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### Knowledge and attitudes towards appropriate antibiotics usage among students-a survey

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#### ABSTRACT



Antibiotics are used to treat bacterial infections. WHO estimates that more than half of all medicines are prescribed, dispensed or sold inappropriately, and that half of all patients fail to take them correctly. The overuse, underuse or misuse of medicines results in wastage of scarce resources and widespread health hazard. The objective of the study is to evaluate the knowledge and Attitude towards appropriate antibiotic use among students. A 15 item web based questionnaire was developed and employed to collect data from pharmacy students at Ezhuthachan College of pharmaceutical sciences. The survey will gather demographic information and collect data on knowledge, expectations and current antibiotic usage among students. A total of 55 students participated in the study, among the respondents about 60% of respondents believed that they could stop taking antibiotics if their symptoms of infection improved. over a half of the respondents (68%) believed that antibiotics are effective for most of the colds and around half of them (40%) stated that, they prefer to keep antibiotics at home for emergencies. About 58% would give their antibiotics to a family member if they caught an infection, 44% of respondents identified that, they have bought an antibiotic from community pharmacies without a prescription. The study shows that the pharmacy students has a number of misconceptions relating to appropriate antibiotic use, particularly relating to use of antibiotics for treatment of viral infections. As antibiotics are widely used in students, proper education should be given about rational use of antibiotics.

**Keywords:** Migraine; Antibiotics; Appropriate; Rational; Knowledge; Attitude.

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#### INTRODUCTION

Knowledge and attitudes towards antibiotics play a vital role in the success of the treatment process. This

study aimed to assess student's knowledge and attitudes toward antibiotic usage which could serve as baseline data for future studies [2]. Studies demonstrated an alarming number of students believe that antibiotics can be used in the treatment of viral infections and other self-limited illnesses. Despite misconceptions, patients often reported a high expectation of receiving antibiotics from their health care providers. Education to physicians, patients, and the public has been identified as the most effective to reduce inappropriate antibiotic use [1]. Excessive and inappropriate use of antimicrobial agents is still common. Factors contributing to no judicious antibiotic use include inadequate knowledge (by both physicians and patients), unreal expectations, real or perceived pressure by the patient or parent, inappropriate patient-physician communication, high work load, inadequate health care structure, cultural norms, and the physician's fears, experience, and education [3]. The use and misuse of antibiotics induce selection pressure, resulting in the development of resistance traits in bacterial populations [4]. However, the problem was not the antibiotics themselves as they remained one of the most effective weapons against diseases; in fact, the problem lied in the drugs'

use. Overusing antibiotics or using them irrationally can easily result not only in the emergence of resistant bacterial strains but also in adverse reactions and can also result in an economical burden on the national health system [5]. The inappropriate use of antibiotics could result from a complex interaction among various factors: prescriber behaviors and knowledge, diagnostic uncertainty, patient demand, the poor patient-prescriber interaction and macro level factors such as sociocultural, economic, and health care regulatory policy [6]. Furthermore, patients' knowledge, beliefs, and attitudes, their expectations, and experience with antibiotics have been contributing factor for spread and emergence of resistant microorganisms [7]. From patient's perspective inappropriate antibiotics use such as failure to complete treatment, skipping of doses, reuse of leftover medicines, misuse of antibiotics in treating viral infections, and self-medication with antibiotics have been reported [8]. Increased self-medication practice could lead to wastage of resources, resistance of pathogens, and adverse reaction, incorrect self-diagnosis, delays in seeking appropriate care, and risk of dependence and drug abuse [9,10]. Hence, it is very important to determine understanding and belief of students toward antibiotics usage. Thus, the aim of this study is to explore the current knowledge and attitudes towards antibiotic usage among the students.

**METHODOLOGY**

A 15 item web based questionnaire was developed and employed to collect data from pharmacy students at Ezhuthachan College of pharmaceutical sciences. The survey will gather demographic information and collect data on knowledge, expectations and current antibiotic usage among students. Inclusion criteria are students belongs the age group of 18-24. Exclusion criteria are those below the age of 18 and above the age of 24. The survey was developed based on previous researches. A thorough review was conducted of relevant literature pertaining to knowledge and attitude towards appropriate antibiotics usage in different populations.

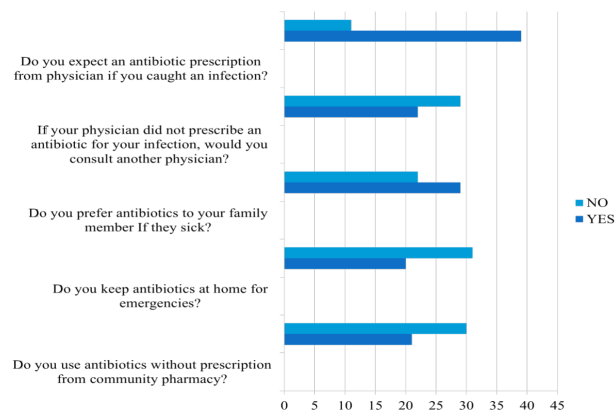
**Data collection:** Data were collected during the 2018–2019 academic year. Respondents completed the online structured questionnaire forms which composed of check box questions regarding socio-demographic data, antibiotics usage pattern, knowledge regarding antibiotics use and their attitude.

**Statistical analysis:** All data collected were analyzed using both descriptive and inferential statistics. Percentages were used to summarize all the responses generated from the survey. P value less than 0.05 was considered as statistically significant.

**RESULTS**

A total of 55 students participated in the study, among the respondents about 60% of respondents

believed that they could stop taking antibiotics if their symptoms of infection improved. Over a half of the respondents (68%) believed that antibiotics are effective for most of the colds and around half of them (40%) stated that, they prefer to keep antibiotics at home for emergencies. About 58% would give their antibiotics to a family member if they caught an infection, 44% of respondents identified that, they have bought an antibiotic from community pharmacies without a prescription.



**Figure 1: Antibiotics preference and expectation**

**Table 1: Knowledge of appropriate use**

Statement	No	(%)
<b>Antibiotics are effective for most colds</b>	38	40
<b>Bought antibiotics without prescription from community pharmacy</b>	40	44
<b>You can stop taking antibiotics if your symptoms of infection improved</b>	55	60
<b>Antibiotics are effective for treating infections caused by bacteria</b>	58	60

**DISCUSSION**

The aim of this study was to assess knowledge, attitude, of students with regard to antibiotics use. In the present study, widespread use of antibiotics was reported. Respondent exhibited poor knowledge and attitude toward antibiotics use. There were also mal-practices such as failing to take full dose, purchasing antibiotics without prescription. About 60% of respondents believed that they could stop taking antibiotics if their symptoms of infection improved. over a half of the respondents (68%) believed that antibiotics are effective for most of the colds and around half of them (40%) stated that, they prefer to keep antibiotics at home for emergencies. About 58% would give their antibiotics to a family member if they caught an infection, 44% of respondents identified that, and they have bought an antibiotic from community pharmacies without a prescription. The study shows that the pharmacy students has a number of misconceptions relating to appropriate antibiotic use, particularly relating to use of antibiotics for treatment of viral infections. As antibiotics are widely used in students, proper education should be given about rational use of antibiotics.

## CONCLUSION

In the present study, widespread use of antibiotics was reported, most of this antibiotic being accessed without prescription. Respondent displayed poor knowledge particularly in regard to the role of antibiotics in minor viral illness. Participants had poor attitude toward the use of antibiotics for cold and sore throat. There were also significant malpractices such as they could stop antibiotics if their symptoms improved, purchasing antibiotics without prescription. Hence, educational interventions on antibiotics use and its association with drug resistance are needed to promote judicious use of antibiotic.

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## CONFLICTS OF INTEREST

The author declares no conflict of interests.

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