KNOWLEDGE, ATTITUDE, AND PRACTICE OF SELF-MEDICATION FOR SORE THROAT AMONG MEDICAL STUDENTS OF NEPALGUNJ MEDICAL COLLEGE, BANKE, NEPAL

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ABSTRACT

Aims and Objectives: Self-medication for minor problems like sore throat is very common, especially among medical students who can easily get medicines and have basic medical knowledge. Although it may show confidence in their own judgment, using medicines without proper guidance can cause problems such as antibiotic resistance and masking of serious illnesses. To assess the knowledge, attitude, and practice (KAP) of self-medication for sore throat among undergraduate medical students of Nepalgunj Medical College, Banke, Nepal.

Methods: A cross-sectional study was conducted from 1st May 2018 to 30th April 2019 among 263 MBBS students using a structured, self-administered questionnaire. The tool consisted of 30 items divided into three sections: knowledge (10), attitude (10), and practice (10). Data were analyzed using descriptive statistics and chi-square tests.

Results: Among 263 respondents, 150 (57.0%) were male and 113 (42.9%) female with a mean age of 21.9 ± 1.8 years. Overall, 74.5% had good knowledge, 47.5% showed a positive attitude toward rational self-medication, and 37.2% had appropriate practices for sore throat. The most commonly used drugs were paracetamol (69.9%), antihistamines (53.8%) NSAIDS and Paracetamol combination (39.3%), Antibiotics (34.9%) and Menthol (31.5%). Major reasons for self-medication were mild symptoms (63.5%), feeling of sufficient knowledge (7.7%). and previous experience of relief (7.7%). There was a positive correlation between all three domains of competency, however only knowledge and attitude have significant correlation. ($p<0.03$)

Conclusion: Most medical students at Nepalgunj Medical College possessed good knowledge and a positive attitude toward responsible self-medication. However, inappropriate practice of self-medication and especially antibiotic use is a concern.

Keywords: KAP study, Self-medication, Sore throat,

INTRODUCTION

"Self-medication involves the use of medicinal products by the consumer to treat self-diagnosed disorders or symptoms, without seeking medical advice or the intermittent/ continued use of a medication prescribed by a physician for chronic or recurrent disease or symptoms".[1] Self-medication includes activities such as buying medicines without a prescription, using old prescriptions to purchase drugs again, sharing medicines with family or friends, or using leftover medicines kept at home.[2] Self-medication is different from self-care because it involves taking drugs that can be both helpful and harmful. Although careful self-medication can sometimes reduce the burden on the healthcare system, it can be a serious problem sometimes[3], hence should be done cautiously. It is a frequent practice among the general population for minor illnesses because many medicines are easily available over-the-counter (OTC) in Nepal.

Many studies have shown that inappropriate self-medication leads to waste of resources, development of organisms with antibiotic resistance, and serious health risks such as adverse drug reactions, long-term illness, and drug dependence[2,4] There is also a risk of using expired medicines, sharing them with others, or taking medicines meant for another condition. Irrational use of medicines can even cause accidental poisoning.

Antimicrobial resistance is a growing problem worldwide, especially in developing countries where antibiotics are often

sold without a prescription.[5] The increment of organisms that are resistant to antibiotics is becoming a serious public health concern [6,7] and has been included as major challenges in National Health Policy of Nepal.[8] This issue is particularly severe in low- and middle-income countries like Nepal. Inappropriate use of antibiotics is a major cause of antibiotic resistance. [9] This makes infections difficult to treat, causes longer and more serious illnesses, increases healthcare costs, and increases the chance of deaths [10].

Upper respiratory infections like sore throat are very common. Even though antibiotics are required only for bacterial infections, most sore throats are actually caused by viruses.[11] These viral infections usually improve without any medicine, but antibiotics are still often used when they are not needed.[12] Because antibiotics kill bacteria, not viruses, their use in viral sore throats is often inappropriate[13,14,15]. Globally, URTIs account for about 60% of all antibiotic prescriptions in general practice.[16]

The knowledge of healthcare professionals about proper antibiotic use plays a key role in promoting awareness in the community. Medical students, due to some medical knowledge and easy access to medications, are more likely to practice self-medication. This makes it important to strengthen their knowledge, attitude, and practices related to infection control. Some studies from India and other countries [2,3] have studied self-medication among medical students, but very few have focused on self-medication for a specific illness. Sore throat is one of the most common conditions for which self-medication is practiced. Since medical students are socially active and can influence others, they can help spread correct information about preventing and treating sore throat. Therefore, it is important to understand their knowledge, attitude, and practices related to sore throat—its symptoms, prevention, and management.

This study aims to assess the knowledge, attitude, and practice regarding self-medication for sore throat among medical students at Nepalgunj Medical College. It focuses on sore throat, a common ENT problem that is usually viral or noninfectious and requires only symptomatic treatment. Therefore, this study was carried out to identify the self-medication patterns for sore throat among medical undergraduates.

METHODS

A cross-sectional questionnaire-based survey study was conducted from 1st May 2018 to 30th April 2019 at Nepalgunj Medical College Teaching Hospital (NGMCTH), Banke among 263 MBBS students (third, fourth and final year) who gave consent for the participation. All MBBS students who have completed their basic science (first two years of medical school) and are posted in clinical sciences from third to final year were included. Hence the concept of pathology, microbiology, pharmacology, etc of sore throat is already expected to be known.

A structured, self-administered questionnaire on sore throat was used for the study The tool consisted of 30 items divided into three sections: knowledge (10), attitude (10), and practice (10). [Table 1,2,3]

Table 1: Knowledge Questions

SN	Questions	True	False	don't know
1	Viral infection is the most common cause of sore throat.			
2	Sorethroat with fever and bodyache is indication of antibiotics			
3	Repeated or untreated sore throat can sometimes lead to heart complications.			
4	Acidity and Reflux can cause sorethroat			
5	Sorethroat can spread from one person to another			
6	Amoxycillin is the drug of choice for acute bacterial pharyngitis			
7	Most sore throats are treated with antibiotics			
8	Sorethroat with dysphagia or shortness of breath should be immediately treated			
9	Drug resistance is mainly due to inappropriate self medication			
10	Allergic reactions can occur from using antibiotics			

Table 2: Attitude Question

SN	Questions	Agree	Disagree	Neutral
1	Self medication should always be tried before visiting a doctor			
2	Exaggerating the symptoms Infront of a doctor helps to get stronger medications that gives instant relief?			
3	Antibiotics should only be taken after consultation with specialist doctor			
4	One can stop antibiotic once symptom subsides			
5	Self medication saves time and money			
6	Self medication is practiced as a learning opportunity			
7	Antibiotics will always be effective in treating the same diseases in future.			

8	Expensive antibiotics have fewer side effects			
9	Taking antibiotics early helps sore throat recover faster			
10	It is better to wait and observe before starting antibiotics for a sore throat.			

Table 3: Practice Questions

SN	Questions	Yes	No	don't know
1	Do you read indications and side effect of the medication that you are taking as self medication			
2	Do you take antibiotics till symptoms subside?			
3	Do you follow institutional prescription protocols?			
4	Do you use broad-spectrum antibiotics under all circumstances.			
5	Have you ever used leftover antibiotics for sore throat?			
6	Do you store antibiotics at home at my convenient place			
7	Do you perform warm salt-water gargles or use other home remedies for sore throat relief?			
8	Do you check the expiry date of medicines before using them?			
9	Do you smoke or get exposed to tobacco smoke regularly?			
10	Do you avoid close contact with people having cough or cold to prevent sore throat?			

Symptoms such as throat irritation or foreign body sensation with or without pain were considered as sore throat.

The questionnaire was pre-tested on 30 students who were asked to fill forms to assess internal consistency using Cronbach's alpha. Later on, it was introduced to whole sample size without any change as the questionnaire was reliable, consistent and feasible and easily understandable. The students included in pilot study were excluded in final data.

Participants were surveyed by a self-administered questionnaire written in English which could be read by all participants. The answer was in objective form with "True, False and Don't know" for knowledge and "Agree, Disagree and Neutral "for attitude questions. For practice questions "Yes, No, Don't know" was used. The correct response was decided by mutual agreement of all ENT consultants of NGMCTH. Knowledge, attitude and practice were assessed using a common grading method, assigning 1 point for correct responses and 0 for incorrect ones. The points obtained for each section were added up to get total value. Participants scoring 70% or above correct responses were classified as having good knowledge, positive attitude, and appropriate practice while those below this threshold were categorized as having poor levels.

Data were coded and analyzed using SPSS 16. Descriptive statistics (mean, percentage) and chi-square test for associations ($p<0.05$) were used.

RESULTS

Internal consistency of all 3 questionnaires was evaluated using Cronbach's alpha ($\alpha=0.72$), which was within an acceptable range. Among 263 respondents, 150 (57.0%) were male and 113 (42.9%) females, with mean age 21.9 ± 1.8 years. There were 97 from 3rd year, 101 from 4th year and 65 from final year.

The mean knowledge score was 7.04 ± 0.93, the attitude score was 6.35 ± 0.98, and the practice score was 5.39 ± 0.81. Good knowledge was found in 74.5% of participants, a positive attitude in 47.5%, and appropriate practices in only 37.2%.

Amongst all participants, 152 students had experienced sore throats in the last one year; of which 97 self-medicated themselves and 12 consulted physicians. Most of the students with sore throat (n=93, 95.8%) did warm saline gargles. There were 206 students who agreed that they have done self-medication at least once. Most of them (63.5%) defended the reason by assuming the condition to be minor and not felt the need to see a doctor. (Table 4)

Table 4: Number of students who have done Self Medication: 206

Reasons	Number
It was minor problem	131 (63.5%)
I have good Knowledge	16 (7.7%)
Senior/Peer recommendations	12 (5.8%)
Left over medicines at home	4 (1.9%)
Previously experience of relief	16 (7.7%)
To save Time	5 (2.4%)
To save cost of showing to doctor	8 (3.8%)
To avoid OPD waiting line	12 (5.8%)
Others	2 (0.97%)
Total	206

The common drugs used were Paracetamol (69.9%), Antihistamines (53.8%), NSAIDS and Paracetamol combination (39.3%), Antibiotics (34.9%) and Menthol (31.5%) (Table 5) Common antibiotics used were Azithromycin (69.4%); Amoxycillin (12.5%), Amoxycillin and Clavulanic acid combination (9.7%) and others (8.3%).

Table 5: Drugs which were commonly used for the self-medication

Drugs	Number
Paracetamol	144 (69.9%)
NSAIDS and Paracetamol combination	81 (39.3%)
Antibiotics	72 (34.9%)
Antihistamines	111(53.8%)
Antiseptic Gargle	32 (15.5%)
Oral Steroids	2 (0.9%)
Menthol (Counter irritants)	65 (31.5%)
Cough Syrup	15 (7.2%)
Montelukast	2 (0.9%)
Proton Pump Inhibitor	3 (1.4%)
Total	206

The usual sources of medications were seniors (40%), friends (25%), pharmacists (20%), family (15%) in case of self-medication. A course of antibiotics (3 days for Azithromycin and at least 5 days for other) was completed by 85% of students.

The proportion of correct responses to different questions are tabulated in table 6,7 and 8. Most of the students have good knowledge regarding cardiac complications of Streptococcal throat infection, drug allergy, need of urgency in sore throat and usual organism of throat infection. Most of the students were unaware of sore throat being communicable and role of acidity in causing sore throat and role of self-medication in drug resistance. (Table 6)

Table 6: Knowledge Questions correct response

SN	Questions	Correct Response
1	Viral infection is the most common cause of sore throat.	215(81.7%)
2	Sorethroat with fever and bodyache is indication of antibiotics	168 (63.8%)
3	Repeated or untreated sore throat can sometimes lead to heart complications.	247 (93.9%)
4	Acidity and Reflux can cause sorethroat	132 (50.2%)
5	Sorethroat can spread from one person to another	105 (39.9%)
6	Amoxycillin is the drug of choice for acute bacterial pharyngitis	210 (79.8%)
7	Most sore throats are treated with antibiotics	182 (69.2%)
8	Sorethroat with dysphagia or shortness of breath should be immediately treated	236 (89.7%)
9	Drug resistance is mainly due to inappropriate self medication	152 (57.7%)
10	Allergic reactions can occur from using antibiotics	259 (98.4%)

Regarding the attitude of MBBS Clinical students, most of them believe that exaggerating symptoms in front of a clinician doesn't help you get instant relief and antibiotics should only be taken after physician consultation. However, most of them believed that early intake of antibiotics helps for faster relief and self-medication saves time and money (Table 7)

Table 7: Attitude Question correct response

SN	Questions	Correct Response
1	Self medication should always be tried before visiting a doctor	155 (58.9%)
2	Exaggerating the symptoms Infront of a doctor helps to get stronger medications that gives instant relief?	241 (91.6%)
3	Antibiotics should only be taken after consultation with specialist doctor	208 (79.0%)
4	One can stop antibiotic once symptom subsides	163 (61.9%)
5	Self medication saves time and money	110 (41.8%)
6	Self medication is practiced as a learning opportunity	157 (59.6%)
7	Antibiotics will always be effective in treating the same diseases in future.	181 (68.8%)
8	Expensive antibiotics have fewer side effects	135 (51.3%)
9	Taking antibiotics early helps sore throat recover faster	105 (39.9%)
10	It is better to wait and observe before starting antibiotics for a sore throat.	162 (61.5%)

As shown in table 8, almost all students practice uses of warm salt-water gargles or other home remedies for sore throat relief. They had good practice of checking the expiry date of medicines before using them and didn't store antibiotics unnecessarily. However, most of them are exposed to active or passive smoking and most of them do not follow institutional prescription protocols.

Table 8: Practice Questions correct response

SN	Questions	Correct Response
1	Do you read indications and side effect of the medication that you are taking as self-medication	107 (40.6%)
2	Do you take antibiotics till symptoms subside?	118 (44.8%)
3	Do you follow institutional prescription protocols?	90 (34.2%)
4	Do you use broad-spectrum antibiotics under all circumstances.	184 (69.9%)
5	Have you ever used leftover antibiotics for sore throat?	167 (63.4%)
6	Do you store antibiotics at home at your convenient place	192 (73.0%)
7	Do you perform warm salt-water gargles or use other home remedies for sore throat relief?	257 (97.7%)

8	Do you check the expiry date of medicines before using them?	202 (76.8%)
9	Do you smoke or get exposed to tobacco smoke regularly?	80 (30.4%)
10	Do you avoid close contact with people having cough or cold to prevent sore throat?	135 (51.3%)

There was a positive correlation between all three domains of competency, however only knowledge and attitude have significant correlation. ($p<0.03$) The correlation is weakly positive suggesting knowledgeable students show a positive attitude. There was no correlation between knowledge with practice and also when attitude was compared with practice as shown in table 9.

Table 9: Correlation between knowledge, attitude, and practice scores

KAP	Correlation coefficient	P-value
Knowledge-Attitude	0.34	0.03
Knowledge-Practice	0.18	0.74
Attitude-Practice	0.23	0.62

DISCUSSION

Inappropriate use of antibiotics can make future treatments ineffective, unsafe, and may even worsen diseases. If future doctors do not have enough knowledge or use antibiotics incorrectly, it can cause serious problems later. Medical students may not yet have strong prescription skills, so they need more training on how to use antibiotics properly. Medical skills in prescribing antibiotics can be improved through continuous medical education.

Compared to study by Saroha[3], we had a smaller proportion of students having sore throats and self-medication. However, choice of antibiotics was similar in both cases.[3]A significant percentage of medical students practiced self-medication despite good knowledge and positive attitudes. The prevalence (78.3%) of self-medication is quite high but aligns with other studies showing the self-medication trend is more prevalent in educated class. [17,18] Although students had adequate knowledge about rational drug use, 34.9% still used antibiotics without prescription, indicating poor translation of knowledge into safe practice. This proportion is similar to other studies. [19] Mild symptom perception and easy drug access were main drivers. Positive attitudes toward safe SM were encouraging, but some misconceptions persisted.

A study from Pakistan showing self-medication among pharmacy students showed more use of beta-lactam as compared to Azithromycin [19] which is in contrast to our study findings and that by Saroha. [3]In both studies, Azithromycin was the most preferred antibiotic which may be due to its easy dosage schedule. In the study by Pathak in 2019[5], Antipyretic (70%) drugs were most commonly used for the self-medication by the study participants, followed by Analgesics (66%) and Antibiotics (53%). Although the trend is similar in our study, the proportion of drug users is less. This is in contrast to other studies [3,20] where antibiotics were the most common SM drug. A study from Sudan among medical students showed 60.8% self-medicated with antibiotics within the previous 12 months mainly for URTI and cough. [21] It is quite high as compared to our usage of 34.9%.

A study from Colombia showed that a large proportion of medical students perceive that the training received from the university is insufficient with regard to antibiotic use and bacterial resistance, which is consistent with the limited knowledge reflected in the selection of antibiotic treatment for respiratory, urinary tract, and skin and soft tissue infections. [22] However in our study almost three-fourth students have good knowledge. The display of positive attitude and appropriate practice should come from implanting their knowledge and learning from teachers, role models and seniors. The undergraduates need to understand the indications of the medicines they prescribed to themselves or others. Medical students need to clearly understand what antibiotic resistance is and why it is dangerous. Educational programs and strict rules are needed to stop the sale of antibiotics without a prescription. Educational interventions reinforcing antibiotic stewardship, and inclusion of self-medication ethics in curriculum, are vital to ensure responsible medication use.

This study was limited by self-reported data and subject to recall bias. Future multicenter research is recommended. Another good study would be to compare KAP of clinical students with preclinical ones. The present study was limited to a small sample size and lack of confirmatory diagnosis. Further studies need to be undertaken to find out about self-medication in several medical colleges simultaneously to get a broader view of the picture.

Self-medication is a necessary evil. It can be both beneficial (if used cautiously) and hazardous (when used indiscriminately). The need of the hour is to teach our undergraduates about the pros and cons of self-medication. Most importantly, they should be educated about the indication of antibiotics and if used, the importance of completing the course.

CONCLUSION

Most medical students at Nepalgunj Medical College possessed good knowledge and a positive attitude toward responsible self-medication. However, inappropriate antibiotic use remains a concern. Structured education and policy measures are vital to promote rational self-care practices.

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