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Assessment of Awareness, Use, Attitude and the Perceived Need for Complementary and Alternative Medicine (CAM) Education, Among Undergraduate Pharmacy Students

A. IBRAHIM[A-E], B.K. LAWAL*[A,C,E,F]

Department of Clinical Pharmacy and Pharmacy Management, Faculty of Pharmaceutical Sciences, Kaduna State University, Kaduna, Nigeria

A – research concept and design; B – collection and/or assembly of data; C – data analysis and interpretation; D – writing the article; E – critical revision of the article; F – final approval of article.

Abstract

Background: In Nigeria, conventional medical practice is the main form of health care but Complementary and Alternative Medicine (CAM) still enjoys widespread popularity and usage among the population. Pharmacy students, as future health professionals, have a great role to play regarding the increasing CAM use.
Objective: To assess CAM awareness, use, attitude and the perceived need for its education among undergraduate pharmacy students.
Method: A cross-sectional study was conducted amongst pharmacy students (n= 370) of Kaduna State University (KASU). Data were collected using both online and paper-based questionnaires by total sampling. Data were analysed using SPSS Version 22 and presented as frequencies and percentages. Student *t*- test and one-way ANOVA were used to compare mean scores of attitudes towards CAM across socio-demographic groups.
Result: Three hundred and fifty (350) students responded to the survey of which majority (n= 280, 80.0%) had used a form of CAM in the past year. The most commonly used CAM modalities were Herbal/Botanical/Dietary Supplements (n= 240, 68.6%) and Spirituality/prayers (217, 62.0%). The least known of the CAM modalities were Homeopathy (n= 133, 38.0%) and Ayurveda (n= 181, 51.7%). Three hundred and forty-six (346) students agreed that knowledge about CAM will be useful to them as future pharmacists and 347 (99.1%) agreed that CAM should be included in the undergraduate curriculum. No statistically significant differences were obtained in mean attitudes scores.
Conclusion: CAM use was common and there was a general perceived need among the students for its inclusion in the undergraduate pharmacy curriculum at KASU.

***Keywords**:* Attitudes; Complementary and alternative medicine; Pharmacy education; Kaduna

INTRODUCTION

Mankind has developed unique indigenous health systems, practices, and products since the inception of human race, which are outside conventional scientific medicine and this is collectively known as Complementary and Alternative Medicine (Bodeker and Kronenberg, 2002). The National Centre for Complementary and Alternative Medicine defines CAM as "a group of various medical and health care systems, practices, and products that are not presently considered to be an aspect of conventional medicine (NCCAM, 2009).

Complementary practices are healthcare interventions that are used together with conventional medical practice whilst alternative health practices are considered to be an option to conventional medical practice (NCCAM, 2009). Alternative medicine can be defined as a broad set of health-care practices (i.e. already available to the public) that are not readily integrated into the dominant health care model, because they pose challenges to diverse societal beliefs and practices; cultural, scientific, medical and educational (Eskinazi, 1998). This form of health care is greatly influenced by culture and tradition of society and is known to play a great role in the delivery of health care in many countries around the world (Bodeker and Kronenberg, 2002). CAM encompasses natural products (herbs, vitamins and probiotics), mind and body practices (acupuncture, massage therapy, Chai chi etc.) and other traditional medical practices such African traditional medicine, traditional chinese medicine in China and Ayurvedic medicine in India. The use of Complementary and Alternative Medicine (CAM) has increased dramatically in both the developed and developing world due to its accessibility, affordability as well as its perceived efficacy and safety in treating diseases as compared to allopathic medicine. For instance, in Italy, Germany, Canada, and France the percentage of CAM use within their populations range from 70% to 90%. In the African region, 70–95% of its population relies on traditional healing methods, including herbal remedies, for maintenance of health and wellbeing (WHO, 2002).

In Nigeria, conventional medical practice is the main form of health care but CAM especially traditional medicine still enjoys widespread popularity and usage among the population. Anecdotal evidence suggests at least 70% of the population use CAM of which biological based therapies are the most common (WHO, 2008). In response to the Beijing declaration and the WHO Regional committee for Africa resolution a national traditional medicine policy was developed that serves to promote traditional medicine development and integration into the health system as well as promoting its rational use among health service providers (WHO, 2000, 2008). Achieving this goal requires health professionals to be well knowledgeable about CAM practices and products with regards to their quality, effectiveness and safety and so be better equipped to advise patients.

Following the approval by Head of Service, Complementary and Alternative Medicines department has been instituted in the Federal Ministry of Health, charged with the development, view and implementation of National policies on CAM health care services and is headed by a pharmacist.

It has also been indicated that lack of formal training is one of the limitations in providing correct information about CAM. This has the potential to put patients at risk and may lead to patient exposure to interactions with conventional medicines or adverse effects. Therefore, it is imperative that health professionals are knowledgeable about the quality, effectiveness and safety of CAM. Implementing programs that seek to address the knowledge gap about CAM among Pharmacists and other health professionals is important to achieving the overall vision of CAM integration into the national health care system (Hussain et al., 2012).

Since pharmacists are frequently cited as both accessible to patients and one of the most trusted healthcare professionals, patients routinely ask them for advice about a variety of CAM-related practices (Chang et al., 2000). For this reason, many believe that pharmacists must be better educated regarding CAM (Maclenna et al., 2002). Thus, the goal of this study was to determine the Awareness, Use, Attitude and Perceived Need for Complementary and Alternative Medicine (CAM) Among Undergraduate Pharmacy Students in KASU plays an important role in how curriculum change could be accomplished.

METHODOLOGY

Study Design and population

This study was designed as a cross sectional descriptive study. An ethical clearance was obtained from Kaduna State Ministry of Health and Human Services. All participants were provided with a participant information sheet regarding the study and were asked for a written consent to participate. All participants were also assured of anonymity and confidentiality. The ethical clearance number is 'NHREC/17/03/2018 (MOH/ADM/744/VOL.1/929)'. The study population was all students from 100 level to 500 level of the faculty of Pharmaceutical Sciences, Kaduna State University.

Study questionnaire

A questionnaire was adopted from previous studies (James and Bah, 2014). The questionnaire contains four sections; Section one contained information on background characteristics of participants, Section two contained questions on awareness and use of CAM, Section three contained items on attitude towards Complementary and Alternative Medicine (CAM) while section four contained Sources of CAM

Information, Perceived barriers to CAM implementation in KASU and Perceived Need for Pharmacy Student for CAM Education. The questionnaire was piloted before data collection amongst 20 participants for internal consistency and its Cronbach alpha calculated.

Data Collection

A questionnaire was adopted from previous studies (James and Bah, 2014). The questionnaire contains four sections; Section one contained information on background characteristics of participants, Section two contained questions on awareness and use of CAM, Section three contained items on attitude towards Complementary and Alternative Medicine (CAM) while section four contained Sources of CAM Information, Perceived barriers to CAM implementation in KASU and Perceived Need for Pharmacy Student for CAM Education. The questionnaire was piloted before data collection amongst 20 participants for internal consistency and its Cronbach alpha calculated. Data for the study was collected via online Google form shared to all students via their various class Whatsapp groups. The online form was made available for three weeks afterwards printed paper questionnaires were distributed to other students who had not previously filled the online questionnaire.

Data Analysis

Data was analysed using IBM SPSS Version 22 and presented as frequencies and percentages. Chi square test was used to determine association between socio demographic variables and attitude and perceived need for CAM. Statistical significance level was set at $p \leq 0.05$. To assess the respondents' attitudes towards Complementary and Alternative Medicines, 10 questions were rated according to a five-point likert scale (strongly disagree/disagree/neutral/agree/strongly agree). The attitude scores were graded to: poor attitude (0-15), Moderate attitude (16-25) and good attitude (26-50). The data was then analyzed descriptively using SPSS.

RESULTS

Response rate

A total number of 300 undergraduate Pharmacy students were issued the printed questionnaires and all the 300 completed and returned them. This number was added to the 50 responses gotten from the online Google form questionnaires to make a total of 350. This gave a total response rate of 94.5%.

Sociodemographic Characteristics of Respondents

The following are frequency distribution of the respondents who completed the survey, 62 (17.7%). 65 (18.6%), 67 (19.1%), 71 (20.3%) and 85 (24.3%) were from first, second, third, fourth and final year respectively. The frequency distribution based on gender indicated that, 165 respondents representing 47% were male while 185 respondents representing 53% of the distribution were females. The age distribution shows that 76 respondents representing 21.7% were in the age group of 15-20, 224 (64.0%) respondents were in the age group of 21-26, 41(11.7%) respondents were the age category of 27-32 while only 9 respondents representing 2.6% are above 32 years. This shows that majority of the respondents were within the age of 21-26. The frequency distribution with respect to religion indicated that 223 respondents representing 63.7% were Muslims while 127 respondents representing 36.3% of the distribution were Christians. Regarding tribe, the distribution shows that 172 (49.1%) were Hausa, 41 (11.7%) were Yoruba, 11(3.1%) were Igbo while 126 respondents representing 36 % have their tribe other than the above mentioned three tribes. This implies that majority of the respondents are Hausa (Table 1).

Table 1: Sociodemographic characteristics of 350 undergraduate pharmacy students respondents

characteristic	**N (%)**
Level	
100	62 (17.7)
200	65(18.6)
300	67(19.1)
400	71(20.3)
500	85(24.3)
Gender	
Male	165(47.1)
Female	185(52.9)
Age group (years)	
15 – 20	76 (21.7)
21 – 26	224(64)
27 – 32	41(11.7)
> 32	9(2.6)
Religion	
Islam	223(63.7)
Christianity	127(36.3)
Tribe	
Hausa	172(49.1)
Yoruba	41(11.7)
Igbo	11(3.2)
Others *	126(36.0)

*n = 350; *Others include Bajju, Kagoma, Ikulu, Kadara, Jaba, Igbira*

Awareness of Complementary and Alternative Medicine

Over 50% of the respondent indicated that they are aware of the various CAM modalities. With respect to awareness of the individual CAM modalities, massage was the most commonly known (84.9%). This was closely followed by Medication/Yoga/Relaxation (84.6%), spirituality/prayer (82.9%), Herbal/Botanical/Supplements (82.0%), Acupuncture (73.4%). The least known CAM modality was Homeopathy (38.0%).

Personal health and CAM use amongst KASU FPS Students

Large percentage of the respondents evaluated their overall general health as being in a good state with the highest percentage of (78.3%). When asked about their present usage of prescribed drug and non-prescribed medicines, the respondents have largely been on non-prescribed drugs (62.3%) while only (32.9%) were on prescribed medicines in the past one year. The result also showed that majority 237(67.7%) of the respondents had used at least one CAM remedy in the past one year while 113 (32.3%) did not. The distribution also shows high frequency of usage rate across respondents with many indicating that they have used between 1 and 5 CAM remedies in the last one year.

Table 2: Personal Health and CAM Usage amongst KASU FPS Students

Category	N (%)
Overall general Health	
Seriously Ill	4(1.1)
Good	274(78.3)
Satisfactory	72(20.6)
Presently on drugs prescribed for a disease condition	
Yes	115 (32.9)
No	235 (67.1)
Previous use of non-prescribed medicine/remedy	
Yes	218 (62.3)
No	132 (37.7)
Use of CAM in the past year	
Yes	237 (67.7)
No	113 (32.3)
No of CAM remedies used in the past year	
Nill	70 (20.0)
1 – 5	250 (71.4)
6 – 10	28 (8.0)
Above 10	2 (0.6)

	Reasons	N (%)
A	Recommendation by a friend or relative	241 (68.9)
B	Do not want to take medications	127(36.3)
C	Good previous experience	232(66.3)
D	Conventional treatments were ineffective	91(26.0)
E	Non-conventional treatment offers more control	27(7.7)
F	Advertisement in media	80(22.9)
G	Recommendations of medical practitioners	89(25.4)
H	Conventional treatments produce adverse effects	113(32.3)
I	Disappointed with conventional medicines	33(9.4)
J	Wanted to try non-conventional medicines	161(46.0)
K	Conventional treatments too costly	136(38.9)
L	No Reasons	17(4.9)

Reasons for use of Complementary and Alternative Medicine.

Table 3 summarized the various reasons respondents had attributed to their use of the various CAM modalities. More than 50% of the respondents have majorly indicated their reasons for use of CAM because of recommendation by a friend or relative [241(68.9%)], followed by good previous experience [232(66.3%)] and that they wanted to try non-conventional medicines [161(46.0%)]. Least of the reasons was that non-conventional treatment offer more control [27(7.7%)]

Diseases/conditions for which Complementary and Alternative Medicine was used

Figure 1 below shows that respondents had use CAM modalities majorly for general wellness (50.3%) followed by stress (46.9%) and stomach Problems (39.7%) other conditions with remarkable percentages of usage are pain (38%), malaria (25.1%), typhoid (24.6%). Insomnia is least of the conditions for which CAM has been applied.

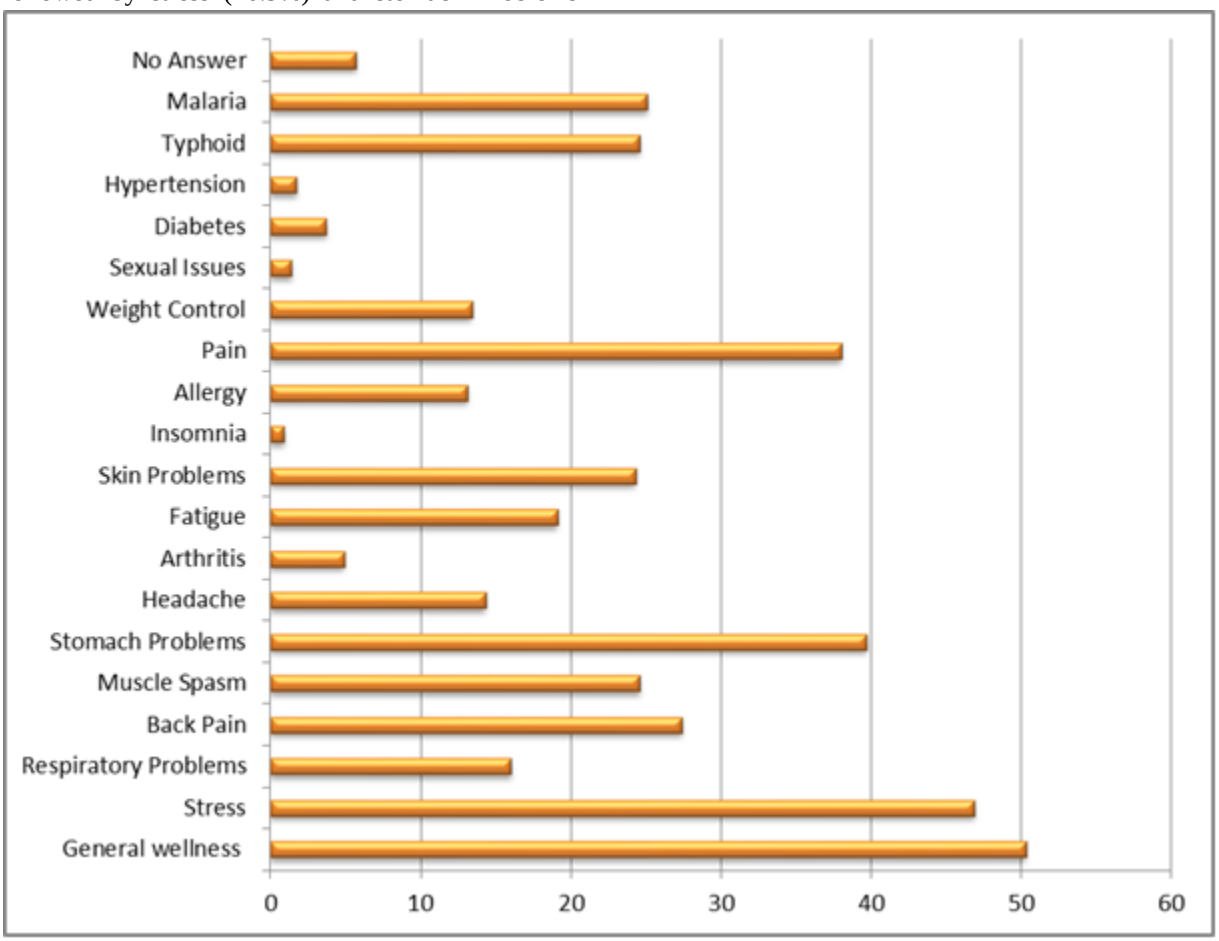

Figure 1: Diseases treated with Complementary and Alternative Medicines

Types of CAM modalities used by FPS KASU students

With regards to the use of the individual CAM modalities, herbals/botanicals/supplements (68.6%) were the most frequently used among KASU pharmacy students. This was followed by spirituality/prayer (62.0%), Medication/Yoga/Relaxation (56.0%) and massage therapy (55.4%) with Homeopathy being the least used (6.6%). See figure 2.

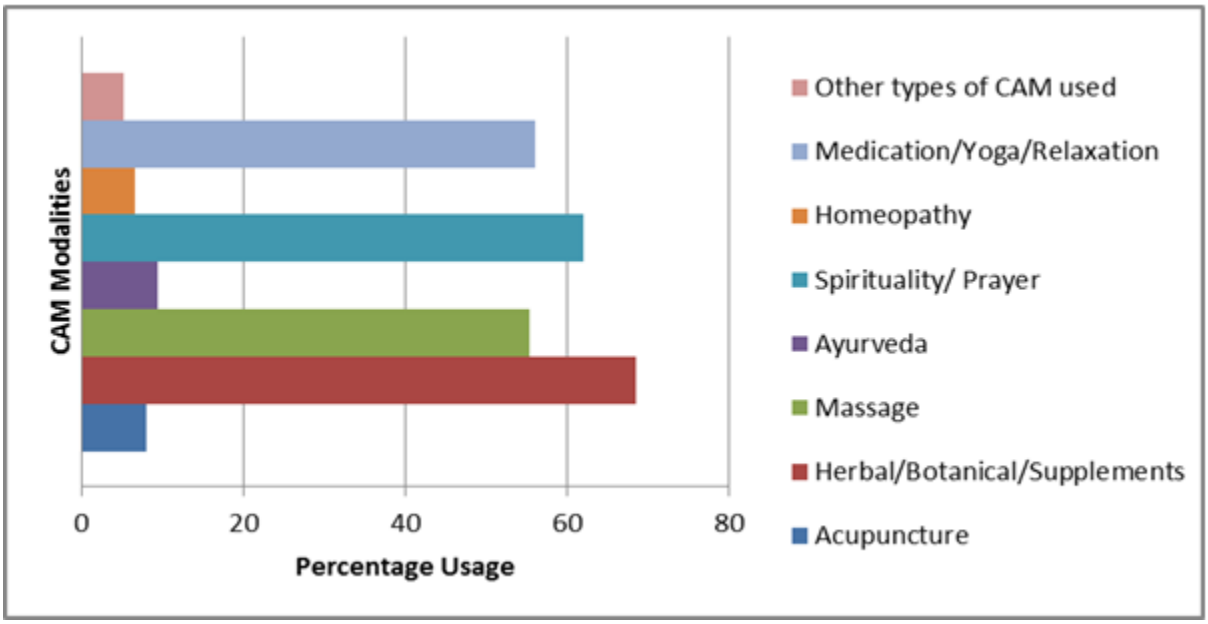

Figure 2: Complementary and Alternative Medicines modalities used by FPS KASU students

Perceived effectiveness/harmful of the CAM used

When asked for their views on how effective the CAM modalities they have used using a Likert scale type measurement. Year of the study, religion, age group and sex, did not significantly affect student's perceived effectiveness of the commonly used CAM modalities.

Respondents were further asked for their views on how harmful the CAM modalities they have used are using same type of measurement. In terms of harmfulness 201(57.4%) said they are not harmful. However, year of the study, religion, age group and sex, did not significantly affect student's perceived harmfulness of the commonly used CAM modalities. As seen in the table 4 below.

Table 4. Pharmacy students' perceived Effectiveness/Harmfulness of the Complementary and Alternative Medicines modalities they have used.

Perceived effectiveness of CAM					
Effectiveness Likert type	VI N (%)	IE N (%)	N N (%)	E N (%)	VE N (%)
	26(7.4)	6(1.7)	59(16.9)	197(56.3)	62(17.7)
Perceived Harmfulness of CAM					
Harmfulness Likert type	VH N (%)	H N (%)	N N (%)	NH N (%)	EH N (%)
	0(0)	9(2.6)	95(27.1)	201(57.4)	45(12.9)

VI =Very Ineffective, IE =Ineffective, N=Neutral, E=Effective, VE=Very Effective, VH=very harmful, H=harmful, N=Neutral, NH=not harmful, ENH=extremely not harmful

Respondent attitude towards Complementary and Alternative Medicines

Majority of the respondents said Clinical care should integrate best conventional and CAM practice [159(45.4%)], [195(55.7%)] of respondents had also agreed that patient's expectations, health beliefs and values should be integrated into the patient care process. Same trend of response was also observed from respondents when asked whether

Complementary therapies include ideas and methods from which conventional medicine could benefit 179(51.1%). However, the respondents had equally agreed that treatments not tested in a scientifically recognized manner should be discouraged [(104(29.7%)]. Majority had also disagreed that Complementary therapies are a threat to public health [107(30.6%)] and many appeared to be undecided as to whether the effects of complementary therapies are usually the result of a placebo effect [117(33.4%)]. Large percentage of respondents disapproved that CAM treatment have no true impact on treatment of symptoms, disease conditions [146(41.7%)]

An overwhelming response was received when respondents were further asked for their views on whether knowledge of CAM is important to them as a pharmacist and whether health professional should be able to advice on commonly used CAMs, with a distribution of [206(58.9%)] and [173(49.4%)] respectively. See Table 5 below.

Table 5: Attitudes of KASU FPS students towards Complementary and Alternative Medicines

Statements	SDA N (%)	DA N (%)	N N (%)	A N (%)	SA N (%)
Clinical care should integrate best conventional and CAM practice	7(2.1)	4(1.1)	98(28.0)	159(45.4)	82(23.4)
A patient's expectations, health beliefs and values should be integrated into the patient care process	17(4.9)	16(4.6)	49(14.0)	195(55.6)	73(20.9)
Complementary therapies include ideas and methods from which conventional medicine could benefit.	42(12.0)	15(4.3)	24 (6.9)	179(51.1)	90(25.7)
Treatments not tested in a scientifically recognized manner should be discouraged	41(11.7)	69(19.7)	56(16.0)	104(29.7)	80(22.9)
Complementary therapies are a threat to public health.	100(28.6)	107(30.6)	52(14.9)	49(14.0)	42(12.0)
Health and disease are a reflection of balance between positive life-enhancing forces and negative destructive forces	6(1.7)	15(4.3)	72(20.6)	160(45.7)	97(27.7)
Effects of complementary therapies are usually the result of a placebo effect	35(10.0)	86(24.6)	117(33.4)	90(25.7)	22(6.3)
CAM treatment have no true impact on treatment of symptoms, disease conditions	121(34.6)	146(41.7)	47(13.4)	34(9.7)	2(0.6)
Knowledge of CAM is important to me as a pharmacist	10(2.9)	0(0)	24(6.9)	110(31.4)	206(58.9)
Health professional should be able advise patient on commonly used CAM methods	8(2.3)	8(2.3)	10(2.9)	151(43.1)	173(49.4)

SDA = strongly disagree, DA = Disagree, n = Neutral, A = Agree, SA = Strongly Agree

Attitudes of KASU FPS Students towards CAM

The result indicates that 99.7% of the respondents showed good attitude towards CAM.

Sources of Complementary and Alternative Medicine information

Figure 3 below shows the summary of common source of CAM information among pharmacy students as being the media such as radio, Television, newspapers (64.6%) followed by CAM practitioners (51.1%) and books (45.1%). The least common source of information source was formal CAM training (8.9%).

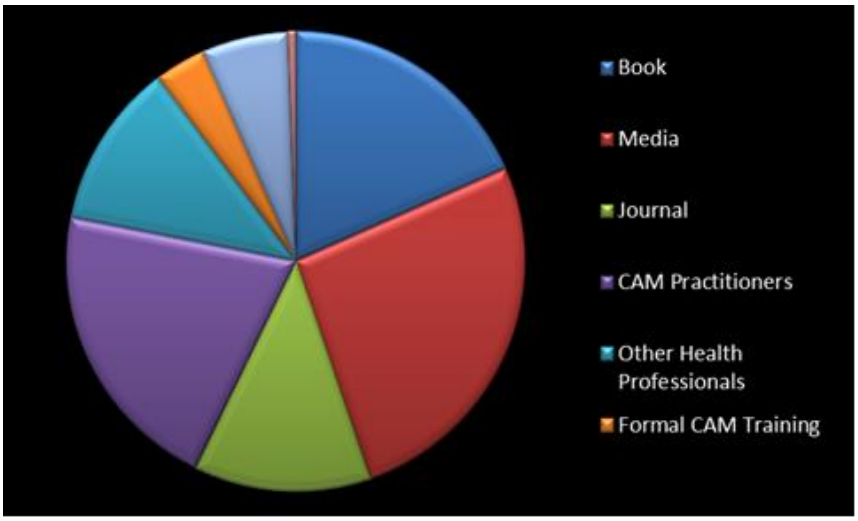

Figure 3: Sources of CAM Information among Pharmacy Student

Need for Complementary and Alternative Medicine education

When asked about the need for CAM education, nearly all of the pharmacy students [346 (98.90%),] reported that knowledge about CAM will be useful to them as pharmacists whilst [347 (99.1%)] agreed that CAM should be included into the undergraduate pharmacy curriculum at KASU. With regards to perceived barriers to appropriate use of CAM in KASU, pharmacy students had majorly indicated lack of trained professionals [321 (91.7%)] as being the key limitation, followed by lack of Knowledge of CAM [304 (86.9%)] and lack of Scientific evidence for practice [282 (80.6%)]. The least barrier considered for CAM implementation was long time for treatment [205 (58.6%)].

Table 7: Need for Complementary and Alternative Medicines education

Variables	N (%)
Usefulness of CAM as a Pharmacy professional	
Yes	346 (98.9)
No	4 (1.1)
Inclusion of CAM in Pharmacy curriculum at KASU	
Yes	347 (99.1)
No	3 (0.9)
Perceived barriers to CAM implementation at KASU	
Lack of trained professionals	321 (91.7)
Lack of scientific evidence for practice	282 (80.6)
Long time for treatment	205(58.6)
Lack of Knowledge of CAM	304(86.9)

Relationship between need for CAM education and sociodemographic characteristics

The overwhelming endorsement by pharmacy students for CAM education as presented above, was not affected by year of study, student gender, religion and age group as indicated by their percentages. The results have also shown that there are statistically significant relationships among the variables [$P<0.05$] when the respondents were asked whether knowledge about CAM is useful to them as future pharmacy

professionals and for whether CAM should be included into the pharmacy undergraduate curriculum at KASU.

Table 8: Results of bivariate analysis to determine the association of the sociodemographic variables to the perceived need for CAM education among Pharmacy students (n = 350)

	Do you think knowledge about CAM is useful to you as a future pharmacy professional?		Chi square	P-value	Do you think CAM should be included into the Pharmacy undergraduate curriculum at KASU?		Chi square	P-value
	Yes (n)	No (n)			Yes (n)	No (n)		
Year of study			.576	.030			.559	.031
First	61	1			61	1		
Second	64	1			64	1		
Third	66	1			67	0		
Fourth	71	0			71	0		
Fifth	84	1			84	1		
Total	**346**	**4**			**347**	**3**		
Gender			.909	.006			.632	.026
Male	163	2			164	1		
Female	183	2			183	2		
Total	**346**	**4**			**347**	**3**		
Age group (years)			.883	.008			.104	.087
15 – 20	75	1			74	2		
21 – 26	222	2			223	1		
27 – 32	40	1			41	0		
> 32	9	0			9	0		
Total	**346**	**4**			**347**	**3**		
Religion			.675	.005			.354	.050
Islam	217	2			218	1		
Christianity	125	2			125	2		
Total	**346**	**4**			**347**	**3**		

DISCUSSION

This study assessed the awareness, use, attitude and perceived need for Complementary and Alternative Medicine (CAM) among KASU Undergraduate Pharmacy Students. Sources of CAM information, perceived barriers to CAM implementation and the need for CAM education were also looked at. Complementary and alternative medicine (CAM) covers a diverse spectrum of ancient to new-age approaches that contend to prevent or treat disease.[2] By definition, CAM practices are not part of conventional medicine because there is insufficient proof that they are safe and effective. Generally, persons who choose CAM approaches are seeking ways to improve their health and well-being or to relieve symptoms associated with chronic, even terminal, illnesses or the side effects of conventional treatments. The percentage of people using complementary and alternative medicine, according to this survey is greater than sixty (>60%) and fewer people still don't have awareness about CAM. This study also revealed that the general students irrespective of socio-demographic characteristic consider it important for CAM to be included in the curriculum and had perceived the importance of CAM to them as future Pharmacists [$N \geq 60\%$, $P \leq 0.05$]. This awareness and widespread use of at least one form of CAM has been reported by (Peter J. 2014)[25] although at different rates. Based on Pharmacy student increased awareness and usage of most of these CAM modalities, it can therefore be argued that it has helped to heightened their inquisitiveness and serve as a motivator to learn more about these modalities. This would have impact their overwhelming endorsement for CAM to be included into the Pharmacy curriculum.

CAM was observed to have been employed mostly for the management of Pain, stress and for general wellness. Not surprisingly, the most commonly known and used CAM modality was herbals/botanical/supplements since herbal medicine and nutritional supplements are known to be widely used in Africa.[36] A similar result was observed in a study among Bristish undergraduate Pharmacy students.[10] The least known and never used CAM modality was Ayurveda. This was expected as this type of CAM practice is not known to be practised in this part of the world. With respect to the most commonly used CAM (herbal/botanicals/supplements, massage, spirituality/prayer and meditation/yoga/relaxation) modalities. This was consistent with a study done by (Koc 2018).[17] The safety and efficacy of CAM practices remain largely unknown, advising patients who use or seek alternative treatments should be based on scientific knowledge and experience of use. Nearly three quarters of the students in this study considered the CAM modalities they have used to be effective and not harmful despite limited scientific knowledge. Same was observed in a similar study.[25] This should be a course for concern to educators and health professionals as there is a tendency for them to recommend CAM therapies to patients based on personal experience. This further underscores the need for the introduction of CAM education into the undergraduate pharmacy program at KASU. There is no statistical difference in the positive attitude of the respondents towards CAM [overall mean of attitudinal score (349)] evident by the percentage responses toward CAM among Pharmacy students who took part in this study. This resonates with other study that assesses pharmacy students' attitudes toward CAM globally.[25] Students from higher classes (third to fifth years) had a high percent response (67, 71 and 84) than the lower classes (first and second years) at $P<0.05$. With respect to their sex, religion and age group, no significant differences were equally observed. In addition to having positive attitudes, access to evidenced based knowledge about CAM is vital for future Pharmacy professionals when they are required to advise patients who use or seek alternative medical therapy. In this study, the media and CAM practitioners, were the most frequent source of CAM information among students. Most of these sources are misleading and without scientific basis since they are coming from illiterate traditional healers and general public. This finding is in complete similarity with a study done among pharmacy students having media and CAM Practitioners as the most common source.[25] Lack of trained professionals, lack of knowledge of CAM and scientific evidence for practice were considered as the most common barriers to CAM practice. Similar challenges were also put forward by medical doctors in Lagos Nigeria with regards to traditional medicine practice.[1] This therefore informs the calls for inclusion of evidence based CAM training at the pharmacy undergraduate level; a move widely supported by nearly all of the pharmacy students [>60.0%)] irrespective of gender, age, level of study and religion. In addition, further studies are required to understand the pattern of CAM use among patients and the general public. This will inform the development and implementation of evidence based CAM instruction in the pharmacy faculty at KASU. The limitations to this study include; narrow scope of study area. Further studies are required to sample wider opinions of students and staff across our schools of Pharmacy in Nigeria. This will assist in excellent decision making regarding CAM education and will generally inform the development and implementation of evidence based CAM instruction in the pharmacy faculty not only in KASU but also in other Pharmacy Schools. Time constraint in data collection was another limitation to this study coupled with tight academic scheduled but effective time management and administration of online version of the questionnaire was employed to curtail the effects. Also student responses were not verified to ensure that their true beliefs and perception about CAM was captured. However, this study serves as reference point for further research concerning awareness, use and attitude of CAM among pharmacy students.

CONCLUSION

This study revealed that students at Faculty of Pharmaceutical Science, Kaduna State University acknowledge that CAM therapies can be beneficial and should be taught in the curriculum. Students showed an increased awareness and self-reported use of at least one of the CAM modalities considered in this research. Herbal/botanical/supplement, massage, spirituality/prayer and meditation/yoga/relaxation) were the most commonly known and used CAM modalities among pharmacy student surveyed with herbal/botanical/supplement being the most used massage most known. The CAM modalities especially the commonly known and used CAM modalities were generally considered to be effective and safe. There was an overall positive attitude towards CAM among pharmacy students and this confirmed an overwhelming endorsement of the need for CAM training at the undergraduate level at the Pharmacy faculty of KASU as lack CAM knowledge and less access to evidence based scientific information were considered as common limitations to CAM practice. Future studies should look at appropriate learning

methods, staff competence and faculty willingness to adopt evidence based Complementary and Alternative Medicine into the Pharmacy curriculum.
Further research should be conducted to explore wider views and opinions of both Pharmacists and Students from other schools of Pharmacy for general acceptance of CAM in Pharmacy curriculum. Scientific researches into the various CAM modalities should be encouraged and sponsored by various stakeholders. This will further increase people's awareness and believe on CAM efficacy and Safety. Also future studies should look at appropriate learning methods, staff competence and faculty willingness to adopt evidence based Complementary and Alternative Medicine into the Pharmacy curriculum.

ETHICAL CONSIDERATIONS

An ethical clearance was obtained from Kaduna State Ministry of Health and Human Services. The ethical clearance number is 'NHREC/17/03/2018 (MOH/ADM/744/VOL.1/929).

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*Address for correspondence: Basira Kankia Lawal

Department of Clinical Pharmacy and Pharmacy Management,
Faculty of Pharmaceutical Sciences,
Kaduna State University,
Kaduna, Nigeria
Telephone: +234 (0) 8036063257
E-mails: lawalbasira@yahoo.com

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