



ISSN NO. 2320-5407

Journal Homepage: - www.journalijar.com

INTERNATIONAL JOURNAL OF ADVANCED RESEARCH (IJAR)

Article DOI: 10.21474/IJAR01/10094
DOI URL: <http://dx.doi.org/10.21474/IJAR01/10094>



INTERNATIONAL JOURNAL OF
ADVANCED RESEARCH (IJAR)
ISSN 2320-5407
Journal Homepage: <http://www.journalijar.com>
Journal DOI: 10.21474/IJAR01

RESEARCH ARTICLE

PRACTICE OF SELF-MEDICATION WITH ANTIBIOTICS AMONG BASIC MEDICAL SCIENCE STUDENTS OF A NIGERIAN TERTIARY INSTITUTION.

Emuesiri Goodies Moke, Emuesiri Kohworho Umukoro, Kesiena Emmanuel Edje and Divine Udele
Department of Pharmacology and Therapeutics, Delta State University, Abraka, Delta State, Nigeria.

Manuscript Info

Manuscript History

Received: 14 September 2019
Final Accepted: 16 October 2019
Published: November 2019

Key words:-

Self-medication, Tertiary institution, Amoxicillin, Practice, Students.

Abstract

Increased irrational use of antibiotics without medical guidelines has resulted to a great incidence of absurd and incorrect therapy, development of resistance, treatment failure and high mortality rate. An investigation among tertiary institution is therefore important because this population constitutes a segment of the society that is highly educated and vast in knowledge and more importantly, it is useful to students in the health related faculties who would represent the future generation of drug prescribers and health educationist. A cross-sectional survey was carried out among Basic Medical Science students in Delta State University, Abraka, to assess the practice of self-medication with antibiotics. A total of 220 students were assessed using a simple frequency method and percentage in data analyses. The distribution showed that majority of the students 91 (41%) were between the ages of 21-23; twenty-seven (27%) of the student were males and while 73% were females. More than half of the students agreed to have practiced self-medication with antibiotics, and see it as an acceptable practice. Amoxicillin was the most commonly used antibiotics (26.4%), with the pharmacy as the major source of procurement. This study showed that antibiotic self-medication is rampant and seen as an acceptable practice.

Copy Right, IJAR, 2019,. All rights reserved.

Introduction:-

Antibiotics are antimicrobial drugs used in the treatment and prevention of bacterial infection; they kill or inhibit the growth of bacteria. They are one of the most commonly used drugs worldwide especially in developing countries, where there is high prevalence of infectious disease (Gebeyehu, et al, 2015). Antibiotics include amoxicillin, ampicillin, penicillin, ciprofloxacin, cefuroxime, metronidazole, amongst others (Rang et al., 2007)

Self-medication can be defined as the use of medicines by persons for treatment of one's self based on self-diagnosed symptoms without consulting a physician and or without a valid prescription (Ruiz, 2010). The use of non-prescribed antibiotics has become a major problem to public health. More than 50% of antibiotics worldwide are purchased privately from pharmacies or street vendors in the informal sector without a prescription (Cars and Nordberg, 2005). This indiscriminate use of antibiotics is a major contributor to antibiotics resistance which further leads to an increase incidence of treatment failures, adverse drug reactions, increased cost of treatment, prolonged hospitalization stays, as well as increased mortality and morbidity (WHO, 2018). Several factors are associated with the prevalent trend of self-medication in the developing world; particularly lack of access to healthcare, availability

Corresponding Author:-Emuesiri Goodies Moke.

Address:-Department of Pharmacology and Therapeutics, Delta State University, Abraka, Delta State, Nigeria.

of antibiotics as over-the-counter drugs, poor regulatory practices and relatively high prevalence of infectious diseases (Villa and Pal, 2010). In Nigeria, there are inadequate controls on the sale or advertisement of antimicrobials, creating opportunities for misinformation and misconceptions that can exacerbate improper use (Ojo and Sapkota, 2007).

The University environment in many developing countries is a potential hub of self-medication. About 39% of Nigerian University students practice antibiotic self-medication (Fadare and Tamuno, 2011). A survey carried out by Sapkota *et al* in South-Western Nigeria reported that one in four females University students self-medicate with antibiotics to treat menstrual symptoms (Sapkota *et al.*, 2010).

Medical students during their undergraduate studies are not medically qualified to prescribe despite their knowledge of the pathophysiology of disease and therapeutics. However, a high incidence of self-medication among medical students in Medical Colleges around the country has been reported (Badiger *et al.*, 2012; Zafar *et al.*, 2008). Also, an assessment of self-medication patterns in Ahmadu Bello University, Zaria showed a high prevalence of antibiotic self-medication with a higher incidence amongst faculties in Health and Allied Health Sciences; Pharmaceutical Science (80.39%) and Medicine (80.36%) and this was attributed to their knowledge and previous experience of use of antibiotics (Olayemi, *et al*, 2010). Prevalence of self-medication among Medical students may be higher due to their higher level of education as well as greater access to knowledge of medicines and disease (Mehta and Sharma, 2011).

This study was designed to assess the attitude and practice of self-medication with antibiotics among students of the Faculty of Basic Medical Sciences in a Nigerian tertiary institution.

Materials and Methods:-

A cross-sectional survey was carried out among the Basic Medical Science Students of Delta State University, Abraka, Nigeria who were willing to participate. It was conducted between 20th February and 5th March, 2018. Self-administered, structured questionnaires were designed for the purpose of data collection. The questionnaire consisted of both closed and open ended questions and the questions include: social demographic variables such as age, gender, level and course of study. Questions on the involvement in antibiotic self-medication, reasons for self-medication, source of antibiotic for self-medication and the most used antibiotic, amongst other information. The questionnaires were randomly distributed to the students in their various lecture rooms. Students below age 18 were excluded from the study. Simple frequency method and percentage was used in analyzing the data obtained.

Results

A total of two hundred and twenty (220) students were involved in this study. The distribution showed that majority of the students 91 (41%) were between the ages of 21-23. A total of 60 (27%) of the students were males and 160 (73%) were females, with 44 (20%) students each from the Departments of Pharmacology, Anatomy, Physiology, Medical Biochemistry and Nursing Science (Table 1).

More than half of the students agreed to have practiced self-medication with antibiotics 198 (90%) while 58.6% (129) see it as an acceptable practice (Table 2). Amoxicillin was the most commonly used antibiotics 58 (26.4%), which was followed by Ciprofloxacin 48 (21.8%) cephalixin (4) was rarely used (01.8%) (Table 3).

The major reasons given for the practice were: assumption of doctors' prescription (40.0%), cost of visiting a hospital (20.9%), fast relief (23.2%) and knowledge from previous experience (15.9%). The indication for self-medication found with this study group (n=274) was majorly diarrhea 113 (41.3%); other indications were nasal congestion 39 (14.2%), aches and pain 38 (13.9%), skin wounds 30 (10.9%), amongst others. Approximately fifty-seven percent (57%) of the student who self-medicate got the antibiotics from the Pharmacy, while 20.4% took prescription they had been previously prescribed, 10.0% via advertisement, personal opinion (7.3%), and neighbours/friends (5.5%) (Table 4).

Table 1:-Demographic characteristics of respondents (n=220).

Variables	Frequency (n)	Percentage (%)
Gender		
Male	60	27.3

Female	160	72.7
Age		
18-20	88	40.0
21-23	91	41.4
24-26	30	13.6
27-30	8	03.6
30 & above	3	01.4
Departments		
Pharmacology	44	20.0
Anatomy	44	20.0
Physiology	44	20.0
Medical Biochemistry	44	20.0
Nursing Science	44	20.0

Table 2:-Practice and attitude to self-medication with antibiotics (n=220)

Variables	Frequency (n)	Percentage (%)
Practice		
Yes	198	90.0
No	22	10.0
Attitude		
Acceptable practice	129	58.6
Not acceptable practice	91	41.4

Table 3:-Most self-medicated antibiotics (n=220)

Variables	Frequency (n)	Percentage (%)
Amoxicillin	58	26.4
Ciprofloxacin	48	21.8
Amoxicillin/Clavulanic acid (Augmentin)	27	12.3
Tetracycline	25	11.4
Penicillin	18	08.2
Erythromycin	17	07.7
Azithromycin	14	06.4
Doxycycline	9	04.0
Cephalexin	4	01.8

Table 4:-Reasons for self-medication and antibiotic sources

Variables	Frequency (n)	Percentage (%)
Reasons (n=220)		
Assumption of doctors' prescription	88	40.0
Cost of visiting a hospital	46	20.9
Fast relief	51	23.2
Knowledge from previous experience	35	15.9
Indications (n=274)		
Diarrhea	113	41.3
Nasal congestion	39	14.2
Aches and pain	38	13.9
Skin wounds	30	10.9
Sore throat	22	08.0
Fever	12	04.4
Cough	9	03.3
Others	11	04.0
Antibiotics source (n=220)		
Pharmacy	125	56.8

Old prescriptions	45	20.4
Advertisement	22	10.0
Personal opinion	16	07.3
Neighbours/Friends	12	05.5

Discussion:-

The prevalence of antibiotics self-medication among Undergraduate students of the Faculty of Basic Medical Sciences in Delta State University, Abraka was seen to be very high 198 (90.0%) and this supports a study done in Nigeria which showed self-medication practice being greater in medical and pharmaceutical sciences 80.36% (Olayemi, et al, 2010). Majority of the students believe that self-medication is an acceptable practice, and this could be associated with the fact that they were all students of the Faculty of Basic Medical Sciences and thus believe they had good knowledge of medicine and therapeutic application of those medications.

This high prevalence is driven majorly by presumed knowledge of what doctor would prescribe, and this was also observed to be similar to findings in a study carried out amongst students of non-health related faculties which correlates with the reasons seen with the medical faculties, although they had good knowledge of the consequences of the practice but still practiced it. (Olayemi, et,al 2010).

It was observed that amoxicillin was the most used antibiotic by the students (26.4%) and this correlates with other published studies (Mohanna, 2010; Núñez, et al, 2010). The frequent use of amoxicillin may be because it is a broad spectrum antibiotic or because of its low cost across the globe, thus, its widespread prescription by most health care providers (Al-azzan, et al, 2007; Savahrood et al, 2010) and rampant irrational use which consequently lead to resistance.

In this study, about 57% of the students visited a Pharmacist directly and 20% deferred to previous prescriptions when similar symptoms appeared. This is similar to the result of the study carried out in Trujulo Peru where college students got recommendation for antibiotic self-medication by visiting a pharmacist (Nunez, et al, 2017).

Irrational use of antibiotics has resulted to low response to therapy of some ailments which is now a huge medical concern. Adverse drug reactions, increased cost of treatment as higher and more expensive antibiotic would be used, treatment failure due to multidrug resistant microbes, and prolonged hospitalization and death may surface if there is no intervention.

For this study, the major source of purchase of antibiotic used for self-medication is the community pharmacy. A policy that would regulate the testing, prescription, and use of antibiotics in the country should be enforced as this could be one means in which bacteria resistance can be checked and havoc on the health of the population can be aborted. Also, restriction on the sales of prescription only drugs like antibiotics should be made and the community pharmacist should also sensitize patients on the risk associated with self-medicating with antibiotics.

The institution can also create awareness as regards self-medication as majority of the students see antibiotic self-medication as a good and acceptable practice. Prevalence of the practice may be higher if a large number of students were surveyed. More pharmacological teachings should be inculcated in students' course work which should not be restricted to only a specific year of study but taught throughout their undergraduate study.

Conclusion:-

This study shows that antibiotic self-medication is rampant and is seen as an acceptable practice by students, and perhaps the society at large. Although, this study was limited to students of the Faculty of Basic Medical Sciences with arguably higher knowledge of antibiotics, there is need to expand the research population to other non-medical faculties, such as Law, Arts, and Social Sciences. However, it is important to put in place policies in controlling the prescription pattern, sales, and use of antibiotics across the country. Proper awareness via classroom education, counseling, and social media should be ensured.

Acknowledgements:-

The authors acknowledge Dr. M.O. Ojezele of the Department of Pharmacology, Delta State University, Abraka, Nigeria for his assistance.

Conflicts of interest

The authors declare no conflict of interest.

References:-

1. Al-azzam, S.I., Al-husein, B.A., Alzoubi, F., Masadeh, M.M. and Al-horani, M.A.S. (2007). Self-medication with antibiotics in Jordanian population. *International Journal of Occupational Medicine and Environmental Health*, 20(4): 373-380.
2. Badiger, S., Kunadapur, R., Jain, A., Kumar, A., Pattanshetty, S., Thakolkaran, N., Bhat, N. and Ullal, N. (2012). Self-medication pattern among students in South India. *Australasian Medical Journal*, 5(4): 217-220.
3. Cars, O. and Nordberg, P. (2005). Antibiotic resistance – The faceless threat. *International Journal of Risk & Safety in Medicine*, 17: 103-110
4. Fadare, J.O. and Tamuno, I. (2011). Antibiotic self-medication among University Medical undergraduate in Northern Nigeria. *Journal of Health Epidemiology*, 3: 217-220.
5. Gebeyehu, E., Bantie, L. and Azage, M. (2015). Inappropriate use of antibiotics and its associated factors among urban and rural communities of Bahir Dar City administration northwest Ethiopia. *PLOS One*, 10(9): 1-14.
6. Mehta, R.K. and Sharma, S. (2015). Knowledge, attitude and practice of self-medication among medical students. *International Organization of Scientific Research Journal of Nursing and Health Sciences*, 4(1): 89-96.
7. Mohanna, M. (2010). Self-medication with antibiotic in children in Sana'a City, Yemen. *Oman Medical Journal*, 25(1): 41-43
8. Núñez, M., Tresierra-Ayala, M. and Gil-Olivares, F. (2017). Antibiotic Self-medication in University Students from Trujiuo, Peru. *Medicina Universitaria*, 18(73): 205-209.
9. Ojo, K.K. and Sakpota, A. (2007). Self-prescribed use of antimicrobials during menstruation periods: A disturbing new example of information poverty in Nigeria. *Journal of Infection in Developing Countries*, 1:123-124.
10. Olayemi, O.J., Olayinka, B.O. and Musa, A.I. (2010). Evaluation of antibiotic self-medication pattern amongst undergraduate students of Ahmadu Bello University (Main Campus), Zaria. *Research Journal of Applied Sciences Engineering and Technology*, 2(1): 35-38.
11. Rang, H.P., Dale, M.M., Ritter, J.M. and Flower, R.J. (2007). Rang and Dale's Pharmacology, 6th ed. USA, Churchill LivingStone Elsevier, pp. 751-764.
12. Ruiz, M. E. (2010). Risks of self-medication practices. *Current Drug Safety*, 5: 315-323.
13. Sapkota, A.R., Coker, M.E., Rosenberg-Goldstein, R.E., Atkinson, N.L., Sweet, S.J., Sopeju, P.O., Ojo, M.T., Otivhia, E., Ayepola, O.O., Olajuyigbe, O.O., Shireman, L., Pottinger, P.S. and Ojo, K.K. (2010). Self-medication with antibiotics for the treatment of menstrual symptoms in southwest Nigeria: a cross-sectional study. *BMC Public Health*, 10: 610.
14. Sarahroodi, S., Arzi, A., Sawalha, AF. and Ashtarinezhad, A. (2010). Antibiotics self-medication among southern Iranian University students. *International Journal of Pharmacology*, 6:48-52.
15. Vila, J. and Pal, T. (2010). Update on antibacterial resistance in low income countries: Factors favouring the emergence of resistance. *Open Infectious Disease Journal*, 1: 123-124.
16. World Health Organization (WHO) (2018). Antimicrobial resistance. <https://www.who.int/news-room/fact-sheets/detail/antimicrobial-resistance>
17. Zafar, S.N., Syed R., Waqar, S., Irani, F.A. and Saleem S. (2008). Prescriptions of medicines by medical students of Karachi, Pakistan: cross-sectional study. *BMC Public Health*, 8:162.