



Satisfaction, Adverse Effects and Disclosure of Complementary and Alternative Medicine Use to Doctors in Urban Slum Areas of Ibadan, Nigeria: Variation by Ethnicity

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Abstract

Background: Sometimes people use medicines other than those prescribed by their doctors. Doctors are not always aware of their patients' use of these Complementary and Alternative Medicine (CAM), and why patients may choose not to disclose. This may have implications on drug-drug interaction.

Methods: A comparative cross-sectional study between two ethnic groups. The WHO modified cluster sampling technique was used to select 800 respondents, 400 from each of the study groups. Data was analysed using SPSS 17.0.

Results: Majority were satisfied with CAM use (Yoruba 86.3%, Hausa 87.2%), fewer were willing to use CAM in future (Yoruba 36.0%, Hausa 31.7%) and fewer still would recommend CAM to others (Yoruba 21.6%, Hausa 21.0%). Only a few respondents reported adverse effect from CAM use (Yoruba 8.7%, Hausa 7.4%). The most reason given for non-disclosure of CAM use was the belief that doctors would not understand and would request the respondent to stop CAM use (Yoruba 9.3%, Hausa 3.4%). Also, doctor did not ask about CAM use (Yoruba 4.0%, Hausa 6.5%).

Conclusion: Further Research on various cam should be carried out to provide scientific information on efficacy, safety and adverse effects.

Keywords: Complementary, alternative, medicine, satisfaction, adverse effect, disclosure.

Abbreviation: Complementary and Alternative Medicine (CAM)

1. INTRODUCTION

Complementary and alternative medicine (CAM) is a group of diverse medical and health care systems, practices, and products that are not generally considered part of conventional medicine, whether they are indigenous or foreign to the culture [1]. For the purpose of this study, CAM has been classified into three: **Unprocessed herbal preparations** (unrefined herbal products and home preparations), **Processed herbal preparations** (pharmaceutically processed herbal products) and **Other CAM** (scarification, massage,

python fat, local bone setting, ritual sacrifices, incantations, wearing of charms, rings, urine therapy).

CAM use has been reported to be beneficial by a number of studies [2-5]. More than 87% of American youth reported that they were 'helped a lot' by CAM [6]. Also, the majority of the elderly in an American study (80%) reported that they had received substantial benefit from their use of CAM [7]. Many cancer patients in many European countries seemed to have benefited from using CAM, even though the benefits were not necessarily related to the

initial reason for using CAM. Some 4.4% of patients, however, reported side-effects, mostly transient [8]. Most of the study respondents in Australia thought alternative medicines were safe but thought they were, or should be, subject to the same standards as prescribed medicines. Among respondents, 92.9% wished product information to be of standard and content similar to those supplied with pharmaceuticals [9].

Ethno-medical research in Ibadan found that compounds of natural plants such as *Calotropis* sp, *Citrus* sp and a few tropical plants have proved successful as a remedy for intra-uterine fibroids without surgery. The existing fibroid masses within the uterus gradually diminish in size, until they disappear completely. The re-growth of fibroid masses within the uterus is suppressed or inhibited [10]. A similar study showed that clinically confirmed cases of ovarian cysts were treated successfully without surgery in Ibadan using natural plant medicines made from the fibre of *Cocos nucifera* and other tropical plants [11]. Twenty five percent of children with chronic conditions who used CAM in Lagos could describe some specific benefits, while most of them (67.3%) did not see any benefit from CAM use. More than 21% of these users reported various unwanted effects and 7.1% had adverse reactions [12].

Adverse effects have been reported in pregnant women and women of child-bearing age in London. The results of a study showed that prolonged use of echinacea may lead to toxicity of the liver and that prolonged use of ginseng could lead to unexplained vaginal bleeding and should be avoided by women taking oestrogens and warfarin and during the preconception and antenatal periods. *Ginkgo biloba* was found to cross the placenta and was implicated in fetal anomalies. Raspberry leaf should only be taken in the third trimester in slowly increasing doses and should be avoided by women with a uterine scar, history of preterm labour and 'precious' pregnancy.[13] Some teenagers who were studied in Benin City revealed that they were introduced to alcohol drinking by their parents out of ignorance. The majority of the teenagers (60%) reported that they started drinking alcohol concoction (mixture of alcohol and herbs) at home administered by their parents at a tender age [14].

Potential toxicity of herbal medicines due to their high levels of heavy metals [15], microbial

contamination [16] and lack of safety warnings on their labels [17] are a source of concern. A study suggests that a Nigerian herbal supplement may have toxic effect on the spleen, pancreas, and heart of male albino rat [18]. On the contrary, *T. Angelica* herbal tonic, a herbal product used for indigestion and constipation and highly patronized in Nigeria, did not cause lethality and produced no signs of intoxication in mice. It exhibited a dose-dependent enhancement in the gastrointestinal tract motility, a modest fertility-promoting effect and showed lack of abortifacient and teratogenic properties [19].

Patients who were being managed for fracture in a secondary health facility in Ogbomoso were studied to compare the outcome of previous treatment. Over 50% of the patients who were previously treated by traditional bone setters had mal-union and a quarter had non-union. Only one of them (2.8%) had no complaints and was satisfied with the outcome of treatment. Among those that were treated in the hospital from the onset, there were seven complications (14%) and most of the complications involved the loss of joint motion [20]

Over 23% of cancer patients in Enugu who used CAM were satisfied, but 68.3% were disappointed [21]. While 86.5% of these CAM users said that they will use orthodox medicine instead of CAM in the future, 9.6% said they will use the two together to help each other. Most of the users (79.8%) will not repeat CAM or recommend its use [21].

Many respondents in a Lagos, Nigeria study, across the ethnic groups, had no idea of the constituents of the herbal remedies they use for treating their malaria episodes since they buy these from traditional herbalists. A majority of respondents claimed to use the same herbs for the treatment and prevention of malaria and experience great improvement after use [Hausas (90%), Igbos (83%), Yorubas (77%) and the other ethnic groups (88%)]. There is usually no specific dose or dose regimen, however, a high proportion in all the ethnic groups use herbal preparation thrice a day and a few of the respondents take unspecified measures at arbitrary intervals [22]. Nine percent of inpatients in a secondary health facility in Ibadan experienced adverse effects with the use of herbs, whereas 2% experienced adverse reactions on co-administration with prescribed drugs [23].

Only 53% of family practice patients in a study done in America had disclosed CAM use to their doctors [24]. The majority (72%) of the respondents in America who used unconventional therapy did not inform their medical doctor that they had done so [25]. Reasons given for non-disclosure included doctors not asking about CAM use, patients do not know that they should tell the doctor, beliefs that doctors do not need to know or would not understand, doctors' potentially negative responses to CAM and not enough time for discussion during the office visit [1, 12, 21, 26-28]. A United States based study showed that men were less likely than women to have discussed CAM with a doctor [1]. A study showed that in New York, America, disclosure of CAM use to medical providers was higher for provider-based CAM than self-care CAM. Disclosure of any CAM was associated with access to and quality of conventional care and higher among non-Latino whites relative to minorities. Having a regular doctor and quality patient-provider relationship removed racial/ethnic differences in CAM disclosure. Disclosure of any CAM use was lowest among Asian Americans (27%) and highest among non-Latino whites (41%). Relative to non-Latino whites, African-Americans, Latinos and Asian Americans were significantly less likely to disclose any CAM or self-care CAM. Compared to non-Latino whites, African Americans were more likely to discuss using provider-based CAM [29]. Another American study among those who use both alternative and orthodox medicine showed that only 33% reported that they always tell their doctors about them [30].

An American based study among children in primary paediatric care practice showed that 81% of pediatric CAM users would have liked to discuss it with their pediatrician, but only 36% did so [31]. Many of the elderly in an American study (58%) did not discuss the use of these therapies with their medical doctor [32]. A study on women with breast cancer in America showed that of those being treated by an alternative practitioner, 54% disclosed their CAM use to their physicians. Reasons for not disclosing CAM use included anticipating the physician's disinterest, negative response, or unwillingness or inability to contribute useful information; the perception that the CAM therapies used were irrelevant to the hospital

treatment course; and the patients' views regarding the appropriate coordination of disparate healing strategies [33]. Many CAM users in Australia (57.2%) did not tell their doctors about it [9].

2. MATERIALS AND METHODS

2.1. Study Area

The study area was Ibadan, South-Western Nigeria. The indigenous tribe is Yoruba.

Two wards in Ibadan North Local Government Area were used - Sabo (predominantly Hausa residents) and Inalende (predominantly Yoruba residents) [34].

2.2. Study Population

The study population were adults aged 18 years and resident in selected study areas.

2.3. Study Design

The study was a comparative, cross-sectional study.

2.4. Sample Size Determination

The sample size was calculated using the formula for comparing two independent groups [35]:

$$N = \frac{2(Z_{\alpha} + Z_{\beta})^2 P_0(1 - P_0)}{d^2}$$

Where N = minimum sample size

P_0 = mean prevalence of CAM use in the 2 comparison groups i.e. $(P_1 + P_2) / 2$

$$\frac{P_1 + P_2}{2} = \frac{0.69 + 0.47}{2} = 0.58$$

P_1 = 0.69. Previous estimate of CAM use among Yoruba population [36]

P_2 = 0.47. Previous estimate of CAM use among Hausa population [36]

d = Difference between P_1 and P_2 = 0.22

Z_{α} = Standard normal deviate corresponding to the probability α , i.e. the probability of making a type 1 error at 5% = 1.96.

Z_{β} = the standard normal deviate at 80% statistical power, corresponding to the probability of making a type 2 error = 0.84

$$N = \frac{2(1.98 + 0.84)^2 0.58(1 - 0.58)}{0.22^2}$$

$$N = 387$$

A total of 400 respondents from each group were studied.

2.5. Sampling Technique

The sampling technique used was the World Health Organization (WHO) modified cluster sampling technique [37], adapted from the WHO 30 by 7 cluster sampling technique, developed by WHO in 1978 for estimating immunization coverage. A total of 400 questionnaires were administered in each ward. The ward settlements were considered as clusters and 50 questionnaires were administered in each of the 8 clusters (settlements) in Sabo and 67 in each of the first five clusters in Inalende and 65 in the sixth cluster.

2.6. Research Instrument

The research instrument was interviewer administered, semi-structured questionnaires.

2.7. Data Collection

Data was collected over a two-month period. Questionnaires were administered by trained research assistants who could speak the local language. The questionnaire was pretested in Ojoo in Akinyele LGA of Ibadan and appropriate amendments were made as necessary.

2.8. Ethical consideration

Approval for the study was obtained from the

Oyo State Ethical Review Committee. Informed consent was obtained from the respondents.

2.9. Data Management

Questionnaires were checked for errors and omissions at the end of each day. Data was analyzed using SPSS version 17.0. Frequencies, proportions, and means were compared between the two ethnic groups. Chi square test was used to test associations between categorical variables at 5% level of significance.

3. RESULTS

The sociodemographic characteristics showed some statistically significant differences between the two ethnic groups. Yorubas had an older population, more female respondents, had higher education and more professional and skilled workers. Hausas had a younger population, more male respondents and more partly skilled and unskilled workers. More Hausa respondents said that they will want to continue using CAM in future and to recommend to others. Most people did not disclose CAM use to their doctors. The most reason given was that they did not think that they should tell their doctor. A few adverse reactions from CAM use were reported. Also, Hausa respondents reported having more adverse reactions from unprocessed herbal preparations and it was statistically significant.

Table 1. Respondents' socio-demographic characteristics

Socio-demographic characteristics	Yoruba N=400 n (%)	Hausa N=400 n (%)	Total N=800 n (%)	Statistics χ^2	p-value
Age group (years)					
≤ 24	40 (10.0)	119 (29.8)	159 (19.9)		
25-34	150 (37.4)	137 (34.2)	287 (35.9)		
35-44	75 (18.8)	70 (17.5)	145 (18.1)		
≥ 45	135 (33.8)	74 (18.5)	209 (26.1)	57.817	<0.001*
Mean age (±SD) years	40.1(±15.8)	32.6 (±12.8)	36.4 (14.9)	7.360**	<0.001*
Sex					
Male	165 (41.2)	209 (52.2)	374 (46.8)		
Female	235 (58.8)	191 (47.8)	426 (53.2)	9.721	0.002*
Level of education					
No formal	59 (14.8)	95 (23.8)	154 (19.2)		
Primary	97 (24.2)	106 (26.5)	203 (25.4)		
Secondary	210 (52.5)	187 (46.7)	397 (49.6)		
Tertiary	34 (8.5)	12 (3.0)	46 (5.8)	1.081	<0.001*
Marital status					
Currently married	306 (76.5)	243 (60.8)	549 (68.6)		
Not currently married	94 (23.5)	157 (39.2)	251 (31.4)	23.042	<0.001*
Religion					
Christianity	191 (47.8)	6 (1.6)	197 (24.6)		
Islam	209 (52.2)	394 (98.4)	603 (75.4)	2.413	<0.001*
Occupation					
Professional & Skilled	142 (35.5)	86 (21.5)	228 (28.4)		
Partly skilled	224 (56.0)	254 (63.5)	478 (59.8)		

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Unskilled	34 (8.5)	60 (15.0)	94 (11.8)	22.829	<0.001*
Monthly income					
< ₦10,000	245 (61.2)	269 (67.2)	514 (64.2)		
≥ ₦10,000 (₦10,000 ≈ \$26)	155 (38.8)	131 (32.8)	286 (35.8)	3.135	0.077

*Statistically significant

**t-test

Table2. Respondents' satisfaction with use of CAM

CAM	Yoruba n (%)	Hausa n (%)	Total n (%)	χ^2	p-value
Any CAM (n = 652)					
Yes	259 (86.3)	307 (87.2)	566 (86.8)		
No	41 (13.7)	45 (12.8)	86 (13.2)	0.110	0.740
Unprocessed herbal preparations (n = 574)					
Yes	238 (90.0)	295 (92.8)	533 (92.9)		
No	18 (7.0)	23 (7.2)	41 (7.1)	0.009	0.926
Processed herbal preparations (n = 120)					
Yes	31 (77.5)	77 (96.2)	108 (90.0)		
No	9 (22.5)	3 (3.8)	12 (10.0)	Fisher's exact	0.002*
Other CAM (n = 317)					
Yes	118 (89.4)	164 (88.6)	282 (89.0)		
No	14 (10.6)	21 (11.4)	35 (11.0)	0.044	0.835

*Statistically significant

Table3. Respondents' willingness to continue using CAM in future

Alternative medicine	Yoruba n (%)	Hausa n (%)	Total n (%)	χ^2	p-value
Any CAM (n = 652)					
Yes	108 (36.0)	112 (31.8)	220 (33.7)		
No	192 (64.0)	240 (68.2)	432 (66.3)	0.080	0.777
Unprocessed herbal preparations (n = 574)					
Yes	74 (28.9)	109 (34.3)	183 (31.9)		
No	182 (71.1)	209 (65.7)	391 (68.1)	1.884	0.170
Processed herbal preparations (n = 120)					
Yes	4 (10.8)	27 (33.8)	31 (25.8)		
No	36 (90.0)	53 (66.2)	89 (74.2)	7.851	0.005*
Other CAM (n = 317)					
Yes	82 (62.1)	139 (75.1)	221 (69.7)		
No	50 (37.9)	46 (24.9)	96 (30.3)	6.180	0.013*

*Statistically significant

Table4. Respondents' willingness to recommend CAM use to other people

CAM	Yoruba n (%)	Hausa n (%)	Total n (%)	χ^2	p-value
Any CAM (n = 652)					
Yes	66 (21.6)	73 (21.0)	139 (21.3)		
No	239 (78.4)	274 (79.0)	513 (78.7)	0.035	0.851
Unprocessed herbal preparations (n = 574)					
Yes	62 (23.3)	52 (16.9)	114 (19.9)		
No	204 (76.7)	256 (83.1)	460 (80.1)	3.702	0.054
Processed herbal preparations (n = 120)					

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Yes	4 (10.0)	22 (27.5)	26 (21.7)		
No	36 (90.0)	58 (72.5)	94 (78.3)	4.812	0.028*
Other CAM (n = 317)					
Yes	17 (12.9)	60 (32.4)	77 (24.3)		
No	115 (87.1)	125 (67.6)	240 (75.7)	16.016	<0.001*

*Statistically significant

Table5. Disclosure of CAM use to doctors

Variable	Yoruba n (%)	Hausa n (%)	Total n (%)	χ^2	p-value
Disclosed	109 (30.7)	110 (28.7)	219 (29.7)		
Not disclosed	245 (69.3)	273 (71.3)	518 (70.3)	4.176	0.653
Total	354 (100.0)	383 (100.0)	737 (100.0)		

Table6. Reasons for non-disclosure of CAM use to doctors

Reasons for non-disclosure of CAM use	Yoruba n (%)	Hausa n (%)	Total n (%)	Statistics χ^2	p-value
	(n = 245)	(n = 273)	(n = 518)		
I did not think that I should tell the doctor					
Yes	193 (78.8)	237 (86.8)	430 (83.0)		
No	52 (21.2)	36 (13.2)	88 (17.0)	5.915	0.015
Doctors would not understand and would ask me to stop					
Yes	23 (9.3)	28 (7.3)	51 (6.9)		
No	222 (90.7)	245 (92.7)	467 (93.1)	0.110	0.740
Doctor did not ask about alternative medicine use					
Yes	14 (4.0)	25 (6.5)	39 (5.3)		
No	231 (96.0)	248 (93.5)	479 (94.7)	2.199	0.138
There wasn't enough time during the consultation with the doctor					
Yes	11 (3.1)	9 (23.5)	20 (2.7)		
No	234 (96.9)	266 (76.5)	498 (97.3)	0.519	0.471
I have not been to a hospital					
Yes	4 (1.1)	2 (0.5)	6 (0.8)	Fisher's exact	
No	241 (98.9)	273 (99.5)	512 (99.2)		0.580

Table7. Adverse effects experienced by CAM users

CAM	Yoruba n (%)	Hausa n (%)	Total n (%)	χ^2	p-value
Any CAM (n = 652)					
Yes	26 (8.7)	26 (7.4)	52 (8.0)		
No	274 (91.3)	326 (92.6)	600 (92.0)	0.362	0.548
Unprocessed herbal preparations (n = 574)					
Yes	10 (3.9)	35 (11.0)	45 (7.8)		
No	246 (96.1)	283 (89.0)	529 (92.2)	9.895	0.002*
Processed herbal preparations (n = 120)					
Yes	2 (5.3)	3 (3.8)	5 (4.2)		
No	36 (94.7)	77 (36.2)	115 (95.8)	0.104	0.747
Other CAM (n = 317)					
Yes	4 (3.0)	18 (9.7)	22 (6.9)		
No	128 (97.0)	167 (90.3)	295 (93.1)	5.353	0.021

4. DISCUSSION

Majority (over four-fifth) of respondents in this study were satisfied with CAM use. However, only about one-fifth of respondents of cancer patients in Enugu were satisfied with CAM use while the rest were disappointed [21]. This is understandable because our study participants used CAM for the treatment of a variety of disease conditions as compared to cancer which has poor prognosis in our environment. Other studies among American youth [6] and American elders [7] reported substantial benefits from CAM use from over four-fifth of respondents, which is similar to the result of this study. The proportion of this study respondents who are willing to continue using CAM 33.7% and recommend them to other people 21.3%, is similar to findings among respondents in Enugu where 20.2% of respondents were willing to continue use and to recommend CAM [21].

Very few respondents reported experiencing adverse reactions with the use of CAM in this study (8.0%) which is similar to the 9% reported in Ibadan [38], 7.1% in Lagos state and 4.4% in Australia [39].

No significant ethnic difference was found with regards to disclosure of CAM use to doctors though more Yoruba respondents 30.7% than Hausa respondents 28.7% had done so. This is similar to the findings of a study done among family practice patients in America where there was no association between race and disclosure [24]. However, this differed from the findings of a multi-ethnic study where disclosure was lowest among Asian Americans 27% and highest among non-Latino whites 41%. It was also found that African-Americans, Latinos and Asian-Americans were significantly less likely to disclose CAM use than non-Latino whites [30]. Generally the fewer respondents in this study disclosed CAM use when compared with CAM users in Australia 57.2% [39], the elderly 58% [7], family practice patients in America [24] and breast cancer patients in America 54% [40]. Similar reasons for non-disclosure was given in all studies, the most reason being that the doctor would not understand and would advise the respondent to discontinue.

5. CONCLUSION

Although, the majority of users expressed satisfaction with CAM use, few were willing to continue use or to recommend CAM to others. The proportions reporting adverse effects were

few. Hausa respondents reported having more adverse reactions from unprocessed herbal preparations and it was statistically significant. Many users of CAM did not disclose use to their doctors and this was similar for both ethnic groups.

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