

# Self-Medication With Antibiotics Among Nursing Students of Nepal

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## ABSTRACT:

**Purpose:** Nowadays globally antibiotic resistance is a major problem. Appropriate knowledge of antibiotics of nursing student can greatly help to combat this problem. Self-medication with antibiotics among nursing students represents a serious threat to clinical practice. A study was planned to find the prevalence and practice of self-medication with antibiotics among nursing students.

**Methods:** this study was conducted in three nursing colleges of Nepal. In this cross-sectional study, 330 nursing students were included to participate in the questionnaire based survey to find the prevalence and practice of self-medication with antibiotics. The data was collected and analyzed using SPSS 16.

**Results:** Out of 330 nursing students 327 were interviewed for the survey. More than 50% (166) of the nursing students gave a positive history of self-medication with antibiotic. The main reasons for self-medication with antibiotic was good knowledge of antibiotic 78 (46.2%) followed by that the doctor advise is not needed for common illness 54 (32%) and to save time and money 36 (21.3%).

**Conclusion:** The present study showed high prevalence of self-medication with antibiotics among the nursing students. This study shows that there is a need for interventions (like strict antibiotics policy, scheduled antibiotics sensitization programme, integrated teaching) that support rational use of antibiotics.

**Keywords:** Antibiotics, nursing students, self-medication.

## Introduction:

Self-medication can be defined as the use of drugs, herbs or home remedies to treat self-diagnosed disorders or symptoms, or the intermittent or continued use of a prescribed drug for chronic or recurrent disease or symptoms.<sup>[1]</sup>Self-medication differs from self-care in that it involves drugs that may do good or cause harm.<sup>[2]</sup>Self-medication with antibiotics has raised a worldwide concern because its irrational use of medicine can cause significant adverse effects which include resistant microorganisms, treatment failures, drug toxicity, increase in treatment cost, prolonged hospitalization periods and increase in morbidity.<sup>[3,4,5]</sup>

Increase rates of antimicrobial resistance have reduced medicines option for the treatment of bacterial infections. This is a major public health concern worldwide, especially in developing countries<sup>[6,7]</sup> and also in some developed countries such as Greece<sup>[8]</sup> where higher rates of resistant bacterial infections persist. Hence the need for research on antibiotic usage patterns to help develop appropriate interventions. Self-medication practices are common in developing countries for the reason of lack of access to health care, availability of antibiotics as over the counter drugs, poor government regulatory practices and the relatively higher prevalence of infectious diseases<sup>[9,10,11]</sup>.

Nursing students are more likely to have self-medication and self-prescription as they have easy access to different types of medicines in their future practices.<sup>[12]</sup>The objectives of this study were to estimate the prevalence of self-medication with antibiotics among nursing students of Chitwan Nepal and evaluate factors associated with self-medication with antibiotics.

### Material and Methods:

The study was carried out in the Chitwan district of central Nepal, from January to April 2016. In the current study, a stratified sampling methodology was employed to select three nursing institutions out of eight in Chitwan. The study was a cross sectional questionnaire-based study and the response rate was 99 %. No incentives were offered to the study participants. The calculated sample size was 360 subjects keeping confidence level at 95% and accepting 5% margin of error.<sup>[7,9]</sup> Questionnaire comprised of two components. First component dealt with the demographic details while second component consisted of both open and close ended questions related to self-medication behavior, pattern, indications and drugs used for self-medication with antibiotics.

The collected data were entered into MS Excel and analyzed with SPSS version 16. Descriptive analysis was carried out on the study variables and prevalence rates were reported as percentages and 95% confidence intervals. Chi-square was used to evaluate significant association among the study variables and  $p$  values of  $<0.05$  were considered statistically significant.

The protocol of the study was approved by the Institutional Review Board of the respective institutes and informed consent was obtained from the students before interviews were done.

### Results:

Out of 330 participants, 327 subjects with completely filled questionnaires were included for final analysis (Response rate: 99%). Mean age was 20 years. Of the 327 nursing students, 115 (35.1%) respondents were from the 1st year, 107 (34.9%) from 2<sup>nd</sup> year and 106 (32.4%) from final year. Overall, 166 (50.7%) nursing students experienced self-medication with antibiotics. Age and year of the nursing class were not statistically correlated with the prevalence of antibiotic self-medication ( $p=0.08$  and  $p=0.34$ ).

The main reasons for self-medication with antibiotic was good knowledge of antibiotic 78 (46.2%) followed by that the doctor advise is not needed for common illness 54 (32%) and to save time and money 36 (21.3%). The chief complaints which predisposed respondents to self-medication practices were fever 60 (35.7%), sore throat 34 (20.2%) and rhinitis 21 (12.5%) (Figure 1). Amoxicillin was the most frequently used antibiotic 57 (33.9%) followed by azithromycin 25 (14.9%) and ciprofloxacin 23 (13.7%) (Figure 2). Criteria for selection of antibiotic was mainly based on previous experiences of same illness 76 (45%) and previous doctor prescriptions 52 (30.8%).

### Discussion:

The Antimicrobial agents are widely prescribed in health care, which are often requested by the people, and dispensed over-the-counter (OTC) from pharmacies without prescription, for treatment of common ailments like cough, fever or pain in abdomen, in both developed and developing nations.<sup>[13,14,15,16]</sup> To the best of our knowledge, this was the first study undertaken to evaluate self-medication practices with antibiotics among nursing students in Nepal. More than one half (50.7%) of the nursing students gave a positive history of self-medication with antibiotics over the past one year. Various studies conducted among different student populations reveal dissimilar results. It is in range with the prevalence estimate (36- 74%) reported by other studies on nursing and medical students.<sup>[17,18]</sup> Our study results were significantly higher compared to general population reported by Kimet al. and Deshpande et al.; 16.6% and 31%, respectively.<sup>[19,20]</sup> Surprisingly, prevalence reported by our study was very similar with the study conducted by Gholap et al. (53.57%) on antibiotic self-medication practices among staff nurses.<sup>[21]</sup> Increased prevalence among health care providers might be due to their professional course. High level of education and professional status were reported earlier as predictive factors for self-medication.<sup>[18]</sup>

In the present study the most common symptoms leading to antibiotic self-medication were fever, sore throat, Urinary Tract Infection and rhinitis. Similar findings were reported in a study in Pakistan.<sup>[22]</sup> Antibiotics belonging to beta-lactam group were commonly used for self-medication. Our results are similar to those reported earlier.<sup>[21,23]</sup> Irrational and unnecessary use of antimicrobials remains common and its use may lead to antimicrobial drug resistance and super infection which is a growing global concern.<sup>[17]</sup>

As reported by previous studies, the most common reason for self-medication was lack of time and economic resources.<sup>[15]</sup> Although knowledge constituted the predominant reason for self-medication among nursing students in our study, cost and time saving were also important factor in this study. Similar findings have also been observed in a study conducted on staff nurses in Karad, India.<sup>[21]</sup> Serious and appropriate measures are need of an hour to such a high prevalence of antibiotic self-medication since these nursing students are future staff nurses and clinical practice will further escalate their antibiotic self-medication practices if not acted accordingly.

### Conclusion:

It is a common tendency among nursing students to practice self-medication when they themselves feel sick. Although they can consult fellow physicians, due to busy lifestyle and a complex set of reasons, they hesitate in seeking medical help from professional colleagues when they are ill. This particular practice however has its pros and cons. While responsible self-medication is a convenient alternative to treat minor illness as well manage acute emergency, inappropriate self-medication results in deleterious results. In this situation further multicentric studies with the objective of evaluating the knowledge, attitude, practices of self-medication involving a wider section of the nursing students across different nursing colleges in the country is urgently needed to estimate the magnitude of self-medication in the nursing fraternity. The findings of such multicentric studies could dictate the need of incorporating responsible self-education as an intrinsic component in medical curriculum.

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Table 1 Reason for self medication

1.	Good knowledge of antibiotics	78 (46.2%)
2.	Doctor advise not needed for common illness	54 (32%)
3.	To save time and money	36 (21.3%)

Table 2 Selection of antibiotics was based on

4.	Previous experience of same illness	76 (45%)
5.	Seen previously doctor prescription	52 (30.8%)
6.	Advice from colleagues and seniors	40 (23.8%)

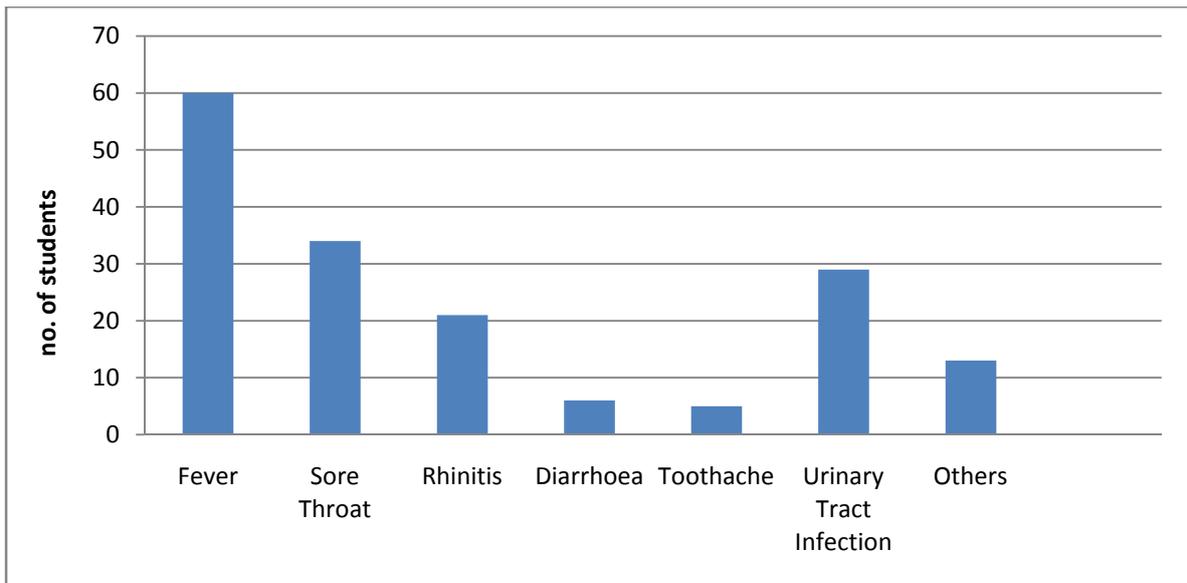


Figure 1. Antibiotics used for self medication

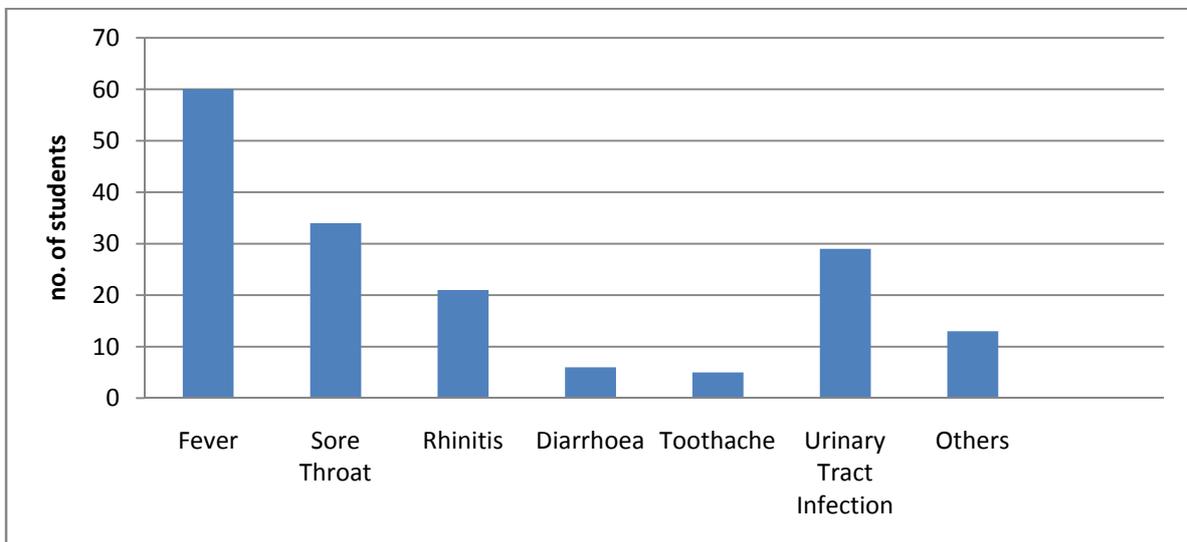


Figure 2. Chief complaint for which antibiotic taken