

Original Research Article

Use of herbal medicines in a Nigerian community and their reported adverse effects: A pilot study

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Abstract

Purpose: To evaluate the use of herbal medicines in Nsukka community and determine the adverse reactions associated with this practice.

Methods: A cross-sectional survey of 120 persons was conducted in Ogige market, Nsukka using self-administered questionnaires. Outcomes measured included proportion of respondents who use herbal medicines and their reasons, their perception on the safety and effectiveness of the medicines, their purchasing habits of the medicines, those who recommend the medicines, and adverse reactions to them. Frequency analysis and Pearson's correlation test were conducted with statistical significance set at $p < 0.05$.

Results: Less than half of the respondents (43.2%) took herbal medicines without consulting a health professional, and more than 60 % of them believed that herbal medicines are safe and effective. Only 47.4 % of the respondents claimed to have ever experienced mild adverse effects following the use of the medicines which were resolved with advice sought from health professionals. Stooling and vomiting were the major reported adverse effects. Older respondents had a better perception on the safety of herbal medicines ($p = 0.005$) and are less likely to tell their health professionals that they are already taking herbal medicines when orthodox medicines are prescribed/recommended for them. High-income earners spent more on herbal medicines ($p = 0.029$) than others.

Conclusion: Many respondents use herbal medicines without consulting a health professional. However, most of them seek advice from health professionals when adverse effects result from these medicines during use.

Keywords: Adverse effects, health professionals, herbal medicines use, Nsukka community

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INTRODUCTION

The World Health Organization (WHO) defined herbal medicines as "herbs, herbal materials, herbal preparations and finished herbal products

that contain as active ingredients parts of plants, or other plant materials, or combinations" [1]. Although, herbal medicines may be produced from any part of the plant, they are commonly made from the leaves, roots, bark, seeds, and

flowers [3]. The herbs are eaten, swallowed, drunk, inhaled, or applied to the skin [2]. In spite of the great advances observed in modern medicine in recent decades, medicinal plants still play a key role in world health [4].

The interest in plant remedies has been spurred by several factors including their effectiveness, the high cost and side effects of orthodox medicines, improvements in the quality, safety, and efficacy of herbal medicines with the development of science and technology, self-medication, and the belief that herbal medicines might be effective in the treatment of any disease where conventional therapies have failed [4-6]. In most countries, herbal products do not have to meet the quality control measures applicable to orthodox medicines [3]. While they may be useful in treating different ailments [7-9], they may be associated with various adverse reactions. This absence of uniform product standardization has raised some concerns [11,12].

The increasing numbers of internet websites that sell and promote herbal supplements have exposed unsuspecting consumers to inaccurate claims regarding these products [3,10]. In Nigeria, the use of vehicles with loudspeakers for advertising herbal products in villages, towns and cities is common. Many patients in Enugu use a wide range of herbal medicines in addition to their conventional medicines [13], without informing their healthcare providers about the concomitant use of the herbs with orthodox medicines. Some healthcare professionals also do not ask questions about their use of herbal medicines due to inadequate knowledge about their use [11]. Therefore, the objective of this study was to ascertain the use of herbal medicines by Nsukka community in Enugu State and to determine adverse reactions associated with this practice.

METHODS

This study was a cross-sectional and descriptive survey carried out in Ogige market, Nsukka Local Government Area, Enugu State. Nsukka is located about 70 km North of Enugu in South-Eastern Nigeria. It is the second biggest town in Enugu State and hosts the first indigenous Nigerian university, University of Nigeria, Nsukka. The Ogige market is Nsukka's largest market and it attracts not only residents of the local government area but also the surrounding local government areas, towns and States, such as Kogi and Benue States.

For this pilot study, 120 respondents were conveniently sampled from five sections of the

study area. Respondents were restricted to those who were 18 years and above. Those who could not communicate in English were excluded from the study.

Data were collected using a 34-item structured self-administered questionnaire which was given to consenting participants to fill out. The statements in the instrument were modified from previously validated questionnaires to suit the study area. Information sought in the questions included respondents' sociodemography, use of herbal medicines and the reasons, perception on the safety and effectiveness of herbal medicines, their purchasing habits of the medicines, those who recommend them, and adverse reactions to them. Oral consent was obtained before issuing the survey instrument. Willingness to participate in the study was taken as consent and participants were informed that they were free to withdraw at anytime. Confidentiality was maintained as the names of the respondents were not requested.

Data analysis

Data was coded and entered into the Statistical Package for Social Sciences (SPSS) Windows version 16.0 (SPSS Inc, Version 16, Chicago, USA) for analysis. Frequency analysis was conducted for the demographics. Data were analyzed by Pearson Correlation test with statistical significance set at $p < 0.05$.

RESULTS

Demographic characteristics and participation rates

A total of 93 questionnaires were completed and returned, representing a participation rate of 77.5%. Most of the respondents were below 40 years of age (78.9%). Majority of them were literate with 80.9% having either a Diploma or Bachelor degree. More than half of them were self-employed (67.0%), mainly as traders (58.0%). Most respondents (56.9%) claimed to earn less than ₦50,000 monthly (Table 1).

More than half of the respondents claimed to have taken herbal medicines in the past 12 months but only about a quarter of them preferred herbal medicines to orthodox medicines (Table 2). More than half of the respondents perceived herbal medicines as safe and effective (Table 3).

More than half of the respondents who use herbal medicines reported spending less than ₦500 monthly (US\$ 1.0 = ₦363.00) on the

Table 1: Demographics of respondents in the survey (N = 93)

VARIABLE	NUMBER OF RESPONSES (%)
Age (in years)	
18 - 29	45 (50.0)
30 - 39	26 (28.9)
40 - 49	18 (20.0)
50 - 59	1 (1.1)
> 60	0 (0.0)
Gender	
Male	46 (51.1)
Female	44 (48.9)
Marital Status	
Single	49 (55.1)
Married	36 (40.4)
Divorced	1 (1.1)
Separated	2 (2.2)
Widowed	1 (1.1)
Religion	
Christianity	72 (80.0)
Islam	2 (2.2)
Traditional	5 (5.6)
Others	11 (12.2)
Highest Level of Education	
Did not go to school	2 (2.2)
Primary school	2 (2.2)
Secondary school	11 (12.4)
Diploma	28 (31.5)
Bachelor degree	24 (49.4)
Postgraduate degree	2 (2.2)
Current work status	
Self-employed	59 (67.0)
Employed full-time	8 (9.1)
Employed part-time	8 (9.1)
Unemployed	13 (14.8)
Occupation	
Farming	1 (1.2)
Trading	47 (58.0)
Professional	17 (21.0)
Others	16 (19.8)
Income Level Per Month	
< ₦ 10, 000	8 (10.1)
₦ 10, 000 to < ₦ 50, 000	37 (46.8)
₦ 50, 000 to < ₦ 100, 000	19 (24.1)
₦ 100, 000 to < ₦ 150, 000	14 (17.7)
> ₦ 150, 000	1 (1.3)

Table 2: Reported use of herbal medicines by respondents

VARIABLE	N (%)
Used herbal medicines previously	59 (71.1)
Used herbal medicines in the past 12 months	53 (65.4)
Prefer herbal medicines to orthodox medicines	19 (24.7)

medicines with most recommendations coming from family members or friends (Table 4 and Table 5).

Stooling and vomiting were the two most common adverse effects the respondents

experienced with herbal medicines (Figure 1). Most adverse reactions to herbal medicines experienced by the respondents were mild and majorly resolved by seeking advice from healthcare professionals (Table 6).

Table 3: Respondents' opinion on the effectiveness and safety of herbal medicines

VARIABLE	N (%)
Effectiveness	
Very effective	5 (5.9)
Somewhat effective	53 (62.4)
Not effective	2 (2.4)
Not sure	25 (29.4)
Safety	
Very safe	5 (5.8)
Somewhat safe	47 (54.7)
Not safe	5 (5.8)
Not sure	29 (33.7)

Table 4: Expenses on herbal medicines and reasons for their use

VARIABLE	N (%)
Monthly expenditure on herbal medicines	
Up to ₦ 500	35 (55.6)
₦ 500 to less than ₦ 1000	9 (14.3)
₦ 1000 to less than ₦ 5000	19 (30.2)
more than ₦ 5000	0 (0.0)
Reason respondents take herbal medicines	
It keeps me healthy	54 (72.0)
To prevent disease	52 (68.4)
To treat a specific disease or symptom	36 (49.3)
It fits into my way of life	23 (30.7)
Health problem is not serious enough to take prescription medicines	34 (44.7)
They work better or just as well as other medicines	40 (53.3)
They were recommended to me	28 (37.3)
It gives me a sense of control over my health	35 (46.1)
They have few side effects	25 (33.3)

Table 5: Recommendation of herbal medicines

VARIABLE	N (%)
Those who recommend herbal medicines to respondents	
Doctors	3 (4.1)
Nurses	0 (0.0)
Pharmacists	1 (1.4)
Pharmacy Assistants	0 (0.0)
Family/Friends	44 (59.5)
Self	21 (28.4)
Patent and Proprietary Medicine Vendors	1 (1.4)
Herbalists/Traditional Healers	1 (1.4)
Not Sure	2 (2.8)

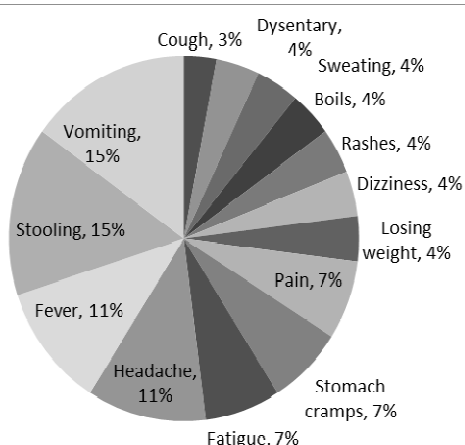


Figure 1: Major adverse effects experienced with herbal medicines as reported by respondents

Most respondents who use the herbal medicines obtained their products mainly through the different individuals and companies operating under the 'networking business approach' with community pharmacies rarely patronized either due to inconvenience or higher cost (Table 7).

DISCUSSION

This study has revealed that more than 50% of those evaluated used herbal medicines with

Table 6: Adverse reactions to herbal medicines

VARIABLE	N (%)
Ever experienced an adverse reaction to a herbal medicine	37 (47.4)
Seriousness of the reaction	
Severe (required hospitalization)	3 (5.7)
Moderate (symptoms required a visit to a doctor or other healthcare professional)	2 (3.8)
Mild (no specific treatment was required)	28 (52.8)
Not applicable	20 (37.7)
Those informed about the adverse reaction	
I didn't tell anyone	6 (11.1)
A doctor	2 (3.7)
A pharmacist	1 (1.9)
A pharmacy assistant	2 (3.7)
Family/friends	5 (9.3)
Rang a professional help line (e.g. NAFDAC)	2 (3.7)
The product manufacturer	16 (29.6)
Not applicable	20 (37.0)
How respondents handled the adverse reaction	
I stopped using the product which I think caused it	6 (11.1)
I reduced the dose I was taking	1 (1.1)
I changed to another herbal medicine	1 (1.1)
I sought advice from a healthcare professional	21 (38.9)
Not applicable	25 (46.3)

Table 7: Purchasing habits of respondents

VARIABLE	N (%)
Where respondents purchase their herbal medicines	
Pharmacy	10 (14.9)
Internet	6 (9.0)
Hospital/Clinic	5 (7.5)
Networking	31 (46.3)
Others	15 (22.4)
Major reasons respondents don't purchase herbal medicines from a pharmacy	
It is too expensive	19 (26.8)
They don't have the specific product I want	5 (7.0)
I get better advice about these products elsewhere	3 (4.2)
I don't need pharmacists' advice about these products	8 (11.3)
It is not convenient for me	19 (26.8)
Not applicable	17 (24.0)
Others	
Major reasons respondents purchase herbal medicines from a pharmacy	
It is cheaper than elsewhere	0 (0.0)
They have the specific product I want	2 (3.3)
I get better information about herbal medicines from the pharmacy than elsewhere	15 (24.6)
It is convenient for me	12 (19.7)
Not applicable	30 (49.2)
Others	2 (3.3)

many of them perceiving the medicines as safe and effective. For those who used the medicines, less than ₦ 5000 was spent monthly on them. While the main source of these medicines was vendors operating under the 'network sales groups, the medicines were mainly recommended for the users by family members or friends. Stooling and vomiting were the two most common adverse effects reported by the users while most adverse reactions experienced by the respondents were mild and often resolved by seeking advice from healthcare professionals.

In this study, older respondents had a better perception on the safety of herbal medicines and are less likely to tell their health professionals that they are already on herbal medicines when orthodox medicines are prescribed/recommended for them.

Although the use of the herbal medicines is popular, more than half of the respondents spent less than ₦500 monthly on the medicines most probably because of their poor earnings as majority of them earned below ₦ 50,000 monthly. The high rate of the use of herbal medicines is similar to that earlier reported [14,15] possibly due to the perception that these medicines are more cost-effective and safer than orthodox medicines. The low proportion of the respondents that reported using the medicines at the recommendation of their physicians is equally similar to what of earlier reported [14] signifying that most herbal medicine users have other drivers for utilizing herbal medicines besides health care professionals or assistants. The reliance on family members or friends to recommend the use of herbal medicine as observed in this study follows the path of traditional use of medicines as most of them did not feel they require advice from a health professional to use herbal medicines [14]. The perceived safety and effectiveness of the medicines by the users and the fact that most of them sought advice from a health professional when they experience adverse effects greatly supports this assumption.

Some studies have reported poor knowledge of the pharmacists in the phytopharmaceuticals sold in pharmacies indicating an urgent need for intensive training in order to render better services to their clients [13,16]. If community pharmacists cannot meet the health care needs of patients as regards herbal medicines, these patients may resort to other less credible sources. To encourage the informed use of herbal medicines there is a need for the development of accessible, quality resources on herbal medicines. Also, incorporation of

complementary medicines into pharmacy curricula would better prepare graduate pharmacists for community practice and ultimately, contribute to the safe and effective use of herbal medicines to the benefit of consumers [17]. Self-medication should not be discouraged in totality but should be practiced under controlled conditions and community pharmacists who are usually readily accessible may help to ensure safe self-medication practices [18,19]. Obviously, the results of this study cannot be directly generalized to other towns, cities or states in Nigeria. However, complementary medicines are now commonplace in Nigeria and this study opens channels for further research in the use of these medicines in Nigeria.

CONCLUSION

Herbal medicines are widely used in Nsukka community but are hardly purchased from the community pharmacies or obtained from hospitals/clinics. Although some users may experienced stooling and vomiting, the adverse reactions to the herbal medicines were mostly mild and resolved with advice sought from healthcare professionals. Knowing that herbal medicines are frequently used by many people, it becomes important that patients are encouraged to consult healthcare professionals (especially pharmacists who are the experts on medicines) prior to use of herbal medicines rather than only when there are adverse reactions to the medicines. The need for the pharmacists to regularly update their knowledge on complementary medicines through symposia, conferences, update lectures etc is of the essence. The findings in this works calls for urgent need for the government to quickly apply measures that will eliminate the sale of herbal medicines by non-healthcare professionals.

DECLARATIONS

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Conflict of interest

The authors have no conflict of interest to declare.

Authors' contribution

AKC and IAN conceived the study, designed the study and questionnaire and drafted the manuscript. AKC performed the statistical analysis. BMO participated in the design of the questionnaire and was actively involved in the data collection phase. EEA performed the data entry and reviewed the manuscript. SON reviewed the statistical analysis and manuscript. MJO reviewed the manuscript for submission.

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