

**A CROSS- SECTIONAL STUDY ON ANTIBIOTIC SELF-MEDICATION AND
ANTIMICROBIAL RESISTANCE**Swati Thakur*, Chauhan Shivani¹, Thakur Suraj², Shukla Shivani³, Thakural Sneha⁴¹Abhilashi college of Pharmacy, Ner Chowk, Mandi, Himachal Pradesh 175008.

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DOI: <https://doi.org/10.5281/zenodo.19884836>**How to cite this Article:** Swati Thakur*, Chauhan Shivani¹, Thakur Suraj², Shukla Shivani³, Thakural Sneha⁴. (2026). A Cross- Sectional Study On Antibiotic Self-Medication And Antimicrobial Resistance. European Journal of Pharmaceutical and Medical Research, 13(5), 185–184.

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Article Received on 28/03/2026

Article Revised on 18/04/2026

Article Published on 01/05/2026

ABSTRACT

- **Introduction:** The study involves the cross- section study towards antibiotic self – medication among local area in Nerchowk district- Mandi Himachal Pradesh. study was conduct on a sample of 300 peoples randomly chosen from local area. We ask many peoples about their medication like antibiotics. Antibiotics are one of the most important discoveries in modern medicine and play a vital role in treatment of bacterial infection. Self-medication with antibiotics is widely practiced in developing countries due to easy availability of drugs, lack of strict regulatory control, previous experience with similar illness, cost of medical consultation, and influence of pharmacist, family members, or advertisement. Although antibiotics are effective against bacterial infection, their improper use – such as incorrect dosage, incomplete course, or use for viral infections like common cold flu – can lead to serious consequences.
- **Material and method:** To understand this important topic better, a study was done as part of a survey called "Self-Medication with Antibiotics and Resistance Levels" in nearby areas of Nerchowk district, Mandi, Himachal Pradesh. Small villages with about 300 to 400 people were chosen randomly. Then, people from these villages were randomly picked to answer questions about using antibiotics without a doctor's advice. The study looked at their age and gender too.
- **Conclusion:** We collected 300 responses in our survey. About 66% of people said they take antibiotics on their own, while 34% said they don't. Using antibiotics without a doctor's advice is a serious health problem. It can cause antibiotics to stop working, treatments to fail, side effects, and higher medical costs. This happens because many people don't know enough, antibiotics are easy to get, and they are often used in the wrong way.

INTRODUCTION

The aim of this study is to evaluate the knowledge and behaviour toward antibiotic self – medication among local area in Nerchowk district- Mandi Himachal Pradesh. A cross-section study was conduct on a sample of 300 peoples randomly chosen from local area. We ask many peoples about their medication like antibiotics. Antibiotics are essential treatment, especially in the developing world like World Health Organization (WHO). In this world antibiotics are purchased and used without prescription of physician.^[1] Antibiotics are one of the most important discoveries in modern medicine and play a vital role in treatment of bacterial infection.

Self-medication with antibiotics is widely practiced in developing countries due to easy availability of drugs, lack of strict regulatory control, previous experience with similar illness, cost of medical consultation, and influence of pharmacist, family members, or advertisement.^[2] Although antibiotics are effective against bacterial infection, their improper use – such as incorrect dosage, incomplete course, or use for viral infections like common cold flu – can lead to serious consequences. The most alarming outcome of antibiotics misuse is antimicrobial resistance. According to the world health organization (WHO), antimicrobial resistance is one of the top global public health threats.

Resistant microorganism make infection difficult to treat, increase treatment duration, raise healthcare cost, and lead to higher morbidity and mortality rates.^[3] In addition, self-medication increases risk of adverse drug reaction, drug - drug interaction, masking of severe diseases and delayed diagnosis. In India, particularly in semi-urban and rural areas, antibiotics are often purchased without prescription despite regulatory restrictions. Public awareness regarding the appropriate use of antibiotics and the dangers of resistance remains limited. Therefore, it is essential to assess the knowledge, attitude, and practice of people regarding antibiotic self-medication. There is a large variety of questionnaire being used for investigating self-medication practices making comparability and meta-analysis very difficult.^[4] This study aims to evaluate the prevalence of antibiotics self-medication and its impact on antimicrobial resistance among resident of our area. The findings of this survey may help in identifying gaps in awareness and guiding future educational interventions and policy measure to promote rational use of antibiotics. Antimicrobial resistance (AR) is increasing and poses a major threat to global public health. It is important to examine the factors that contribute to the rising cases of resistance. Globally, self-medication has been observed to be on the increase.^[5] Self-medication has been described as "the taking of drugs, herbs or home remedies on one's own initiative, or on the advice of another person, without consulting a doctor. The major problems associated with self-medication include wastage of resources, development of resistance of pathogens (which usually cause serious health hazards such as adverse reactions), prolonged suffering and drug dependence.^[6] Other medications being considered as being used without a prescription, in developing countries, are antibiotics. Self-medication, especially with antibiotics, has been greatly encouraged by the unregulated supply chain. This could lead to the development of resistant bacterial strains.^[7] Self-medication can be useful in aiding the recovery of some minor illnesses. However, the risks and benefits should be weighed reasonably as some serious problems may arise from the self-use of medications. Medications that can be used for self-medication are those that are referred to as Over-the-counter (OTC) drugs, and they can be dispensed without a doctor's prescription through pharmacies, mostly in the less developed countries.^[8] Over the counter (OTC) medications are a type of self-medication where the consumer diagnoses their own illness and purchases a particular drug to treat that illness. OTC medications relieve symptoms of ailments that do not necessarily need medical attention. Self-medication has been extensively practiced to treat behavioural and psychological ailments such as smoking. Pharmacists can assist patients in selecting the appropriate OTC smoking cessation aids to enable them to successfully quit smoking. For instance, non-prescription nicotine enables people to stop smoking.^[9] Self-medication has some benefits in that it is convenient, cost-effective, and prevents wastage of

health resources in treating minor ailments. However, since the diagnosed disease may not be accurate, there is a delay in consulting a health care professional; the side effects of the medication are not known, misuse of antibiotics can cause drug resistance; and using the same drug along with other drugs can cause drug interactions and sometimes, drug addiction.^[10] Among the groups of people who engage in self-medication, especially the use of antibiotics, some researchers have demonstrated that university students are part of them. The purpose of this study was to evaluate self-medication practices of antibiotics among students. However, when self-medication is done correctly, there are some benefits that can be derived by the individual and the health system: It saves time spent queuing up for medical consultations, saves precious medical resources for minor ailments, reduces the workload of doctors, reduces health care cost, and reduces absenteeism from work. Despite the benefits derived from the practice of self-medication, there are many negative outcomes that could arise from improper self-medication practices, especially with antibiotics.^[11] WHO describes improper use of antibiotics as the use of antibiotics without appropriate indication, wrong dosage, wrong treatment duration, late or absent downscaling of treatment, poor treatment adherence, and use of poor quality or substandard antibiotics. Self-medication with antibiotics (SMA) is known to accelerate the development of antimicrobial resistance (AMR). In Low and Middle-Income Countries (LMIC), it is estimated that about 80% of antibiotics are used outside the official health care system; of which 20-50% are used inappropriately increased irrational use of antibiotics can be caused by a number of factors. Numerous studies have shown a strong correlation between public awareness and knowledge of antibiotics and inappropriate use and non-adherence to antibiotic regimens Demographic characteristics, such as gender, age, race, education level, family income, place of residence, and other factors, such as a lack of physician advice regarding rational antibiotic use, have been reported to be factors associated with public knowledge of antibiotics.

➤ MATERIAL AND METHODS

In order to obtain a broad overview of this significant topic, the presented study was conducted as part of the literature survey "Self-Medication with Antibiotics and Resistance Levels in among local area in Nerchowk district-Mandi Himachal Pradesh" conducted in neighboring locations.

Nearby areas were selected randomly rural areas with population of 300-400. Random sampling of residents from rural area to collect data on self-medication with antibiotics depending on population age and gender.

Questionnaire

The questionnaire included questions on demographic data like and gender and age. Individuals were asked about the use of antibiotics like reasons for taking them,

sources of their acquisition, any side effects, their recommendation and the intended use of antibiotics.

More than 80% of people intended the use of antibiotics on their own like azithromycin, amoxicillin for common flu and cold.

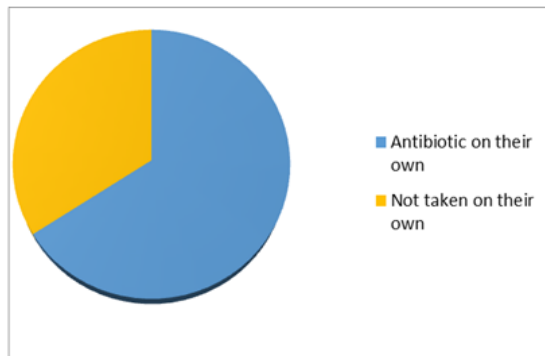
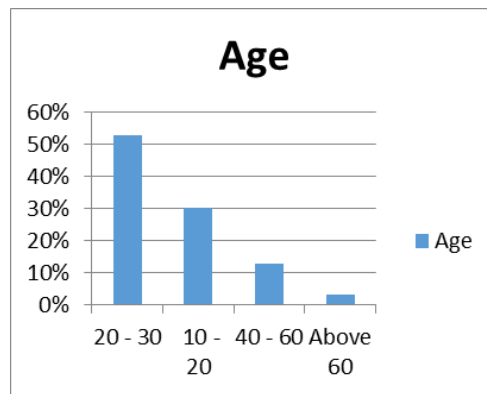
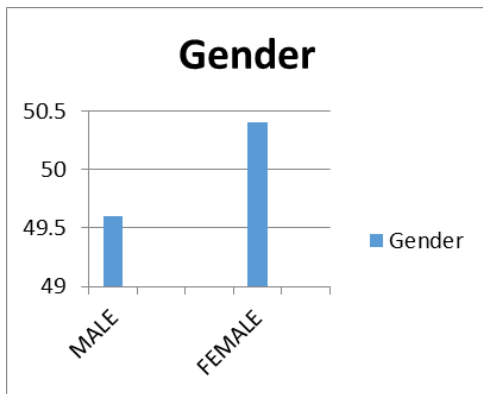
Self-medication was defined as using antibiotics without a prescription during the previous 12 months, regardless of where they came from (prescription-free pharmacy purchases, leftovers from previous treatments at home, or antibiotics acquired from friends or relatives). When people reported using antibiotics without first consulting

a doctor or nurse, it was considered purposeful self-medication.

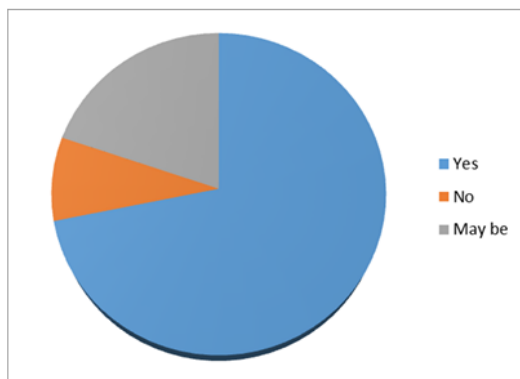
RESULTS

Responses were classified according to age and gender which are collected through online and offline survey.

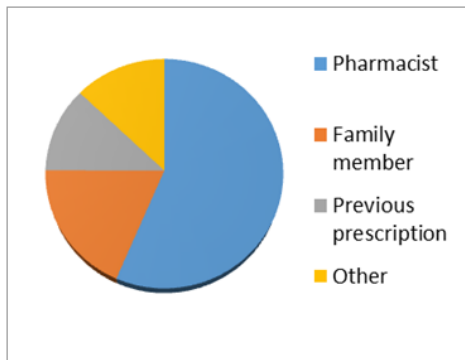
AGE	RESPONSE
10-20	30.3%
20-30	53%
40-60	12.9%
More than 60	3%



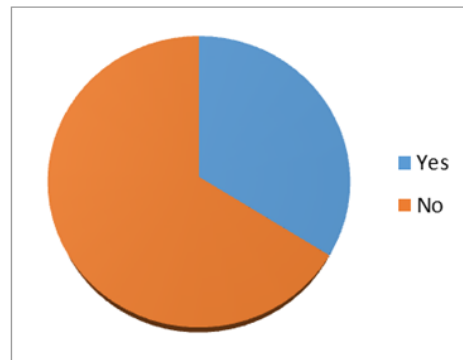
➤ 65.9% of people take antibiotics on their own and remaining 34.1% not.



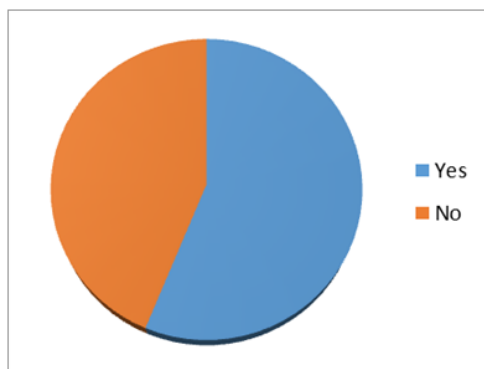
➤ Antibiotics work successfully- 71.8% say yes 8.4% say no and remaining 19.8% are not sure.



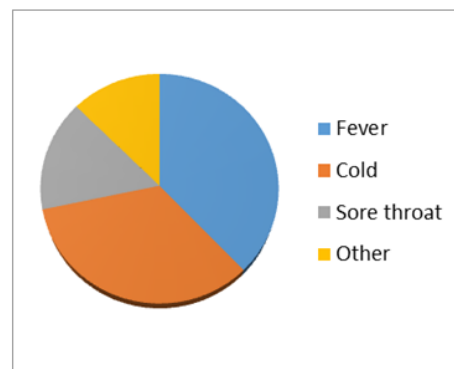
➤ Who suggested antibiotics- 55.6% pharmacist, 18.3% family member, 11.9% previous prescription, 12.7% others.



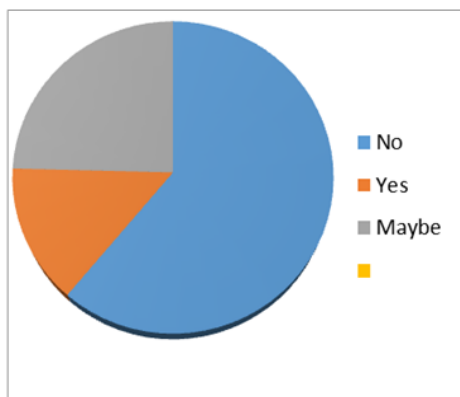
➤ Changed dose on your own- 33.9% say yes remaining 66.1% say no.



➤ Antibiotics medication without consulting doctor- 56.2% says yes and remaining 43.8% say no.



➤ Condition for which a person self-medicate- 37.8% for fever, 33.9% for cold and cough, 15.7% for sore throat, 12.6% others.



➤ Ever experienced side effect with antibiotics- 61.1% say no, 14.3% say yes and remaining 24.6% not sure.

➤ **CONCLUSION**

According to our survey we collected 300 responses in which 65.9% of people take antibiotics on their own and remaining 34.1% not. Self-medication with antibiotics is a growing public health concern that leads to serious consequences such as antibiotic resistance, treatment failure, adverse effect, and increase healthcare cost. Lack of proper knowledge, easily availability of drugs and misuse contribute significantly to this problem. Therefore, there is the need for proper education and strict control over antibiotic use.

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