Herbal Medicine: Education and Occupation Influences Its Practice among Residents of Port Harcourt, South-South Nigeria

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ABSTRACT

Herbal medicine plays an important role in Nigerian society based on its increased patronage. It encompasses the use of naturally occurring, plant-derived substances which are employed to prevent, manage, or treat illnesses. This study was conducted to assess the knowledge, attitude, and practice (KAP) of herbal medicine among the residents of Port Harcourt, Rivers State, Nigeria. A descriptive cross-sectional survey was carried out on 280 residents using self-administered questionnaires comprising demographic information and questions on the knowledge, attitude, and practice of herbal medicine. Data analysis was conducted using SPSS version 21.0 on 244 valid questionnaires. The prevalence of the use of herbal medicine among the respondents was 88.9%, as many (79.1%) believed that best treatment outcomes can be achieved when herbal medicine is used in combination with conventional medicine. Associations between respondents' demographic characteristics and overall KAP of herbal medicine showed that the level of education and occupation have a significant relationship with the respondents' practice of herbal medicine. There is a high level of knowledge, attitude, and practice of herbal medicine among residents of Port Harcourt, Rivers State, Nigeria, and education and occupation influence the practice of herbal medicine.

Key Words: *Herbs, Conventional medicine, Herb-drug interaction, Efficacy*

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INTRODUCTION

Traditional herbal medicines are naturally occurring, plant-derived substances with minimal or no industrial processing that have been used to treat illness within local or regional healing practices [1, 2]. A large proportion of the global population has been reported to used traditional herbal medicine, as reports have shown that over 80% of the people in the developing world patronize medicinal plant use in the ailment's treatment [3]. The World Health Organization (WHO) welcomes inventions around the world, which include traditional medicines, repurposing drugs, and developing new therapies in the quest for potentially treating various diseases and infections [4].

Herbal medicines comprise herbs and herbal preparations which contain parts of plants or other plant materials as active ingredients which are employed to prevent, improve, or treat illnesses [5]. Plants and herbs can be processed and can be taken in different ways and forms, as a whole herb, essential oils, ointments, teas, syrup, salves, rubs, capsules, and tablets that contain ground or powdered form of a raw herb or its dried extract [6]. They

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can be used to alternatively treat alleviating several health problems like high blood pressure, diabetes, heart diseases, and even certain types of cancer [7, 8].

A major driving force for herbal drug use is the opinion that 'they are safe because they are natural and have little or no side effects than prescription drugs'[7]. The efficacy and use of medicinal plants significantly contribute to the disclosure of their therapeutic properties. So, even if their chemical constituents are not always completely known, they are frequently prescribed [9]. Increased Interest in herbal medicine is a result of claims of effectiveness, its natural form of therapy, high cost and increased side effects of most modern drugs, and inclination towards self-medication [3]. Medicinal herbs or plants are well known to be an essential potential source of therapeutics or curative aids [9, 10]. The medicinal and therapeutic effects of various herbal plants have been reported in different researches as being antifungal [11], antidiabetic [12-14], anticancer [15, 16], antibacterial [17, 18], anti-inflammatory [19, 20], hepatoprotective [21], antioxidative [22], wound healing [23, 24], antimalarial [25, 26], antidiarrhoeal [27], CNS effects [28, 29], amongst others.

In most countries, herbal medicines and related products are introduced into the market without any mandatory safety or toxicological evaluation. In West Africa, commonly in Nigeria, over 1000 medicinal plants are being used in herbal therapy, although most of their medical effects are yet to be investigated [9]. The lack of clinical trials on traditional herbal and drugs the deficit of the well-documented safety profile of herbal medicine is a major drawback for its continuous use globally [3, 4]. Numerous researches have pointed out possible side effects of herbal medicine if taken irregularly, in excessive amounts, or combined with some other medicines [7, 30, 31].

Although herbal medicine plays an important role in Nigerian society, data on the knowledge, attitude, and practice of its use, especially by residents in Port Harcourt is limited, hence, the need for this study. This study will be of immense benefit in designing and implementing government policies relating to the adoption of herbal medicine for use. It will also be beneficial to the consumers and herbal medicine providers in appreciating the strengths and herbal medicines weaknesses in Nigeria.

MATERIALS AND METHODS

Study design

This study adopted a cross-sectional survey among residents of Port Harcourt to determine the knowledge, attitude, and practice (KAP) of the use of herbal medicine between March and May 2019. Study participants include residents of age 18 years and above within Port Harcourt. The data of the study were collected with the use of 280 questionnaires which captured information on socio-demographic characteristics of the respondents (Section A), and questions that evaluated their use of herbal medicine (Section B through Section D) of which were structured on a four-point scale response option, ranging from strongly agree (4) to strongly disagree (1). The 'Ethical Committee' of the Faculty of Basic Medical Sciences, Delta State University, Abraka, Nigeria gave an approval. Informed oral consent was obtained from the individual respondent as they willingly filled out the well-structured questionnaires.

Data analysis

The questionnaires administered were coded serially after proper sorting and cross-checking. For analysis of data, the Statistical Package for Social Sciences (SPSS) version 21.0 software was used. Using descriptive statistics including standard deviation, percentage, mean, frequency, and parametric statistics including, ANOVA statistics and t-test, obtained data were analyzed. Mean and standard deviation (SD) were used to examine the extent of the knowledge, attitude, and practice of herbal medicine among respondents. The benchmark for estimating the extent was 2.50 out of a total of 4. This means that result with a mean rating ≥ of 2.50 was assigned as "high" while a score of < 2.50 was categorized as "low". The One-Way Analysis of Variance (ANOVA)and independent samples t-test was used to compare the level of attitude, knowledge, and practice of herbal medicine among respondents based on their social-demographic data. This was done at a 0.05 level of significance.

RESULTS AND DISCUSSION

A total of 280 questionnaires were administered to the respondents, of which only 244 were filled, giving a response rate of 87.1%. One hundred and fourteen respondents (46.7%) were males, 145 (60.4%) were single. The majority of them (164; 68.3%) had tertiary education, while 52 (22.6%) were unemployed **(Table 1)**.

Table 2 shows respondents' knowledge of herbal medicine. The majority (96.8%) claimed that natural products can be used as medicine, and 228 (93.5%) claimed to be aware of the safety concerns with herbal medicine. Two hundred and six (84.4%) believed that herbal medicine could be used in the treatment of chronic diseases, while 192 (78.7%) opined that herbal medicine is superior to conventional medicine.

Table 1. Social-demographic data of respondents

Variable	Frequency	Percentage
Gender (n=244)		
Male	114	46.7%
Female	130	53.3%
Marital Status (n=239)		
Married	66	27.6%
Divorced	20	8.4%
Widowed	8	3.3%
Single	145	60.7%
Level of Education (n=240)		
No Formal Education	23	9.6%
Primary Education	25	10.4%
Secondary Education	28	11.7%
Bachelor's degree (B.Sc.)	124	51.7%
Master Degree (M.Sc.)	26	10.8%
Doctorate (Ph.D.)	14	5.8%
Occupation (n=230)		
Unemployed	52	22.6%
Self-Employed	69	30.0%
Civil Servant	42	18.2%
Trader	39	17.0%
Farmer	28	12.2%

Table 2. Respondents' knowledge of herbal medicine

S/N	Statement	Strongly agree n (%)	Agree n (%)	Disagree n (%)	Strongly disagree n (%)
1	Natural products can be used as medicines	190(77.9)	46(18.9)	2(0.8)	6(2.5)
2	I am aware of safety concerns with herbal medicines or possible interactions with conventional drugs	138(56.6)	90(36.9)	12(4.9)	4(1.6)
3	I wish to know more about these herbal products	120(49.2)	100(41.0)	21(8.6)	3(1.2)
4	The use of herbal medicine by patients could help in the treatment of chronic diseases	112(45.9)	94(38.5)	23(9.4)	15(6.1)
5	The use of herbal medicine by patients with chronic conditions could help in reducing the dose of their conventional medicine	104(42.6)	100(41.0)	29(11.9)	11(4.5)
6	Herbal medicine is superior to conventional medicine	89(36.5)	103(42.2)	33(13.5)	19(7.8)
7	Herbal remedies alone are sufficient	102(41.8)	90(36.9)	28(11.5)	24(9.8)

Respondents' attitude towards herbal medicine is shown in **Table 3**. Two hundred and twelve (86.9%) reported that herbal medicine is as effective as conventional drugs, 210 (86.1%) believed natural remedies have lesser side effects, and 193 (79.1%) thought that herbal medicine should be used in conjunction with conventional medicine to achieve best treatment outcome.

Table 3. Respondents' attitude towards herbal medicine

S/N	Statement	Strongly agree n (%)	Agree n (%)	Disagree n (%)	Strongly disagree n (%)
1	Herbal medicine is as effective at treating physical ailments as conventional drugs.	111(45.5)	101(41.4)	23(9.4)	9(3.7)
2	There are fewer side effects when taking natural remedies	108(44.3)	102(41.8)	28(11.5)	6(2.5)
3	Herbal medicine involves natural plant formulas that are healthier than taking drugs given by the medical doctor	96(39.3)	103(42.2)	33(13.5)	12(4.9)
4	Herbal medicine builds up the body's defenses and promotes self-healing	87(36.7)	115(48.5)	29(12.2)	6(2.5)
5	Herbal medicine is better for your body than pharmacological drugs.	76(31.1)	116(47.5)	40(16.4)	12(4.9)
6	Herbal medicine should only be used after conventional medicine has shown little benefit.	80(32.8)	100(41.0)	56(23.0)	8(3.3)
7	I will not use herbal medicine until it is subject to more rigorous scientific testing.	74(30.8)	108(45.0)	40(16.7)	18(7.4)

8	Using herbal medicine, the body can heal itself without pharmacological drugs	85(34.8)	97(39.8)	47(19.8)	15(6.1)
9	The physician who uses herbal medicine will have more success with helping a patient's medical concerns.	92(37.7)	102(41.8)	36(14.8)	14(5.7)
10	Herbal medicine should be used in conjunction with conventional medicines for the best treatment outcome.	97(39.8)	96(39.3)	36(14.8)	15(6.1)

Table 4 illustrates the practice of herbal medicine by respondents. A great proportion (215; 88.9%) reported to have used herbal products as medicine, 193 (79.9%) reported that they will recommend its use to others, and 170 (70.9%) revealed that they informed their herbal medicine practitioner of double use. While most (194; 81.5%) considered herbal medicine as cheaper, 79.1% (189) deemed it more accessible to them hence, their easy usage.

Table 4. Respondents' practice of herbal medicine.

S/N	Statement	Strongly agree n (%)	Agree n (%)	Disagree n (%)	Strongly disagree n (%)
1	I have used the herbal product as a medicine	112(46.3)	103(42.6)	18(7.4)	9(3.7)
2	I will recommend the use of herbal medicine to others	99(40.9)	94(38.8)	37(15.3)	12(5.0)
3	When using herbal products, I always follow the prescription	93(38.6)	102(42.3)	34(14.1)	12(5.0)
4	If I use herbal medicines and hospital medicine at the same time, I always inform my herbal medicine practitioner of double use	95(39.6)	75(31.3)	47(19.6)	23(9.6)
5	I use herbal medicine because it has no side effect	85(35.6)	95(39.7)	46(19.2)	13(5.4)
6	I consider herbal medicine cheaper	96(40.3)	98(41.2)	36(15.1)	8(3.4)
7	Herbal medicine is more accessible	98(41.0)	91(38.1)	42(17.6)	8(3.3)
8	Sometimes, I obtain herbal products from the farm	97(40.1)	97(40.1)	37(15.3)	11(4.5)
9	A family member has been treated using herbal products	87(36.1)	98(40.7)	41(17.0)	14(5.8)
10	I have been treated with herbal products by an herbal medicine practitioner	88(37.0)	75(31.5)	51(21.4)	24(10.1)

Analysis of the level of knowledge, attitude, and practice (KAP) of herbal medicine among respondents showed that the mean for all the variables is higher than the criterion mean of 2.50, which indicates that the level of knowledge, attitude, and practice of herbal medicine among respondents is high **(Table 5)**.

Table 5. Analysis of the knowledge, attitude and practice (KAP) of use of herbal medicine

Variable	N	Mean	SD	Remark
Knowledge	244	3.29	.80	High
Attitude	244	3.08	.85	High
Practice	244	3.09	.87	High

Criterion Mean = 2.50

Associations between respondents' demographic characteristics and overall KAP of herbal medicine are shown in **Tables 6 and 7**. The level of education did not influence respondents' knowledge and attitude towards herbal medicine; however, the practice of herbal medicine was influenced significantly. Further post-hoc analysis revealed a significant difference in the practice of herbal medicine among residents with primary education, bachelor's, and master's degree education. The result showed that residents with primary education were more likely to use herbal medicine, followed by those with no formal education, secondary education, and tertiary education **(Table 6)**. **Table 7** shows the influence of occupation on respondents' knowledge, attitude, and practice of herbal medicine. The result indicated that occupation had no influence on respondents' knowledge and attitude of herbal medicine but its practice was significantly influenced. Further post-hoc analysis showed that farmers were more likely to practice herbal medicine, followed by self-employed residents and traders. Civil servants were shown to be less likely to practice herbal medicine.

Table 6. Comparison between the level of education and KAP of herbal medicine

Variable	ANOVA	Sum of Square	df	Mean Square	F	Sig	Remark
Knowledge	Between Groups	2.656	5	.531	1.738	.127	Not Significant
	Within Groups	71.807	235	.306			
	Total	74.463	240				
Attitude	Between Groups	2.418	5	.484	1.501	.190	Not Significant

	Within Groups	75.720	235	.322			
	Total	78.137	240				
Practice	Between Groups	8.255	5	1.651	4.466	.001	Significant
	Within Groups	86.868	235	.370			
	Total	95.123	240				

$p < 0.05$

Table 7. Comparison between occupation and KAP of herbal medicine

Variable	ANOVA	Sum of Square	df	Mean Square	F	Sig	Remark
Knowledge	Between Groups	2.690	4	.672	2.281	.062	Not Significant
	Within Groups	66.643	226	.295			
	Total	69.333	230				
Attitude	Between Groups	2.489	4	.622	1.987	.097	Not Significant
	Within Groups	70.779	226	.313			
	Total	73.268	230				
Practice	Between Groups	3.980	4	.995	2.612	.036	Significant
	Within Groups	86.098	226	.381			
	Total	90.077	230				

$p < 0.05$

Usage of herbal products as medicine is common in Africa particularly among the Nigerian population [3, 32]. Various researches have been carried out to ascertain the extent of herbal use as well as the level of knowledge, attitude, and practice of herbal medicine among Nigerians [32-35]. This present study revealed a high level of knowledge, attitude, and practice of herbal medicine among residents of Port Harcourt, Rivers State, Nigeria.

The majority of respondents (96.8%) were very much aware of the use of herbal products as medicine, which was as high as the findings of the study conducted in Jos, Nigeria (100%) [33] and another similar study in Wayu town, West Ethiopia (78.6%) [36]. About 94% reported being aware of the safety concerns with herbal medicine, which is much higher than the study conducted in Ethiopia where 60.7% were aware [36]. However, 86.1% believed that natural remedies have lesser side effects. Similarly, over 70% of herbal users in Jos considered it safe for use [33].

A high proportion of respondents (78.7%) opined that herbal medicine was more superior in therapy to conventional medicine, and it can be useful in chronic disease therapy (84.4%). A similar survey reported a far lesser view (35.7% and 28.8%) on the effectiveness of complementary and alternative medicine (CAM) to modern medicine [36, 37]. Most respondents in this study (79.1%) believed that the best treatment outcomes can be achieved when herbal medicine is used in combination with conventional medicine. This finding differs from a study in Ibadan, Nigeria where only 30.5% agreed [34]. One study found that 40% of pregnant women used herbal remedies and about 85% of them alongside conventional drugs [38]. Respondents may have failed to consider the possibility of herb-drug interaction, as many are poorly informed about these products [3].

The prevalence of the use of herbal medicine among respondents was 88.9%, which is consistent with other studies where prevalence was reported at 79.2% [33], 84.7% [39], and 89.7% [34, 40]. This increased use of herbal medicine may be attributable to its low cost and easy accessibility [3, 33].

Associations between respondents' demographic characteristics and overall KAP of herbal medicine revealed that the level of education and occupation significantly influenced respondents' practice of herbal medicine, which was more notable among persons with primary education and farmers. This implies that residents with a lower level of education are more likely to use herbal medicine than those with higher levels of education. This correlates with prior findings where, in low resource settings, a lower level of education was associated with herbal medicine use [34, 41-43].

CONCLUSION

There is a high level of knowledge, attitude, and practice of herbal medicine among residents of Port Harcourt, Rivers State, Nigeria. The findings showed that education and occupation influence the practice of herbal medicine. With the increased use of herbal medicine by Nigerians, the need has arisen for government to make much effort in standardizing herbal medicine for general public use.

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