

Self-Medication Practices among Health Workers in a Tertiary Hospital in South-South Nigeria: Prevalence, Pattern and Determinants

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Abstract

Background: Self-medication reduces the pressure on health services, but is often associated with inappropriate and irrational use, even among health workers.

Aims: The study was carried out to determine the practice and determinants of self-medication among health care workers in a tertiary health facility in Nigeria.

Materials and methods: In a cross-sectional study design, consenting health workers, selected through a multistage sampling technique, were interviewed using validated questionnaires.

Statistical analysis: Data analysis was done using SPSS version 21. Bivariate analysis was tested using *chi-square*. Statistical significance was set as $p < 0.05$.

Results: Prevalence of self-medication in the last 6 months was 89.3% and significantly associated with age ($\chi^2=8.09$, $p=0.00$) and attitude towards self-medication ($\chi^2=19.89$, $p=0.00$). Knowledge of self-medication was average for the majority 111 (53.9%). Treatment was sought for headache (92.4%), fever (81.5%), diarrhoea (75.0%) and respiratory infections (61.4%). Common drugs self-medicated included antimalarials (91.3%), analgesics (80.9%), antibiotics (71.2%). Thirty-nine (21.2%) self-medicated with sleeping pills. Familiarity with the treatment options was the main reason for self-medication for 60.9% of respondents.

Conclusion: The study highlights the need for health managers and administrators to promote responsible self-medication through raising knowledge and behaviour change communication and removing the barriers to accessing medical services. On a broader scale, there is a need to enforce the restriction on the sale of prescription drugs like antibiotics and sleeping pills and support drug dispensers to provide effective counselling while dispensing.

Keywords: Self-medication; Health workers; Prevalence; Sleeping pills

Introduction

Self-medication describes the condition where medications are used by an individual or a family member to treat self-diagnosed or self-recognized conditions without a physician's order. Drugs recommended for self-medication are permitted for the public's use without the supervision of medical doctors or other professionals and approved as safe and effective for such use. As a component of self-care, responsible self-medication allows an individual play an active role in decision-making regarding his or her own health care, reduces

the burden on the health system especially in resource-poor settings, and enables better use of health worker's time. Irrational self-medication on the other hand carries the risk of delays in seeking medical advice, adverse reactions, life-threatening drug interactions, masking of severe disease, risk of dependence and antibiotic resistance. Though self-medication occurs globally, prevalence rates vary across countries [1].

Health workers have a greater tendency to self-medication due to their privileged access to professional co-workers, familiarity with medications in the workplace, a false sense of

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confidence in self-treatment and a refusal to enter the patient role. These factors increase their risk beyond the general population. Prevalence of self-medication was 77.6% among health professions in Malaysia, 52.1% in South-west Nigeria and 67.5% in Ethiopia. Self-medication is under-researched in low-income countries where the practice is made worse by the ease with which prescription drugs can be obtained over the counter. In Nigeria, it becomes more alarming in Lassa fever endemic communities such as the study area, as Lassa fever mimics several common tropical infections including malaria and inappropriate treatment for a febrile illness might delay the diagnosis of Lassa fever. Assessing their knowledge, attitude and practice of health workers in Nigeria towards self-medication will guide the development of interventions to promote responsible self-medication [2].

The practice of self-medication is high among health workers in tertiary health institutions with antibiotics and narcotics in common use. Health administrators should institute behaviour change programs to their staff to promote responsible drug use, while easing access to health services to discourage harmful self-medication practices [3].

Materials and Methods

Study area

This study was carried out in a tertiary hospital located in the South-South region of Nigeria. The 250-bedded hospital provides comprehensive primary, secondary and specialized health care services to the people of Edo and neighbouring states. At the time of the study, there were a total of 1430 health workers and 191-non-medical workers (administrative staff and health record officers) in the hospital [4].

Study population and design

The study utilized a cross-sectional design and was conducted between June and December 2018 among the clinical and non-clinical staff of the hospital. Sample size was calculated using Cochran's formula for prevalence study $N = z^2pq/d^2$ with d as 77.6%, being the prevalence of self-medication practice among health professionals in a private university in Malaysia, standard normal deviation set at 1.96% and 95% confidence interval and margin of error (d) as 5%. The final sample size was determined using correction formula for populations less than 10,000: $nf = n_0 / (1 + n_0/N)$, where: nf is the final sample size; n_0 initial sample size and N total population. After adjusting for non-response, the sample size was set as 250 [5].

Selection criteria and sampling technique

All full-time clinical and non-clinical staff who were willing to consent and were present during the study period were eligible to participate. Medical doctors were excluded as they were considered the prescribers. Respondents were selected through a two-stage sampling process with the first step as the use of population proportional to size sampling to determine the number of health workers required per

department and second step as use of simple random sampling within the departments to select eligible respondents [6].

Study instrument

Data were collected using a structured self-administered questionnaire that was designed by the researchers following an extensive literature review process and subjected to face and content validity by a group of local experts. This consultation process led to redrafting and re-organizing items in the questionnaire. Reliability was calculated using Cronbach's α as >0.7 for all items of the questionnaire. Pre-testing was carried out among 30 health workers employed in a government-owned secondary health facility in the district [7].

The questionnaire contained 4 sections on socio-demographic characteristics, general knowledge of self-medication, attitude and practice of self-medication. Ten questions examined respondents understanding of self-medication and included definition, situations where self-medication was permitted, benefits and dangers of self-medication. A score of one was assigned to a correct response and zero to an incorrect response. Understanding was graded as good, average or poor depending on whether the final score of the respondent fell within $>75\%$, $50\%-75\%$ or $<50\%$ of the total score of 10. Five questions set in Likert style with responses as strongly agree, agree, uncertain, strongly disagree and disagree were used to assess the attitude towards self-medication.

For analysis, response scoring was done by assigning a score of 4 to a response that should be strongly disagree if the response is correct, 3 for disagree, 0 for not sure, 2 for agree and 1 for strongly agree. Reverse score marking was done for a negative statement. For attitude, a grade of negative was assigned to the respondent if his/her total score for attitude fell $<50^{\text{th}}$ percentile and positive if $>50^{\text{th}}$ percentile. A respondent was said to have self-medicated if he/she gave a yes response to the question. Have you taken medicines in the last 4 months without the prescription of a doctor? The questionnaire also collected information on the type of ailments for which treatment was sought, names of drugs consumed and source of drug information, reasons for self-medication, occurrence (s) of adverse drug events and actions. Research assistants were final year medical students who underwent a one-day training on the basic techniques of consenting and questionnaire administration [8].

Statistics

Statistical analysis was done using Statistical Package for the Social Sciences (SPSS) version 21 (IBM Corporation, Armonk, NY, USA). Descriptive data were presented as percentages, mean and standard deviation were used to summarize quantitative data. The outcome variable-practice of self-medication, was tested in bivariate analysis with *chi-square* test against exposure variables of knowledge, attitude

and sociodemographic qualities. P-value for statistical significance was taken as <0.05 .

Results

Two hundred and six questionnaires were returned giving a

response rate of 82.4% (206/250). Mean age of respondents was 36.5 ± 8.5 years, there were slightly more females than males (53.9% and 46.1% respectively). The majority were nurses (40.8%), married (62.6%) and the mean duration of employment was 7.68 ± 6.4 years (Table 1) [9].

Table 1: Socio-demographic characteristics (n=206).

Variable	Frequency (%)
Occupation	
Clinical	53 (25.7)
Nurses	84 (40.8)
Support staff	21 (10.2)
Administrative staff	25 (12.1)
Other allied health workers	23 (11.2)
Marital status	
Single	68 (33.0)
Married	129 (62.6)
Others	9 (4.4)
Gender	
Male	95 (46.1)
Female	111 (53.9)
Age group (years)	
≤ 29	51 (24.8)
30-39	77 (37.4)
40-49	51 (27.2)
≥ 50	21 (10.2)
Duration of working years	
<1	22 (10.7)
1-10	141 (68.4)
11-20	31 (15.0)
≥ 21	12 (5.8)
Religion	
Christianity	181 (87.9)
Islam	22 (10.7)
Others	3 (1.4)

One hundred and nine of 206 (57.8%) respondents could correctly define self-medication. 79.6% (164/206) respondents were aware of current modalities of home management of malaria, 18.0% (139/206) correctly knew common cold should not be treated with antibiotics, 67.0% (138/206) and 77.2% (159/206) respectively knew anti-hypertensives and anti-diabetics require consultation with a physician to review prescriptions during the course of treatment. Common advantages of self-medication mentioned

were quick relief of symptoms 21.4% (44/206) and cost-saving 48.6% (100/206). Fifteen (7.3%) respondents did not know any benefit of self-medication. Dangers of self-medication mentioned included drug reaction 22.3% (46/206) and overdose or underdose 36.9% (76/206). About 7.3% of respondents could not mention any untoward effect of self-medication (Table 2) [10].

Table 2: Knowledge of self-medication.

Knowledge question	Correct response (%)
Definition of self-medication	119 (57.8)
Malaria can be treated at home and only require seeing a doctor if there is no improvement	164 (79.6)
Antibiotics are best for common cold and can be stopped when symptoms clear	137 (18.0)
Once you have high blood pressure, you can take your drugs at home and discontinue them once your blood pressure returns to normal	138 (67.0)
Drugs for diabetes mellitus can be changed based on recommendations from the any trained health worker and not necessarily a doctor	159 (77.2)
Drugs to stop heartburn can be taken as often as necessary	102 (49.5)
Typhoid should be treated with drugs prescribed only by a doctor	105 (51.0)
Medications for arthritis can be taken on an empty stomach	119 (57.8)
Taking medicines three time a day means: Taking at breakfast, lunch and dinner time	107 (51.9)
Advantages of self-medication	
Quick relief of symptoms	44 (21.4)
Convenience	27 (13.1)
Cost-saving	100 (48.6)
Time saving	6 (2.9)
No need for hospital visit	5 (2.5)
Useful for emergency need	3 (1.5)
Effective	6 (2.9)
No known advantage	15 (7.3)
Disadvantages of self-medication	
Drug reaction	46(22.3)
Overdose/under dose	76 (36.9)
Use of wrong drug	22 (10.7)
Damage to internal organs	14 (6.8)
Death	33 (16.0)
No knowledge	15 (7.3)

The greater proportion of respondents were found to have average knowledge of self-medication, 53.9% (111/206), while the least number had good knowledge made up 12.6% (26/206). One hundred and four (50.5%) respondents felt

confident in their ability to self-diagnose and 128 (62.1%) in their ability to treat themselves (Table 3) [11].

Table 3: Attitudinal disposition to self-medication (n=206).

Attitudinal statements	Frequency (%)
I do not feel obliged to consulting a doctor for my illness	
Strongly agree/Agree	133 (64.6)
Strongly disagree/Disagree	63 (30.6)
Uncertain	10 (4.9)

I am confident in my ability to diagnose my symptoms myself	
Strongly agree/Agree	104 (50.5)
Strongly disagree/Disagree	93 (45.1)
Uncertain	9 (4.4)
I do not consider myself at any risk or harm from self-medication	
Agree	133 (64.6)
Disagree	63 (30.6)
Uncertain	10 (4.9)
I am confident with my ability to treat myself and handle side effects	
Agree	128 (62.1)
Disagree	61 (29.6)
Uncertain	17 (8.3)
I believe self-medication should be practiced only by health workers	
Agree	72 (35.0)
Disagree	101 (49.0)
Uncertain	33 (16.0)

One hundred and eleven (55.9%) respondents were positive towards self-medication, 95 (46.1%) held negative attitudes. One hundred and eighty-four (83.9%) respondents had self-medicated in the last 4 months. Headache (92.4%), fever (81.5%) and body pains (75.0%) were the most frequent complaints for which respondents self-medicated. Antimalarials were the most common drugs that were self-

medicated, 81.6% others included analgesics 80.9%, anti-hypertensives 21.4% and anti-diabetic medications 11.7%. Use of antibiotics and sleeping pills were 71.2% and 21.2 % respectively. The greater proportion of respondents obtained the drugs from private retail drug stores, 36.4% and pharmacists provided the most source of drug information for 59 (32.1%) respondents. Less than 1% read the package insert of the drugs obtained (Table 4) [12].

Table 4: Pattern of self-medication among respondents.

Variable	Frequency	Percent
Have you taken drugs without a doctor's prescription in the past 4 months		
Yes	184	83.9
No	22	10.7
Common drugs self-medicated[#] (n=184)		
Analgesics	149	80.9
Anti-malaria	168	91.3
Antibiotics	131	71.2
Cold/Catarrh remedies	145	70.4
Worm expellant	82	44.6
Anti-ulcer	56	30.4
Sleeping pill	39	21.2
Anti-hypertensive	40	21.4
Anti-diabetics	22	11.7
Symptoms for which treatment was obtained[#]		

Headache	170	92.4
Fever	150	81.5
Arthritic pains/Body pains	138	75
Cold/catarrah	113	61.4
Sorethroat	108	58.7
Eye and ear problem	33	17.9
Vomiting/Nausea	8	4.3
Diarrhea	19	10.3
Rashes/Allergy	12	6.5
Constipation	22	12
Heartburn	63	34.2
Others	9	4.9
Common source of drugs		
Private pharmacy	67	36.4
Chemist/patent medicine store	60	32.6
Leftover at home	53	28.8
Others*	4	2.2
Source of information about drugs		
Friends	14	7.6
Retail pharmacist/Chemist	59	32.1
Journal articles	8	4.3
Past experience	29	15.8
Drug package insert	1	0.5
Family members	13	7.1
Internet	10	5.4
Health workers	32	17.4
Patent medicine dealer	18	9.8

Note: *Online ordering, family or friends, #Multiple response

Reasons given for self-medication included lack of time to see a doctor 96 (52.2%), familiarity with the treatment option 112 (60.9%), perceptions of non-severity of symptoms to warrant a clinic visit 63 (34.2%), financial constraints 27 (14.7%), non-favourable appointment times 6 (3.3%), fellow health worker attitude 20 (10.9%). Fifty-eight (31.5%) respondents had ever experienced a side effect from self-medication, most notable mentioned by the majority was nausea and vomiting 36 (62.1%). Others included rash (43.1%), poor sleep (44.8%), body itch (6.9%), headache (17.2%) and diarrhoea (5.1%). When asked what action they took when they experienced a side effect, the majority 37 (63.8%) consulted a health professional, 12 (20.7%) first went for a lab test, 2 (3.4%) changed the dose of the drug, 2

(3.4%) changed to another drug and 3 (5.2%) resorted to herbal preparations, 2 (3.4%) took no action [13].

For illnesses that were perceived as serious or severe, 198 (96.1%) opined to consult a doctor, while the minority, 6 (2.9%) would use traditional practitioners. The practice of self-medication significantly declined sharply after 50 years of age ($p=0.04$). No other socio-demographic factor was significantly associated with self-medication (Table 5). Similarly, a greater proportion of respondents with negative attitude practised self-medication compared to those with a positive attitude ($p<0.01$) (Table 6) [14].

Table 5: Sociodemographic factors associated with self-medication.

Variable	Practice of self-medication		χ^2	p value
	Yes (184) n (%)	No (22) n (%)		
Occupation				
Clinical	45 (84.9)	8 (15.1)	6.61	0.16
Nurses	80 (95.2)	4 (4.8)		
Support staff	19 (90.5)	2 (9.5)		
Administrative staff	20 (80.0)	5 (20.0)		
Allied health workers	20 (87.0)	3 (13.0)		
Marital status				
Single	61 (89.7)	7 (10.3)	1.32	0.52
Married	116 (89.9)	13 (10.1)		
Others	7 (77.8)	2 (22.2)		
Gender				
Male	84 (88.4)	11 (11.6)	0.15	0.7
Female	100 (90.1)	11 (9.9)		
Age group (years)				
≤ 29	48 (90.2)	5 (9.8)	8.09	0.04*
30-39	70 (90.9)	7 (9.1)		
40-49	53 (93.0)	4 (7.0)		
≥ 50	15 (71.4)	6 (28.6)		
Duration of working years				
<1	19 (86/4)	3 (13.6)	2.69	0.44
1-10	127 (90.1)	14 (9.9)		
11-20	26 (83.9)	5 (16.1)		
≥ 21	12 (100.0)	0 (0.0)		
Religion				
Christianity	161 (89.0)	20 (11.0)	0.44	0.93
Islam	20 (90.9)	2 (9.1)		
Others	3 (100.0)	0 (0.0)		

Note: *Significant

Table 6: Association of knowledge and attitude with self-medication (n=206).

Variable	Practice of self-medication		χ^2	p value
	Yes (184) n (%)	No (22) n (%)		
Knowledge grade of respondent				
Poor	60 (87.0)	9 (13.0)	0.72	0.7
Average	100 (90.1)	11 (9.9)		
Good	24 (92.3)	2 (7.2)		

Attitude towards self-medication

Positive	109 (98.2)	2 (1.8)	19.89	0.00*
Negative	75 (78.9)	20 (21.1)		

Note: *Significant

Discussion

The study being the first of its kind in the study area showed a high prevalence of self-medication among health workers, as has been reported from previous studies involving health workers. In contrast, lower rates of self-medication practice were recorded among nurses in Rio de Janeiro, 24.7% and health sciences students in Ethiopia, 58.4%. These differences in prevalence may be ascribed to methodological differences across the studies. Familiarity with the treatment was the most common reason given for self-medication, in tandem with other studies. This is understandable as the common symptoms for which treatment was instituted were fever and headache, symptoms associated with malaria and the common drugs taken were analgesics and antimalarials. One study reports similar findings. The majority were aware that malaria can be treated at home, which is a recommendation from the National Malaria Elimination programme. In Nigeria, antimalarials are OTC drugs, nevertheless treatment should follow a positive laboratory test because of the risk of developing resistance to malaria drugs and undue delay in the diagnosis and treatment of Lassa fever, a viral haemorrhagic fever endemic in Nigeria. The high prevalence of self-medication with antibiotic in this study agrees with other studies and is due to ease with which antibiotics can be obtained OTC without a prescription. The incorrect notion held by most respondents that antibiotics can be used for the treatment of common colds should be addressed through health education and stricter enforcement of regulations that restrict the sale of antibiotics without a prescription. Also worrisome is the high prevalence of use of sleeping pills, as has been reported in other studies and may be a reflection of a high stress level among health workers [15].

Lack of time to see the doctor was mentioned as a reason for self-medication in this study and similarly noted in a previous study. This finding requires further investigation by managers of health institutions, as staff in a health institution should have time to seek medical care if sick. Age was the only sociodemographic variable found to have any significant association with the practice of self-medication, with the practice declining after 50 years of age and corroborated in other studies. This is contrary to studies that found increasing age associated self-medication. This may be due to greater health consciousness with increasing age. Other studies found no association with socio-demographic characteristics.

The higher number of respondents with a positive attitude towards self-medication is in tandem with a study in North-west Ethiopia and in contrast with others. The perception of

not being at risk from self-medication tallies with the low proportions of respondents who were able to mention dangers of self-medication. The low perception of risk may therefore be a result of poor knowledge of dangers of self-medication. Interestingly, about 30% had ever experienced a side effect from using drugs without medical consultation.

General knowledge of self-medication was average for the majority, a finding shared by a study carried out in India and contrary to a study carried out in South-west Nigeria where knowledge was generally low. The gaps in knowledge regarding management of hypertension and diabetes mellitus observed among one-third of respondents is reflected by the observation that about one fifth and one-tenth of respondents self-medicated on anti-hypertensives and anti-diabetic drugs. This is in sharp contrast to a study in northern Tanzania where prevalence was 0.3% for both drugs. Such beliefs can lead to poor clinic attendance and poor outcomes of treatment. These misconceptions should be addressed through health enlightenment programmes and opportunities provided during screening clinics, well-person's clinics and medical specialty clinics.

Respondents misunderstanding of the timing of drug administration in this study has similarly been reported and reflects a desire to tailor the one's drug regimens to fit into daily life. However, incorrect drug timing carries the danger of sub-therapeutic dosing, medication errors and poor outcomes. This gap in knowledge should be addressed by ensuring that dispensers adopt a practice of counselling and clearly writing out drug instructions for their clients/patients, especially as the study showed pharmacists were the most common source of drug information for the majority, as has been documented in other studies.

The finding of a self-report of ever having an adverse drug effect in this study may be the result of a mismatch in the drug combinations, as in the study area it is common for drug stores to sell a cocktail of drugs based on the patient's complaints or particular requests.

Conclusion

The study showed the practice of self-medication was high with analgesics, antimalarials and antibiotics as the common drugs used. Considerable gaps in knowledge and attitude towards self-medication were identified. The study highlights the need for health managers and administrators to institute organizational-wide programs to promote responsible self-medication through improving knowledge and behavior change communication. There is an urgent need for local health authorities to enforce the restriction on sale of

prescription drugs like antibiotics and sleeping pills even to non-clinician health workers.

Ethical Considerations

Approval was obtained from the hospital's health research ethics committee and written informed consent obtained from all participants after the nature of the study, participation status, benefit of the study and confidentiality were explained and understood.

Source of Support

None.

Presentation at a Meeting

Nil.

Conflicting Interest

None declared.

Declaration

The manuscript has been read and approved by all the authors, the requirements for authorship have been met and that each author believes that the manuscript represents honest work.

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