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Health Care Seeking Behaviour and Predictors of Combined Orthodox and Traditional Health Care Utilization among Households in Communities in Owerri, Imo State, Nigeria

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Abstract

Background: Health care seeking behaviour is a complex, dynamic and multidimensional process that involves a sequence of remedial actions that are influenced by the interaction between the individual, household and community with the intention of addressing perceived ill health. **Objective:** To determine health care seeking attitude and behaviour and the predictors of combined orthodox and traditional health care use among households in communities in Owerri, Imo State. Nigeria. **Methods:** A cross sectional design that used a multistage random sampling technique to select 500 participants from households in two communities in Owerri, Imo State. Data was collected using a pretested, semi structured questionnaire. Descriptive analyses were done with frequencies and summary statistics. Chi square statistics were computed to determine significant relationships and binary logistic regression was used to determine predictors of combined use. P was set at 0.05 significance level. **Results:** The results revealed that, while just more than half of the respondents (56.4%) had a moderate to good level of overall knowledge of health care, almost all of the respondents (96.2%) also had a moderate to good level of overall positive attitude towards seeking health care; with less than one third (29.4%) using combined orthodox and traditional health care treatments. It further revealed that, respondents who were female, traders and from households of polygamous families were significantly more likely to use

combined orthodox and traditional health care treatments ($p < 0.05$) while those with a tertiary level of education, from households with a professional as head, having private water closet toilets and earning a monthly income of more than 50,000 Naira ($140) were significantly less likely to use combined orthodox and traditional health care treatments ($p < 0.05$). **Conclusion:** There is a need to be more sensitive to the realities of the combined use of orthodox and traditional treatments, as its use will be difficult to prevent because this behaviour is rooted in the traditional and cultural belief system of our societies.

Keywords

Health Seeking Behaviour, Combined Use, Orthodox and Traditional Treatments, Nigeria

1. Introduction

Health care seeking behaviour which is a sequence of remedial actions to address perceived ill health, is a complex, dynamic and multidimensional process that is not only influenced by the individual alone but by a broader interaction between the individual, household and community within the constraints of existing factors such as affordability, availability and accessibility [1] [2] [3].

In seeking health care, people's behaviour differ in relation to the number and type of health care services sought, which is influenced by the nature of the disease and who is experiencing it within the context of what they believe is the causation; and also, when it comes down to individual choices, people with care options will seek the care that perceivably meets their quality, convenience and cost [1].

Health care behaviour involves a combination of different responses such as seeking traditional care, spiritual care, drug store services, private and public orthodox care which differ over time, opportunity and circumstance in terms of the type of care individuals seek for themselves and members of their family [1]. This behaviour of serial or simultaneous engagements with different health care services are probably due to the belief that, one of the services may provide answers as to the cause of the disease or provide some form of relief or cure [4].

In Nigeria, the practice of home treatment with drugs which could be herbal or, and orthodox medicines bought without prescription from drug stores appear to be a significant health seeking behaviour, as observed in a Nigerian study, were most of the mothers within the first 24 hours of the child's illness gave them drugs at home [5].

In spite of the fact that, there is widespread popularity of modern health care services especially the private health services which includes both formal and informal drug stores; the traditional and religious health services are still commonly used and according to World Health Organization, at least 80% of people

in Africa have used traditional health service at one point or the other in their everyday lives [1] [6].

The practice of traditional health services involves the use of herbs, spiritual intervention and local practices which are occasionally based on superstition [6] [7]. Herbs are natural and as such, its use is believed to be safe, but due to the potential for undesirable interactions with orthodox standardized medicines, the inappropriate combined use, can produce harmful effects [6].

It has been suggested that due to the different perceptions of the nature of an illness, individuals and families either seek traditional health care treatments first, prior to orthodox health care treatments or vice versa, depending on the perceived degree of its potential effectiveness with respect to the different aspects of the illness; and also, the level of satisfaction received during their first treatment contact. However, this implies that both treatments are used concomitant during the course of the same illness, with traditional and orthodox health care treatments being viewed as complimentary and not as alternative treatments [1] [8].

A study in Botswana, found that 95% of patients' first point of care was an orthodox health facility after which, 47% of these patients subsequently visited a traditional health service [9]. Similarly, a Kenyan study also observed that, the traditional health care treatments coexisted with, and complemented the orthodox health care treatments [7]. Although, the orthodox health care treatments were preferred, the traditional health care treatments were still frequently consulted, especially when the diseases were perceived to be of a supernatural nature, which they attribute as the cause, for whenever treatment with orthodox health care interventions fail [7].

It is obvious that people, due to a variety of reasons within a variety of contexts, are using traditional health care treatments and probably, increasingly combining them with orthodox health care treatments as observed by their movement back and forth between health services rather than receiving care from one care point [10]. This could potentially have significant effects on health; and therefore, it is important to recognize this reality of health seeking behaviour [11]. In Nigeria, the use of combined orthodox and traditional health care treatments appear to be significant, as prevalence rates of 31%, 61.4% and 63.7% respectively have been reported in different studies [12] [13] [14].

The complex nature of health seeking behaviour especially in taking a decision towards a particular health care service is further emphasized by the fact that, educating and providing knowledge alone, is not sufficient to influence this behaviour; as other factors are required such as, the individual attitude which contributes to making the individual purposive and decisive; and also the household and the community that makes the individual interactive and dynamic [11]. Furthermore, socioeconomic factors such as sex, age, status, nature of illness, access and perceived quality of services have also been reported to influence the

individual health decisions [11] [14]. However, health care generally, and especially for the rural and urban poor cannot be effectively provided, unless there is a basic understanding of their individual and environmental characteristics, health practices and also, their value and belief system which is embodied in their attitudes towards seeking health care [15].

Thus, this study attempts to assess the health seeking behaviour and attitude, the socio-demographic and household factors that influence health seeking behaviour with respect to the use of combined orthodox and traditional health care treatments among households in communities in Owerri, Imo State, Nigeria.

2. Methodology

2.1. Study Area

The study was conducted in two Local Government Areas in Owerri city in Imo State, South East, Nigeria. By the 2006 census, with a State annual growth rate of 3.2%, Owerri municipal LGA had a total population of 125,337 (60,882 males and 64,455 females) and occupies an area of 58.5 square kilometers with a population density of about 2143 persons per square kilometer. Also Owerri North LGA had a total population of 176,334 (87,094 males and 89,240 females) and occupies an area of 200 square kilometers with a population density of about 882 persons per square kilometer [16].

2.2. Study Population/Study Design/Selection Criteria

The study population comprised male and female adults within households in communities in Owerri city, Imo State. The study was a descriptive cross sectional type. Any individual above 18 years old who had lived in the study area for at least one year was selected and interviewed.

2.3. Sample Size Estimation

The minimum sample size was calculated using the Cochrane formula [17]

$$n = \frac{Z^2 pq}{d^2}$$

When n = minimum sample size, Z = Standard normal deviate corresponding to 5% significance level, p = proportion of the target population that combined orthodox and traditional treatment in a previous study (63.7%) [14], q = 1 - p (1 - 0.64 = 0.36), d = tolerable error of margin set at 0.05, Z = 1.96. Applying the formula above, a sample size of 500 participants was used in this study to adjust for incomplete and non-response rate.

2.4. Sampling Technique

The sampling technique used to select the participants for this study was the multistage random sampling technique. The first stage involved the selection of 2 LGAs (Owerri municipal and Owerri North) from Owerri city which com-

prise 3 LGAs, by simple random sampling using ballots. The second stage involved the selection of one community each (Umuodu and Egbu respectively) from Owerri municipal and Owerri North LGAs using simple random sampling by balloting. The third stage involved the selection of one participant from the individual households in the communities. In each community, a prominent location was identified and moving in a particular direction, each consecutive household was enrolled until 250 households were selected from each community. If there were more than one adult present in any household, balloting was done to select and enroll the eligible adult after an informed consent. Any household without an adult present after two repeat visits or had only one adult present, who had not lived in the area for at least one year was skipped.

2.5. Data Collection and Analysis

Data was collected within a three month period from January to March 2016 using a pretested, semi structured, self and interviewer administered questionnaire. The questionnaire was developed by the researchers and pretested in another LGA, outside the study area. The content validity was established qualitatively using a panel of four experts that assessed each question against the intended construct. The questionnaire comprised 4 sections; section one: the socio-demographic and household characteristics; section two: the knowledge of health care; section three: attitude towards seeking health care and section four: use of health care services.

The level of knowledge of health care was determined by scoring the questions that assessed knowledge. For a single response question, an appropriate answer was scored 2; an inappropriate answer was scored 0. For a multiple response question, up to 2 appropriate answers scored 1, 3 to 5 appropriate answers scored 3 and greater than 5 appropriate answers scored 5. In assessing the level of attitude towards seeking health care, a Likert scale was used. For a positive question, a response from strongly agree to strongly disagree, a score from 5 to 1 was allocated accordingly and for a negative question, a response of "strongly disagree" to "strongly agree", a score from 5 to 1 was allocated accordingly. The aggregate scores for each respondent according to the level of knowledge and attitude towards seeking health care were translated to a percentage and assessed against a scale of less than 60% for poor, 60% - 80% for moderate and greater than 80% for good. Data was cleaned, validated manually and analyzed using Software Package for Social Sciences (IBM-SPSS) version 22. Descriptive statistics (frequency tables and summary indices) were generated. Chi Square was used to test association between socio-demographic and household characteristics; and the combined orthodox and traditional health care use. Statistically significant associations were included in the regression model and binary logistic regression was applied to determine the predictors of combined use. P value of $\leq$ 0.05 was considered significant.

2.6. Study Limitation

Accessibility and consequently, the administration of the questionnaire to most of the parents of households during the day was a limitation, as a significant proportion leave the house early in the morning and return late in the evening from their respective occupations.

2.7. Ethical Considerations

Ethical approval was obtained from the Ethics Committee of Imo State University Teaching Hospital Orlu. Informed consents were obtained from the participants. All authors hereby declare that the study was performed in accordance with the ethical standards laid down in the 1964 Declaration of Helsinki.

3. Results

Five hundred questionnaires were administered but 456 were completely and correctly filled with a response rate of 91.2%.

3.1. Socio-Demographic Characteristics of Respondents

The mean age of the respondents was 29 ± 8.2 years with majority of them being female (63.6%), students (55.3%), currently single (61.6%) and having a tertiary education (77.6%). Close to half of the respondents were of the Christian catholic faith (47.4%) and 44.7% of the respondents were adult children living with their parents in the household (Table 1).

3.2. Household Characteristics of Respondents

Most of the households heads were males (86.8%) and living in a household that is of a monogamous family setting (82.2%), with a majority of the household heads having attained a tertiary level of education (66.2%) and were either civil servants or traders (73.4%). Majority of the respondents' were living in households comprising 5 - 8 members (55.5%) which included up to 4 children (53.0%). Though, close to half of the respondents (44.7%) were unable to give an estimate of their household monthly income, a majority of the respondents were living in houses owned by them or their families (58.6%) with most of them having their water supply from private boreholes (75.9%) and using private water closet toilet facilities (81.1%) (Table 2).

3.3. Knowledge of Health Care of Respondents

Majority of the respondents were aware of what appropriate health care is (69.5%) and their source of information about appropriate health care, was from the television (58.0%) and radio (52.9%). Though a majority of the respondents indicated that the source of receiving health care treatment was from private (77.2%) and public hospitals (72.6%), about 11% - 20% indicated that the sources of receiving health care treatment were from spiritual healers (11.7%), Christian churches (14.9%), faith-based institutions (20.2%) and traditional

Table 1. Sociodemographic characteristics of respondents.

Variable	Category	Frequency (%) n = 456
Age (years) Mean age (29.0 ± 8.2)	20 - 29	297(65.1)
	30 - 39	81(17.8)
	>40	78(17.1)
Gender	Male	166(36.4)
	Female	290(63.6)
Religion	Catholic	216(47.4)
	Pentecostal	181(39.7)
	Orthodox	33(7.2)
	Others[1]	26(5.7)
Marital status	Single	281(61.6)
	Married	142(31.1)
	Others[2]	33(7.2)
Household status	Child	204(44.7)
	Father	161(35.3)
	Mother	86(18.9)
	Relative	5(1.1)
Educational level	Tertiary	354(77.6)
	Secondary	70(15.4)
	Primary	14(3.1)
	None	18(3.9)
Occupation	Students	252(55.3)
	Traders	65(14.3)
	Civil servants	57(12.5)
	Professionals	53(11.6)
	Others[3]	29(6.4)

1-traditional, Islam. 2-living with partner, separated, divorce, widow. 3-artisan, housewife.

healers (20.6%). Most of the respondents were aware of a health facility in their community (89.5%) and the type most known to them was a public hospital (85.3%); though, about 26.5% knew of the traditional healing homes in their community. Most of the respondents were aware of the different types of illnesses that can occur around them (91.9%), while most reported knowing that malaria (91.2%) can occur around them, less than 3.3% reported knowing HIV as an illness that can occur around them with majority of the respondents reporting death (74.5%) as a known consequence of poorly treated illness or disease (Table 3).

Furthermore, the more than half of the respondents (56.4%) had a moderate to good level of health care knowledge (Figure 1).

3.4. Attitude of Respondents towards Seeking Health Care

Most of the respondents strongly agreed that it is important to seek health care early when sick (82.4%). Close to half of the respondents (45.6%) were of the opinion that, what is important is seeking health care and not where you seek care first. Majority of the respondents were of the opinion that it is important to see a medical doctor first when sick (80.9%) and that, modern drugs have been researched more than traditional drugs and therefore should be only used when

Table 2. Household characteristics of respondents.

Variable	Category	Frequency (%) n = 456
Head of Household	Male	396(86.8)
	Female	60(13.2)
Occupation of Household Head	Civil servants	178(39.0)
	Traders	157(34.4)
	Professionals	86(18.9)
	Others[4]	35(7.7)
Educational level of Household Head	Tertiary	302(66.2)
	Secondary	99(21.7)
	Primary	31(6.8)
	None	24(5.3)
Household family type	Monogamous	375(82.2)
	Polygamous	81(17.8)
Household size Mean size (5.7 ± 3.6)	1 - 4	119(26.1)
	5 - 8	253(55.5)
	>8	84(18.4)
Number of children per household Mean number (4.3 ± 2.3)	0	33(7.2)
	1 - 4	209(45.8)
	5 - 8	187(41.0)
	>8	27(5.9)
House ownership	Owner	267(58.6)
	Tenant	189(41.4)
Source of water supply	Private Borehole	346(75.9)
	Public works	78(17.1)
	Others[5]	32(7.0)
Toilet facilities	Private water closet	370(81.1)
	Shared water closet	57(12.5)
	Pit latrine	20(4.4)
	Open defecation	9(2.0)
Household Monthly Income (Naira)	<10,000	23(5.0)
	10,000 - 50,000	141(30.9)
	>50,000	88(19.3)
	Cannot estimate	204(44.7)

4-artisan, student, housewife. 5-rainwater, shallow well, rivers, streams.

sick (69.5%) with a majority of the respondents (61.8%) having the opinion that traditional drugs can be very dangerous to health. Despite this, more than half of the respondents (56.5%) were either in agreement or undecided about traditional drugs being more effective than modern drugs in treating most diseases. Close to one quarter of the respondents (24.4%) were either in agreement or undecided about buying drugs from a chemist without a prescription. More than one third of the respondents (36.2%) were either in agreement or undecided about receiving a prescription from a laboratory scientist in the absence of a doctor. Though, most of the respondents were of the opinion that, it is good to take medical advice from a trained health professional (88.2%), close to one third of the respondents (31.1%) were either in agreement or undecided about seeking health care from the church or spiritual healing homes when sick. Also, close to one third of the respondents (30.2%) were either in agreement or undecided

Table 3. Respondents' knowledge of health care.

Variable	Category	Frequency (%)
Awareness of what appropriate health care is? (n = 456)	Yes	317(69.5)
	No	139(30.5)
*Source of information of what appropriate health care is (n = 317)	Television	184(58.0)
	Radio	168(52.9)
	Health care staff	136(42.9)
	School/lectures	127(40.0)
	Friends/family	105(33.1)
	Newspaper/magazine	98(31.0)
	Books	82(25.9)
	Poster/billboard	71(22.5)
	Church	57(18.0)
	Markets/town crier	45(14.2)
	Others	21(6.6)
*Sources of appropriate health care treatment (n = 456)	Private hospital	352(77.2)
	Public hospital	331(72.6)
	Pharmacy/chemist	212(46.5)
	Self-medication	156(34.2)
	Traditional healers	94(20.6)
	Faith based institutions	92(20.2)
	Christian Churches	68(14.9)
	Spiritual healers	53(11.7)
Awareness of health facility in community? (n = 456)	Yes	408(89.5)
	No	48(10.5)
*What are the types of health facility in the community? (n = 408)	Public hospital	348(85.3)
	Private hospital	294(72.1)
	Pharmacy/chemist	221(54.2)
	Traditional healing homes	108(26.5)
	Churches	74(18.1)
	Spiritual healing homes	64(15.7)
Awareness of the types of illnesses/diseases that can occur around you? (n = 456)	Yes	419(91.9)
	No	37(8.1)
*What are the different types of illnesses that can occur around you? (n = 419)	Malaria	382(91.2)
	Typhoid fever	332(79.2)
	Asthma	273(65.2)
	Diabetes	271(64.2)
	Hypertension	266(63.5)
	Ebola	239(57.0)
	Hepatitis	237(56.6)
	Cancers	233(55.8)
	Tuberculosis	217(51.8)
	Skin disease	217(51.8)
	Diarrhoea	214(51.1)
	Pneumonia	211(50.4)
	Worm infestation	202(48.2)
	Lassa fever	187(44.6)
	Others[1]	14(3.3)
*What are the consequences of poorly treated illness/disease? (n = 419)	Death	312(74.5)
	Inability to perform tasks	243(58.0)
	Fainting spells	219(52.3)
	Permanent disability	200(47.7)
	Convulsion	162(38.7)
	Coma	148(35.3)

*Multiple responses. 1-HIV, ulcer.

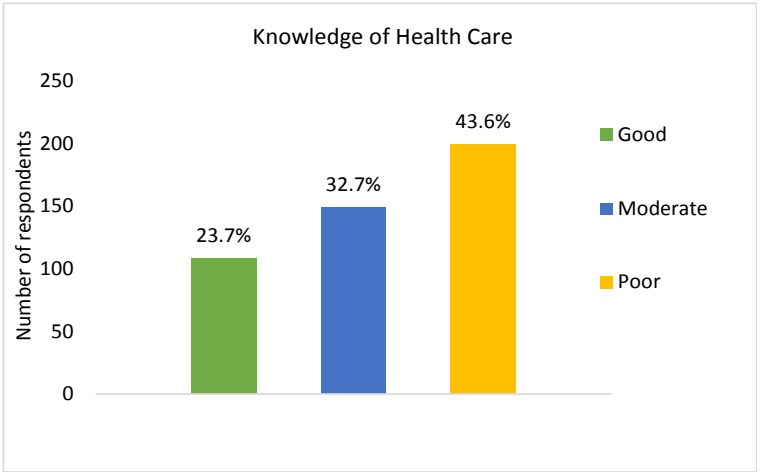

Figure 1. Level of health care knowledge of respondents.

about the importance of not going for medical check-ups except when feeling sick. While most of the respondents (95.3%) were of the opinion that eating proper foods improves health, close to one third of the respondents (30.9%) were either in agreement or undecided about stress at work being a substitute for regular exercise (**Table 4**).

Generally, most of the respondents (96.2%) had a moderate to good level of positive attitude towards seeking health care (**Figure 2**).

3.5. Use of Health Care Services by Respondents

Most of the respondents reported that, they have been sick before (95.4%) with a majority staying up to 3 days before seeking treatment (69.7%) and about 13.6% seeking treatment only when the illness becomes serious. Most of the respondents preferred using modern health care services (94.9%) with majority (63.2%) attributing effective treatment as the reason for their preference and those that preferred using traditional, all (100%) attributed culture and belief as the reason for their preference.

Close to half of the respondents when ill (48.1%), either self-medicate themselves first with home treatments or with drugs bought without a prescription from the pharmacy or chemist (formal and informal drug stores). The main reasons given for their health seeking choice of first treatment were prompt care (36.6%) personal attention (32.9%), effective treatment (26.4%) and proximity to home (24.1%). Close to one third of the respondents (29.4%) combined orthodox and traditional health care treatments when sick and the major reason for use as reported by users is that its effective (58.6%) (**Table 5**).

Furthermore, among those who do not combine orthodox and traditional care when sick, most of them use only orthodox treatment when sick (93.2%).

3.6. Socio-Demographic Factors Associated with Combined Use of Modern and Traditional Health Care Treatment

The following socio-demographic factors were significantly associated with the

Table 4. Respondents' attitude towards seeking health care.

Variable	Category	Frequency (%) n = 456
Do you think that when sick, it is important to seek health care early?	Strongly agree	375(82.4)
	Agree	70(15.4)
	Undecided	3(0.7)
	Disagree	5(1.1)
	Strongly disagree	2(0.4)
Do you think that, what is important is seeking health care and not where you seek care first?	Strongly agree	95(20.8)
	Agree	113(24.8)
	Undecided	43(9.4)
	Disagree	130(28.5)
	Strongly disagree	75(16.4)
Do you think, it is important to see a medical doctor first, when sick?	Strongly agree	195(42.8)
	Agree	174(38.1)
	Undecided	34(7.5)
	Disagree	44(9.6)
	Strongly disagree	9(2.0)
Do you think that, modern drugs have been researched more than traditional drugs and therefore should be only used when sick?	Strongly agree	157(34.4)
	Agree	160(35.1)
	Undecided	85(18.6)
	Disagree	41(19.0)
	Strongly disagree	13(2.9)
Do you think that traditional drugs are more effective than modern drugs in treating most diseases?	Strongly agree	56(12.3)
	Agree	68(15.0)
	Undecided	133(29.2)
	Disagree	145(31.8)
	Strongly disagree	54(11.8)
Do you think that traditional drugs can be very dangerous to health?	Strongly agree	125(27.4)
	Agree	157(34.4)
	Undecided	77(16.9)
	Disagree	72(15.8)
	Strongly disagree	25(5.5)
Do you think that it is okay to buy drugs from the chemist without a prescription?	Strongly agree	20(4.4)
	Agree	29(6.4)
	Undecided	62(13.6)
	Disagree	221(48.5)
	Strongly disagree	124(27.2)
Do you think that without a doctor, a prescription from a laboratory scientist is okay?	Strongly agree	26(5.7)
	Agree	66(14.5)
	Undecided	73(16.0)
	Disagree	198(43.4)
	Strongly disagree	93(20.4)
Do you think it is good to take medical advice from a trained health professional?	Strongly agree	269(59.0)
	Agree	133(29.2)
	Undecided	16(3.5)
	Disagree	24(5.3)
	Strongly disagree	14(3.1)
Do you think that the best thing to do when sick, is to go to church or spiritual healing homes?	Strongly agree	17(3.7)
	Agree	38(8.3)
	Undecided	87(19.1)
	Disagree	166(36.4)
	Strongly disagree	148(32.5)

Continued

Do you think it is not important to go for medical check-ups except when feeling sick?	Strongly agree	23(5.0)
	Agree	68(14.9)
	Undecided	47(10.3)
	Disagree	206(45.2)
	Strongly disagree	112(24.6)
Do you think eating proper foods improves health?	Strongly agree	366(80.3)
	Agree	67(15.0)
	Undecided	13(2.9)
	Disagree	1(0.2)
	Strongly disagree	9(2.0)
Do you think that stress at work is a substitute for regular exercise?	Strongly agree	28(6.1)
	Agree	47(10.3)
	Undecided	66(14.5)
	Disagree	195(42.8)
	Strongly disagree	120(26.3)

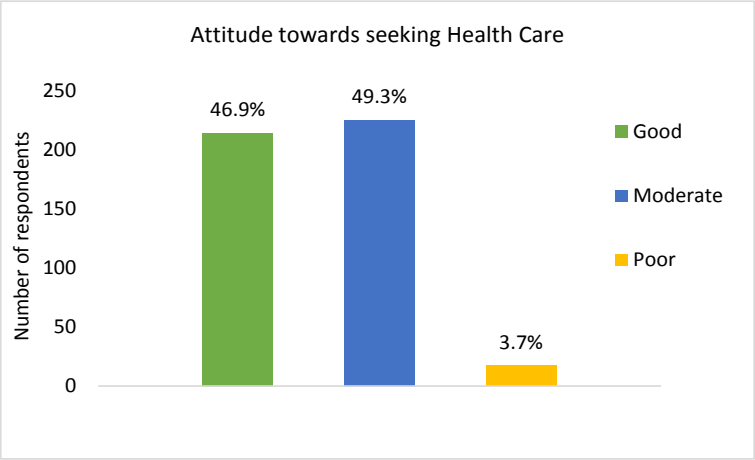

Figure 2. Level of positive attitude towards seeking health care.

use of combined orthodox and traditional health care treatments; educational level of the respondents ($p < 0.0001$) and occupation of the respondents ($p = 0.020$). On the other hand; age, gender, religion, marital status and status in the household were not significantly associated with combined use ($p > 0.05$) (Table 6).

3.7. Household Factors Associated with Combined Use of Orthodox and Traditional Health Care Treatment

The following household factors were significantly associated with the use of combined orthodox and traditional health care treatments; Gender of the household head ($p = 0.010$), Occupation of the household head ($p = 0.001$), Educational level of the household head ($p = 0.001$), Household family type ($p = 0.001$), Type of household toilet facilities ($p < 0.0001$) and Household Monthly Income ($p = 0.008$). On the other hand; Household size, Number of children per household, House ownership and Sources of water supply were not significantly associated with use ($p > 0.05$) (Table 7).

Table 5. Respondents' use of health care services.

Variable	Category	Frequency (%)
Have you been sick before? (n = 456)	Yes	435(95.4)
	No	21(4.6)
Usual duration of any illness before seeking treatment (n = 435)	Immediate	146(33.6)
	1 - 3 days	157(36.1)
	>3days	55(12.6)
	When it becomes serious	59(13.6)
	Do not seek treatment	18(4.1)
What is your preferred health care use (n = 435)	Orthodox health care	413(94.9)
	Traditional health care	22(5.1)
*If orthodox, what are your reasons for preference (n = 413)	Effective treatment	261(63.2)
	Expert management	194(47.0)
	Complication prevention	142(34.4)
	Prompt treatment	80(19.4)
	Prompt referral	54(13.1)
*If traditional, what are your reasons for preference (n = 22)	Culture/belief	22(100)
	Low cost	13(59.1)
	Proximity to home	12(54.5)
	Receives support	8(36.4)
	Receives attention	8(36.4)
	Home visits	6(27.3)
	Attitude of hospital staff	5(22.7)
Where do you seek treatment first? (n = 435)	Private hospital	132(30.3)
	Home treatments	129(29.7)
	Public hospital	96(22.1)
	Pharmacy/chemist	80(18.4)
	Faith based	16(3.7)
	Traditional healers	9(2.1)
	Churches	3(0.7)
*Why do you seek treatment first from the place you do? (n = 435)	Receive care fast	159(36.6)
	Personal attention	143(32.9)
	Effective treatment	115(26.4)
	Proximity to home	105(24.1)
	Provide support	57(13.1)
	Care is inexpensive	35(8.0)
	Cultural belief	34(7.8)
When sick, do you use combined orthodox and traditional health care treatments? (n = 435)	Yes	128(29.4)
	No	307(70.6)
If you do not, what treatments do you use? (n = 307)	orthodox only	286(93.2)
	Traditional only	21(6.8)
*Why do you use combined modern and traditional health care treatments? (n = 128)	Treatment is effective	75(58.6)
	Recommended by family and friends	35(27.3)
	A better feeling	32(25.0)
	Cultural belief	16(12.5)

*Multiple response.

3.8. Predictors of Combined Use of Orthodox and Traditional Health Care Treatment

Respondents with a tertiary level of education were significantly less likely to use combined orthodox and traditional health care treatments when compared to

Table 6. Socio-demographic factors associated with combined use of orthodox and traditional health care treatment.

Combined Modern and Traditional Health Care Treatment						
Variable	**USE (%)**	**NON-USE (%)**	**Total (%)**	**$\chi 2$**	**df**	**p-value**
Age (yrs)						
20 - 29	80(29.0)	196(71.0)	276(100)	**0.80**	**2**	**0.671**
30 - 39	22(27.2)	59(72.8)	81(100)			
≥40	26(33.3)	52(66.7)	78(100)			
Total	128(29.4)	307(70.6)	435(100)			
Gender						
Male	54(34.2)	104(65.8)	158(100)	**2.70**	**1**	**0.100**
Female	74(26.7)	203(73.3)	277(100)			
Total	128(29.4)	307(70.6)	435(100)			
Religion						
Catholic	54(26.0)	154(74.0)	208(100)	**3.81**	**3**	**0.283**
Pentecostal	56(30.8)	126(69.2)	182(100)			
Orthodox	13(39.4)	20(60.6)	33(100)			
Others	5(41.7)	7(58.3)	12(100)			
Total	128(29.4)	307(70.6)	435(100)			
Marital Status						
Single	72(26.1)	204(73.9)	276(100)	**5.11**	**2**	**0.078**
Married	47(33.8)	92(66.2)	139(100)			
Others	9(45.0)	11(55.0)	20(100)			
Total	128(29.4)	307(70.6)	435(100)			
Position in household						
Child	57(29.1)	139(70.9)	196(100)	**3.62a**	**3**	**0.305**
Father	54(33.5)	107(66.5)	161(100)			
Mother	16(21.9)	57(78.1)	73(100)			
Relative	1(20.0)	4(80.0)	5(100)			
Total	128(29.4)	307(70.6)	435(100)			
Educational level						
Tertiary	84(24.1)	265(75.9)	349(100)	**23.23a**	**3**	**0.000***
Secondary	36(50.0)	36(50.0)	72(100)			
Primary	3(50.0)	3(50.0)	6(100)			
None	5(62.5)	3(37.5)	8(100)			
Total	128(29.4)	307(70.6)	435(100)			
Occupation						
Student	69(28.2)	176(71.8)	245(100)	**11.66**	**4**	**0.020***
Trader	25(44.6)	31(55.4)	56(100)			
Civil servant	14(24.6)	43(75.4)	57(100)			
Professional	10(18.9)	43(81.1)	53(100)			
Others	10(41.7)	14(58.3)	24(100)			
Total	128(29.4)	307(70.6)	435(100)			

*Significant a likelihood ratio.

those without an education (OR: 0.19; 0.045 - 0.813, p = 0.026). Respondents that were traders were significantly more likely to use combined orthodox and traditional health care treatments when compared to those that were students (OR: 2.06; 1.134 - 3.733, p = 0.016). Female respondents were significantly more likely to use combined orthodox and traditional health care treatments when compared to the male respondents (OR: 2.29; 1.207 - 4.332, p = 0.010). Respondents where the household heads were professionals were significantly less likely

Table 7. Household factors associated with combined use of modern and traditional treatment.

Combined Modern and Traditional Health Care Treatment						
Variable	**USE (%)**	**NON-USE (%)**	**Total (%)**	**χ^2**	**df**	**p-value**
Gender of Household Head						
Male	108(27.6)	284(72.4)	392(100)	**6.71**	**1**	**0.010***
Female	20(46.5)	23(53.5)	43(100)			
Total	128(29.4)	307(70.6)	435(100)			
Occupation of Household Head						
Civil servant	58(34.5)	110(65.5)	168(100)	**16.63**	**3**	**0.001***
Trader	48(32.4)	100(67.6)	148(100)			
Professional	10(11.6)	76(88.4)	86(100)			
Others	12(36.4)	21(63.6)	33(100)			
Total	128(29.4)	307(70.6)	435(100)			
Educational level of Household Head						
Tertiary	72(23.8)	230(76.2)	302(100)	**17.49**	**3**	**0.001***
Secondary	43(43.4)	56(56.6)	99(100)			
Primary	10(47.6)	11(52.4)	21(100)			
None	3(23.1)	10(76.9)	13(100)			
Total	128(29.4)	307(70.6)	435(100)			
Household family type						
Monogamous	97(26.4)	271(73.6)	368(100)	**10.82**	**1**	**0.001***
Polygamous	31(46.3)	36(53.7)	67(100)			
Total	128(29.4)	307(70.6)	435(100)			
Household size						
1 - 4	37(33.3)	74(66.7)	111(100)	**1.12**	**2**	**0.570**
5 - 8	68(28.3)	172(71.7)	240(100)			
>8	23(27.4)	61(72.6)	84(100)			
Total	128(29.4)	307(70.6)	435(100)			
Number of children per household						
0	8(29.6)	19(70.4)	27(100)	**4.62**	**3**	**0.202**
1 - 4	68(33.7)	134(66.3)	202(100)			
5 - 8	44(24.0)	139(76.0)	183(100)			
>8	8(34.8)	15(65.2)	23(100)			
Total	128(29.4)	307(70.6)	435(100)			
House ownership						
Owner	77(29.1)	188(70.9)	265(100)	**0.04**	**1**	**0.833**
Tenant	51(30.0)	119(70.0)	170(100)			
Total	128(29.4)	307(70.6)	435(100)			
Source of water supply						
Private Borehole	96(28.7)	239(71.3)	335(100)	**1.10**	**2**	**0.577**
Public works	20(29.4)	48(70.6)	68(100)			
Others	12(37.5)	20(62.5)	32(100)			
Total	128(29.4)	307(70.6)	435(100)			
Household toilet facilities						
Private water closet	90(24.3)	280(75.7)	370(100)	**43.61**	**3**	**0.000***
Shared water closet	27(75.0)	9(25.0)	36(100)			
Pit latrine	6(30.0)	14(70.0)	20(100)			
Open defecation	5(55.6)	4(44.4)	9(100)			
Total	128(29.4)	307(70.6)	435(100)			
Household Monthly Income (Naira)						
<10,000	12(34.3)	23(65.7)	35(100)	**11.94**	**3**	**0.008***
10,000 - 50,000	42(37.8)	69(62.2)	111(100)			
>50,000	14(15.9)	74(84.1)	88(100)			
Cannot estimate	60(29.9)	141(70.1)	201(100)			
Total	128(29.4)	307(70.6)	435(100)			

*Significant.

to use combined orthodox and traditional health care treatments when compared to respondents whose household heads were traders (OR: 0.27; 0.130 - 0.577, p < 0.0001). Respondents from a polygamous household were significantly more likely to use combined orthodox and traditional health care treatments when compared to those from a monogamous household (OR: 2.41; 1.411 - 4.101, p = 0.001). Respondents from households with private water closet toilets were significantly less likely to use combined orthodox and traditional health care treatments when compared to those households that practice open defecation (OR: 0.26; 0.068 - 0.978, p = 0.047). Respondents from households with a monthly income of greater than 50,000 naira ($140) were significantly less likely to use combined orthodox and traditional health care treatments when compared to those households with a monthly income of less than 10,000 naira ($28) (OR: 0.36; 0.147 - 0.894, p = 0.024) (Table 8).

4. Discussion

This study assessed the health care knowledge, attitude towards seeking health care and the predictors of using combined orthodox and traditional health care treatments.

In our communities, the lack of awareness of what appropriate health care is, still constitutes an important barrier to seeking appropriate health care, as observed in the present study where close to one third of the respondents did not know what appropriate health care is and even though, most were aware of a modern health facility in their community which was similar to the study by Musoke *et al*. [18], about 15% - 30% of the respondents in the present study also regarded traditional healing homes, churches and spiritual healing homes as sources of treatment. Furthermore, a study among pregnant women in Nigeria [19] reported that, as high as 50% - 60% of the respondents were of the opinion that fasting and prayers and other spiritual interventions could be used as a source of treatment.

For those that knew what appropriate health care is, just above half were informed through television and radio media with less than half receiving information from health care staff. This was contrary to a study by Aboyade *et al*. [20] who reported that, the most common sources of health information were doctors and nurses before radio and television. This may explain to some extent why just above half of the respondents in the present study had an overall moderate to good level of health care knowledge, as it appears that the opportunities of educating patients on appropriate health care during health contact visits are not maximized by the health care workers. This is probably because, it has been wrongly assumed that since the patients have presented themselves to receive modern treatments, that traditional treatments will not be used in the course of the same illness; or probably due to the fact that, they are inadequately staffed or equipped to regularly educate the patients. A study by Ige *et al*. [21] reported that, previous education about illness by health care workers was significantly associated with the use of modern health care treatments. So educating our

Table 8. Predictors of combined use of modern and traditional health care treatment.

	OR (estimate)	95%(CI)	p-value
Educational level of respondents			
None	1.00	-	1.00
Primary	0.60	0.070 - 5.136	
Secondary	0.60	0.133 - 2.700	0.713
Tertiary	0.19	0.045 - 0.813	**0.026***
Occupation of respondents			
Student	1.00	-	-
Trader	2.06	1.134 - 3.733	**0.016***
Civil servant	0.83	0.427 - 1.614	0.584
Professional	0.59	0.282 - 1.246	0.165
Others	1.82	0.773 - 4.297	0.166
Gender of Household Head			
Male	1.00	-	-
Female	2.29	1.207 - 4.332	**0.010***
Occupation of Household Head			
Trader	1.00	-	-
Civil servant	1.10	0.688 - 1.755	0.699
Professional	0.27	0.130 - 0.577	**0.000***
Others	1.19	0.541 - 2.619	0.663
Educational level of Household Head			
None	1.00	-	-
Primary	3.03	0.644 - 14.257	0.276
Secondary	2.56	0.664 - 9.874	0.160
Tertiary	1.04	0.280 - 3.895	1.000
Household family type			
Monogamous	1.00	-	-
Polygamous	2.41	1.411 - 4.101	**0.001***
Household toilet facilities			
Open defecation	1.00	-	-
Private water closet	0.26	0.068 - 0.978	**0.047***
Shared water closet	2.40	0.527 - 10.928	0.411
Pit latrine	0.34	0.068 - 1.743	0.237
Household monthly income (Naira)			
<10,000	1.00	-	-
10,000 - 50,000	1.17	0.526 - 2.587	0.708
>50,000	0.36	0.147 - 0.894	**0.024***
Cannot estimate	0.82	0.381 - 1.745	0.597

communities on appropriate health care will continue to remain an important approach even though, we know that only health care education will not influence health seeking behaviour, but it will provide the foundation for implementing other effective strategies. However, the indecision of individuals about

health care further provides an opportunity for intervention with health care education in order to influence opinion.

These opportunities were obvious in the present study, where more than half of the respondents were either in agreement or undecided about traditional drugs being more effective than orthodox drugs in treating most diseases; or where close to one quarter of the respondents were either in agreement or undecided about buying drugs from a chemist without a prescription; or where more than one third of the respondents were either in agreement or undecided about receiving a prescription from a laboratory scientist in the absence of a doctor and finally, where close to one third of the respondents were either in agreement or undecided about seeking health care from the church or spiritual healing homes when sick.

In the present study, almost all of the respondents had a moderate to good level of positive attitude towards seeking health care and this is not surprising because, they willingly sought health care irrespective of the type, which could be implied from the fact that, up to 95% of the respondents sought one type of health care service or the other, ranging from orthodox health care services and self-medication, to spiritual and traditional interventions; as close to half of the respondents in the present study were of the opinion that, what is important, is to seek health care and not where you seek care first.

About three fifths of the respondents in the present study sought treatment first, either from a private hospital or by self-medicating using home treatments and this was not consistent with some other studies [18] [21] [22] [23]. In an Ugandan study [18], close to two thirds had sought treatment from a public health facility and less than one quarter opted for self-medication using drugs from drug shops; but with respect to traditional healers, only 2% admitted seeking treatment from a traditional healer which was consistent with the present study. In a Nigerian study [22], more than three fifths of the respondents sought treatment by self-medication using drugs from patent medicine stores followed by traditional healers, public health centers and private health clinics; with their commonest reason for preferred choice of visit being accessibility to the health service. This was also different from the present study, where the commonest reasons included the need to receive fast care and personal attention. Also inconsistent, was a study among the Nigerian elderly [23] where close to three quarters of the respondents sought treatment from hospitals and health centers while about 6% sought treatment from traditional healers. Similarly, in another study among Nigerian market traders [21] which was also inconsistent, observed that, treatment was sought first from self-medication using drugs from patent dealers followed by consultations with health workers, then herbalist as the least option.

However, the preferential use of private hospitals was consistently observed in a study [24] among people in a university community where it was reported that most of them patronized private health care services but this, was not similarly

observed in the study done by Ilesanmi *et al*. [25], where the respondents, who were hospital cleaners, mostly patronized the government hospitals followed by Chemist shops with a few utilizing the private health care services. In these cases, socioeconomic status and probably the level of education, may have contributed to the type of health care services that were preferentially utilized, with people in a higher socioeconomic class tending to use private health care services. According to Nabyonga *et al*. [26], rich people have the choice of utilizing private health care services because of their financial ability to pay.

Most of the respondents in the present study, strongly agreed that it is important to seek health care early when sick with more than two thirds of the respondents, actually reporting, that they usually seek treatment within 3 days of any illness. With respect to attitude, this was similarly observed in the study by Adekanle *et al*. [19] who reported that, the majority of their respondents were also of the opinion that early presentation to a health facility when sick was necessary. On the contrary, other studies [27] [28] have reported delays in promptly and appropriately seeking treatment when sick; and this has been associated with poor health seeking behaviour. This is from the fact that, a majority are first inappropriately managed at home or within the community, therefore, resulting in delays in receiving treatment from modern health care services.

In the present study, though most of the respondents preferred receiving treatments from modern health care services, close to half of them indulged in self-medication with about 29.4% of the respondents using combined orthodox and traditional treatments. This observed prevalence of combined use was consistent with an earlier comparative study done in Nigeria [12] that reported a prevalence of 31%. On the contrary, these prevalence rates were not consistently observed in some other Nigerian studies [13] [14] that reported prevalence rates of 61.4% and 63.7% respectively. The marked differences observed across these studies may be attributed to the differing sociodemographic and economic characteristics of the different study respondents; as according to Adibe *et al*. [13], combined use of orthodox and traditional treatments is significantly associated with demographic and socioeconomic characteristics of the respondents.

In the present study, the sociodemographic factors such as the educational level and occupation of the respondents were significantly associated with the use of combined modern and traditional health care treatments. This observed association of combined use with the level of respondents' education, was similar in the study by Adibe *et al*., but with respect to age and gender of the respondents, their associations with combined use were not consistent. On the other hand, the study by Duru *et al*. [14] conducted in Orlu Local Government Area in the western part of Imo State, reported that age, gender, marital status, educational level and occupation of the respondents were significantly associated with combined use, of which only the associations of educational level and occupation of the respondents were consistent with the present study. In terms of household characteristics, Duru *et al*. reported that household size and number

of children per household were significantly associated with combined use and these relationships were not similarly observed in the present study.

Furthermore, the two studies were conducted in Imo State with the present study being conducted in the Eastern part, within a study area categorized as semi-urban/urban as against the rural/semi-urban study area of Duru *et al*. conducted in the Western part. The nature of the different study areas obviously reflects on the characteristics of the household and the socio-cultural attitudes and beliefs which in turn, influences health seeking behaviour. Also, the sociodemographic characteristics of the respondents were different with respect to gender, marital status, level of education and occupation; showing different associations and risks of combined use. These varying factors highlights the role of sociodemographic and household characteristics in influencing the use of combined modern and traditional treatments as exemplified in the present study; were being a female, trader and from a polygamous household were significantly more likely to use combined modern and traditional health care treatments and while having a tertiary level of education, from a household whose head is a professional using private water closet toilet facilities and earning a monthly income of more than 50,000 Naira ($140) were significantly less likely to use combined modern and traditional health care treatments.

5. Conclusion

This study observed some level of poor health seeking behaviour and attitude from some of the households studied, thus it is important to organize the provision of health care services in such a way, as to safely guide the interaction of individuals, families and the communities with the different health care treatments and services. It is also important that the health care professionals are equipped with better insight and appreciation of the health care utilization patterns and the sociodemographic and household risk factors associated with using combined orthodox and traditional treatments. Notwithstanding, the use of combined orthodox and traditional treatments in our environment, will be difficult to prevent in spite of its potential harm; because this behaviour is rooted in the traditional and cultural belief system of our societies. Furthermore, the need to be more sensitive to the realities of the use of combined orthodox and traditional treatments is increasingly being recognized, as dismissal by health care professionals of its use among patients, will not influence patient utilization; but rather, it will reduce the opportunities the health care professionals have, to provide safe guidance and control.

Authors' Contributions

All the authors participated in the study.

Conflict of Interest

The authors hereby declare that there are no conflicts of interest.

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