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Knowledge Attitude and Practice Regarding Antibiotic Abuse Among Students at Pamo University of Medical Sciences in Rivers State, Nigeria

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Abstract

Background: Antibiotic abuse is a global burden, which has led to a plethora of difficulties; including increased emergence of acquired multi drug resistance hence this study which assessed the knowledge, attitude, practices and prevalence of antibiotics abuse among medical students at Pamo University, Oyigbo, Port Harcourt.

Materials and methods: The study was conducted in Oyigbo, Rivers State. A cross-sectional study design was adopted; multi-stage sampling technique was used to select 413 eligible participants for this study. Data was collected using a semi-structured questionnaire and analyzed using IBM Statistical Package for Service Solutions version 27.0.

Results: The mean age of participants were 18±1.9 years, and mainly from the department of medicine and surgery 331(80.1%). Three hundred and thirty-Six (81.4%) of participants had good knowledge of antibiotic abuse, 273(66.1%) of participants had a good attitude towards antibiotic abuse. However, 279 (67.6%) participants had poor practices regarding antibiotic abuse. Findings from this study showed a very high prevalence of antibiotic abuse recorded as 400 (96.5%). Participant's department was associated with level of knowledge on antibiotic abuse ($\chi^2 = 3.844$; $p \leq 0.050$) and Age was associated with the attitude towards antibiotic abuse ($\chi^2 = 6.581$; $p \leq 0.037$).

Conclusion: More than half of the participants had a good knowledge and attitude regarding antibiotic abuse, but most exhibited poor antibiotic use practices. To prevent the grave consequences of antibiotic abuse, we encourage health promotion activities to adopt good antimicrobial stewardship practices, including promoting the completion of full antibiotic courses as prescribed.

Keywords: Antibiotics, Antibiotic abuse, Attitude, Knowledge, Practices, Students.

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INTRODUCTION

Antibiotics are medications that combat bacterial infections by either killing bacteria or preventing them from growing and multiplying.[1]. Antibiotic abuse is a global crisis that brought about a plethora of difficulties, the practices that constitute this misuses include wrong administration especially for viral infections, mid-way stopping of therapy, improper or unregulated use of antibiotics for prophylactic purposes, non-prescription sale of antibiotics, unnecessary extensive use of antibiotics usually following noncompliance or self-medication seen in healthcare workers, students and public at large(2). Antibiotic abuse has led to challenges which include increased emergence of acquired multi drug resistance, being the most significant burden, inadequate therapeutic outcome or failure, increased incidence of adverse drug reactions and many more.[2]

The WHO set the theme of World AMR Awareness Week (WAAR) which lasted from November 18th - 24th 2024 as "Educate, Advocate, Act now"[3] This shows a serious and global problem of antibiotic abuse reflecting the urgency and commitment needed to combat antimicrobial resistance and this would only begin to take effect when more people are educated on antibiotic abuse and impact.[4]. However, in Nigeria, the application of policies regulating distribution, governance of antibiotic and prescription drugs sales and use is weak, with some areas lacking regulation entirely, posing a challenge and the need for a great deal of work to be done in the healthcare sector.[5,6].

The role of students of healthcare professions in this context is particularly noteworthy as they acquire theoretical knowledge on antibiotic prescribing while observing prevailing practices in healthcare settings.[6] They are stewards and prescribers of antimicrobials upon completing their studies. They must therefore be equipped with ample knowledge of antimicrobial stewardship and resistance.[2] The outcome of this study will aid in the formation, integration and execution of practical antimicrobial stewardship training for students and highlight the need for focused or targeted learning programs to tackle knowledge deficiencies and misconceptions.[2,7]. Understanding the knowledge, attitudes and practices towards antibiotic abuse among students at Pamo University of Medical Sciences is important because of its public health impact. Abuse of antibiotics is a public health concern, particularly because it is the leading cause of the emergence and spread of bacterial resistance in recent decades.[8] An increase in drug resistance can result in extensive associated health implications and economic consequences by affecting the drug's therapeutic effectiveness, increase treatment failures, and resulting in more prolonged and more severe illness episodes with higher costs and mortality rates(8).This study assessed students' knowledge, attitude and practices regarding antibiotic abuse in Pamo University of Medical Sciences.

METHODS

The study was conducted at PAMO University of Medical Sciences (PUMS) Elelenwo, Port Harcourt, Rivers State, Nigeria. PAMO University of Medical Sciences, the study site, is the foremost mono-disciplinary Medical University in Nigeria, offering programs in Anatomy, Biochemistry, Physiology, Medicine/Surgery, Pharmacology, Physiotherapy, Nursing Sciences, Medical Laboratory Sciences, Radiography and Radiation Sciences. The estimated population of students and staff in PUMS is about 885 and 400 respectively.
A cross-sectional study was utilized for this study.

The study population comprised 100 to 400 level students from the departments of Nursing and Medicine and surgery, Pamo University, who gave informed consent.
The Sample was predetermined using the Cochran's formula for cross sectional determination:

$$n = \frac{Z^2\,(pq)}{d^2}$$ (9)

Where:

n= Sample size
Z= Confidence interval at 95% level of significance given as 1.96
p= referenced prevalence for perception of antibiotics abuse; taken as 65.7%(10)
q= 1-p (1-0.657=0.343)
d= Maximum sampling error allowed=0.05

The calculated sample size was adjusted for non-response rate of 10%, study design effect was applied, study design effect was applied and sample size was multiplied by 2 and finally calculated value was corrected using the formula NF=n/1+n/N where NF is the calculated sample size, n is the sample size and N is the population size. Thus, the calculated sample size was 411.

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Multi-stage sampling technique was used for this study. The first stage involved faculty Selection**.** Two faculties were chosen for the study using a simple random sampling technique by balloting method. The faculties selected were Clinical sciences and Allied health sciences. Stage 2 involved the selection of Departments. The Nursing Department from the faculty of Allied health was sampled using simple random sampling by balloting method. Since medicine and surgery was the only department in clinical sciences, it was auto selected. Stage 3 involved the selection of Levels. Using simple random sampling technique by balloting method, 4 participating levels were selected from 100-400 level in both departments. Estimation of the minimum number of participants from each level was done using M= B*S/A.

Where:

M= Proportionate sample size for each level
B= Total number of students in that level
S= Minimum sample size
A= Total number of participants in all participating levels.

The minimum sample size for 100-400 level medicine and surgery students included 106, 90, 76 and 56 respectively and 35, 20, 17, and 12 for 100-400 level students of the nursing departments respectively.

The fourth stage was for the selection of Participants which was done using computer generated table of random numbers.

Data was collected during break and free periods using a semi-structured self-administered questionnaire which was adapted from World Health Organization (WHO) Antibiotics Resistance: Multi-Country public awareness survey. The questionnaire included an initial consent section followed by five other sections (sections A-E) which were Socio-demographics Characteristics, Knowledge of antibiotics of and antibiotic abuse, Attitude towards antibiotic abuse, Practices towards antibiotic abuse, Factors contributing to antibiotic abuse. The validity of the questionnaire was ascertained by a Supervisor/Consultant from the department of Community Medicine PAMO University of Medical sciences, Elelenwo, Port Harcourt and was pretested among 600 level medical students.

Collected data was uploaded into Microsoft Excel, checked for both completion and accuracy and transferred to IBM Statistical Products for Service Solutions (SPSS) version 27.0. Socio-demographic section was summarized using descriptive statistics. All appropriate responses were scored as 1 and wrong responses scored 0 for knowledge of Antibiotics and Antibiotic Abuse as well as Attitude towards antibiotics abuse. Appropriate responses for practices were scored as 0 and wrong responses 1 to enable us to determine the prevalence of antibiotic abuse. A total of 5 questions from the section for practices towards antibiotic abuse were used to determine the prevalence rate. The sum of scores was computed and converted to percentages. The Chi-squared test was used to for association between the outcome variable (knowledge, attitude, practices, prevalence) and the independent variables (socio-demographic characteristics).

This study was carried out from January 2025 to September 2025.

Ethical approval was sought and obtained from the research and ethics committee of PAMO University of Medical Sciences (PUMS/REC/202504) to consider ethical principles that ensures confidentiality and protects the rights, privacy and welfare of the study participants and consent was obtained from the participants.

RESULTS

For this study, four hundred and thirteen (413) students responded to the disseminated questionnaire.

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Table 1: Socio-Demographic Characteristics of Participants

Variables	Frequency n=413	Percent (%)
Age (in years)	**Mean=18.22 ± 1.9**	
15-19	330	79.9
20-24	79	19.1
25-29	4	1.0
Sex		
Male	87	21.1
Female	326	78.9
Religion		
Christianity	408	98.8
Islam	5	1.2
Faculty		
Allied health science	82	19.9
Clinical science	331	80.1
Department of study		
Nursing	82	19.9
Medicine and Surgery	331	80.1
Level of Study		
100	141	34.1
200	108	26.2
300	93	22.5
400	71	17.2

From Table 1, Socio-demographics, most participants were between 15 and 19 years old (330, 79.9%) with a mean age of 18. Majority of the participants were Females 326(78.9%), Christians, 408(98.8%). The respondents were mostly from the faculty of clinical sciences, department of medicine and surgery 331(80.1). Most participants were Students from 100 level 141(34.1%).

Table 2a: Assessment of Knowledge of antibiotics

Variables	Frequency n=413	Percent (%)
Antibiotics are		
Medicines that kills Viruses	13	3.2
Medicines that kill Bacteria	396	95.9
Medicines that kill Parasite	4	1.0
Medicines that kill Fungi	0	0.0
The use of Antibiotics		
To treat bacterial Infections	366	88.6
To boost immune system	26	6.3
To prevent viral infections	11	2.7
To relieve symptoms like fever	10	2.4
When to use Antibiotics		

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If you have a fever	24	5.8
If you have a cough	14	3.4
If the Doctor prescribes them	372	90.1
If you feel like taking them	3	0.7
Antibiotics are effective against all types of bacterial infections		
Yes	69	16.7
No	344	83.3

Table 2a revealed that 396(95.9) respondents believed antibiotics could fight bacteria, and 366(88.6) used them to treat bacterial infection. 90.07% of participants believed antibiotics were needed when the doctor prescribed them. However, only 69(16.7) participants believed the antibiotics were effective against all types of bacterial infections.

Table 2b: knowledge of antibiotic abuse among respondents

Variables	Frequency n=413	Percent (%)
Definition of Antibiotic Abuse		
Using it for all infections	280	67.8
Yes	133	32.2
No		
Taking it as prescribed by the Doctor	85	20.6
Yes	328	79.4
No		
Using antibiotics for non-bacterial infections	331	80.2
Yes	82	19.9
No		
Taking without a doctor's prescription	352	85.2
Yes	61	14.8
No		
Stopping antibiotics when symptoms improve	286	69.3
Yes	127	30.8
No		
Sharing leftover antibiotics	335	81.1
Yes	78	18.9
No		
Overdosing on antibiotics		
Yes	350	84.8
No	63	15.3
Antibiotics can be abused		
Yes	407	98.6
No	6	1.5
Consequences of antibiotic abuse		
Development of resistant infections	326	78.9
Increased efficacy of antibiotics	52	12.6
Reduced healthcare costs	18	4.4
Improved gut microbiome balance	17	4.1
Effect of improperly taken antibiotics		
They become less effective	279	67.6
They can harm you	96	23.2

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They have no effect	20	4.8
They become more effective	18	4.4

Table 2c: knowledge of antibiotic abuse among respondents

Variables	Frequency n=413	Percent (%)
Effect of Antibiotic Abuse on the Community		
Increased risk of antibiotic resistance	383	92.7
It has no effect	16	3.9
Decreased healthcare outcome	9	2.2
Improved healthcare outcome	5	1.2
Antibiotic abuse is of a significant health concern		
Yes	390	94.43
No	23	5.57
Overall, Knowledge Level of Antibiotics and Antibiotic Abuse		
Poor Knowledge (0-5)	1	0.2
Fair Knowledge (6-10)	76	18.4
Good Knowledge (11-16)	336	81.4

From table 2b, Participants defined antibiotics as thus: using it for all times of infections-67.8%, taking it as prescribed as the doctor-20.6%, using antibiotics for non-bacterial infections-80.15%, using antibiotics without a doctor's prescription-85.2%, Stopping antibiotics when symptoms improve-69.3%, Sharing leftover antibiotics-81.11, Overdosing on antibiotics-84.8%. 98.6% of participants believed that antibiotics can be abused, 78.9% believed that a consequence of antibiotic abuse would be development of resistant infections. 67.6% of participants believed that an effect of improperly taken antibiotics is that they can become less effective. 92.7% of participants believed that an effect of antibiotic abuse to the community is an increased risk of antibiotic resistance. 94.4% believed that antibiotic abuse is a significant health concern. This result shows that 81.4 % (336), 18% (76), 0.2% (1) of participants had good, fair and poor knowledge on antibiotics and antibiotic abuse respectively.

Table 3: Attitude towards Antibiotic Abuse among students of Pamo University

Variables	Frequency n=413	Percent (%)
Take Antibiotics without a prescription		
Yes	101	24.5
No	312	75.5
Concerned about antibiotic resistance		
Very concerned	190	46.0
Neutral	206	49.9
Unconcerned	17	4.1
Antibiotics should be used only under medical supervision		
Agree	334	80.9
Neutral	70	17.0
Disagree	9	2.2
Trust in the physician when he decides antibiotics are not needed		
Yes	383	92.7
No	28	6.8
Overall Attitude level		
Poor Attitude (0-2)	140	33.9
Good Attitude (3-4)	273	66.1

From table 3, 101(24.5) stated that they would take antibiotics without prescription, 190(46) were very concerned about antibiotic abuse, 334(80.9) believed antibiotics should be used only under medical supervision, 383(92.7) said they trust

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the physician when he decides that antibiotics are not needed in their management. It also shows that on the overall 140(33.9%) participants had a negative attitude towards antibiotic abuse.

Table 4: Practices of antibiotic abuse among students of Pamo University

Variables	Frequency (n=413)	Percent (%)
Use of antibiotics in the past 12 months		
Yes	336	81.4
No	77	18.6
Previous use of antibiotics without a prescription		
Yes	198	47.9
No	215	52.1
Always follow the instructions provided by Doctor/Pharmacist		
Yes	320	77.5
No	93	22.5
Ever stopped taking antibiotics without completing the course		
Yes	347	84.0
No	66	16.0
Adjusting the dose or duration according to their judgment		
Yes	283	68.5
No	130	31.5
How often do they self-medicate		
Rarely (less than once a year)	160	38.7
Never	139	33.7
Occasionally (1-3 times in a year)	82	19.9
Frequently (more than 3 times in a year)	32	7.8
What to do with leftover antibiotics		
Dispose them properly	171	41.4
Save them for future use	163	39.5
Finish the course	55	13.3
Share them with others who may need them	24	5.8
Overall practices of antibiotic abuse (scores)		
Poor (4-7)	279	67.6
Good (0-3)	134	32.4

From table 4, 336(81.4) participants had used antibiotics in the last 12 months, 198(47.9) participants had previously used antibiotics without prescriptions, 320(77.5) participants always follow the Doctor's instructions when taking antibiotics, 347(84.0) participants had at least once stopped taking antibiotics without completing the course, 283(68.5) participants adjust their treatment doses according to their judgment. 33.7% had never self-medicated with antibiotics. Only 55(13.3) participants finished their course of antibiotics. It also showed that most participants (279, 67.6%) had poor practices against antibiotics abuse and a few (134, 32.4%) had good practices against antibiotics abuse.

Table 5: Prevalence of antibiotic abuse among students of Pamo University

Variables	Frequency n=413	Percent (%)
Previous use of antibiotics without prescription		
Yes	198	47.9
No	215	52.1
Always follow instruction provided by Doctor/Pharmacist		
Yes	320	77.5
No	93	22.5
Ever stopped taking antibiotics without completing the course?		
Yes	347	84.0
No	66	16.0

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Variables	Frequency n=413	Percent (%)
Adjusting the dose or duration according to their judgment		
Yes	283	68.5
No	130	31.5
What to do with leftover antibiotics		
Dispose them properly	171	41.4
Save them for future use	163	39.5
Finish the course	55	13.3
Share them with others who may need them	24	5.8
Abuse antibiotic		
Yes	400	96.5
No	13	3.1

The prevalence of antibiotic abuse in this study is 96.5%

Table 6: Factors associated with Knowledge of antibiotic abuse among students of Pamo University

Variables	Level of Knowledge (n=413)		Chi-Square test	p-value (0.05)
	Good (%) n=390	Poor (%) n=23		
Age				
15-19	313(94.8)	17(5.2)	0.962	0.618
20-24	73(92.4)	6(7.6)		
25-29	4(1.0)	0 (0.0)		
Sex			0.198	0.657
Male	83(95.4)	4(4.6)		
Female	307(94.2)	19(5.8)		
Religion			2.004	0.157
Christianity	386(94.6)	22(5.4)		
Islam	4(80)	1(20)		
Department				
Medicine and surgery	309(93.4)	22(6.6)	3.844	**0.050***
Nursing	81(98.8)	1(1.2)		
Level of Study				
100	131(92.9)	10(7.1)	5.499	0.139
200	99(91.7)	9(8.3)		
300	90(96.8)	3(3.2)		
400	70(98.6)	1(1.4)		

From Table 11, only the participants' department was significant to their knowledge of antibiotics and antibiotic abuse ($p \leq 0.050$).

Table 7: Socio Demographics factors with Attitude of antibiotic abuse among students of Pamo University

Variable	Level of Attitude n=413		Chi square test	p-Value
	Good (%) n=273	Poor (%) n=140		
Age				
15-19	228(69.1)	102(30.9)	6.581	**0.037***
20-24	43(54.4)	36(45.6)		
25-29	2(50.0)	2(50.0)		
Sex				
Male	53(60.9)	34(39.1)	1.321	0.250
Female	220(67.5)	106(32.5)		
Religion				
Christianity	268(65.7)	140(34.3)	2.596	0.107
Islam	5(100)	0(0.0)		

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Variable	Level of Attitude n=413		Chi square test	p-Value
	Good (%) n=273	Poor (%) n=140		
Department				
Medicine and surgery	213(64.4)	118(35.6)	2.282	0.131
Nursing	60(73.2)	22(26.8)		
Level of Study				
100	99(70.2)	42(29.8)	3.487	0.322
200	73(67.6)	35(32.4)		
300	60(64.5)	33(35.5)		
400	41(57.7)	30(42.3)		

From Table 12, Age was seen to have significantly affected participants' attitude towards antibiotic abuse (p≤ 0.037)

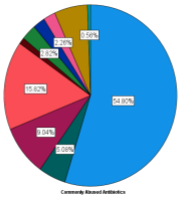

Figure 1. Commonly Abused Antibiotics
From Fig 1, Amoxicillin was seen to be the most abused antibiotics.

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DISCUSSION

Antibiotic resistance is a significant problem not just in the developing countries but also in the developed countries, where antibiotic abuse is a major contributory factor. In addition to the antibiotic resistance, there is treatment failure and high healthcare cost. There was a paucity of knowledge of antibiotic abuse and its consequences, hence this study.

The study showed that most participants had good knowledge of antibiotics and antibiotic abuse. This is true as most participants answered correctly that antibiotics are medicines that kill bacteria, used to treat bacterial infections, and should be prescribed by a doctor. A study in south-south by.[11] showed that 86.3% answered correctly which is in line with our study, with less than one-fifth agreeing that it is used to treat viruses, a little less than his study. In a study carried out in Bangladesh and Kosovo by(12,13), 65% and 42.5% respectively answered that antibiotics can kill viruses while 22.5% were unsure. Also, regarding the knowledge of antibiotics abuse, a good number of participants knew the various definitions and forms of antibiotics abuse and also the consequences which are development of resistant infection and increased risk of antibiotic resistance, however, a study done in Delta state by (10) revealed that although the students had good knowledge of antibiotics and good perception of antibiotics abuse, they had poor awareness of antibiotics resistance which is a significant consequence of antibiotic abuse and a problem in the society but was good among healthcare students in Maidugiri in a study conducted by (14). Also, the age of the students, sex, religion and level of study had no significant association with the knowledge of antibiotics and knowledge of antibiotic abuse, but the department had significant association. Medical students had better knowledge compared to the nursing students as they undergo more rigorous training as future prescribers and thus attuned to the importance of responsible antibiotics use and consequences of abuse. However, a study carried out in Bangladesh by (15) reported that respondents showed poor knowledge compared to other countries such as Malaysia which was 94.1%, Trinidad and Tobago but better than Lithuania and Ethiopia.

This study also showed that participants had a good attitude towards antibiotic abuse as they answered correctly that antibiotics should not be used without prescription from a doctor and that they trust a physician when he says antibiotics are not needed. Only a little above one-fifth of the participants were concerned about antibiotic resistance, which shows that though they had good knowledge of the consequences of antibiotic abuse, they didn't fully understand the burden and consequence of antibiotic abuse, which is antibiotic resistance. There was a significant relationship between the age and the attitude, and this can be because from our findings, the vast majority of participants were within the age group of 15-19 years of age. The significance of this difference between the younger age group and the level of attitude suggests that older age groups are more responsible with antibiotic use. This finding could also be attributed to the fact that older age group would be found in more advanced year of study and would have had lectures on antibiotics stewardship and good clinical exposure to see firsthand the dangers of antibiotic abuse.

About two-thirds of the participants had poor practices towards antibiotic abuse, and this was further demonstrated as the overall prevalence of antibiotic abuse was high. Almost half the students had self-medicated in the past year which is lower than a study done in south south(16)similar to a study done in Nigeria by (17) but is and lower than the result gotten from a study done in the 6 geopolitical zones of Nigeria by (18) which was 59.1% and higher than the 23% recorded by WHO for Nigeria in 2015 (3). A greater number of students stopped taking antibiotics without completing the course, maybe because they got better, forgot the antibiotics, had side effects or didn't get better at all. Almost half the participants agreed that they save leftover antibiotics and share with others. Also, a study conducted in Ibadan by (19) showed that there is a high prevalence of self-medication among nursing and medical students and this agrees with our study and agrees with a study in Kano by (20) that showed that self-medication is prevalent among medical undergraduates. This goes to prove the study conducted in Ibadan by (5,6) and another conducted by(21)that showed that low and middle income countries abuse antibiotics a lot.

The most prevalent factors contributing to antibiotics abuse, with the most participants' agreement, were suggestions from family and friends, followed by previous resolution of symptoms following particular antibiotics use. This can be because the majority of the participants are within the age bracket where family and friends make decisions for them and there is a tendency

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to go back to the same drugs that previously resulted in the resolution of infection or disease. According to a study by [22], availability and its effectiveness were the most common factors for antibiotic abuse amongst pediatrics outpatients.

Among the most common antibiotics abused from our study, were amoxicillin, ampiclox and ampicillin, which are drugs under the penicillin class. From a study conducted by (22) amongst pediatrics outpatients in Rivers state, it was noticed that the most commonly abused antibiotics were amoxicillin, augmentin and cefodoxime. The result of our study agrees with the findings by [22] which showed that amoxicillin was the most abused. Another study by [23] showed that ampicillin was among the most abused which is in line with our study. Also, a study by [11] confirmed that ampiclox, amoxicillin and ampicillin are among the most abused although not in the exact order of our study. This can be due to the cheap price of these antibiotics compared to others and the most available in the school's medical facility, where students usually go for treatment of basic illnesses. Perhaps, the persistent and inappropriate use of these antibiotics has contributed to the several reports of antibiotic-resistant strains in Nigeria according to (9). From the study, the most common conditions for which antibiotics were abused were furunculosis and urinary tract infection, with more than half the participants agreeing. It may be because the major causeS of these infections are bacterial in origin, and the delay in getting results of culture and sensitivity; thus, the use of antibiotics prescribed by family and friends and previously used antibiotics. A little above half the participants agreed to abusing antibiotics when they had cough and cold. This shows that the participants have no idea that those are predominantly viral infections. Thus, antibiotics are not exactly needed except for secondary bacterial infection, hence the inappropriate use of antibiotics for cough and cold. In a study carried out amongst pediatrics outpatients, the most common use was for fever and cough [22]. This finding was in agreement with [2], as more than half the participants reported using antibiotics for cold and cough. Other reasons stated by participants for abusing antibiotics are open wounds, fever and diarrhea and vomiting which agrees with study by [11]

Implications

To prevent the grave consequences that follow antibiotic abuse, we encourage health workers on campus to adopt good antimicrobial stewardship practices, including promoting the completion of full antibiotic courses as prescribed. The Schools Health Facility should track antibiotics prescriptions and monitor emerging antibiotic resistance trends. Students should endeavour to seek medical advice when ill for proper consultation, investigation and treatment. The government should support public awareness campaign with funds and other resources to promote awareness campaigns educating the public about antibiotic use and resistance.

CONCLUSION

The study showed that a large proportion of the respondents (81.4%) had a high level of good knowledge of antibiotic abuse. The majority of the participants (87.9%) had a good attitude against antibiotic abuse. However, a very high prevalence of antibiotic abuse was recorded, at (96.5%). The participant's status was significantly associated with the level of knowledge and attitude on antibiotic abuse, while the department was significantly associated with antibiotic abuse. Antibiotic abuse is a global burden, which has led to a plethora of difficulties, including increased emergence of acquired multi drug resistance, being the most significant burden, inadequate therapeutic outcome or failure, increased incidence of adverse drug reactions and many more.

DECLARATIONS

Conflict of Interest Declaration: None Declared.
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