

# Self-Medication Among Nurses In A Tertiary Health Facility In Enugu State, South East Nigeria

**Short running head:** Self-medication among nurses in Nigeria

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## **ABSTRACT**

**Background:** *Self-medication (SM) is a global practice that is prevalent in all age groups and in all races. Although it has been successfully integrated into many healthcare systems throughout the world, it still presents with the problems of wrong diagnosis, inappropriate choice of treatment, drug abuse, delayed health seeking behaviour, double medication and harmful interactions, inappropriate storage and administration of expired medicines, medication wastage and in extreme cases death.*

**Methods:** *The study was a cross-sectional study conducted at ESUTH Parklane, Enugu Nigeria. A structured pre-tested self-administered questionnaire was used to collect data from the consenting nurses. Data was analysed using SPSS version 25 and variables were presented in frequencies, percentages, means, and standard deviation with the aid of tables. Bivariate analysis was done using chi-square test. The level of significance was set at p value  $\leq 0.05$ .*

**Results:** *Most of the nurses were within the 30-39 years age group 95(44.4%). Majority were females 199(93.0%) and married 169(79.0%). Almost all of them were Christians 213(99.5%) and Igbo ethnic group 212(99.0%).*

*All the nurses have heard about SM but only 181(86.4%) have good knowledge of it. Majority of them have practiced SM in the past one year 185(86.4%). Among those that practiced SM, majority practiced rarely 157(73.4%). The commonest symptom for which SM was practiced was headache 194(90.7%) followed by fever 170(79.4%) and pain 163(76.2%). The commonly used drugs for SM were analgesics/anti-pyretic 194(90.7%) and anti-malarials 187(87.4%). Sources of drugs were majorly from pharmacy shops 195(91.1%). Their major reasons for SM were emergency illness 171(79.9%), mild illness 162(75.9%) and prior knowledge about the illness and its treatment 150(70.1%).*

***Conclusion: There was good knowledge of SM among the studied nurses but their practice was poor as majority practiced SM in the past one year.***

***Key words: Knowledge, Nigeria, Nurses, Practice, Self-medication, Tertiary health facility***

## **1. INTRODUCTION**

Self-medication (SM) is a worldwide problem and practiced widely globally, especially in developing countries where many drugs are dispensed over the counter without prescription. [1, 2] It is prevalent in all age groups, though the extent of its practice differs among individuals and different regions of the world.

Self-medication is defined by the World Health Organization (WHO) as the selection and use of medicines (including herbal and traditional products) by individuals to treat self-recognised illnesses or symptoms. Self-medication is recognized as one element of self-care. [3] It may incorporate Over -The Counter (OTC) medications that are dispensed without prescription, as well as Prescription-Only Medications (POM) which require a valid prescription, such as antibiotics. Though self-medication with POM is not advisable, but it is common in countries that do not have strict regulations on the sale of medications. [4-6] Self-medication practice offers ease of access to OTC medications at a lower cost, which serves as an alternative to the costly and time-consuming clinical consultations. Though, this practice is associated with an increased risk of misdiagnosis, Adverse Drug Reactions (ADRs), drug abuse and misuse. [7] Self-medication has been successfully integrated into many healthcare systems throughout the world. [8]

The WHO elaborates on this using the term ‘Responsible Self Medication’ which is defined as the practice whereby individuals treat their ailments and conditions with medicines which are approved and available without prescription, and which are safe and effective when used as directed. Responsible self-medication requires that: (1). Medicines used are of proven safety, quality and efficacy. (2). Medicines used are those indicated for conditions that are self-recognisable and for some chronic or recurrent conditions (following initial medical diagnosis). In all cases, these medicines should be specifically designed for the purpose, and will require appropriate dose and dosage forms. Such products should be supported by information, which describes: how to take or use the medicines; effects and possible side-effects; how the effects of the medicine should be monitored; possible interactions; precautions and warnings; duration of use; and, when to seek professional advice. [3]

Often time people feel unwell and human beings have an inherent tendency to use herbs and medications for treating themselves. [1] Human beings naturally try to take care of themselves in other to stay healthy and that is the concept of self-care. Self-care is a broad phenomenon that involves what people do for themselves to establish and maintain health, prevent and deal with illness. It is a broad concept encompassing: hygiene, nutrition, lifestyle, environmental factors and socioeconomic factors. [3] Everyday people throughout the world practice self-care and in many instances, they do so through self-medication which is now increasingly being considered as a component of self-care. [9] WHO defines self-care as what people do by themselves to keep their health, prevent and treat illness. [3]

In developing countries, most illnesses are treated by self-medication. [1] It has been found in several studies that inappropriate self-medication results in wrong diagnosis, inappropriate choice of treatment, drug abuse, delayed health seeking behaviour, double medication and harmful interactions, inappropriate storage and administration of expired medicines, medication wastage and in extreme cases death. [9-12] Antimicrobial [11, 13] and antimalarial [12] resistance are also important pitfalls of self-medication. Self-medication is a global problem. [14] The prevalence from studies carried out in Europe is 68% [14] while it is higher in African countries (40.7-81.8%). [15] In Sudan and Cameroun, prevalence of 73.9% and 55.7% were observed respectively [12] while a study in Nigeria showed that 85% of participants practiced self-medication. [16] A meta-analysis of 27 studies of self-medication among physicians and medical students reported self-treatment prevalence of >50% in 76% of the studies. [17]

Health workers may differ from general population because they are exposed to the knowledge about disease and drugs. It will be interesting to know how this their knowledge affects their self-medication practice. This study was undertaken to determine the knowledge, practice and reason for practice of self-medication among health workers in a tertiary health facility in Nigeria. The result of the study will help policymakers in the control self-medication in Nigeria.

## **2. METHODOLOGY**

### **Study Area**

Enugu state is one the States in the South Eastern part of Nigeria. It covers an area of 85m<sup>2</sup>. It shares borders with Abia and Imo States to the south, Ebonyi State to the east, Benue State to the north east, Kogi State to the north-west and Anambra State to the west. [18] The residents are predominantly Igbo by tribe and Christians. Majority are civil servants while others are businessmen and women, students, artisans, and farmers.

Enugu State University Teaching Hospital (ESUTH) Parklane is the State-owned teaching hospital located at the heart of Enugu city. It provides tertiary healthcare to people of Enugu and its neighbouring states.

### **Study Design**

The study was a cross-sectional study conducted at ESUTH Parklane, Enugu Nigeria.

### **Study Population and Sampling**

The study population included all the nurses working at the Enugu State University Teaching Hospital (ESUTH) Parklane, Enugu. The sample size for the study was determined with Fishers formula for calculating sample from populations less than 1000.

$$N=Z^2 p (1-p)/d^2$$

Z=normal deviate 1.96

P=85.7% (prevalence of self-medication in a similar study) [19]

$\alpha$ =level of significance placed at 0.05

A minimum sample size of 188 was arrived at.

A 10% non-response was added giving a final sample size of 207

However, 214 nurses were used for the study.

### **Data Collection**

Data was collected for a period of 6 weeks; 16<sup>th</sup> July-27<sup>th</sup> August 2020. A structured pre-tested self-administered questionnaire was used to collect data from the consenting nurses. It was shared at the wards and clinics and time was given for its completion, mainly at the end of their shift.

The questionnaire included four sections; socio-demographic characteristics, knowledge, practice and reason for practicing self-medication. Nine questions were used to assess the knowledge of SM. A correct answer scores one while a wrong answer scores zero. The higher the score the more knowledgeable the respondent was. The practice of SM was assessed by asking whether the nurse had taken drugs outside doctor's prescription in the past one year. This was used to assess the one-year prevalence of SM among these group of nurses.

### **Data Analysis**

All the questionnaires were manually examined for completeness and entered into SPSS version 25. Data were presented in frequencies, percentages, with the aid of tables. Bivariate analysis was done using chi-square test. The level of significance was set at  $p$  value  $\leq 0.05$ . The knowledge and practice scores were categorized into poor and good. Scores of  $< 80\%$  were classified as poor while scores of  $\geq 80\%$  were classified as good.

### **Ethical Clearance**

Ethical approval for the study was obtained from the Research and Ethics Committee of Enugu State University Teaching Hospital Parklane (ESUTHP), Enugu with reference number ESUTHP/C-MAC/RA/034/vol.2/24. This was after the research protocol was submitted for their consideration, comment and guidance. The study however followed the Helsinki Declaration in line with the ethical principles for medical research involving human subjects. The research study posed minimal risks to the participants. The questionnaires contained no identifying information which ensured anonymity. In order to protect the dignity and privacy of the human subjects involved their names were not recorded. All aspects of the research were explained to the HCWs and their informed consent was received prior to the interviews. There was no form of coercion or interference with the researcher-HCW relationship and participation was completely voluntary. The participants also understood that they had the option of withdrawing from taking part in the study at any time without any permission. All the HCWs were mentally sound and capable to participate in the research. Confidentiality was also maintained and this related to the protection of the data collected.

## Limitations

The study involved recall of past events and may likely be affected by recall bias. The nurses used in the study works in a tertiary health facility where they may have received better training on SM and its effect, thus the results of the study may not be generalized to nurses in primary or secondary health facilities.

## RESULTS

Table 1 shows the socio-demographic characteristics of the nurses. Most of them were within the 30-39 years age group 95(44.4%). Majority were females 199(93.0%) and married 169(79.0%). Almost all of them were Christians 213(99.5%) and Igbo ethnic group 212(99.0%). Majority have been in practice for 1-5years 59(27.6%) while the least proportion were those have practiced for >35years 2(0.9%).

In table 2, all the nurses have heard about SM but only 181(86.4%) have good knowledge of SM. However, majority of them knew that SM can result to harmful effects 190 (88.8%), cause addiction 189 (88.3%), delay seeking medical care 190(88.8%), result to drug resistance 194(90.7%) and can result in complications 189(88.3%).

Their major source of information about SM was from colleagues 144(67.3%) followed by physicians 112(52.3%) and pharmacists 101(47.2%).

Table 3 shows the practice of SM among the nurses. Majority of them have practiced SM in the past one year 185(86.4%). Among those that practice SM, majority practiced rarely 157(73.4%). The commonest symptom for which SM is practiced is headache 194(90.7%) followed by fever 170(79.4%) and pain 163(76.2%). The commonly used drugs for SM were analgesics/anti-pyretic 194(90.7%) followed by anti-malarias 187(87.4%). Sources of drugs were majorly from pharmacy shops 195(91.1%).

Table 4 shows the reasons for practice of SM. Their major reasons for SM were emergency illness 171(79.9%), mild illness 162(75.9%) and prior knowledge about the illness and its treatment 150(70.1%).

In Table 5, no socio-demographic characteristics significantly affected the knowledge of self-medication

Table 6 showed the factors that affected the practice of SM. Only ethnicity significantly affected the practice of SM.

## 4. DISCUSSION

Self-medication as a component of self-care is recognized by WHO. [3] If done in the correct manner, will reduce both cost and time spent in accessing health care services. It helps patient to take care of minor ailments, reduces pressure on medical services especially in areas where personnel are insufficient like Nigeria. However, self-medication has been viewed as a malpractice with increased risk of adverse drug reactions, drug interactions, inadequate dosing, poly pharmacy, and indiscriminate drug use. [20]

In our study all the respondents (100.0%) have heard about SM but only 84.6% had good knowledge of SM. This was similar to the report of a study conducted among nursing and paramedical staff in India where 84.0% of nurses and 82.7% of the paramedical staff had good knowledge of SM. [21] Other studies in Nigeria, Ethiopia and Tanzania reported a lower knowledge of SM. [22-24] The Nigerian study was done among all cadres of HCWs including those with no educational background while the Ethiopian and Tanzanian studies were done among rural communities. These settings may account for the difference in knowledge scores.

No socio-demographic characteristic significantly affected the knowledge of SM among these nurses. However those aged 40years and above, females, those with more than four children and those that have practiced for 21years and above had better knowledge of SM. The sources of information on SM were from colleagues (67.3%), physician (52.3%) and internet (48.6%). This is in line with the finding of a similar study which reported that physicians and internet were the commonest source of information on SM. [25]

The prevalence of SM in our study is 86.4%. This high prevalence was reported in similar studies in Nigeria, Brazil and Pakistan. [19, 26, 27] Across low and middle income countries, poor access to health care, scarcity of trained HCWs, low standard of health care, easy accessibility of drugs, and patients' misconception were some reasons for higher practice of SM. [28, 29] Self- medication is practiced due to the advantage of being convenient, saves time from consulting doctor, and helps in treating minor ailments, being more economical when reaching doctor becomes difficult and early/initial relief of symptoms before consulting doctor. [30, 31]

Even though self-medication has advantages, yet it is becoming more hazardous due to its ill effects such as use of sub therapeutic or toxic doses, use of improper drug, drug interactions, drug abuse or drug dependence, failure to diagnose the illness, wastage of health resources due to illicit use and drug resistance. [30, 31]

Another problem that is peculiar to Nigeria is the availability and uncontrolled access to all kinds of medicines especially POM. The prevalence of self-medication in some countries like USA, Denmark, Spain and Lithuania is very low (17%, 3%, 11% and 22%) respectively. [32] These countries are well developed with advanced health care, adequate personnel compared to developing countries. Restricted legislated control of POMs and OTC drugs may account for this difference in prevalence

Moreover, a similar study among HCWs in Ethiopia reported a lower finding of 73.4%. [33] This may however, be due to the fact that they used a 3 month recall of SM while our study used a longer recall period of 12 months. Other studies however, reported lower findings in Nekemte, Ethiopia 67.5%, Malaysia 77.6% and Addis Ababa, Ethiopia 75.5%. [28, 34, 35] This difference might be due to differences in sample size, setting, socioeconomic gaps, sampling method, and law enforcement. The types, extent, and reason for SM might vary from place to place due to study methodological differences and variation in socio-demographic characteristics of the study participants. The differences could also be as a result of the country's drug laws or the electiveness of the drug regulating agencies of the countries

where the studies were conducted. Hence, SM can be seen as a generalized issue, both in developed and developing countries. Coordinated efforts are required to tackle the inappropriate and hazard consequences of SM.

On bivariate analysis only ethnicity significantly affected the practice of SM. However, it was observed that the higher the age the more the practice of SM. Those that have more than four children and those that have practiced for more than 25 years also practiced SM more. A study has suggested that higher professional experience will more likely contribute to the knowledge of appropriate medication and familiarity of treatment options by the respondents and hence, increase the rate of SM. [36] In contrast some other studies have reported that less experienced HCWs are more likely to practice SM. [37] A study in Ethiopia showed that HCWs that have practiced for less than 5 years were more likely to practice SM than those with work experience of more than 10 years. [33] The common symptoms for which SM is practiced may be a possible explanation.

The commonest symptom for which the nurses practiced SM was headache (90.7%). The same finding was reported by other studies in Malaysia, Iran and Ethiopia. [34, 38, 39] Headache is mostly a mild to moderate illness that can be treated with OTC drugs like analgesics, and in most of the cases, it does not require further diagnosis and treatment unless it is secondary to other diseases. However other studies reported fever as the commonest symptom for practice of SM [21] while others reported cold/ flu as the commonest. [40] The differences may be due to geographical location, environmental factors and common ailments prevalent in their environments.

The commonly used medications were analgesics/antipyretics. This was not surprising as headache was the commonest symptom for practice of SM and these analgesics are easily available over the counter. Other studies reported similar findings. [28, 41] Other studies among medical students reported that antibiotics and sedatives were the commonly used medications. [25, 42] This may be related to the common symptoms experienced by these students and the availability of these groups of drugs, even without prescription. Irrational use of antibiotics may result in the emergence of resistant strains of organisms with antecedent increase in cost of treatment and morbidity. Antibiotics are susceptible to the risk of misuse and yet they are often exposed to the high rate of SMs. This might imply that antibiotics could be obtained from drug retail outlets and pharmacies without prescription though they are prescription-only drugs. [34]

The main source of drug for SM was from pharmacy shops (91.1%). This was in contrast to the report of a similar study among students where majority of them obtained the antibiotics they used from their friends in the hostel. [43] This may also be due to absent of pharmacy shops within their hostels.

The major reason for SM in our study was emergency illness (79.9%) and mild illness (75.7%). This is similar to the report of other studies. [44, 45] Other studies however reported unfriendly attitude of HCWs [25], knowledge about the disease/treatment [45], previous experience [45], availability of medications [46], affordability [46] and to save time. [46, 47]

These reasons however are subject to the environment and study populations where the studies were carried out.

## 5. CONCLUSION

The respondents had good knowledge of SM, but majority of them still practiced SM it in the past one year. Their good knowledge did not influence their practice of SM though majority of them practiced it rarely. Efforts must be made to educate not just the nurses but the general populace on the disadvantages and complications of self-medication. There should also be a scale-up on enforcement of existing laws and legislations to discourage uncontrolled access to prescription only medications while over-the-counter drugs should be used with caution and when there is an absolute need for it.

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## Conflict Of Interest

The authors have no competing interests to declare.

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## TABLES

Table I: Socio-demographic characteristics of the nurses

Variable	Frequency	Percentage
<b>Age (years)</b>		
20-29	36	16.8
30-39	95	44.4
40-49	65	30.4
50-59	18	8.4
<b>Gender</b>		
Male	15	7.0
Female	199	93.0
<b>Marital status</b>		
Single	45	21.0
Married	169	79.0
<b>Number of children</b>		
0	59	27.6
1	20	9.3
2	42	19.6
3	27	12.6
4	51	23.8

≥5	15	7.1
<b>Religion</b>		
Christianity	213	99.5
Islam	1	0.5
<b>Ethnicity</b>		
Igbo	212	99.0
Hausa	1	0.5
Edo	1	0.5
<b>Years of service</b>		
1-5	59	27.6
6-10	57	26.6
11-15	53	24.8
16-20	20	9.3
21-25	7	3.3
26-30	10	4.7
31-35	6	2.8
>35	2	0.9

Table II: Knowledge of self-medication among nurses in a tertiary health facility

Variable	Frequency	Percentage
<b>Have heard about self-medication</b>		
Yes	214	100.0
No	0	0.0
<b>Self -medication can be practiced with all drugs</b>		
Yes	51	23.8
No	163	76.2
<b>Self -medication better than seeking medical consultation</b>		
Yes	13	6.1
No	201	93.9
<b>Medications can be shared between 2 people with different ailments</b>		
Yes	33	15.4
No	181	84.6
<b>Self-medication can result to harmful effects</b>		
Yes	190	88.8
No	24	11.2
<b>Self-medication can cause addiction</b>		
Yes	189	88.3
No	25	11.7
<b>Self-medication can delay one from seeking medical care</b>		
Yes	190	88.8
No	24	11.2

<b>Self-medication results to drug resistance</b>		
Yes	194	90.7
No	20	9.3
<b>Self-medication results in complications</b>		
Yes	189	88.3
No	25	11.7
<b>Knowledge categorized</b>		
Good	181	84.6
Poor	33	15.4
<b>Sources of information about self-medication*</b>		
Physician	112	52.3
Pharmacist	101	47.2
Colleague	144	67.3
Family member	73	34.1
Friends	83	38.8
Internet	104	48.6
News paper	50	23.4
Magazines	56	26.2
Radio	71	33.2
television	67	31.3

\*multiple response allowed

Table III: Practice of self-medication among nurses in a tertiary health facility

<b>Variable</b>	<b>Frequency</b>	<b>Percentage</b>
<b>Have practiced self-medication in the past one year</b>		
Yes	185	86.4
No	29	13.6
<b>If yes, how often</b>		
Never	29	13.6
Rarely (once a month)	157	73.4
Often (once every 2 weeks)	15	7.0
Very often (once every week)	13	6.1
<b>Common symptoms for which self-medication is practiced are*</b>		
Headache	194	90.7
Fever	170	79.4
Pain	163	76.2
Sleep disorder	76	35.5
Cold/flu	154	72
Allergy	95	44.4
Diarrhea	133	62.1
Constipation	110	51.4
Indigestion	107	50.0

Respiratory tract infections	63	29.4
Skin infections	84	39.3
Heart burn	123	57.5
<b>Commonly used medications for self-medication*</b>		
Analgesics/antipyretics	194	90.7
Antibiotics	159	74.3
Cough/flu medications	162	75.7
Anti-diarrhea	117	54.7
Laxatives	70	32.7
Anti-allergic	93	43.5
Multi-vitamins	152	71.0
CNS stimulants	42	19.6
Anti-malarial	187	87.4
Antacids	149	69.6
Sedatives	69	32.2
<b>Sources of drug for self-medication*</b>		
Pharmacy shop	195	91.1
Friends	50	23.4
Family members	56	26.2
Left over drugs	83	38.8

\*multiple answers allowed

Table IV: Reasons for practice of self-medication\*

Variable	Frequency	Percentage
Emergency illness	171	79.9
Long distance to health facility	90	42.1
Pharmacy is close to me	81	37.9
Health facility charges high	109	50.9
Delay/long protocol in hospital services	113	52.8
No medications in health facility	48	22.4
Prior knowledge about the illness and its treatment	150	70.1
Mild illness	162	75.7
To save time	118	55.1
Unfriendly attitude of healthcare workers	65	30.4
No reason	38	17.8

\*multiple answers allowed

Table V: Factors that affect the knowledge of self-medication among the nurses

Variable	Knowledge		$\chi^2$	P value
	Poor	Good		
<b>Age (years)</b>			6.140	0.105
20-29	5 (13.9)	31 (86.1)		
30-39	20 (21.1)	75 (78.9)		

40-49	8 (12.3)	57(87.7)		
50-59	0(0.0)	18(100.0)		
<b>Gender</b>				
Male	4(26.7)	11(73.3)	1.564	0.211
Female	29(14.6)	170(85.4)		
<b>Marital status</b>				
Single	7(15.6)	38(84.4)	0.001	0.977
Married	26(15.4)	143(84.6)		
<b>Number of children</b>				
0	12(20.3)	47(79.7)	6.321	0.503
1-2	7(11.3)	55(88.7)		
3-4	13(16.7)	65(83.3)		
Above 4	1(6.7)	14(93.3)		
<b>Religion</b>				
Christianity	33(15.5)	180(84.5)	0.183	0.669
Islam	0(0.0)	1(100.0)		
<b>Ethnicity</b>				
Igbo	33(15.6)	179(84.4)	0.368	0.832
Hausa	0(0.0)	1(100.0)		
Edo	0(0.0)	1(100.0)		
<b>Years of service</b>				
1-5	12(20.3)	47(79.7)	7.115	0.417
6-10	10(17.5)	47(82.5)		
11-15	5(9.4)	48(90.6)		
16-20	5(25.0)	15(75.0)		
21-25	0(0.0)	7(100.0)		
26-30	1(10.0)	9(90.0)		
31-35	0(0.0)	6(100.0)		
Above 35	0(0.0)	2(100.0)		

Table VI: Factors that affect the practice of self-medication among the nurses

Variable	Practice		$\chi^2$	P value
	Poor	Good		
<b>Age (years)</b>				
20-29	29(80.6)	7(19.4)	4.832	0.184
30-39	79(83.2)	16(16.8)		
40-49	60(92.3)	5(7.7)		
50-59	17(94.4)	1(5.6)		
<b>Gender</b>				
Male	13(86.7)	2(13.3)	0.001	0.980

Female	172(86.4)	27(13.6)		
<b>Marital status</b>				
Single	38(84.4)	7(15.6)	0.195	0.658
Married	147(87.0)	22(13.0)		
<b>Number of children</b>				
0	48(81.4)	11(18.6)	3.730	0.292
1-2	57(91.9)	5(8.1)		
3-4	66(84.6)	12(15.4)		
Above 4	14(93.3)	1(6.7)		
<b>Religion</b>				
Christianity	184(86.4)	29(13.6)	0.157	0.691
Islam	1(100.0)	0(0.0)		
<b>Ethnicity</b>				
Igbo	184(86.8)	28(13.2)	6.557	0.038**
Hausa	1(100.0)	0(0.0)		
Edo	0(0.0)	1(100.0)		
<b>Years of service</b>				
1-5	48(81.4)	11(18.6)	3.158	0.870
6-10	51(89.5)	6(10.5)		
11-15	46(86.8)	7(13.2)		
16-20	17(85.0)	3(15.0)		
21-25	6(85.7)	1(14.3)		
26-30	9(90.0)	1(10.0)		
31-35	6(100.0)	0(0.0)		
Above 35	2(100.0)	0(0.0)		

\*\*significant value