

A study on the Assessment of Knowledge, Attitude and Practice towards Antibiotic Utilization among Pharmacy Students

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ARTICLE INFO

Article History:

Received: 25.07.2021

Revised: 22.09.2021

Accepted: 01.10.2021

Keywords :

Antibiotics

Attitude

Knowledge

Pharmacists

Practice

Resistance

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ABSTRACT

Aim: To assess the knowledge, attitude and practice towards the antibiotics utilization among the pharmacy students.

Materials and Methods: This was a prospective study conducted among the pharmacy students by using the KAP questionnaire which was circulated by means of Google form to various Pharmacy colleges located in Andhra Pradesh, India. Students from pharmacy colleges with both the gender of all age groups were included. Students who were studying the first and second years of B.Pharm & Pharm.D and students other than the pharmacy field were excluded from the study.

Results: A total of 256 pharmacy students were participated in the study and among them 73 (28.5%) were found to be males and 183 (71.5%) were found to be females. Among the 256 study participants 90 (35.1%) were having good knowledge towards the antibiotics utilization, 88 (34.4%) were having moderate knowledge towards the antibiotic utilization and the remaining 78 (30.5%) were having poor knowledge towards antibiotic utilization. Most of the study participants were having good knowledge (35.1%) followed by moderate knowledge (34.4%). About 147 (57.4%) study participants thought that antibiotics should be prescribed only after culture and sensitivity report, 208 (81.2%) study participants thought that antibiotic resistance is a serious global health issue and 213 (83.2%) study participants thought that abuse of antibiotics has become the main cause leading to bacterial resistance. About 202 (78.9%) study participants used to consult a doctor before starting antibiotics, 196 (76.6%) study participants used to take the full course of antibiotics prescribed by a doctor and 157 (61.3%) study participants used to stop taking antibiotics when started feeling better.

Conclusion: Pharmacy students should have good knowledge, attitude and practice towards the antibiotic utilization as they are directly or indirectly involving in the patient care where the rational usage of the antibiotics is mandatory to deal with the serious global health issue like the antibiotic resistance.

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Introduction

Antibiotics are the wonder drugs which are mainly used for the treatment and prevention of various bacterial infections. They are the most commonly prescribed and as well as the misused drugs in the clinical scenario [1]. Irrational and indiscriminate use of antibiotics leads to antibiotic resistance. Especially in developing countries, antibiotics resistance is a global health problem [2]. Among all the healthcare professionals, pharmacist plays a significant role in the aspect of providing the awareness regarding the appropriate antibiotic usage in the community [3].

Inappropriate training and inadequate knowledge of the pharmacist may contribute to substandard professional practices in the aspect of antibiotics usage [4]. One of the basic strategies employed to promote the rational use of antibiotics is the assessment of knowledge, attitude and practice

among the various health care professionals. Replacement or restriction of the formulary, antibiotic stewardship, prescription audit and feedback activities are the various strategies proposed for the rational use of antibiotics [5-7]. In order to improve the clinical knowledge regarding the antibiotics and to ensure the rational use of antibiotics from the initial stage of clinical practice, assessment of the knowledge, attitude and practice among the pharmacy students must be done. In this study, the main aim was to assess the knowledge, attitude and practice towards the antibiotics utilization among the pharmacy students.

Materials and Methods

This was a prospective study conducted among the pharmacy students by using the KAP questionnaire which was circulated by means of Google form to various Pharmacy colleges located in Andhra Pradesh, India. Students from pharmacy colleges with both the gender of all age groups were

included. Students who were studying the first & second years of B.Pharm & Pharm.D and students other than the pharmacy field were excluded from the study.

Study procedure

A total of 256 pharmacy students were participated in the study by filling of the KAP questionnaire. A link was generated for the questionnaire which was prepared in the format of Google forms and this link was circulated among the social media groups in order to get the responses from the study participants. Responses from all the study participants were analyzed and the proper interpretation of the study was done.

In this study, the questionnaire was divided into three categories mainly knowledge, attitude and practice. Each category includes six questions. The knowledge of study participants was graded into Good (5-6), Moderate (3-4) and Poor (1-2). The questions provided in the attitude and practice categories were provided with "Yes" or "No" options which can be chosen by the study participants.

Results and Discussion

A total of 256 pharmacy students were participated in the study and among them 73 (28.5%) were found to be males and 183 (71.5%) were found to be females. Among the 256 study participants 74 (28.9%) were of 20 years of age, 80 (31.2%) were of 21 years, 56 (21.9%) were of 22 years, 33 (12.9%) were of 23 years, 11 (4.3%) were of 24 years and the remaining 2 (0.8%) were of 25 years.

Table 1 represents the questionnaire to assess the knowledge of the study participants towards antibiotics utilization. About 146 (57%) study participants answered that antibiotics are used to treat for bacterial infection, 154 (60.2%) study participants answered that rational antibiotic use includes all except always use newer antibiotics, 145 (56.6%) study participants answered that nosocomial infection means - Hospital acquired, 114 (44.5%) study participants answered that all factors contribute to antibiotic resistance except combination of antibiotics, 159 (62.1%) study participants answered that second line drugs that treat tuberculosis was Kanamycin, 195 (76.1%) study participants answered Streptomycin for the question which of the following belongs to aminoglycoside drug class.

Table 1: Questionnaire to assess the knowledge of the study participants towards antibiotics utilization

S. No	Question	Option A (%)	Option B (%)	Option C (%)	Option D (%)
1	Antibiotics are used to treat	Bacterial infection 146 (57)	Viral infection 12 (4.7)	Injury 2 (0.8)	All the above 96 (37.5)
2	Rational antibiotic use includes all except	Correct choice 16 (6.2)	Right dosage and duration 51 (19.9)	Cost effectiveness 35 (13.7)	Always use newer antibiotics 154 (60.2)
3	Nosocomial infection means	Acquired in the Community 19 (7.4)	Occur in AIDS patients only 10 (3.9)	Hospital acquired 145 (56.6)	Spread through nasal route only 82 (32.1)
4	All factors contribute to antibiotic resistance except	Over use 33 (12.9)	Self medication 42 (16.4)	Incorrect choice and duration 67 (26.2)	Combination of antibiotics 114 (44.5)
5	Second line drugs that treat Tuberculosis	Isoniazid 38 (14.8)	Ethambutol 34 (13.3)	Rifampicin 25 (9.8)	Kanamycin 159 (62.1)
6	Which of the following belongs to Aminoglycoside drug class	Streptomycin 195 (76.1)	Doxycycline 27 (10.5)	Dapsone 17 (6.7)	Ciprofloxacin 17 (6.7)

Table 2 represents the grading of the knowledge of the study participants based on the correct responses. Among the 256 study participants 90 (35.1%) were having good knowledge towards the antibiotics utilization, 88 (34.4%) were having moderate knowledge towards the antibiotic utilization and the remaining 78 (30.5%) were having poor knowledge towards antibiotic utilization. Most of the study participants were having good knowledge (35.1%) followed by moderate knowledge (34.4%). This result was found to be similar with the study done by Annie Zulu et al (2020) [8] and was differed from the study done by Pallavi Kulkarni et al (2017) [9].

Table 2: Grading of the knowledge of the study participants based on the responses

Area	Frequency (%)
Good (5-6)	90 (35.1)
Moderate (3-4)	88 (34.4)
Poor (0-2)	78 (30.5)
Total	256 (100)

Table 3 represents the attitude of study participants towards the antibiotic utilization. About 162 (63.3%) study participants thought that antibiotics should be prescribed for all cases of fever, 147 (57.4%) study participants thought that antibiotics should be prescribed only after culture and sensitivity report, 59

(23%) study participants thought that more expensive medicines will be more effective, 42 (16.4%) study participants thought that self medication of antibiotics is advisable, 208 (81.2%) study participants thought that antibiotic resistance is a serious global health issue and 213 (83.2%) study participants thought that abuse of antibiotics has become the main cause leading to bacterial resistance.

Table 3: Assessment of the Attitude of the study participants towards antibiotics utilization

S.No	Question	Yes (%)	No (%)
1	Do you think antibiotics should be prescribed for all cases of fever?	162 (63.3)	94 (36.7)
2	Do you think antibiotics should be prescribed only after culture and sensitivity report?	147 (57.4)	109 (42.6)
3	Do you think more expensive medicines will be more effective?	59 (23)	197 (77)
4	Do you think self medication of antibiotics is advisable?	42 (16.4)	214 (83.6)
5	Do you think antibiotic resistance is a serious global health issue?	208 (81.2)	48 (18.8)
6	Do you think abuse of antibiotics has become the main cause leading to bacterial resistance?	213 (83.2)	43 (16.8)

Table 4 represents the practice of study participants towards antibiotic utilization. About 202 (78.9%) study participants used to consult a doctor before starting antibiotics, 196 (76.6%) study participants used to take the full course of antibiotics prescribed by a doctor, 157 (61.3%) study participants used to stop taking antibiotics when you start feeling better, 165 (64.5%) study participants used to be purchased antibiotics as over the counter drugs from the pharmacists, 145 (56.6%) study participants used to prefer to take an antibiotic when they have cough and sore throat and 87 (34%) study participants had experienced some adverse effects especially with antibiotics usage.

Table 4: Assessment of the Practice of the study participants towards antibiotics utilization

S.No	Question	Yes (%)	No (%)
1	Do you consult a doctor before starting antibiotics?	202(78.9)	54(21.1)
2	Do you take the full course of antibiotics prescribed by a doctor?	196(76.6)	60(23.4)
3	Do you stop taking antibiotics when you start feeling better	157(61.3)	99(38.7)
4	Antibiotics should be purchased as over the counter drugs from pharmacy/chemists	165(64.5)	91(35.5)
5	Do you prefer to take an antibiotic when you have cough and sore throat?	145(56.6)	111(43.4)
6	Have you experienced any adverse effects particularly with antibiotics?	87(34)	169(66)

Conclusion

In this study, majority of the study participants were having good knowledge towards antibiotics utilization followed by some participants with moderate knowledge. The attitude of more than half of the study participants was observed that the study participants thought that the antibiotics should be prescribed only after culture and sensitivity report and they were considering that antibiotic resistance is a serious global health issue. Majority of the study participants thought that the abuse of antibiotics has become the main cause leading to bacterial resistance. In the aspect of practice majority of the study participants used to consult a doctor before starting the antibiotics. Pharmacy students should have good knowledge, attitude and practice towards the antibiotic utilization as they are directly or indirectly involving in the patient care where the rational usage of the antibiotics is mandatory to deal with the serious global health issue like the antibiotic resistance.

References

- Zaman SB, Hussain MA, Nye R, Mehta V, Mamun KT, Hossain N. A Review on Antibiotic Resistance: Alarm Bells are Ringing. *Cureus*. 2017 Jun 28; 9(6):e1403.
- Llor C, Bjerrum L. Antimicrobial resistance: Risk associated with antibiotic overuse and initiatives to reduce the problem. *Ther Adv Drug Saf*. 2014; 5(6):229-41.
- Sakeena MHF, Bennett AA, McLachlan AJ. Enhancing pharmacists' role in developing countries to overcome the challenge of antimicrobial resistance: a narrative review. *Antimicrob Resist Infect Control*. 2018 May 2; 7:63.
- Ventola CL. The antibiotic resistance crisis: part 1: causes and threats. *P T*. 2015 Apr;40(4):277-83.
- Johnson AP, Ashiru Oredope D, Beech E. Antibiotic stewardship initiatives as part of UK-5- year antimicrobial resistance strategy. *Antibiotics*2015; 4: 467- 76.
- Leong TW, Mohammed NS, Ishak S, Ali Z. Knowledge, attitude and practice of antibiotics prescribing among medical officers of public health care facilities in the state of Kedah, Malaysia, *Med J Malaysia*2015; 70(5):307-11.

7. Vadivoo NS, Usha B, Padmavathi BK. Assessment of clinician's knowledge and perception on antimicrobial resistance a primary strategy for antimicrobial resistance control. *Global Journal of Medical Research* 2015; 15(4):9-14.
8. Annie Zulu, Scott K Matafwali, Michelo Banda, Steward Mudenda. Assessment of knowledge, attitude and practices on antibiotic resistance among undergraduate medical students in the school of medicine at the University of Zambia. *International Journal Basic Clinical Pharmacology*, 2020; 9(2):263-70.
9. Pallavi Kulkarni, Alice Kuruvilla, Regina Roy, Indla Ravi. An evaluation of knowledge, attitude and practice of rational antibiotic usage and antibiotic resistance among interns in a teaching tertiary care hospital: A cross-sectional questionnaire/based study. *Indian Journal of Pharmacy and Pharmacology*, 2017; 4(4): 192-7.

