ANTIMICROBIALS SELF MEDICATION AMONG PARAMEDICAL STUDENTS IN A NIGERIAN UNIVERSITY

ABSTRACT

Background/Objective: Self medication refers to selection and use of medicines by individuals to treat self recognized illness and symptoms. It is widely practiced globally and often regarded as part of self-care. Though, unlike the other elements of self-care, it acts as a double-edged sword with the ability to do good as well as exposure to hazards because it employs use of drugs. The objective of this study was to assess prevalence of antibiotic self medication among paramedical students of Usmanu Danfodiyo Sokoto, Nigeria.

Methodology: It was questionnaire- based, cross sectional study involving undergraduate paramedical students in a Nigerian University. Participants were selected by multistage sampling technique and data generated was analyzed using SPSS version 20.

Result: Majority of the respondents were males and singles, 64(68%) and 84(89.4%) respectively. Age ranged 18-25 years for majority of respondents, 87(92.6%). Eighty one point nine percent self medicate with antimicrobials. As a group, penicillin was the most cited 58(61.7%), and among the penicillin group, amoxicillin was the commonly used, 17(18.1%). There was no statistically significant association between gender, marital status and course of study with self medication (X_1=0.06, P=0.81; X_1=0.028, P=0.87 and X_3=2.28, P=0.52 respectively).

Conclusion: A high proportion of self medication with antimicrobials was observed among the respondents. However there was no statistically significant association of the medication with gender, marital status or course of study.

Keywords: Antimicrobials, Nigeria, Paramedical students, Self medication, University,

Introduction

Self medication refers to selection and use of medicines by individuals to treat self recognized illness and symptoms.[1] It is widely practiced globally and often regarded as a part of self-care. Though, unlike the other elements of self-care, it acts as a double-edged sword with the ability to do good as well as exposure to hazards because it employs use of drugs.[2] It is seemingly much easier, to circumvent the trouble of seeing a medical doctor and the cost involved by self medication, especially in financial and human resources constrained circumstances such as low and middle income countries. In most parts of the world, it is commonly practiced as over 50% of antibiotics are purchased without prescription.[3] Exorbitant costs of health care services, poor accessibility to health facilities, unregulated distribution of drugs, and inequality in the spread of health care services provide fertile grounds for self medication.[4,5] Self medications for whichever purpose poses a serious public health challenge worldwide and contribute immensely to development of deadly antimicrobial resistance irrespective of age bracket or gender. [1]

The magnitude of antibiotics self medication is higher with population in developing countries among the young and literates.[6, 7] Use of antibiotics for self medication is considered not a responsible use of antibiotics.[8] Antibiotics resistance which may arise from self medication currently potent one of the most pressing health issue globally.[9] This is more common in

developing countries, where antibiotics are freely purchased without prescription over the counter.[10]

Reasons for antibiotics resistance are multifaceted which include human factors such as self medication.[11] Socioeconomic status, life styles and easy accessibility to drugs have been shown to influence self medication.[12] Widespread use of antibiotics in agriculture as growth promoters and prophylaxis in livestock has been implicated in promoting resistance.[13] The consumption of antibiotics via these processes account for 63,000 to 240,000 tons of annual global use and through food chains resistance can be transmitted from animals to humans. [14, 15]

In Nigeria antibiotics are purchased over the counter.[16] It is however, unfortunately not without attendant dire consequences. These penalties include but not limited to masking symptoms of serious illness, fatal adverse drug reactions, wrong diagnosis, and susceptibility to addiction, risks of under or over dosage and poly pharmacy.[2] This is more so, with emerging more worrisome-the antimicrobial resistance. This has started rearing its ugly head years ago.[17] If left unchecked, it will take this generation back to pre antibiotics era of course with deadly outcome. This study therefore, aimed at assessing the prevalence of antibiotic self medication among paramedical students of Usmanu Danfodiyo Sokoto as future key players in healthcare delivery.

Setting, Study design and Sampling

Usmanu Danfodiyo University is among the second generation universities created in 1975. It is located in Sokoto seat of Usmaniyya caliphate. Paramedical students include Nursing, Radiography, Medical laboratory Science and Pharmacy. The first three are located in the College of Health Sciences while the last one is a faculty on its own. Their trainings involve preclinical and clinical phases. At the preclinical stage, students are taught mainly basic medical courses after passing relevant examinations proceed to the clinical levels at the Teaching Hospital which serves as referral centre for the neighboring states of Kebbi, Zamfara, Kano, Katsina and even Niger republic. The hospital is manned by various cadres of health professionals. It is a cross sectional descriptive study.

The respondents were selected by multistage sampling technique as follows:

Stage 1: Respondents were stratified based on course of study into nursing, pharmacy and radiography

Stage 2: Total number of students was obtained from in each department/faculty by their study levels

Stage 3: Total number of respondents to be selected from each department and level was by proportionate allocation

Stage 4: Actual respondents who participated in the study from the department/level were selected by sampling interval

Questionnaire design, Validation and Data collection

The semi -structured questionnaire was derived from previous studies (Kasulkar, 2015; Nùněz, 2016; Esiet, 2015).[18, 19, 16] It was reviewed by experts and test and retest was carried out for construct and content validity among students of faculty of Medical Laboratory Science. Areas of ambiguity were identified and addressed appropriately before administering. It comprised 3 sections. Section A, contained questions on demographic characteristics, section B focused on reasons for self medication and section C awareness of hazards associated with self medication. The questionnaires were distributed to the volunteers and asked to fill collected on the spot by one of the researchers (Fidelis). Those that could not fill promptly were given the next day to fill and were retrieved.

Study Population

Only registered students duly confirmed by the respective administrative offices of the concerned departments were recruited for the survey. Participation was purely voluntary. This was clearly made to the participants.

Statistical Analyses

Crude descriptive statistics was calculated for the components of the questionnaire. We used Chi-square Pearson's test to ascertain association of antimicrobial self medications with gender, marital status and course of study. Analyses were based on P<0.05 and SPSS version 20 was used.

Results

Hundred and fifteen questionnaires were administered and retrieved. After data cleaning 94 were analyzed of whom majority were males and singles, 64(68%) and 84(89.4%) respectively. The mean age was 22±0.1 years and most of the respondents' age ranged 18-25 years, 87(92.6%). As a group, penicillin was the most cited 58(61.7%), and among the penicillin group, amoxicillin was the commonly used, 17(18.1%). Respondents using metronidazole accounted for 17(18.1%). On where they purchased drugs, 44(46.8%) bought from Pharmacists' store while 24(25.5%) from 'Chemists' and only 1(1.5%) from street hawkers. The rest obtained drugs from hospital pharmacy and patent medicine stores 7(7.5%) and 18(19.2%) respectively. Headaches, skin rashes and dizziness dominated adverse effects experienced by the respondents (52.9%) each 17.7% respectively. Association between gender, marital status, course of study with self medication showed (X_1=0.06, P=0.807, df=1; X_1=0.028, P=0.868, df=1; X_3=2.281, P=0.516, df=3 respectively).

Discussion

A high response rate recorded may be attributed to on spot administration and collection of data. Female respondents constituted minority in our study which differs from the findings of similar works.[20, 21] Girl child education is still an obstacle in this part and most part of northern Nigeria and always reflects in enrolments in tertiary level of education and other formal sectors of economy. [22]

The proportion of respondents who self medicate with antibiotics observed in this study was quite higher than 39.3 and 47.9% reported in Southern India and China respectively.[23, 24] Antibiotics are sold over the counter in Nigeria and may be responsible for the high percentage recorded in the study. This is really worrisome and regulatory bodies saddled with the responsibility of monitoring drugs need to develop a policy frame work to curtail this menace by striking a balance between control and access to antimicrobials to vast majority especially in areas where healthcare manpower is overstretched.

The finding of this study, which penicillin as a group was the most commonly used for self medications was in agreement with the observations made by Fadare and Tamuno.[25] This may be explained by the fact that Penicillin were among the earlier antibiotic that are still clinically relevant currently because of their broad spectrum of activities, less side effects, affordability, safety profile and efficacy.[26] Among the group, amoxicillin was the most frequently cited, a finding reechoing reports in previous studies.[21, 20, 19] Saving money, time and presence of left over drugs as reasons for self medication were quite higher than 44, 19 and 16% respectively reported in Karachi. [27] This may be explained by prevailing economic recession being experience in the country. A good proportion of participants admit lack of confidence in health care providers prompted them to self medication which differed from finding in Lagos.[28]

On the awareness of dangers associated with self medication, the finding of this study is higher than 51.2% reported in India.[29] This is really encouraging and strengthens hope of improved rational drug use as the respondents were the future captains of health care delivery system. It

was heartwarming also that majority of respondents procured their drugs from approved designations. Previous study in the study area has documented non medical students university students tend to purchase their drugs from unauthorized outlets. [30]

No association was observed between antibiotic self medication and gender, marital status or course of study. This finding was slightly different from what was documented earlier that female students were more inclined to self medication than their male counterpart. [19] [24]

Conclusion

This study has revealed high prevalence of antimicrobial self medication among undergraduate paramedical students of Usmanu Danfodiyo University. No association was established of the self medication with gender, marital status or course of study. There is need for any intervention study to stem the tide of self medication.

Conflict of interest: none

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Table 1: Antibiotics Usage by Respondents

S/N	Antibiotic	N(%)
1.	Ampicillin + Cloxacillin	12(12.8)
2.	Ampicillin	7(7.5)
3.	Amoxicillin	17(18.1)
4.	Penicillin G procaine	13(13.8)
5.	Ciprofloxacin	13(13.8)
6.	Metronidazole	17(18.1)
7.	Erythromycin	5(5.3)
8.	Co-trimaxazole	4(4.3)
9.	Tetracycline	4(4.3)
10.	Ceftriazone	3(3.2)
11.	Chloramphenicol	1(1.1)

NB: Some respondents mentioned more than 1 drug

Table 3: Responses of Respondents on Reasons for Self medication

Question	Yes N(%)	Odds	95%CI lower	95%CI higher
SM with antibiotics last 1 year	77(81.9)	4.529	2.695	7.614
To Save time	77(81.9)	4.529	2.695	7.614
To Save money	52(55.3)	1.238	0.827	1.854
Past successful use	74(78.7)	3.700	2.269	6.034
Left over medicines	43(45.7)	0.843	0.564	1.262
Academic knowledge	75(79.8)	3.947	2.399	6.497
To avoid stress of seeing a doctor	70(74.5)	2.917	1.482	4.618
The drug has worked successfully In acquaintances before	74(78.7)	3.700	2.269	6.034
No need to consult a doctor for Minor illness	59(62.8)	1.686	1.113	2.553
Unfavorable attitudes of health care workers	52(55.3)	1.238	0.827	1.854
Lack of confidence in health care giver	57(60.6)	1.541	1.022	2.323
Encounter with adverse drug effects Following self medication	17(18.1)	0.221	0.131	0.371
Awareness that self medication Can be harmful to health	76(80.9)	4.222	2.539	7.019

SM= self medication