

## LEVEL OF KNOWLEDGE AND USE OF HERBAL MEDICINE IN THE ADULT POPULATION OF MUSHIN LOCAL GOVERNMENT AREA OF LAGOS STATE

By

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### **Abstract**

*Herbal medicine which has existed for centuries as a form of treatment became relegated to the background by the advent of modern medicine; however it is becoming increasingly popular in recent times. This study was a descriptive cross-sectional study carried out in Mushin LGA, Lagos using multi-stage sampling technique and interviewer-administered questionnaires with results analyzed using Epi info software version 7. The findings of this study revealed a low level of knowledge (40.83%) of herbal medicine, its side effects, possible contaminants and regulations despite a high level of use (85.02%). It was also revealed that low income earners and individuals not covered by health insurance had poor knowledge when compared to higher income earners and individuals with health insurance coverage. Also, a higher proportion of those with poor knowledge used herbal medicine as opposed to those with good knowledge. It is therefore recommended that health education on herbal medicine, its uses, benefits and its side effects be given to adults using methods that focus on individuals such as health education during clinic visits, health campaign and the use of media. Interplay between conventional and herbal medicine practitioners would also ensure safe usage of medication.*

**KEYWORDS:** *Herbal, medicine, knowledge, use, products, side effects*

### **INTRODUCTION**

Herbal medicine has existed as a form of treatment for thousands of years with over eleven thousand species of medical plants used either singularly or in mixtures. It has been widely used to treat ailments and diseases across all tribes and races with its earliest documented use recorded about five thousand years ago.

Traditional systems have also existed over the years in various countries including but not restricted to Ayurveda, Unani system, Maori medicine, Australian bush medicine, traditional Chinese medicine and so on. The increasing popularity of herbal medicine has attracted the attention of the World Health Organization (WHO) prompting the development of the traditional medicine strategy 2014-2023. Complementary and Alternative Medicine (CAM) is the adopted term in developed countries and lists herbal medicine, herbal products and supplements as important aspects. CAM as defined by the National Center for Complementary and Integrative Health is a non-mainstream practice used together with conventional medicine while alternative medicine is a non-mainstream practice used in place of conventional medicine.

Herbal medicine is an aspect of CAM that has been defined by the WHO as plant derived materials or products with therapeutic or other human health benefits which contain either raw or processed ingredients from one plant or more plants. It can be administered as a whole, part of a preparation or as finished products excluding purified and laboratory prepared substances. It has evolved over time into various forms for ease of use including topical, oral, intramuscular and intravenous forms. Nigerian Herbal Remedies (NHR) consists of a cocktail of herbs and other ingredients known only to the manufacturer which can be in the form of oral suspensions, syrups, powder or capsules.

Traditional medicine refers to diverse health practices, approaches, knowledge and beliefs that incorporate plant, animal and/or mineral based medicines, spiritual therapies, manual techniques and exercises which are used singularly or in combination to maintain well-being as well as to treat, diagnose or prevent illnesses.

Herbs like aloe, lemongrass, moringa dongoyaro produce many chemical compounds that serve a lot of biological functions. For example, epigallocatechin gallate found in green tea has been used to treat infections from enterovirus 71. Flaxseed oil is used as a laxative, grape seed extracts for treating cardiac pathologies, Asian ginseng to boost the immune system and regulate blood pressure. Herbs have been found useful in treating and/or preventing pathologies of different organ systems in the body. Some herbs like *Allium sativum* (garlic), *Panax ginseng* (Asian ginseng), *Camellia sinesis* (green tea) and *Glycine max* (soy bean) have been shown to prevent thromboembolic events, prevent atherosclerosis by lowering blood lipid levels and improve cardiac health.

Also, herbs like *Pelargonium sidoides*, *Taraxacum officinale*, *Polygala karenism* have demonstrated antiviral properties against influenza viruses. Blackberry extracts and excoecarianin extracted from *Phyllanthus urinaria* have been shown to have properties that inhibit Herpes Simplex Virus. Some other herbal medications have been shown to have effects on other viruses like measles, Dengue virus, coronavirus, respiratory syncytial virus and many others.

Besides its application in treating ailments, herbal preparations like St. John's Wort and herbal tea mixed with black pepper have both been proven by clinical trials to be effective in smoking cessation

Modern medicine has its roots in herbal medicine as the pharmacological constituents of some conventional drugs contain herbal products. The production of Aspirin from the extract of willow barks in 1897 birthed an era dominated by pharmaceutical companies. This discovery gave rise to other drugs like Artemisinin which is a potent antimalarial from Qinghao, quinidine and quinine which are anti-arrhythmic and antimalarial respectively from *Cinchona pubescens*, digoxin and digitoxin which are cardiac glycosides from *Digitalis lanata* and *digitalis purpurea*, the antipsychotic reserpine from *Rauwolfia serpentina* and many more. In certain instances like in the treatment of chronic liver disease and psychiatric diseases, a combination of conventional drug therapy and herbal medicine was used to produce a synergistic effect and/or reduce adverse effects of modern medicine. The advent of modern medicine replaced herbal medicine for majority of people however as the side effects became common knowledge, majority reverted back to herbal medicine. Documented reasons for use of herbal medicine include personal autonomy, personal beliefs, cost of modern medicine, ease of access to herbal preparations, unavailability of modern medicine, presence of co-morbidities and dissatisfaction with modern medicine.

Despite the presence of many licensing bodies for regulation of herbal medicine around the world, many of the herbal products in the market are unlicensed due to issues like the high cost of licensing in some countries, lack of sufficient data, poor implementation of policies and unrestricted access to herbal products in developing countries.

Problems with herbal medication include heavy metal poisoning which has been linked to gastrointestinal, hematological and renal disturbances, pesticide and microbiological contamination, adulteration of products, contraindications in vulnerable groups like the elderly, pregnant women and children, insufficient pharmacovigilance, adverse reactions between herbs and also between herbs and conventional medicine.

Adverse effects of herbal medicine include acute kidney injury, hepatotoxicity, contact dermatitis, rhinitis, anaphylaxis, diarrhea, insomnia, dyspepsia, prolonged bleeding time, hypo/hypertension and so on. In Nigeria, commonly available herbal mixtures like agbo iba, agbo jedi jedi, agbo ara riro have been shown to be acidic in nature, contain steroids which can lead to side effects like poor wound healing, weight gain, and saponins which can cause death when taken in large quantities.

## **STATEMENT OF THE PROBLEM**

Majority of herbal medicine consumers have a general misconception about herbal products being safe for consumption with little or no side effects and having no reason for regulation. This has resulted in a lack of awareness on the potential deleterious effects. The wild wisteria which is native to Zambia, Zimbabwe, and Malawi is used to treat a wide range of diseases in general medicine and reproductive health has also been found to be highly nephrotoxic. Also, the quality of herbal medicine may be questionable due to the paucity of details on safety monitoring and guidelines, lack of proof of efficacy or clinical trials, lack of antidotes to reverse overdose, possible contamination and substitution of some plant species with similar ones. Also, safety of herbal products in pregnant women and children remains debatable as deleterious side effects have been reported.,

Three-quarters of the world's population use herbal medicine as a major form of healthcare, with a greater proportion of consumers living in developing countries. In USA, about \$19 billion per year is spent on herbal products and supplements by consumers. In Africa, it is estimated that one traditional healer attends to the needs of at least 500 people and about 20-80% of the population use alternative medicine.<sup>3</sup>In Nigeria, many herbal products are produced and marketed without the approval of the National Agency for Food and Drug Administration and Control and are found on store shelves and as cocktails available at the roadside. The increase in popularity of herbal remedies may have been associated with an increasing number of adverse effects which has however not increased awareness on proper usage and potential toxic effects among the general populace. This paper therefore sought to identify the relationship between the level of knowledge of herbal medicine of the members of the community *visa vis* their usage of such, and the potential side effects of the herbal products they consume.

## **RESEARCH QUESTIONS**

1. What is the level of knowledge of herbal medicine of adult users in the Mushin local government area of Lagos?
2. What is the level of awareness of possible side effects and contamination of herbal products of adult users in the Mushin local government area of Lagos?
3. What are the determinants of the use of herbal medicine?

## **MATERIALS AND METHODOLOGY**

The approval to carry out this study was obtained from the Health Research and Ethics Committee (HREC) of the Lagos University Teaching Hospital (LUTH) and a letter of introduction issued by the Head of Department was presented to the local government secretariat. Permission to go ahead with the survey was sought from

the medical officer of health of the LGA and a verbal consent was obtained from each respondent.

Of all the Local government areas, Mushin Local Government Area, Lagos State in South Western Nigeria was purposively sampled for researchers' ease of access. Mushin has approximately 631,857 people based on the 2006 census, it is home to the three major tribes in Nigeria. Mushin has the basic amenities, however the area is largely overpopulated with poor sanitation and low income housing. The study was conducted as a community-based cross sectional descriptive survey to determine the level of knowledge and use of herbal medicine among adults who had resided in Mushin LGA for at least six months.

The sample size was estimated using the Cochran formula which was adjusted to accommodate non response and culminated in a sample size of 289. Multi-stage sampling was used in selection of wards, streets, houses, households and then respondents. The instrument used was a questionnaire which was developed from pre-existing studies which was pretested to 20 respondents in Shomolu Local Government Area to ascertain the reception and comprehension of the entire original population and the outcome was used in restructuring the questionnaire. The structured, reliable and validated, interviewer-administered questionnaire was then administered to selected respondents.

Data gotten was analyzed using Epi info 7 software and relationship between knowledge and use was determined using chi square such that  $p < 0.05$  (5%) was considered statistically significant.

## **RESULTS**

Majority of the respondents were between 21-30 years with a greater proportion being male (52.94%), single (50.52%), Christians (71.28%) and Yoruba (70.59%). Also, many of the respondents had attained secondary level of education (47.40%) and less than half of the respondents were skilled workers (34.95%) who earned between N10,000-50,000 with no health insurance coverage (87.54%).

Majority of the respondents (98.96%) had heard about herbal medicine from informal sources, especially family members. Only 42.72% of respondents believed that herbal medicine can have side effects of which less than half were of the opinion that herbal medicine can have side effects when used during pregnancy. Among those who believed herbal medicine can have side effects, 22.84% of respondents could not name possible side effects while others were able to name diarrhea and vomiting as possible side effects. Similarly, 42.56% of respondents who agreed that herbal medicine can cause harm in pregnancy did not know the possible side effects of use of herbal medicine in pregnancy while others were aware of low birth weight, foetal death, prematurity and congenital malformations as possible side effects.

Majority of the respondents (55.40%) were aware that herbal medicine could be contaminated and more than half (69.37%) of the respondents are aware that herbal products in circulation are always regulated by NAFDAC. Majority of the respondents (80.28%) of respondents believed that herbal medicine can cure malaria, fever and diarrhea. Overall, more than half (59.17%) of respondents had poor knowledge on herbal medicine, its side effects, possible contamination, regulation and possible effects in pregnancy.

**Table 1: Level of knowledge among respondents**

LEVEL OF KNOWLEDGE	FREQUENCY (n=289)	PERCENTAGE (%)
Poor knowledge	171	59.17
Good knowledge	118	40.83

In terms of frequency of usage, 85.12% of respondents had used herbal medicine at one point in time, of which majority (60.57%) had used herbal medicine in the last 6 months. About half (56.10%) of respondents only used herbal medicine when sick while 21.10% of other respondents used herbal medicine on a daily basis, About one quarter (25%) of respondents combined herbal medicine with conventional medicine with the most preferred forms of herbal medicine being self-made preparations (46.02%), road side herbal mixtures (16.96%) and packaged herbal products (28.03%) in that order. Less than half (44.90%) used herbal medicine as their first line of treatment when ill because they perceived it to be more effective (18.34%), due to cultural beliefs (14.19%), low cost (13.84%) and it being easily accessible (12.46%).

Common indications for herbal medicine use included malaria (67.47%), general body pain (46.37%) and fever (41.52%). Only 16.80% of respondents had experienced side effects when using herbal medicine. Common side effects experienced included diarrhoea (5.88%), vomiting (5.88%), dizziness (3.81%) and abdominal pain (3.11%).

Majority of the respondents (68.70%) would recommend the use of herbal medicine to others on the basis that it is more effective (35.29%), safe (19.03%) and cheap (13.84%). More than half (63.41%) of respondents would voluntarily inform their doctors of their use of herbal medicine while 83.33% would inform their doctors when asked.

**Table 2: Association between socioeconomic variables and knowledge of respondents**

SOCIO ECONOMIC VARIABLES	OVERALL KNOWLEDGE		STATISTICAL TESTS
	GOOD (%) Freq (%)	POOR (%) Freq (%)	
Household monthly income			
<10,000	11 (9.32)	33 (19.30)	$\chi^2 = 8.95$ df = 3 p = 0.030
10,000-50,000	55 (46.61)	87 (50.88)	
51,000-100,000	37 (31.36)	38 (22.22)	
>100,000	15 (12.71)	13 (7.60)	
Health insurance coverage			
Private insurance	9 (7.63)	6 (3.51)	$\chi^2 = 11.14$ df = 3 p = 0.013 Fisher's p = 0.006
Social insurance	14 (11.86)	6 (3.51)	
Community insurance	0 (0.00)	1 (0.58)	
No insurance	95 (80.51)	158 (92.40)	

There was a statistically significant association between the household monthly income (p = 0.03), health insurance coverage (p = 0.013) and level of knowledge of the respondents as a higher proportion of people who earned between 10,000-50,000 (50.88%) and those that were not covered by health insurance (92.40%) had poor knowledge of herbal medicine compared to others who earned more and were covered by health insurance.

**Table 4: Association between knowledge and use of herbal medicine**

KNOWLEDGE VARIABLES	USE		STATISTICAL TESTS
	YES (%)	NO (%)	
Good	94 (38.52)	24 (55.81)	$\chi^2 = 4.51$ df = 2 P = 0.034
Poor	150 (61.48)	19 (44.19)	

There was a statistically significant association between knowledge and use of herbal medicine among the respondents as a higher proportion (61.48%) of respondents with poor knowledge use herbal medicine compared to those with good knowledge.

## **DISCUSSION**

Findings from this study indicated that knowledge of herbal medicine is passed down from parents, family members and friends than any other means. This is similar to findings from studies done at Wayu town, Ethiopia and Surulere, Lagos where informal sources were the major sources of knowledge of herbal medicine.,

Commonly known side effects in this study were diarrhea, vomiting, kidney problems, rashes and liver problems in that order. This bears similarities with other Nigerian studies where vomiting, diarrhea, dizziness, malaise and abdominal pain were commonly known side effects.,

In this study, more than half (55.40%) of respondents were aware of possible contamination of herbal medicine which is similar to a Malaysian study where respondents were aware of possible contamination with heavy metals, other medications and microorganisms. Also, 69.37% of respondents were aware that not all herbal products are regulated by NAFDAC which is in contrast to a study done in the United States where 60% of adults believed the Food and Drug Agency (FDA) regulates products and 70% believed the FDA routinely tests these products.

Studies done in Indonesia and Saudi Arabia show high consumption of herbal medicine as 98% and 94.6% respectively were herbal medicine users which is similar to that of this study (85.12%). These findings are higher when compared to studies from Hungary, Ghana, Ethiopia and Osun where 59.2%, 65.9%, 74.2% and 34.6% respectively of respondents were herbal medicine users.,,,

In this study, 16.80% of respondents had experienced side effects from use of herbal medicine which is similar to rates from other Nigerian studies which revealed 18-20.4% of respondents experiencing side effects. These findings are higher when compared to Asian studies where only 5.8-10.6% of respondents experienced side effects.,Side effects experienced include diarrhea, vomiting, dizziness, abdominal pain, rashes among others which is agreeable with other Nigerian studies where respondents reported similar side effects.,

## **CONCLUSION**

This study showed a generally poor knowledge of the constituents, regulations, possible side effects and harmful effects of herbal medicine in vulnerable groups. Low household monthly income and lack of health insurance coverage were found to be significant contributors to the low level of knowledge. This study also shows a high level of herbal medicine use despite the low level of knowledge.

## RECOMMENDATIONS

- \* Health education should be employed by the state ministry of health using effective tools such as social media, radio programs, newspapers, health campaigns and so on. These would be used to pass appropriate information by skilled professionals on the appropriate use of herbal medication particularly in pregnancy; its potential side effects and early detection of toxicity. Information should also be made available on safe, hygienic ways to prepare homemade herbal preparations. Religious leaders should also be brought on board to encourage and educate their members on the uses and ills of herbal medicine.
- \* Regulatory bodies should be better equipped to monitor and document reports on efficacy, safety and side effects of various registered herbal products. Also, strict measures should be put in place to ensure proper pharmaco-vigilance and surveillance of herbal products in the marketplace.
- \* Healthcare professionals should be advocate for more researches and clinical trials for herbal products in local governments and states across the country. During clinical visits, inquiry about use of herbal medicine in every patient should be made and counseling on proper usage should be done. After counseling, patients should be encouraged to share these details with their family members and close associates.
- \* User-friendly and affordable insurance coverage should be made available to members of the community especially for the low socioeconomic class to encourage hospital visits when ill.
- \* Finally, members of the community should also be proactive and exercise caution with herbal preparations. When side effects are noticed, such products should be discontinued and reported.

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