Self-medication with antibiotics among staff of a Nigerian University

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Abstract

This study was done to determine the prevalence of, reasons for and antibiotics used in self-medication among staff of Delta State University, Abraka Campus, Nigeria. A cross sectional survey was conducted among staff of Delta State University, using a pretested questionnaire which was self-administered to randomly selected staff of the university within a period of four (4) weeks. The study objectives were assessed by series of descriptive analysis including percentage and frequency. Overall, 82.4% of the participants practiced self-medication. The most likely indication for which participants self-medicated was frequent stooling (73, 21.7%) amongst other conditions such as cough, typhoid fever, boils nasal congestion etc. The most common antibiotics used was tetracycline (71, 21.1%) and others which included Ampicillin/Cloxacillin, Metronidazole, Co-trimoxazole . Doctors (198, 58.9%) and Pharmacists (123, 36.6%) were the most common sources of information on antibiotics. Antibiotics used for self-medication were mostly purchased from pharmacies (46.7%); possession of some sort of knowledge on drugs (26.2%), having doctor's prescription on previously treated condition (22.6%) and lack of time to visit the doctor (23.2%) were the most common reasons for self-medication with antibiotics. The study revealed that the prevalence of self-medication with antibiotics among staff of Delta State University, Abraka was high. This alarmingly high use of antibiotics in self-medication calls for urgent health education on the appropriate use of these medicines.

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Keywords: Self-medication, antibiotics, staff, university.

INTRODUCTION

Self-medication can be defined as obtaining and consuming medication without professional supervision, which comprises of acquiring medicines without a prescription, purchasing drugs by resubmitting/reutilizing an old prescription, taking medicines on advice of relatives or others, or consuming left over medicines already available at home[1]. It has also been 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 disease or symptoms [2,3]. Self-medication is the selection and use of medicines by individuals to treat self-recognized illnesses or symptoms [4]. Appropriate self-medication can cure diseases, saving time and money which would have been spent on visiting doctors and even it can sometimes save the patient's life in acute conditions [5]. Nevertheless, inappropriate self-medication could be detrimental to patients and even the society. For instance, self-medication with antibiotics has potentials to produce harmful effects on society such as antibiotics resistance [6]. Self-medication is also self-treating with 'over the counter' (OTC) medicines such as aspirin, acetaminophen, vitamins. Although this kind of self-medication is legal and there is no prohibition for pharmacists to give the requested drugs, inappropriate self-treatment with these drugs can also result in unwanted effects.

The World Health Organization (WHO) has defined self-care as what people do to themselves to establish and maintain health, prevent and deal with illness, and self-medication was included as an element of self-care by the WHO.

The prevalence of irrational use of drugs is quite high. In developing countries, it is as high as 92% [7], up to 68% in European countries [8] in India 31% and Nepal 59% [7]. A research conducted among university students in Islamabad [9]] showed the prevalence of self-medication with antibiotics to be 77% and assumed knowledge on antibiotics was the major reason given for self-medication. A Ghanaian study [10] on self-medication practices with antibiotics among tertiary education level students shows the prevalence of self-medication was 70%, most common antibiotics used was amoxicillin (23.9%), treatment failure reported was 35%, main reason for self-medication was that it was less expensive compared to medical care in the hospital and 49% of the respondents had poor knowledge about the health implications of irrational use of antibiotics. Another research carried out in Northern Nigeria on antibiotics self-medication among university undergraduate medical students [11] showed that 38.8% of the participants had practiced self-medication with antibiotics in the preceding two months. A study of the prevalence of self-medication practice among university students in South Western Nigeria [12] revealed that 53.8% of the students used antibiotics for self- medication while 46.3% used anti-malarial drugs for self –medication.

Effective intervention by studying the factors leading to the phenomenon is therefore of particular importance, especially in developing countries which are home of majority of the world's population. Many international studies have investigated the prevalence and nature

of self-medication practice at the population level. In Nigeria, some studies have been conducted on the population prevalence of self-medication [10,12] also the prevalence of anti-biotic self-medication amongst students in some Nigerian university has been studied, but not much work has not been conducted university community. Hence this research is focused on assessing self medication with antibiotics amongst staff of Delta State University. The objectives of the study is to assess the prevalence of self-medication with antibiotics, factors responsible for, and most common antibiotics used in self-medication among staff of Delta State University, Abraka Campus.

METHODS

A descriptive cross-sectional study was carried out between October and November, 2014 at the Abraka campus of Delta State University, (DELSU) Abraka-Nigeria. Delta State University operates a multi-campus system with each campus located in the three Senatorial district of the state. Abraka Campus is the main Campus of the university hosting the faculties of pharmacy, Basic medical sciences, Education, Arts, Science, Social Sciences and the major administrative offices and the main library. The study was conducted among academic and non-academic staff of the various faculties and administrative offices of the Abraka campus of DELSU. However, two faculties (Pharmacy and Basic medical sciences) were excluded because of their medical orientation so as to minimize bias.

Using the Raosoft® formula for calculation of sample size, a sample size of 330 was adopted. Four faculties were selected and questionnaire was administered to the staff. These faculties includes; Faculty of Art, Faculty of Science, Faculty of Education, and Faculty of Social Science and some in the administrative offices.

The research instrument was a 22 item questionnaire which was designed and pretested on a sample of 10 participants and relevant modifications were made. The questionnaire consisted of Sections A and B. Section A comprised the demography of the study participants (such as Age, Gender, Level of education) while Section B contained questions on the prevalence and practice of self-medication such as "Have you ever practiced self-medication with antibiotics? What conditions did you use it for?". "How often did you use it", "which of these antibiotics have you used?". The questionnaire was administered to 350 staff of Delta State University by approaching them in their offices. The questionnaire was given after explaining the purpose of the study and taking oral informed. The completed questionnaires were entered into excel spreadsheet and coded and then transferred into computer software SPSS version 20 for data analysis. Statistical analysis carried out and results were presented as means and frequencies.

RESULTS

A total of 350 questionnaires were distributed to the target respondents but only 336 were returned appropriately completed and valid giving a response rate of 96%.

Socio-demographic characteristics

The most dominant age group for this study was 45 years and over (199, 59.2%), while the least age group represented was <20 years (5, 1.5%). Over half (53.3%) of the respondents had post graduate qualification while only 1.5% of the respondents had primary level of education. Other demographic details are as shown in Table 1.

Table 1: Socio-Demographics of Study Sample

Characteristics	Frequency
Sex	
Male	195 (58.0)
Female	141 (42.0)
Age (in Years)	
≤ 20	5 (1.5)
21-44	132 (39.3)
45 and above	199 (59.2)
Marital status	
Single	107 (31.8)
Married	200 (59.5)
Separated/Divorced	29 (8.6)
Educational Qualification	
Primary	5 (1.5)
Secondary	26 (7.7)
Tertiary	126 (37.5)
Postgraduate	179 (53.3)
Total	**336 (100%)**

Prevalence of Self-medication with antibiotics

The prevalence of self-medication with antibiotics was obtained by positive response to the question "Have you ever practiced self-medication with antibiotics?" Majority of the respondents, 277 (82.4%), agreed ever practicing self-medication.

Sources of Information about antibiotics

Multiple responses were gotten from the participants on sources of information on antibiotics. Majority of them got information on antibiotics from Doctors (198, 58.9%) and Pharmacists (123, 36.6%). Others, 85 (25.3%), were taught in school, got it through the media, 56 (16.7%) and from friends and relatives, 96 (28.6%).

Most common antibiotics used for self-medication

Tetracycline was the most common antibiotics used for self-medication (71, 21.1%). Others are shown in Table 2.

Table 2. Types of antibiotics used by the respondents

Frequency (%)	Antibiotics
66(19.6)	Ampicillin/Cloxacillin
44(13.1)	Amoxicillin
26(7.7)	Flouroquinolones
28(8.3)	Ampicillin
50(14.9)	Co-trimoxazole
71(21.1)	Tetracycline
22(6.5)	Metronidazole
1(0.3)	Erythromycin

Note: Percentages do not add up due to respondents' multiple responses

Medical conditions for which Antibiotics were used

From this research, frequent stooling was found to be the most common condition for which respondents practiced self-medication (73, 21.7%). More details on the condition for which antibiotics were used are shown in Table 3.

Table 3. Illnesses for which antibiotics were used

Illnesses	Frequency (%)
Cough	46 (13.7)
Vomiting	8 (2.4)
Sore throat	11 (3.8)
Sexually transmitted diseases (STIs)	28 (8.3)
Catarrh	10 (3.0)
Typhoid	46 (13.7)
Boils	66 (19.6)
Toothaches	9 (2.7)
Frequent stooling	73(21.7)
Others*	14(4.2)

*"Others" include stomach aches, skin rashes, swollen toe, fever and malaria
Note: Percentages do not add up due to respondents' multiple responses.

Sources of antibiotics

Pharmacy outlets (157, 49.7%) were the most patronized source of antibiotics, others are patent medicine stores, drug hawkers, left-overs from previous prescription and some others got theirs from previous prescriptions.

Reasons for self-medication with antibiotics

Possession of some sort of knowledge on drugs (26.2%) accounted for the most frequent reason why self- medication was practiced this was however closely followed by having doctors' prescription on previously treated condition (22.6%) and lack of time to visit the Doctor (23.2%). More details are shown in Figure 1 below.
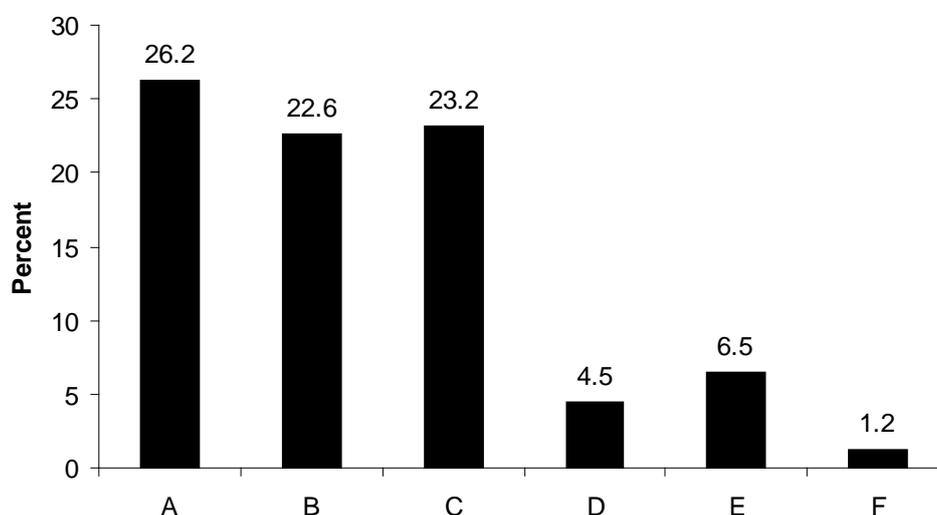

Fig.1 Reasons for self-medication with antibiotics

Key:

A	I have the knowledge	B	I had the doctor's prescription on previously treated condition
C	I did not have the time to visit the doctor	D	I did not have money to see a physician
E	I had the unfinished drug from previous prescription	F	Others(previous interaction with a pharmacist, privacy)

DISCUSSION

Majority of the respondents had practiced self-medication with antibiotics which is in consonance with similar studies carried out in Pakistan [13], in Ghana [10], Islamabad [9]and contrasts the findings in Northern Nigeria[11] where less than half of the population who were Undergraduate students in a medical profession admitted the practice. This study has revealed that almost all the respondents had some information about antibiotics, especially from Doctors and Pharmacists which is similar to a research conducted in Yogykarta, Indonesia [14].

Tetracycline was mostly used for self-medication while Ampicillin/Cloxacillin ranked next which contrasts the findings from a research carried out in Southwestern Nigeria [15] where the antibiotics commonly used for self-mediation was Ampicillin/Cloxacillin. Only a small proportion of the respondents reported not ever using antibiotics on self-medication at any time. This can be related to a research done in Ondo state [16] which shows that only 15% of the respondents have never practiced self-medication.

Gastrointestinal tract upset (frequent stooling) was the most common condition for which self-medication with antibiotics was practised. There are similarities in the conditions for which self- medication was practiced in this study with several other universities and community based studies [1, 7, 17]. These conditions included diarrhea, sore throat, catarrh, toothache with stooling being the most prevalent as stated above. Frequent stooling being the most common condition for which self-medication is being practiced in this research is a likely reason why tetracycline is the most common antibiotics used in self medication. This may be due to the popular belief within the tetracycline is effective and is the drug of choice for the treatment of frequent stooling.

From this study, it was also found that respondents were less likely to self-medicate in situations such as vomiting. In contrast to this finding, a research carried out in South Western Nigeria[12] shows that pneumonia (1.8%) was the condition in which respondent were least likely to self medicate.

The major reason for self-medication in this study was the possession of some sort of knowledge on drugs. Some respondents reported difficulty in making out time to see a doctor, while some resorted to self-medication because they had retained previous prescription from a Doctor for similar condition. These three reasons mentioned above were the most common in this study with their percentile values very close to one another. This is in contrast with a similar work carried out in Northern Nigeria [11] which showed that 42.6% of the respondents indulged in this practice because they considered their ailment as being mild, while 38.3% were involved in it because of their past experience with particular antibiotics. Assumed knowledge on drugs being the major reason for self-medication on this study is in consonance with a study conducted in Islamabad [9] where assumed knowledge on antibiotics was the major reason for self-medication. Apart from other reasons for self medication as reported, the least reason for self-medication in this research was found to be financial constraints.

Majority of the participants obtained their antibiotics from pharmacies, and some, from patent medicine stores. This finding corresponds with that from the research carried out in Yogyakarta, Indonesia [14] which shows that 64% of the respondent got their antibiotics from a pharmacy shop. Patent medicine store is the second most common source of

antibiotics. This goes to show that although patent medicine stores are authorized only to sell over the counter drugs, they sell 'prescription only medicines' which is the group of drugs to which antibiotics belongs.

Majority of the respondents knows that antibiotics should be taken on prescription while only a handful did not. From the research it was found that over half of the respondents had gone ahead to prescribe an antibiotic for another person previously. Nearly all the respondents opined that they would need further enlightenment on the use of antibiotics.

Limitation of the Study
A limitation of this study was that questions asked regarding the use antibiotics were retrospective in nature, and there is a possibility of recall bias.

CONCLUSION
This study revealed that the prevalence of self-medication with antibiotics amongst staff of Delta State University, Nigeria is very high. This shows a high risk of antibiotics resistance which is could be detrimental to both individuals and the society at large. Efforts should therefore be made by stakeholders in the healthcare sector especially the pharmacist, to embark on education on the appropriate use of antibiotics in other to stem the tide of self-medication with antibiotics.

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