Prevalence and Determinants of Self-Medication Practices among Nigerians

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Summary

BACKGROUND

Previous studies that evaluated the prevalence of self-medication practices in Nigeria were either institutional, specified localized areas or regions of the country, thereby making trends analysis of self-medication practices in Nigeria difficult. The aim of this study was to evaluated the prevalence and determinants of self-medication, their sources, types of illnesses and reason for self – medications among Nigerians.

MATERIALS AND METHODS

The study was a descriptive cross-sectional design, conducted among Nigerian communities (urban and rural) between January and March 2020. Multistage sampling method and a community based pre-tested structured interview-administered questionnaire was used for data collection and data collected was analysed using SPSS/PC statistical package

RESULTS

Out of the 1089 questionnaire retrieved, 753 (52.6%) were male, while 516 (47.4%) were females. The mean age in years was (34.46±), ranges 15 – 82years, and the most predominant age group was 35 -45 (33.3%) years. The prevalence of self – Medication among the participants across the 6 geopolitical zone was 69.4%. The commonest illness Nigerians took self-medications for are headache (21.10%), Febrile illness - including Malaria (9.15%), Cough/URTI (11.64%), and Body pains (6.05%). The most common reasons for practicing self-medication were doctor/clinics too far (24.8%), busy doctors with clinic having too many patients (17.72%), convenience (18.34%), financial reasons (12.95%), and time saving (12.86%). Community pharmacy shops (23.0%) and patent medicine stores (20%) were the commonest sources where participants obtained self-medications.

CONCLUSSION

Prevalence of self-medication among Nigerians is high and difficult be eliminated. Proliferations of street hawking, patent medicine shops, busy far sited poorly equipped

health facilities, financial challenges, confidence in traditional medications are the determinants of self-medications.

RECOMMENDATIONS

To avoid the harmful effects of self-medication, policy makers should improve healthcare, set up campaign and training strategies in promoting "responsible self-medication practices". Medical practitioners should also ensure a good drug history including herbal medicine use and its harmful adverse effects.

Key Words: *Self-Medication, Prevalence, Determinants, Nigeria*

[***Afr. J.*** Health Sci. 2021 34(5): 634 - 649]

Introduction

Self-medication is defined as the use of drugs to treat self-diagnosed disorders or symptoms, or the intermittent or continued use of a prescribed drug for chronic or recurrent diseases or symptoms, [1] It is 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. Measures taken to achieve well-being and freedom from illness are different based on the attitudes and experiences of individuals. Beliefs, feelings, and thoughts of an individual significantly influence his/her understanding of an illness, which in turn affects the decision taken to address it. [2]

Globally, self-medication has been reported as being on the rise. People around the world tend to treat the disease, almost 50% either wait for the problem to run its course or use a home remedy. About 25% visit doctor or use prescription medicine previously obtained for the same condition. The remaining 25% turn to the over the counter (OTC) medicines. [3] The global increase in the consumption of medications call for studying medication knowledge and behaviours.[4] Medication knowledge assessment is used to assess a person's knowledge and ability to read and understand information necessary for appropriate medication use.[5]

Because self-medication is a fairly widespread practice worldwide, both developed and developing nations are giving due attention to self-medication as a component of their health care policy. [6 -9]

Self-medication are on the increase in many countries due to a number of factors, which include socioeconomic factors, lifestyle, ready access to drugs, increased potential to manage certain illnesses through self-care, and greater availability of medicinal products. In most economically deprived countries, including Nigeria, many drugs are dispensed over the counter (OTC), and the majority of health-related problems, nearly 60%–80%, are treated through self-medication as a lower-cost alternative. [8, 10--12]

Responsible self-medication practice which require a certain level of knowledge and health orientation, can have a positive impact on individuals and health care systems. It allows patients to take responsibility and build confidence to manage their own health, thereby promoting self-empowerment. Furthermore, it can reduce the work load on the medical services, decrease the time spent in waiting to see the physician, even save lives in acute conditions, and thereby may contribute to decreasing health care costs especially in economically deprived countries with limited health resources. [13 - 15] The World Health

Organization has also pointed out that responsible self-medication can help to prevent and treat ailments that do not require medical consultation, and provides a cheaper alternative for treating common illnesses. [16]

Regardless of the unquestionable benefits obtained from self-medication with non-prescription drugs, there are undesired outcomes that occur, due to improper usage. These have been indicated in studies where self-medication may have increased risks of misdiagnosis, overdose of drugs, incorrect duration of use, and adverse drug reactions related to the improper use of OTC drugs.[17,18] Inappropriate self-medication results in irrational use of drugs, wastage of resources, increased risk of unwanted effects, and prolonged suffering.[19] Irrational usage of antibiotics leads to the emergence of resistance pathogens worldwide.[20] Furthermore, risks associated with self-medication also include potential delay in treating serious medical conditions, masking of symptoms of serious conditions through the use of non-prescription products, and increased polypharmacy and interaction with other commonly used medications.[21] Even though self-medication is difficult to eliminate, interventions can be made to discourage the abnormal practice. Improving self-medication practice requires focused continuous education of both the public and health professionals to avoid irrational use of drugs. [13, 22 - 25]

Self-medication patterns vary among different populations, and are influenced by many factors, such as age, sex, income, expenditure, self-care orientation, level of education, medical knowledge, satisfaction, and perception of illnesses. [13] The type and extent of self-medication and the reasons for its practices may also vary from country to country.

Even though various studies have been conducted on self-medication practices in different parts of Nigeria, there has not been any study done that comprehensively expresses self-medication practice in the country. The prevalence of self-medication from several Nigerian studies ranges between 60-90%. For example, among undergraduate students of a Nigerian university, the prevalence of self-medication was 67% [26] and in Lagos, south-west Nigeria, self-medication was reported in 67.7% of infants being treated for colic [27]. Among patients attending the general outpatients and dental clinics in Owo, Nigeria, self-medication was reported in 85% and 79% respectively [27, 28]. A study amongst health workers in tertiary hospital in Ondo State, Nigeria, reported a prevalence of 73% [29]. The difference in prevalence in the cited Nigerian studies could be ascribed to the difference in sample size, sampling population, survey location and sampling method. Therefore, there is a need to know the overall situation of self-medication practice in the country, in order to devise appropriate educational, regulatory, and administrative measures in alleviating public health risks arising from improper practices of self-medication. We have therefore set out to comprehensively assess self-medication practices among and across Nigeria.

Materials and Methods

The study would be descriptive cross-sectional study, conducted among Nigerian communities (urban and rural) between January and March 2020. Adults, who were at least 18 years old and permanent residents of the country (had lived in the community for at least a year prior to the study), were included in the study. Temporary visitors and those who could not respond coherently to questions were excluded.

Study design and populations

Nigeria is the most populated country in Africa with a 2016 population estimate of

over185 million people, a population growth rate of 2.5% and average life expectancy of 54 years [30]. Nigeria has five hospital beds per 10,000 population [31]. The Nigerian healthcare system is organised into primary, secondary and tertiary healthcare levels. The Local Government Areas (LGAs) are responsible for primary healthcare, the State Governments are responsible for providing secondary care while the Federal Government is responsible for policy development, regulation, overall stewardship and providing tertiary care

The federal ministry of health's (FMOH) health facilities (HFs) census of 2005 showed that Nigeria had a total of 23,640 public and private hospitals. Primary health facilities make up 88% of health facilities in Nigeria while secondary and tertiary health facilities make up 12% and 0.25%, respectively. There are more government-owned health facilities than privately owned health facilities (67% vs. 33%).[31] Secondary health facilities are predominantly privately owned. The ratio of public to private health facilities is much higher in the northern part of the country than in the southern part.

In Nigeria, health establishments are concentrated in the industrial and commercial parts of the country, the distribution of the state general hospitals and local community dispensaries is structurally and geographically imbalanced. Usually, the rural dwellers suffer more in this regard. The private sectors whose primary motive is profit maximization operate more in the urban centres. This results in inequitable distribution in the provisioning of services.

An adequate minimum sample size was calculated Based on Nigeria population of 185 million using the Cochran formula for descriptive studies ($n = z^2pq/d^2$), at 95% confidence, 2% error margin, and an estimated proportion (respondents who practiced self-medication) of 73% from a previous study. [32] A sample size of 2401 was calculated, however, to compensate for non-response and invalid data forms, the calculated sample size was increased by 10% to get the final sample size of 3002 for the study.

A multistage sampling method was used for the study, and the stages are described as follows: Two study sites were selected from each of the six geopolitical zones of the country based on convenience and availability of competent person for the study. A simple random sampling method (balloting) was used to select wards and streets (wards A and C) in a City/Town/village. One person out of every two people on a street we encountered was selected and interviewed/administered questionnaire, until the maximum number of questionnaires allotted was reached.

Data collection

The information on the questionnaires includes the following: demographics, sociodemographic, history of illnesses in the preceding three months of the interview, treatment approach as well as general approach about self-medications of drugs. variables, questions on whether questionnaire was self-filled or by assistance. The patterns of practice of self-medication comprised questions on the following: medications they use without a doctor's prescription, the conditions for which they use medications and reasons for using the medications. Information was also sought on where medications are usually obtained, preferred mode care (eg orthodox or traditional) and the perceived outcome of their treatment the last time they self-medicated (i.e., whether it was successful or not). Interviewers were trained at site on administering the questionnaires. All the trainees possessed a minimum post-secondary

education and spoke English, and Hausa, Igbo Yoruba language, and "Pidgin English" fluently. Each interview last for about 10 minutes.

Data analysis

Data collected was initially entered into a pre-coded excel spreadsheets and analysed using Statistical Package for the Social Sciences (SPSS Version 20) statistical software [33] Summary and inferential statistics were worked out. The chi-square test was used to test for associations between selected variables, and the level of significance was pre-determined at 5% ($P < 0.05$). Data was presented as frequencies, mean ± standard deviation (SD), and proportions.

Ethical considerations

Ethical approval/Permission for the study was obtained from the National Health Research and Ethics Committee of the Federal Ministry of Health (FMoH) Abuja for the conduct of the study Verbal was obtained from the participants prior to interview. Participation was voluntary and confidential, those who were practicing irresponsible self-medication were educated on responsible self-medication practices.

Results

From the study design, 2400 questionnaire was calculated based on 200 million population of Nigeria for distribution at 400 per each geopolitical zone between January to May 2020. However, the study was interrupted due to the Lockdown following the outbreak of COVID-19 pandemic.

Out of 2400 questionnaire that was printed for distribution from January to March 2020, A total of 1098 by 31st March 2020 were distributed (table 1) among respondents in 9 states of the six geopolitical zones of Nigeria participated in the study voluntarily. We therefore report the results of 1089 questionnaire distributed and retrieved.

Out of the 1089 questionnaire retrieved as presented on Table 2, 753 (52.6%) were male, while 516 (47.4%) were females ($p < 0.005$). The mean age in years was 34.46±, ranges 15 – 82years, and the most predominant age group was 35 -45 (33.3%) years. (<0.005). Majority of the respondents were married people 33.3%. Religious affiliation has Christians 64%, Muslims,35.7% and traditional religion affiliation 0.1% respectively. Most of the despondence has attended tertiary (58.7%) and secondary (29.2%) level of educations (p <0.005). Civil servants, students and business and petty traders (37.01%), (33.15%) and (15.06%) respectively were the commonest occupation among the respondents. most household monthly income was N10,000 - 25,000 ($2.58 -64.52USD), followed by 50,000 to N150, 000. ($ 129.03 – 387.10USD). (p <0.005) etc.

Table 1: National Geographical Distribution of Respondents

Town/State of Origin	Geo-Political zone	N = 1089(100%)
Abuja (FCT)	FCT	210 (19.3)
Jos/Kuchikau/Keffi, Plateau/Nasarawa)	North Central	204 (18.6)
Nssukka (Enugu)	South East	180(13.4)
Kaduna (Kaduna)	Northwest	168(15,4)
Ilorin, Ibadan (Kwara, Oyo)	South west	156 (16.6)
Yola (Adamawa	North East	128(11.8)
Uyo (Akwa Ibom State)	South South	43(3.9)

Table 2: Socio-Demographic Data of Respondents

Variables	Male N=573(52.6%)	Female N=516 (47.4%)	Total N=1089 (100%)	P. Value
Gender	**573 (52.6%)**	**516 (47.5%)**	**1089 (100%)**	
Age groups in (years) (Mean 34.46±)				**0.004**
15 -< 35	112 (10.3)	143 (13.1)	255 (23.4)	
35 - < 45	195 (17.9)	168 (15.4)	363 (33.3)	
45 - < 55	130 (11.9)	121 (11.1)	251 (23.0)	
55 +	136(12.5)	84 (7.7)	220(20.2)	
Marital Status				**0.000**
Single	238 (21.9)	201(18.5)	439 (40.3)	
Married	324 (29.8)	282 (25.9)	606 (55.6)	
Separated/Divorced	8 (0.7)	7 (0.6)	15 (1.4)	
Widow/widower	3 (0.3)	26 (2.4)	29 (2.7)	
Religion				**0.042**
Christian	347 (31.9)	350 (32.1)	679 (64.0)	
Muslim	224 (20.6)	165 (15.2)	389(35.7)	
Traditional	2 (0.2)	1 (0.1)	3 (0.3)	
Education Qualification				**0.003**
None/informal	15(1.4)	39(3.6)	54(5.0)	
Primary	40 (3.7)	38 (3.5)	78 (7.2)	
Secondary	171 (15.7)	147 (13.5)	318 (29.2)	
Tertiary	347 (31.9)	292 (26.8)	639 (58.7)	
Occupation				**0.000**
Students	187 (17.17)	174 (15.98)	361 (33.15)	
Civil servants	228(20.9)	175 (16.09)	403 (37.01)	
Business/Petty Trading	97 (8.9)	67 (6.15)	164 (15.06)	
House wife/unemployed	3 (0.28)	46 (4.20)	49 (4.50)	
Retires	16 (1.41)	4 (0.37)	20 (1.80)	
Manual labourers/ Unskilled Workers	10 (0.92)	22 (2.02)	32 (2.90)	
HCP	32 (2.94)	28 (2.57)	60 (5.51	
Household Monthly income				**0.000**
1000.00 - < 25000.00	239 (21.9)	274 (25.2)	513 (47.10)	
25,000.00 - <50,000.00	90 (8.30)	68 (6.20)	158 (14.50)	
50,000.00 - < 100,000.00	108 (9.90)	109 (10.0)	217 (19.90)	
100,000.00+	136 (12.5)	65 (6.00)	201 (8.50)	

Out of the 1089 who participated and reported to have been sick in last three months were 37.56 % prior to the study. The prevalence of self – Medication among the respondents across the 6 geopolitical zone was 69.4% (Table 3). However overall prevalence among the participants who's usually practicing self-medication always (14.6%), sometimes (48.9%), rarely (27.9%) bringing an overall prevalence of those who's admitted to ever practice self-

medication across the country to 91.5%, as only 8.5% denied ever practice self-medication. As reported in table 3.

The 10 top illnesses Nigerians took self-medications for were headache (21.10%), Febrile illness (including Malaria (9.15%), Pain in joints/Arthritis/Waist/Back Pains (8.77%), Cough/URTI (11.64%), Body pain. (6.05%), Genital infection/STD (4.72%), Dandruff/Hair falls (3.88%), Asthma (3.67%), Varicose veins (3.42%) and skin disease on open areas (3.98%) etc. (Table 4). Interestingly Nigerians do not commonly appear to self – medicate with non-communicable diseases such as Hypertension (1.89%), Diabetes (1.55) Seizure disorders (0.93). This also applies to birth control practices (1.58%).

On Table 5, we presented the most common reasons for practicing self-medication among the participants which includes Doctor/Clinic too Far (24.8%), Ease/Convenience (18.34%), Dr Busy with too many Patients (17.72%).

Table 3: Self-Medication Practice by Respondents

Variable	Male N = 573 (52.6%)	Female N = 516 (47.4%)	Total N = 1089 (100%)
Did you fall ill in the last 3 months			
Yes	208 (19.1)	201 (18.50	409 (37.56)
No	365 (33.6)	315 (28.9)	680 (62.4)
Did you self-medicate the in last 3 months			
Yes	392 (36.0)	364 (33.4)	756 (69.4)
No	181 (16.6)	152 (28.9)	333 (30.58)
Do you Practice self – Medication			
Yes Always	95 (8.73)	64 (5.87)	159 (14.60)
Yes Sometimes	265 (24.3)	268 (15.15)	533(48.90)
Rarely	159 (14.3)	145 (15.51)	304(27.90%)
Subtotal	**519 (47.66)**	**477 (43.80)**	**996(91.50)**
No Response	54 (45.0)	39(3.58)	93(8.50)

Table 4: Various Indications for Self-Medication among Respondents

N/O	Diseases	Count (%	N/O	Diseases	Count (%)
1.	Headache	682(21.10)	18.	Diabetes	50 (1.55)
2.	Fever (including Malaria)	296 (9.15)	10.	Dental pain	46 (1.42)
3.	Arthritis/Waist/Back Pains	279 (8.77)	20.	Ear pain	42 (1.30)
4.	Cough/URTI	375(11.64)	21.	Skin disease in covered areas	34 (1.05)
5.	Body pains	195 (6.05)	22.	Epilepsy	30 (9.28)
6.	Genital infection/STD	152 (4.72)	23.	Menstrual problems	26 (8.04)
7.	Dandruff/Hair falls	125 (3.88)	24.	Migraine	24 (7.46)
8.	Asthma	118 (3.67)	25.	Dysphagia	22 (6.80)
9.	Varicose veins	110 (3.42)	26.	Wounds	22 (6.80)
10.	skin disease on open areas	96 (3.98)	27.	Mouth ulcer	19 (5.88)
11.	Nausea/anorexia/Vomiting	88 (2.72)	28.	Impotence	13 (4.02)
12.	Rash	67 (2.07)	29.	Waist/Back pain	12 (3.71)
13.	Hypertension	61 (1.89)	30.	Fainting attacks	11 (3.42)
14.	Diarrheal diseases	60 (1.86)	31.	Salmonella infection	10 (3.09)
15.	Eye infection	53 (1.44)	32.	Urination problems	9 (2.80)
16.	Acidity (Dyspepsia)	53 (1.44)	33.	Indigestion/constipation	3 (9.2732)
17.	Birth control	51 (1.58		**Total**	**3234 (100)**

Financial Reason (12.95%), and Saves time (12.86%) etc .The most common reasons among respondents who do not practice Self-medication includes is that they think, they lack knowledge about medicines (11.2%), fear of misdiagnosing (7.5%), risk of using wrong drugs (6.9%) risk of using drugs wrongly (4.8%), or risk of adverse effects (4.7%), (Figure 1).

Where medicine is obtained

Most (23% and 20%) of the respondents obtained their medications from Community Pharmacy shop and patent medicine (drug) stores respectively, rather than hospital pharmacy (12%). Local hawkers 19%, and consultation of previous prescription 18% were the next common sources drugs for self-medications in this study. (Figure 2)

Table 5: Factors Leading to Self-Medications among the Participants

Factors	Male N = 573 (52.6%)	Female N = 516 (47.4%)	Total N =1089 (100%)
Doctor/Clinic too far	139 (12.76)	131 (12.00)	270 (24.79)
Ease/convenience	113 (10.38)	87 (8.00)	200 (18.37)
Dr busy with too many patients	92 (8.40)	101 (9.27)	193 (17.72)
Financial reason	74 (6.80)	67 (6.15)	141 (12.95)
Saves time	63 (5.77)	77 (7.07)	140 (12.86)
I have old prescription	45 (4.10)	32 (2.90)	77 (7.07)
Seek Pharmacist/Nurse's advise	16 (1.47)	6 (0.55)	22 (2.02)
Depends on nature of sickness	15 (1.38)	6 (0.55)	22 (2.02)
No confidence in doctors	6 (0.55)	2 (0.18)	8 (0.74)
Self-knowledge	1 (0.09)	2 (0.18)	3 (0.25)
Prefer to try Herbal first	9 (0.83)	4 (0.37)	13 (1.20)

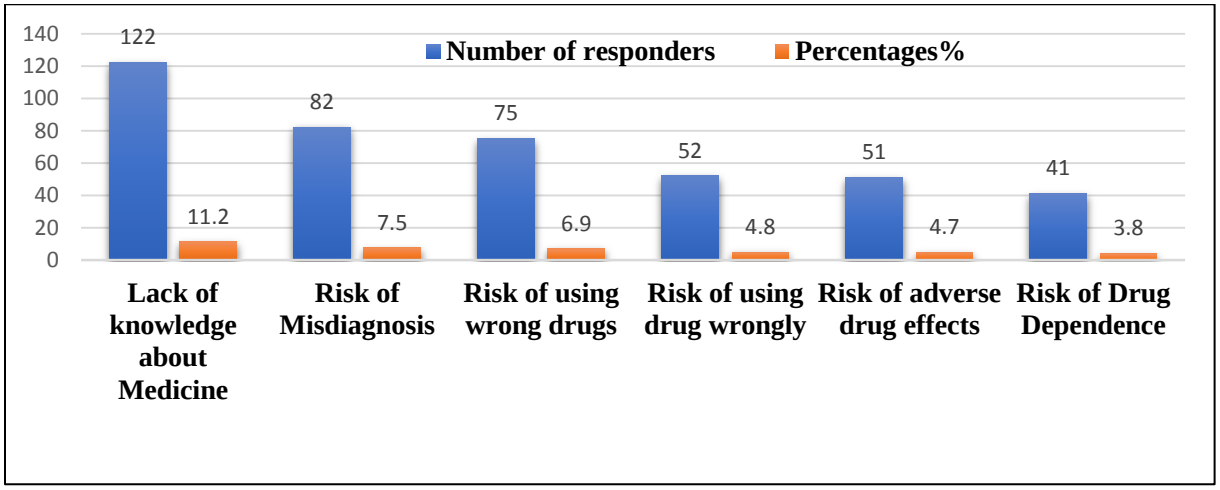

Figure1: Reason for Not Taken Self Medications

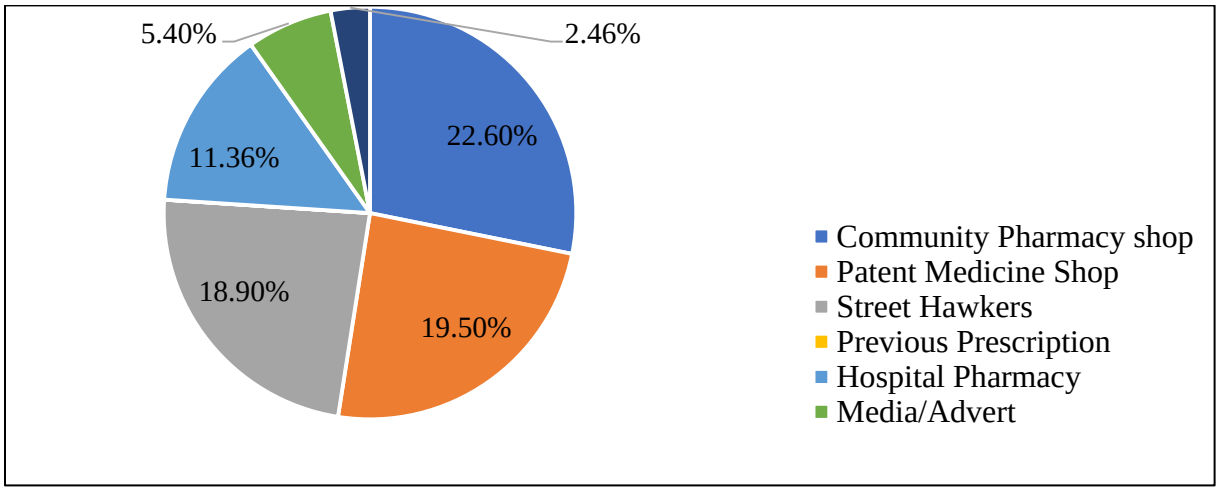

Figure 2: Places where drugs are obtain for self- Medications (%)

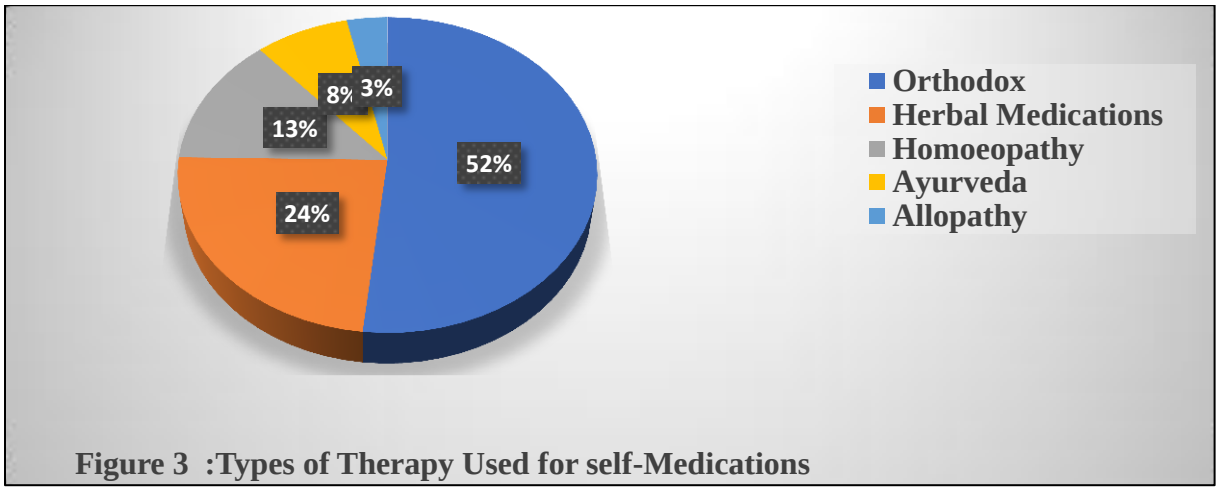

Figure 3 :Types of Therapy Used for self-Medications

Types of therapy used for self-medications

As seen on figure 3, majority of the respondents (52%) claim they use orthodox medicine for self-medication, while 24% of respondents practice herbal medicine for self-medication. Those whose use herbal medication claims it works faster, cheaper and has fewer side effects than the orthodox medicines.

Discussion

In the present study the prevalence of self-medication among the participants across the 6 geopolitical zone was 69.4%. This is similar to previous community studies in Nigeria 63.8%, 85% and 79% among patients attending general outpatients' clinics in hospitals in western Nigeria [3428, 27,], in Cameroon (86.50%) [35], 81.8% in Khartoum State Sudan, Kolladiba Town, North West Ethiopia 70%, and Western Ethiopia 80% [36 – 37] respectively. This is also comparable to what is obtainable in other studies conducted in different developing countries outside Africa with a range from Pakistan 76% [38], Punjab in India 50% [40] and in rural & urban communities in Vietnam 56% and 60%. [41,42] These may be because they are developing countries with few

healthcare facilities and personnel. Most of the available healthcare facilities are located in the urban centres while majority of the population still live in the rural area where healthcare facilities are grossly inadequate. In the Urban areas it has been found to be due to modern consumers (patients) wish to take a greater role in the maintenance of their own health and are often competent to manage (uncomplicated) chronic and recurrent illnesses [43]. They may understandably be unwilling to submit to the inconvenience of visiting a doctor for what they rightly feel they can manage for themselves, given adequate information.

Although previous self- medication studies in Nigeria was institutional among students and hospital healthcare workers, our finding were of similar pattern, with the prevalence of self-medication from several studies ranges between 60-90%.Among health workers in a tertiary institution in South-West Nigeria was, 52.1%, 73[42,28] Among undergraduate students of a Nigerian university, the prevalence of self-medication was 67% [44], 99.1%, among clinical students Delta state University.[25] and among medical students of the Bayero University 38.6%, Kano, North-West Nigeria [45, 46]. It is therefore likely that even if the expected sample size of 1400 was reached there may not be any difference in the findings. This calls for concern and the need for developing strategies and policies towards ensuring responsible self-medication across the country.

Our findings indicate a significant role of socioeconomic as well as family factors that were associated with the likelihood of self-medication. Males are more involved in this practice than females, which was in line with previous findings in South west Nigeria (44,47) and in highland settings in Vietnam, India and Nepal. [48, 49–51. This might be because males were less likely to go to clinics because of mild symptoms and loss of income or the fact that most are too busy to spend a\day at busy clinic they felt more confident in managing their own illness than women, more so in some northern part of Nigeria it is regarded as not manly to complain of minor illness and therefore more likely to hide their complaints opting to practice self-medications.

The 10 top types of illness Nigerians led to self-medications in this study, (headache, Febrile illness -including Malaria, pain in joints/Arthritis/waist/back pains , cough/URTI, etc. were reported with same trend by Babatunde e al (2016) (body pains (14.9%), catarrh (14.9%), headache (14.3%), sore throat (11.5%), diarrhoea (11.2%), fever (9.0% et), and toothache (5.6%).) in South-West Nigeria. [44] Also, similarly in France and Brazil, three fourth of the ill people who had fever sought medical help. This probably shows that fever is taken as an important signal that made patients visit health facility. Thus, the type of illness was a contributing factor to the patient's manner of response towards their illness (47 - 51).in this study, non- communicable diseases such as hypertension, Diabetes Mellitus, seizure disorders were reported as low as (2% each). This confirms the fact that nature of illness determines self-medication. It invariably implies that majority of our respondents are aware that serious illness needs proper medical attention than the ones they consider mild. It is therefore possible to train the Nigerian public for responsible self- medication (care) to avoid harmful effects of improper use of self-medication.

The reasons for practicing self-medication among the participants include distance to access medical doctor clinic which in most cases are too far, ease and convenience, unwillingness to seek attention from busy doctor

who had to cope with too many Patients. Several studies have also reported lack of time to visit physician, financial reason, saves time and nature of illness (too mild) that it did not require doctors consultation, in addition, they also use the same prescription because they felt that even if they visit the doctor they will also prescribe the same medication hence they opted self-medication practices.[52,53] Few other studies also reported the same reasons for the self-medication practices among their study population.[54,-56]. The common sources of information for self-medication reported by our study respondents are advertisement, previous experiences with medication, advice from family members and friends. These findings are very much similar to the opinions of participants of other published studies. [24,21,58,59]. Access to medical care and satisfaction with pharmacy services emerged as important predictors of self-medication. In many settings, patient's satisfaction with the health care provider has been identified as an important factor affecting self-medication. [60,9,61 - 63].

Majority (23% and 20%) of the respondents obtained their medications from Community Pharmacy shop and patent medicine (drug) stores respectively, rather than hospital pharmacies (12%). Local hawkers 19%, and consultation of previous prescription 18% were the next common sources drugs for self-medications in this study in this study.

Drug outlets such as community pharmacies, patent medicine (vendors) shops, street hawkers were identified as the main sources of modern drugs for practice of self-medication. Availability of drug in wrong places outside health professionals' supervisions such as those purchased in shops (kiosks), advertisements (sales representatives), drug markets, online shopping and left-over drug from past prescription were also identified in this study same as sources of drugs in study done in Urban Sri-Lanka, Addis Ababa and Jimma [64,65,47,21]. In order to decrease unnecessary health risks and bacterial resistance due to improperly obtained and used drugs, it is important to consider the mode of consumers access to drugs.

Although mode of treatment preferred by respondents were Orthodox (51.72%) medicine, Herbal Medicines (23.45%) were significantly used either before or as means of self-medication practice in our study. Many of our respondents especially among the Igbo in Southwestern Nigeria claim that they prefer traditional medicines use first before considering orthodox medicine for self-medication because traditional medicine is more effective, cheap and hard fewer side effects. In a study among non - academic staff in a Nigerian University, Akannmu *et al* (2012), found out that 19.4% of their participants practiced herbal self-medication while 3.8% consulted herbal practitioners for treatments. A total of 42.2% respondents do combine herbal and orthodox medicine to achieve better cure (60.7%) or quick recovery (38%) [47].

Accessibility to orthodox medicines was the most cited reason by herbal clinic attendees for opting for this form of therapy as first choice when sick. "Although it is unclear if the patrons of the herbal clinics who had used orthodox medicines prior to their visit got them based on a physician's prescription or self-medication and even whether they administered the drugs using the right dosage regimen, their decision to seek healthcare at herbal clinics could possibly be due to their lack of satisfaction with the orthodox medications". This assertion is supported by the results of this study and others previous study [47], which found that both hospital and herbal clinic attendees had their topmost reason for opting for herbal medicines being that herbal

medicines are more effective than orthodox medicines. Lack of satisfaction with orthodox medicines had also been found to be a major reason for people opting for herbal medicines in one study in the USA [66].

Many current orthodox drugs have their origin from herbal medicines, but the main difference between the two is that the herbal drugs contain a large number of compounds, rather than a single pharmacologically active substance; hence components of both herbal and orthodox medicines may act on one another to moderate, oppose, or enhance an effect [67,68]. The fact that most respondents in previous studies, also stated that concurrent use of herbal and orthodox medicines is better and a more effective way of treating their conditions brings to the fore the need for greater education to lessen the consequences of drug-herb interactions.it is important that besides orthodox healthcare practitioners, herbal medicine practitioners should also be sensitized to be interested in the drug history of their clientele and then educate them on the dangers of taking these forms of medications together.

Conclusion

Prevalence of self-medication in Nigeria is still high and our finding suggests that it is unlikely to be eradicated even with improved healthcare. Considering fact that self-medication practices cannot be considered as entirely harmful especially in our setting with poor healthcare, because drugs classified as over the counter can be purchased without prescription and many a times might save time and money for the patients. Also, majority of our people lives in remote areas, where it is hard to reach an ideal healthcare setting, or where there is huge shortage of human health work force, patients can benefit from self-medication practices for minor symptoms. Also, common is the use of herbal medicine either before or concurrent with orthodox medicine is still common. To avoid the harmful effects of self-medication, policy makers in the country should improve healthcare, set up campaign and training strategies in promoting "responsible self-medication practices". Medical practitioners should also ensure a good drug history including herbal medicine use and its harmful adverse effects.

Limitation of the Study

The occurrence of COVID -19 Pandemic, prevented data collectors from completing the required target study population as described in our sample size. More importantly, generalization of our study findings to other areas of the country may be limited since self-medication is a self-initiated behaviour which tends to vary from setting to setting. Our findings however are similar to previous studies carried out at local and regional level implying that the smaller than expected sample size has not been affected significantly.

Conflict of Interest

There is no conflict of interest

Source of Funding

Research was completely self-sponsored between authors.

Acknowledgement

The authors would like to thank the chairman and members of national ethical committee for approval of the study. The assistance of Dr Obidah Musa Gwary, Mr Dan Fulani Kaduna, Mrs Hannatu Abel, Pastor Haruna Bassi, Mellitus Ogbonna, during the data collection is highly appreciated. Lastly, our gratitude also goes to Miss Pamela James, Mr Dunawutuwa Bassi, Mr Akpan Emediong and Mr Michael Nwuko, Mr Samuel Audu for the secretariat and data entry.

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