaware of CAM use due to communication gap. These findings underscore the need for physicians to consistently ask their patients on CAM use, while government should enact laws regulating CAM use in Nigeria.

KEYWORDS: Cancer patients, complementary and alternative medicine, correlates, prevalence

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INTRODUCTION

Complementary and alternative medicine (CAM) has been defined as any diagnosis, treatment or prevention that complements mainstream medicine by contributing to a common whole, by satisfying a demand not met by orthodoxy or by diversifying the conceptual framework of medicine.^[1] The use of CAM has increased steadily over the past 15 years, and undoubtedly, it has gained medical, economic, and sociological importance.^[2]

CAM has been defined by the National Center for CAM (NCCAM)^[3] as a group of various medical and

health-care systems, practices, and products that are not currently part of conventional medicine. When unconventional approach and/or product are used together with conventional medicine, it is said to be complementary; however, when it is used in place of conventional medicine, it becomes an alternative

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medicine. Therefore, CAM is an umbrella term used for both complementary and alternative health-care practices.

Little is known about the use of CAM in cancer patients specifically. This is especially true in the context of Africa as very few publications are available on CAM use in the region. A survey conducted in 33 countries, yielding a meager of 83 responses mainly from oncologists, indicated the existence of a large and heterogeneous group of CAM therapies or remedies used to treat cancer in both developed and developing countries.^[4]

A literature review suggested that the use of CAM among cancer patients is common, with a prevalence rate across studies of 31.4% (ranged from 7% to 64%).^[2] The latter review included 26 surveys from 13 countries carried out from 1977 to January 1998. Globally, the prevalence of CAM use ranged from 30% to 75%.^[5] However, more recent studies suggest that the use of CAM is considerably higher, with some studies reporting rates of 70.2% in a sample of 356 colon, breast, and prostate cancer patients^[6] and 83.3% in an outpatient sample of 453 patients.^[7]

CAM use in Nigeria is becoming more popular^[8] as in many other countries of the world. In Nigeria, the prevalence of CAM use among cancer patients is unknown. The use of traditional herbs and remedies are however well known and relatively common.^[9,10] What biomedicine considers as CAM today has been a way of life for most Nigerians. Furthermore, the cost of western medical treatment and inadequate penetration of the communities by western orthodox medicine make CAM more appealing to them.^[11]

In addition, there are almost no medical malpractice litigations to limit and regulate the use of non-orthodox remedies. Equally, cancer is considered a death sentence in Nigeria.^[9] Its cause in many cases is attributed to non-material causes beyond biomedicine such that western medicine is largely seen as ineffective in its treatment. It is therefore expected that the use of CAM in cancer patients will be commensurately higher than it is in western populations. There has been explosion of various types of CAM in use. To create a kind of order, these types of CAM have been classified by some established committees. Two of such committees are the NCCAM and House of Lords Select Committee on Science and Technology. The NCCAM classified CAM into alternative medical systems, for example, homeopathy and naturopathy; mind-and-body interventions, such as meditation and prayer; biological products, such as herbs and food; manipulative therapies, such as chiropractic and massage; and energy therapies, such as magnetic fields and therapeutic touch.^[12]

The House of Lords Select Committee on Science and Technology classification grouped CAM into three and is mainly based on therapies that have been professionally organized, such as acupuncture and herbal medicine; therapies considered complementary to other forms of health care, such as nutrition and aromatherapy; and traditional systems, such as Chinese medicine and other alternative medicines.^[13] CAM is built on the philosophical orientation of holism and the recognition that optimum interaction between the body, mind, and spirit establishes harmony. Unlike the reductionist approach of conventional medicine which treats human beings in parts, CAM holds that the whole body is greater and more than the sum of its parts and recognizes the impact of the total life experiences on the health of the individual. In developed countries, more females than males use CAM in the general adult population^[10,14,15] and what is being used under the umbrella of CAM varies in the form, number, and ailment in different parts of the world. We do not know yet which factors are most critical in influencing Nigerian cancer patients to use CAM. We also do not know what potential benefits or adverse outcomes can occur when Nigerian patients on conventional western medicine use standard therapy either concurrently or sequentially with CAM. Research to estimate the burden of CAM use and factors associated with it is needed to guide policymakers and human resource managers in designing intervention for preventing adverse effects of CAM use among cancer patients. This study assessed the prevalence and correlates of CAM use among cancer patients in Usmanu Danfodiyo University Teaching Hospital (UDUTH), Sokoto, Nigeria.

MATERIALS AND METHODS

This cross-sectional, descriptive study was carried out among cancer patients attending Radiotherapy and Oncology Clinic of Usmanu Danfodiyo University, Sokoto, Nigeria, from July to September 2016. The hospital serves the inhabitants of Sokoto state, the neighboring states of Kebbi, Zamfara, and Katsina, and people from other parts of the country; likewise the neighboring Niger Republic. It has a bed capacity of 650 and consists of 42 departments, of which 24 offer clinical services in the form of preventive, curative, and rehabilitative services. The Radiotherapy and Oncology Department is one of the 24 clinical departments in the hospital.

The sample size was estimated at 217 and adjusted to 240 using the statistical formula for calculating the sample size for descriptive studies,^[16] a 83% prevalence of CAM use among cancer patients from a previous

study,^[2] a precision level of 5%, and an anticipated response rate of 95%. All patients with histological diagnosis of cancer were considered eligible, seriously ill, and mentally retarded patients were excluded. Systematic sampling technique was used to select eligible participants using the clinic attendance register to constitute the sampling frame.

A set of pretested, semi-structured, standardized, interviewer-administered questionnaire was used to obtain information on respondent's sociodemographic characteristics, CAM use, and clinical profile. The questionnaire was adopted from the tools used in the previous studies.^[11,17] The questionnaire was pretested among cancer patients at the Department of Radiotherapy and Oncology of Federal Teaching Hospital, Gombe, Nigeria. The questions were well understood by the patients and no modification was necessary. Three nurses and two radiographers assisted in questionnaire administration after pretraining on conduct of survey research, objectives of the study, selection of study subjects, and questionnaire administration. Institutional ethical clearance was sought from the Ethical Committee of UDUTH, Sokoto, Nigeria. Permission to conduct the study was obtained from the management of the hospital, and informed written consent was also obtained from the participants before data collection.

Data were analyzed using IBM Statistical Package for the Social Sciences (SPSS) version 21.0 software (SPSS, IBM Corp, Armonk, NY, USA). The Chi-square test was used for bivariate analysis involving categorical variables. Logistic regression analysis was used to determine the variables that predict CAM use among the participants. All levels of significance were set at $P < 0.05$.

RESULTS

Two hundred and forty respondents who agreed to participate in the study were interviewed and they all responded giving a response rate of 100%. The ages of the respondents ranged from 10 to 79 years (mean = 45.4 ± 13.7 years), and about a third of respondents were aged 40–49 years. More than half of the respondents were females (56.2%), about two-thirds were Muslims (65.4%), and larger proportions of respondents had secondary (23.8%) and tertiary education (25.8%). While a larger proportion of respondents were unemployed (30.8%), substantial proportions of respondents were either civil servants (19.2%) or traders (18.8%) [Table 1].

Types of cancers seen among respondents

Cervical cancer was the most common malignancy among the respondents (33.3%) followed by breast cancer (22.1%), head-and-neck cancers (15.8%), and

Table 1: Sociodemographic characteristics of respondents

Variables	Frequency (n=240) (%)
Age group (years)	
10-19	7 (2.9)
20-29	26 (10.8)
30-39	41 (17.1)
40-49	79 (32.9)
50-59	39 (16.3)
60-69	30 (12.8)
70 and above	18 (7.5)
Sex	
Male	105 (43.8)
Female	135 (56.2)
Religion	
Islam	157 (65.4)
Christianity	83 (34.6)
Level of education	
None	52 (21.7)
Quranic/Arabic	33 (13.8)
Primary	36 (15.0)
Secondary	57 (23.8)
Tertiary	62 (25.8)
Occupation	
Unemployed	74 (30.8)
Civil servants	46 (19.2)
Traders	45 (18.8)
Farmers	37 (15.4)
Teachers	15 (6.3)
Bankers	13 (5.4)
Others	10 (4.2)

Table 2: Types of oncologic treatment received by respondents

Treatment received	Frequency (n=240) (%)
Chemotherapy	119 (49.6)
Radiotherapy	55 (22.9)
Both chemotherapy and radiotherapy	66 (27.5)

gastrointestinal cancers (10.8%). Other forms of cancers seen among the respondents are as shown in Figure 1.

Types of oncologic treatment received by respondents

One hundred and nineteen (49.6%) of the 240 respondents had only chemotherapy as a modality of treatment, 55 (22.9%) had only radiotherapy, while 66 (27.5%) had a combination of chemotherapy and radiotherapy [Table 2]. All the patients have had one form of surgical procedure or the other performed on them before being referred for oncologic treatment.

Sources of information on complementary and alternative medicine among respondents

Majority of respondents obtained information on CAM from a family member or friend (50.4%), followed by

Table 3: Prevalence, types, and duration of complementary and alternative medicine use by respondents

Variables	Frequency (%)
Used CAM (n=240)	
Yes	159 (66.3)
No	81 (33.7)
Types of CAM used (n=159)	
Alternative medical system	
Indian medicine	5 (3.1)
Mind-and-body intervention	
Special prayers	49 (30.8)
Biological-based method	
Herbs	45 (28.3)
Aloe vera	16 (10.0)
Nutritional therapy	5 (3.1)
Forever living products	22 (13.8)
Body based method	
Scarifications	17 (10.0)
Duration of CAM use (n=159)	
<3 months	96 (60.4)
3-<6 months	41 (25.8)
6-12 months	22 (13.8)

CAM=Complementary and alternative medicine

Table 4: Reasons for complementary and alternative medicine use among respondents

Reason for CAM use	Frequency (n=159) (%)
Improved outcome with hospital medication	59 (37.1)
More affordable	30 (18.9)
Readily available	40 (25.1)
Others (cultural, spiritual)	30 (18.9)

CAM=Complementary and alternative medicine

Table 5: Perceived benefits of complementary and alternative medicine use among respondents

Perceived benefits	Frequency (n=159) (%)
Makes me eat better and stronger	16 (10.1)
Reduces nausea and vomiting	19 (11.9)
Reduces pain	11 (6.9)
Improves immunity	3 (1.9)
No benefits	102 (64.2)
No response	8 (5.0)

social media (31.6%) and health workers (12.1%), but a few (5.8%) still reported obtaining information on CAM from other sources [Figure 2].

Prevalence, types, and duration of complementary and alternative medicine use by respondents

Majority, 159 (66.3%) of the 240 respondents, were CAM users. Of these, the most commonly used CAM method was mind-and-body intervention (had special

Table 6: Side effects of complementary and alternative medicine use among respondents

Side effects*	Frequency (n=159) (%)
Nausea and vomiting	126 (52.5)
Diarrhea	106 (44.2)
Skin rashes	22 (9.3)
Itching	73 (30.4)
Headache	17 (7.1)

*Multiple responses allowed

Table 7: Physicians' awareness of complementary and alternative medicine use by respondents

Variables	Frequency (%)
Awareness by physicians (n=159)	
Aware	20 (12.6)
Unaware	139 (87.4)
Reason for physician not being aware (n=139)	
Doctor did not ask	63 (45.3)
Refused to tell doctor	60 (43.2)
Cannot say	16 (11.5)

Table 8: Association between complementary and alternative medicine use and respondents' sociodemographic and clinical profile

Variables	CAM use		Test of significance (χ^2 , P)
	Yes, frequency (%)	No, frequency (%)	
Sex			
Male	78 (74.3)	27 (25.7)	5.391, 0.002
Female	81 (60.0)	54 (40.0)	
Religion			
Islam	99 (63.1)	58 (36.9)	2.070, 0.15
Christianity	60 (72.3)	23 (27.7)	
Occupation			
Unemployed	47 (63.5)	27 (36.5)	0.358, 0.549
Employed	112 (67.5)	54 (32.5)	
Cancer stage			
Localized disease	127 (68.6)	58 (31.4)	2.077, 0.101
Metastatic disease	32 (58.2)	23 (41.8)	
Comorbidities			
Present	44 (50.0)	44 (50.0)	16.410, <0.001
Absent	115 (75.7)	37 (24.3)	

CAM=Complementary and alternative medicine

prayer sessions, 30.8%), followed by a biologically based method (used herbs, 28.3%), while the least patronized CAM among the respondents was alternative medical system (used Indian medicine, 3.1%). Majority, 96 (60.4%) of the 159 CAM users, have used it for <3 months, 41 (25.8%) have used it for 3-<6 months, while 22 (13.8%) have used it for 6-12 months [Table 3].

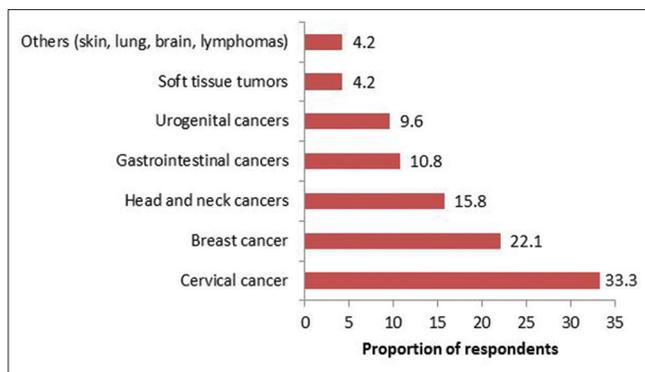


Figure 1: Types of cancers seen among respondents

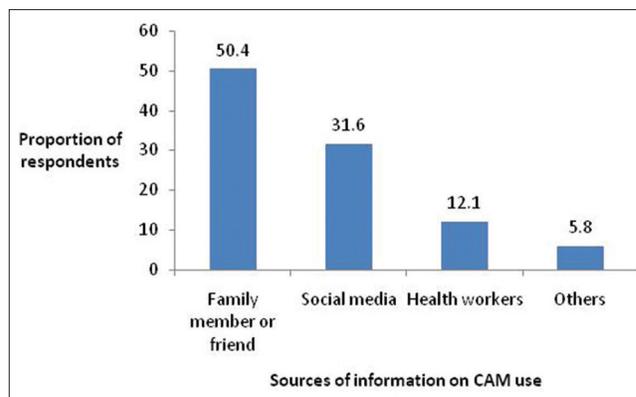


Figure 2: Sources of information on complementary and alternative medicine use among respondents

Table 9: Predictors of complementary and alternative medicine use among respondents

Variables	OR	95% CI		P
		Lower	Upper	
Sex (males vs. females)	1.830	1.021	3.281	0.042
Religion (Muslims vs. Christians)	0.582	0.314	1.080	0.086
Cancer stage (localized vs. metastatic disease)	1.383	0.722	2.651	0.328
Occupation (unemployed vs. employed)	1.015	0.551	1.870	0.962
Comorbidities (present vs. absent)	0.323	0.182	0.574	<0.001

OR=Odds ratio; CI=Confidence interval

Reasons for complementary and alternative medicine use among respondents

Fifty-nine (37.1%) of the 159 CAM users believed that using CAM improves treatment outcome with hospital medications, while 40 (25.1%) said that they used it because it was readily available. Thirty (18.9%) of the 159 CAM users believed that CAM use has spiritual and cultural importance, while 30 (18.9%) used CAM because it was more affordable [Table 4].

Perceived benefits of complementary and alternative medicine use among respondents

Majority, 102 (64.2%) of the 159 CAM users, said that there was no benefit after CAM use. Among those who said there were benefits, 19 (11.9%) said that CAM reduces their nausea and vomiting, 16 (10.1%) said that it makes them eat better and stronger, while 11 (6.9%) said that it reduces pain [Table 5].

Side effects of complementary and alternative medicine use among respondents

Multiple side effects were reported by the CAM users. Majority, 126 (52.5%) of the 159 CAM users, complained of nausea and vomiting, while 106 (44.2%) had diarrhea, 22 (9.2%) had skin rashes, and 73 (30.4%) complained of itching [Table 6].

Physicians' awareness of complementary and alternative medicine use by respondents

Majority, 139 (87.4%) of the 159 CAM users, said that their doctors were unaware of their CAM use. Sixty-three (45.3%) said that their doctors were not aware because they did not ask, while 60 (43.2%) claimed to have refused telling them [Table 7].

Correlates of complementary and alternative medicine use among respondents

There was an association between respondents' sex and CAM use; a significantly higher proportion of males (74.3%) were found to have used CAM compared to their female counterpart (60.0%), $\chi^2 = 5.391$, $P = 0.002$. There was also an association between absence of comorbidities and CAM use; a significantly higher proportion of respondents with no comorbidities (75.7%) were found to have used CAM compared to those with other medical ailments (such as hypertension and diabetes mellitus) in addition to cancer (50.0%), $\chi^2 = 16.410$, $P < 0.001$ [Table 8].

The results of logistic regression analysis indicated that male sex and absence of comorbidities were the predictors of CAM use. Males were almost twice more likely to use CAM compared to females (odds ratio = 1.830, 95% confidence interval [CI] = 1.021–3.281, $P = 0.042$). Respondents with other medical ailments in addition to cancer were less likely to use CAM compared to those without comorbidities (odds ratio = 0.323, 95% CI = 0.182–0.574, $P < 0.001$) as shown in Table 9.

DISCUSSION

The mean age of the participants in this study was 45 ± 13.7 years, with a range of 10–79 years. Ezeome and Anarado^[11] conducted a similar study in Enugu, Southwestern Nigeria, and reported a somewhat similarly close age range of 13–86 years with a mean age of 52.3 years. A similar study in Ghana^[17] reported an

age range of 18–89 years with a mean of 55.5 years. The differences could probably be a reflection of the environmental factors that played a role in the etiology of their disease.

Cervical cancer was the most common malignancy (33.3%) among the respondents followed by breast cancer (22.1%). Contrary to this, a study in Enugu reported breast cancer as the most common cancer followed by urogenital cancers.^[11] Yarney *et al.*^[17] in Ghana also reported breast cancer as the commonest. In a similar study in Europe, the most frequent diagnosis included breast cancer (30.8%), colorectal cancer (16.1%), and lung cancer (12.1%).^[18]

Most of the respondents in this study (50.4%) got their information on CAM from family members or friends. This was followed by the social media 76 (31.6%). Yarney *et al.*^[17] in Ghana reported a similar findings where majority of their respondents said that they got their information from friends (33.8%) and the mass media (24.6%). In contrast to the findings of this study, majority of respondents using CAM in a study in Lebanon chose their therapy based on input from the media.^[19] While a study in Mexico reported patients' family (56.4%) as the main source of information, similar to the finding in this study, intriguingly, a substantial proportion (24.3%) of the respondents in the Mexican study reported using CAM based on their physicians' recommendation.^[20]

While the 66.3% prevalence of CAM use in this study is in agreement with the 60.9% prevalence obtained in a study among cancer patients in Thailand,^[21] it is far below the 84.0% prevalence reported in a study among cancer patients in the United States.^[22] In contrast to the finding in this study, studies done in the United Kingdom,^[18] Iran,^[23] and New Zealand^[24] reported lower prevalence of 32.7%, 35.0%, and 49.0% respectively.

Very few studies described CAM use among cancer patients in Africa. In North Africa, a lower prevalence of 36.0% was reported in Algeria.^[25] Singh *et al.*^[26] reported a prevalence of 38.5% among the general population in Chatsworth, South Africa. In Ghana, West Africa, the only available study on CAM use in cancer patients reported a prevalence of 73.5%,^[17] while a Nigerian-based study on CAM in Enugu reported a prevalence of 65.0%.^[11] The 66.3% prevalence of CAM use in this study is almost similar to the findings in southern part of Nigeria and neighboring country (Ghana). This could be due to similarities in traditional and cultural practices in the populations studied. These traditional and cultural practices along with the cost and poor penetration of western medicine in the region could have contributed to the high prevalence of CAM use in the West African

subregion. The misconception that the etiology of cancer in most parts of Northern Nigeria is spiritual could also contribute to the high prevalence of CAM use obtained in this study.

The most commonly used CAM method among cancer patients in this study was biological-based method (55.2%), with herbal preparations (28.3%) being the most commonly used in the group. This is followed by mind-and-body interventions, with faith healing/prayer house healing (30.8%) being the most commonly patronized. This is in agreement with the work in Enugu, where herbal preparations (51.9%) and prayers (39.4%) were reported to be the most commonly used.^[11] The high prevalence of faith and prayer house healing among Nigerian patients mirrors the attachment of people of African ancestry to spiritual and transcendental beliefs. Some of the patients rely completely on prayers and faith for their healing; such patients are usually brought to the hospital when the disease is widely metastatic or locally advanced. Similar to the finding in this study, Singh *et al.*^[26] reported that herbs and spiritual healing were the two most common forms of CAM used among Indians in South Africa. Herbal preparations have also been reported to be the leading CAM used among cancer patients in Turkey.^[27,28]

Most of the respondents (37.1%) said that they used CAM because they believed that it will complement hospital medications to improve their treatment outcome. In Africa, a large proportion of the population (80%) use CAM to meet their primary health-care needs because the therapy is easily accessible and it is the only affordable source of health care in some countries, especially the world's poorest clients.^[5,29] This study also corroborates this as majority of the respondents said that they used CAM because it is cheaper and accessible and has some spiritual healing powers. A similar finding was observed among cancer patients in the USA where the bulk of the patients believed CAM will boost their immunity and hence a better quality of life and treatment outcome.^[7] These findings are also in concordance with the report of a similar study in Ghana.^[17]

However, majority of CAM users (64.2%) in this study said that there were no benefits from CAM use. A study in Europe reported a contrary finding where only a few patients (3.2%) found the CAM therapy/therapies they used not beneficial at all.^[18] In the New Zealand study,^[24] most of the respondents (71%) reported that the CAM therapies used had been helpful in the management of their cancer.

Majority of respondents reported multiple side effects which were attributed to CAM use. Large proportions

of the respondents who used CAM complained of nausea and/or vomiting (52.5%), diarrhea (44.2%), skin rashes (9.2%), and itching (30.4%). The WHO had reported that there is a lack of common standards or appropriate methods for evaluating CAM to ensure safety, efficacy, and quality control.^[30] This lack of standardization implies that one preparation of the same kind may be highly potent while another is ineffective. Of the 141 WHO Member States, only 45 (32%) countries have a national policy on CAM.^[30] In Africa, only 12 of 46 countries have a national policy on CAM. In Nigeria, the national policy on CAM is still in the pipeline.^[30]

Contrary to the findings in this study, a study in Enugu reported a lower prevalence (21.2%) of unwanted effects from CAM use.^[11] The study further reported that most of the claimed adverse effects were very difficult to distinguish from the natural manifestations or progression of advanced malignancies, but some specific adverse effects of CAM use reported were indisputable. Fraser and Cooper^[13] reported that there is a growing body of evidence about the risks of possible interaction between herbal and conventional medicines.

Very few physicians (12.6%) were aware that their patients were using CAM. The main reason given by respondents for not informing their doctors was that the physicians did not ask (45.3%). Similar to the findings in this study, the Enugu study reported that most of their patients who used CAM (55.8%) did not tell their doctors about it mainly because the doctors failed to ask (28.3%).^[11] The low CAM use disclosure rate in this study compares well with the 39%–45.8% disclosure reported in studies among cancer patients in the US^[31] and among Indians in South Africa.^[27] In studies that examined discrepant views of oncologists and cancer patients on CAM use, nondisclosure was believed to be due to the fact that the cancer patients believed physicians would not understand the use of CAM, discontinue treatment, or disapprove the use of CAM. The physicians on their own part considered CAM not to be of much benefit in improving the quality of life, cure disease, or prolong life.^[32,33] The fact that most patients will not disclose their use of CAM until they were asked makes it necessary for every oncologist to routinely ask cancer patients whether they use CAM, what they use, and how they used them.

Male sex and absence of comorbidities were the predictors of CAM use identified in this study. There was no association between CAM use and clinical stage of cancer. In contrast to the findings in this study, Hedderson *et al.*^[34] reported a significantly higher prevalence of CAM use among women (81.5%) compared to men (59.0%). Other studies by Sparber *et al.*^[35] and Harris *et al.*^[36] also found that CAM users were more likely to be females.

In the study by Hedderson *et al.*,^[34] it was concluded that clinicians should be aware that men and women differ considerably in their use of CAM, which may reflect differences in their psychological needs as they cope with their cancer diagnosis and treatment.

The lower likelihood of CAM use among participants with comorbidities (such as hypertension and diabetes mellitus) in this study is not unexpected in view of the fact that multi-morbidity is known to be associated with poly-pharmacy which may lead to an increased risk of inappropriate drug use, under-use of effective treatment, drug–drug and drug–disease interactions, and most importantly adverse reactions.^[37] In addition, emotional distress caused by multiple medical conditions can be overwhelming for both patients and their caregivers, as corroborated by the documented high prevalence of depression, anxiety, and stress among patients with chronic diseases, resulting in poor adherence to medications and suicidal behavior.^[38-40]

CONCLUSION

The prevalence of CAM use is high among cancer patients in UDUTH, Sokoto, Nigeria, but the physicians were largely unaware of CAM use due to communication gap. These findings underscore the need for physicians to consistently ask their patients on CAM use while government should enact laws regulating CAM use in Nigeria.

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Conflicts of interest

There are no conflicts of interest.

REFERENCES

- Ernst E, Resch KL, Mills S, Hill R, Mitchell A, Willoughby M, *et al.* Complementary medicine – A definition. *Br J Gen Pract* 1995;45:506.
- Ernst E, Cassileth BR. The prevalence of complementary/alternative medicine in cancer: A systematic review. *Cancer* 1998;83:777-82.
- National Centre for Complementary and Alternative Medicine, Time to Talk: Ask Your Patients about Their use of Complementary and Alternative Medicine. Available from: <http://www.nccam.nih.gov/health>. [Last accessed on 2017 Jan 24].
- Cassileth BR, Schraub S, Robinson E, Vickers A. Alternative medicine use worldwide: The international union against cancer survey. *Cancer* 2001;91:1390-3.
- WHO. Traditional Medicine Strategy 2002-2005. Geneva, Switzerland: World Health Organization; 2002. Available from: <http://www.who.int/mediacentre/factsheets/fs134/en/>. [Last accessed on 2017 Jan 24].
- Patterson RE, Neuhaus ML, Hedderson MM, Schwartz SM, Standish LJ, Bowen DJ, *et al.* Types of alternative medicine used by patients with breast, colon, or prostate cancer: Predictors, motives, and costs. *J Altern Complement Med* 2002;8:477-85.

7. Richardson MA, Sanders T, Palmer JL, Greisinger A, Singletary SE. Complementary/alternative medicine use in a comprehensive cancer center and the implications for oncology. *J Clin Oncol* 2000;18:2505-14.
8. Onyiaapat JL, Okoronkwo IL, Ogbonnaya NP. Complementary and alternative medicine use among adults in Enugu, Nigeria. *BMC Complement Altern Med* 2011;11:19.
9. Nwoga IA. Traditional healers and perceptions of the causes and treatment of cancer. *Cancer Nurs* 1994;17:470-8.
10. Barnes PM, Bloom B, Nahin RL. Complementary and alternative medicine use among adults and children: United States, 2007. *Natl Health Stat Report* 2008;(12):1-23.
11. Ezeome ER, Anarado AN. Use of complementary and alternative medicine by cancer patients at the university of Nigeria teaching hospital, Enugu, Nigeria. *BMC Complement Altern Med* 2007;7:28.
12. Fan KW. National centre for complementary and alternative medicine website (NCCAM). *J Med Libr Assoc* 2005;93:410-2.
13. Fraser DM, Cooper MA. *Myles Textbook for Midwives*. 15th ed. Edinburgh: Elsevier; 2009. p. 507-30.
14. MacLennan AH, Myers SP, Taylor AW. The continuing use of complementary and alternative medicine in South Australia: Costs and beliefs in 2004. *Med J Aust* 2006;184:27-31.
15. Adams J, Lui CW, Sibbritt D, Broom A, Wardle J, Homer C, *et al.* Women's use of complementary and alternative medicine during pregnancy: A critical review of the literature. *Birth* 2009;36:237-45.
16. Araoye MO. *Research Methodology with Statistics for Health and Social Sciences*. 2nd ed. Ilorin, Nigeria: Nathadex Publishers; 2004.
17. Yarney J, Donkor A, Opoku SY, Yarney L, Agyeman-Duah I, Abakah AC, *et al.* Characteristics of users and implications for the use of complementary and alternative medicine in Ghanaian cancer patients undergoing radiotherapy and chemotherapy: A cross-sectional study. *BMC Complement Altern Med* 2013;13:16.
18. Molassiotis A, Cubbin D. 'Thinking outside the box': Complementary and alternative therapies use in paediatric oncology patients. *Eur J Oncol Nurs* 2004;8:50-60.
19. Naja F, Fadel RA, Alameddine M, Aridi Y, Zarif A, Hariri D, *et al.* Complementary and alternative medicine use and its association with quality of life among Lebanese breast cancer patients: A cross-sectional study. *BMC Complement Altern Med* 2015;15:444.
20. Gerson-Cwilich R, Serrano-Olvera A, Villalobos-Prieto A. Complementary and alternative medicine (CAM) in Mexican patients with cancer. *Clin Transl Oncol* 2006;8:200-7.
21. Puataweepong P, Sutheechet N, Ratanamongkol P. A survey of complementary and alternative medicine use in cancer patients treated with radiotherapy in Thailand. *Evid Based Complement Alternat Med* 2012;2012:670408.
22. Kelly KM, Jacobson JS, Kennedy DD, Braudt SM, Mallick M, Weiner MA, *et al.* Use of unconventional therapies by children with cancer at an urban medical center. *J Pediatr Hematol Oncol* 2000;22:412-6.
23. Montazeri A, Sajadian A, Ebrahimi M, Haghghat S, Harirchi I. Factors predicting the use of complementary and alternative therapies among cancer patients in Iran. *Eur J Cancer Care (Engl)* 2007;16:144-9.
24. Chrystal K, Allan S, Forgeson G, Isaacs R. The use of complementary/alternative medicine by cancer patients in a New Zealand regional cancer treatment centre. *N Z Med J* 2003;116:U296.
25. Algier LA, Hanoglu Z, Ozden G, Kara F. The use of complementary and alternative (non-conventional) medicine in cancer patients in Turkey. *Eur J Oncol Nurs* 2005;9:138-46.
26. Singh V, Raidoo DM, Harries CS. The prevalence, patterns of usage and people's attitude towards complementary and alternative medicine (CAM) among the Indian community in Chatsworth, South Africa. *BMC Complement Altern Med* 2004;4:3.
27. Ceylan S, Hamzaoglu O, K m rc  S, Beyan C, Yal ın A. Survey of the use of complementary and alternative medicine among Turkish cancer patients. *Complement Ther Med* 2002;10:94-9.
28. Malik IA, Khan NA, Khan W. Use of unconventional methods of therapy by cancer patients in Pakistan. *Eur J Epidemiol* 2000;16:155-60.
29. Frenkel M, Ben Arye E, Carlson C, Sierpina V. Integrating complementary and alternative medicine into conventional primary care: The patient perspective. *Explore (NY)* 2008;4:178-86.
30. WHO. National Policy on Traditional Medicine and Regulation of Herbal Medicines – Report of a WHO Global Survey. Geneva, Switzerland: World Health Organization; 2005. Available from: <http://www.apps.who.int/medicinedocs/pdf/s7916e/pdf>. [Last accessed on 2017 Feb 17].
31. Shen J, Andersen R, Albert PS, Wenger N, Glaspy J, Cole M, *et al.* Use of complementary/alternative therapies by women with advanced-stage breast cancer. *BMC Complement Altern Med* 2002;2:8.
32. Richardson MA, M sse LC, Nanny K, Sanders C. Discrepant views of oncologists and cancer patients on complementary/alternative medicine. *Support Care Cancer* 2004;12:797-804.
33. Kim DY, Kim BS, Lee KH, Lee MA, Hong YS, Shin SW, *et al.* Discrepant views of Korean medical oncologists and cancer patients on complementary and alternative medicine. *Cancer Res Treat* 2008;40:87-92.
34. Hedderson MM, Patterson RE, Neuhaus ML, Schwartz SM, Bowen DJ, Standish LJ, *et al.* Sex differences in motives for use of complementary and alternative medicine among cancer patients. *Altern Ther Health Med* 2004;10:58-64.
35. Sparber A, Bauer L, Curt G, Eisenberg D, Levin T, Parks S, *et al.* Use of complementary medicine by adult patients participating in cancer clinical trials. *Oncol Nurs Forum* 2000;27:623-30.
36. Harris P, Finlay IG, Cook A, Thomas KJ, Hood K. Complementary and alternative medicine use by patients with cancer in Wales: A cross sectional survey. *Complement Ther Med* 2003;11:249-53.
37. Nobili A, Garattini S, Mannucci PM. Multiple diseases and polypharmacy in the elderly: Challenges for the internist of the third millennium. *J Comorb* 2011;1:28-44.
38. Brown MT, Bussell JK. Medication adherence: WHO cares? *Mayo Clin Proc* 2011;86:304-14.
39. Igwe MN, Uwakwe R, Ahanotu CA, Onyeama GM, Bakare MO, Ndukuba AC, *et al.* Factors associated with depression and suicide among patients with diabetes mellitus and essential hypertension in a Nigerian teaching hospital. *Afr Health Sci* 2013;13:68-77.
40. Tan KC, Chan GC, Eric H, Maria AI, Norliza MJ, Oun BH, *et al.* Depression, anxiety and stress among patients with diabetes in primary care: A cross-sectional study. *Malays Fam Physician* 2015;10:9-21.