

The Journal of Phytopharmacology

(Pharmacognosy and phytomedicine Research)

Research Article

ISSN 2230-480X
JPHYTO 2013; 2(4): 30-36
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Dr. Rahul Parakh

3rd Year Resident, Department of Pharmacology, NIMS Medical College, Shobha Nagar, Jaipur Rajasthan, India

Dr. Neha Sharma

2nd Year Resident, Department of Pharmacology, NIMS Medical College, Shobha Nagar, Jaipur Rajasthan, India

Dr. Kriti Kothari

1st Year Resident, Department of Anaesthesia, SMS Medical College, Jaipur Rajasthan, India

Dr. Richa Parakh

1st Year Resident, Department of Pathology, Geetanjali Medical College, Udaipur, Rajasthan, India

Dr. Pradeep Parakh

Professor and Head, Department of Radiodiagnosis, Rohilkhand Medical College, Bareilly, Uttar Pradesh, India

Correspondence:

Dr. Rahul Parakh

B-109 Sethi Colony Jaipur, Rajasthan 302004, India

Phone: +918769065658

E-mail: jbunlimited08@gmail.com

Self-medication practice among engineering students in an engineering college in North India

Dr. Rahul Parakh, Dr. Neha Sharma, Dr. Kriti Kothari, Dr. Richa Parakh, Dr. Pradeep Parakh

Abstract

Aims: This study was undertaken to determine the knowledge, attitude & practice of self medication among engineering students of all the years of NIMS Engineering College, Jaipur, Rajasthan. **Methods:** This study was an anonymous, questionnaire-based, descriptive study. A self-developed, pre-validated questionnaire consisting of both open-ended and close-ended questions was filled by 1st, 2nd, 3rd & 4th year engineering students. Data was reviewed, organized and summarized as counts and percentages and evaluated using the Chi-square test and p-value of <0.05 was considered statistically significant. **Results:** Out of a total of 346 students, 70.5% were male & 29.4% were females. Their age ranged from 17-27 years. Out of these, 75.7% students had taken self medication with 22.3% being females and 77.86% being males. The commonest indications for self-medication were fever seen in 176(67.1%) of the students followed by, cough/common cold 104(39.69%). 37.4% of the students didn't feel the need to go to a doctor and this was the most frequent reasons for resorting to self-medication and the main source of self medication was guardians (54.9%). Analgesics were the commonest drugs used (56.5%) followed by antimicrobials (15.6%) with 52% of the students completed the recommended course of antimicrobials. 46.5% students thought that self medication was harmful. **Conclusion:** The practice of self-medication in our study was common and often inappropriate and this high prevalence is a cause of concern. Education and proper information about the drugs may go a long way in promoting responsible self medication.

Keywords: Self-medication, Engineering students, Self-prescription, Drugs.

Introduction

Self medication is defined as the use of medication by a patient on his own initiative or on the advice of a Pharmacist or a lay person instead of consulting a medical practitioner.¹ Studies done on self medication reveal that it is a fairly common practice, especially in economically deprived communities² and internationally, self-medication has been reported as being on the rise.³⁻⁵ In developing countries like India, easy availability of a wide range of drugs coupled with inadequate health services result in increased proportions of drugs used as self medication compared to prescribed drugs. In several studies it has been found that inappropriate self-medication results in wastage of resources, increases resistance of pathogens and generally entails serious health hazards such as adverse drug reactions, prolonged suffering and drug dependence. On the other hand, if done appropriately, self-medication can readily relieve acute medical problems, can save the time spent in waiting to see a doctor, may be economical and can even save lives in acute conditions.

It is now accepted that self-care in the form of responsible self-medication can be beneficial for patients, healthcare providers, the pharmaceutical industry and governments.⁶ The potential risk/ benefit of self medication should be compared to potential risks/ benefits of prescription medicines. Self-medication is an area where governments and health authorities need to ensure that it is done in a responsible manner, ensuring that safe drugs are made available over the counter and the consumer is given adequate information about the use of drugs and when to consult a doctor.^{3, 6, 7} Rational use of drugs has drawn public health attention globally with the aim of maintaining quality health care at⁸ lower cost. A high level of education and professional status has been mentioned as predictive factor for self medication.⁹ Despite this, there is a paucity of studies on self-medication among engineering students therefore the present study was undertaken to determine the knowledge, attitude and practice of self-medication and to identify the reasons for, and the patterns of self medication among all the four year engineering students of NIMS College of Engineering and Technology, Jaipur, Rajasthan.

Aims:

- To determine the Knowledge, Attitude & Practice (KAP) of self medication among Engineering students of NIMS College of Engineering and Technology, Jaipur, Rajasthan.
- Prevalence of self medication
- Incidence of adverse drugs reactions

Materials & Methods

This is an anonymous, questionnaire-based survey. In the study pattern of drug use over a six-month period preceding the study was noted. A Self-developed, pre-validated questionnaire (Annexure 1) was used. Data is expressed as counts and percentages and evaluated using Chi-square test and $p < 0.05$ was considered statistically significant. Some questions had multiple options to choose from therefore the sum total of percentage is not always 100%.

Annexure 1:

Questionnaire used for assessing prevalence of self and non-doctor prescribing

- 1) What is your name?
- 2) What is your full residential address?
- 3) What is your approximate monthly salary/pocket money/income of family?
- 4) Have you used medicines of your own without consulting either a doctor in the preceding six months: Yes/No
- 5) How many episodes of illness have you had in the preceding six months?
- 6) What was the main symptom of your illness?
- 7) What others symptoms did you experience?
- 8) Were there any associated complaints?
- 9) What type of medicine(s) did you use?
- 10) Can you tell me it's (their) name(s)?
- 11) If you took antimicrobials then did you complete the course: Yes/No
- 12) Did you have knowledge about dose, side effects, interactions, of the medicines you have taken? Yes/no.
- 13) What was the main source of information of yourself medication:
Friends/Chemists/Advertisement/Seniors/Books/Previous prescriptions/Previous experience/Guardian?
- 14) What was your main reason for not consulting a doctor: Minor illness, Far place, Money constraints, Time constraints/Late night, Didn't feel the need, Doctor not available, Some known doctor, Previous experience, treatment advised by guardian/senior
- 15) Do you think self medication is harmful: Yes/No
- 16) Did you find any Adverse Drug reaction & what was the most common ADR?

Results

Baseline characteristics (Figure 1):

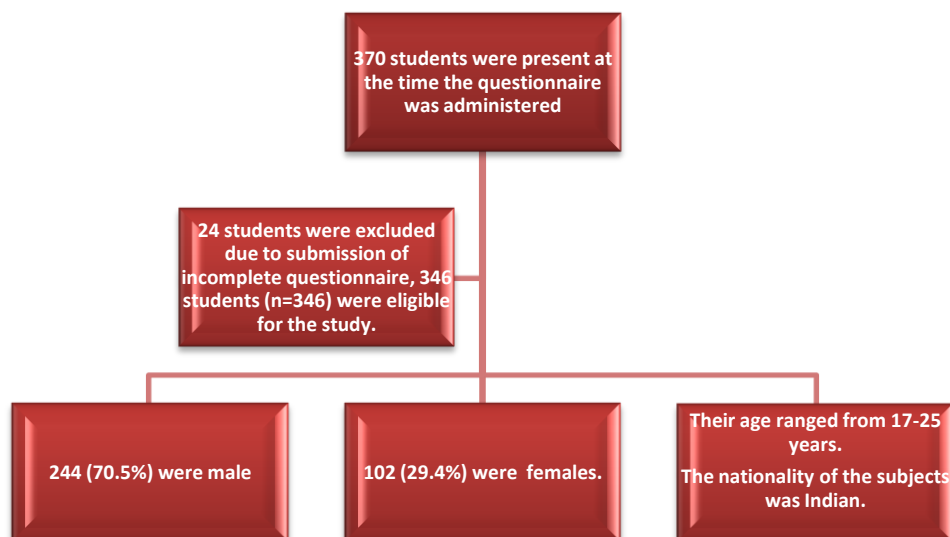


Figure 1: Baseline characteristics

Prevalence of self medication in males and females (%):

Out of the 346 students 262 (75.7%) had taken self medication & 84 (24.2%) were not taking self medication in the past 6 months. Comparing the sex wise variation of self medication rate, out of a total 102 females, 58(56.8%) were taking self medication & 44(43.1%) were not taking self medication; while for males out of a total of 244 males 204(77.8%) were taking self medication & 40(16.3%) were not taking self medication. This difference is statistically highly significant with P value <0.001

Most common drugs:

A total of 623 drugs were consumed by 262 students over a period of six months. The average number of drugs

consumed per student in a 6 months period was 2.37. The most common drugs used were analgesics-antipyretics 352(56.5%), followed by antimicrobials 97(15.6%), cough/cold remedies 52(8.4%), antihistaminic 48(7.81%), antacids 34(5.4%), multivitamins 24(3.9%) & antispasmodics 14(2.3%) as shown in figure 2. Paracetamol alone or in combination was the most commonly used drug being used in 42.06% cases. There were 97(15.6%) antimicrobials consumed in total by all the year students, with Azithromycin having the maximal consumption of 54(48.64%), followed by Amoxicillin 20(18.01%) & Ciprofloxacin 19(17.11%). In total 51 out of 97(53%) students completed the course as shown in figure 3. There is no significant difference (p > 0.05) between engineering students in all the years based on completing and not completing the course.

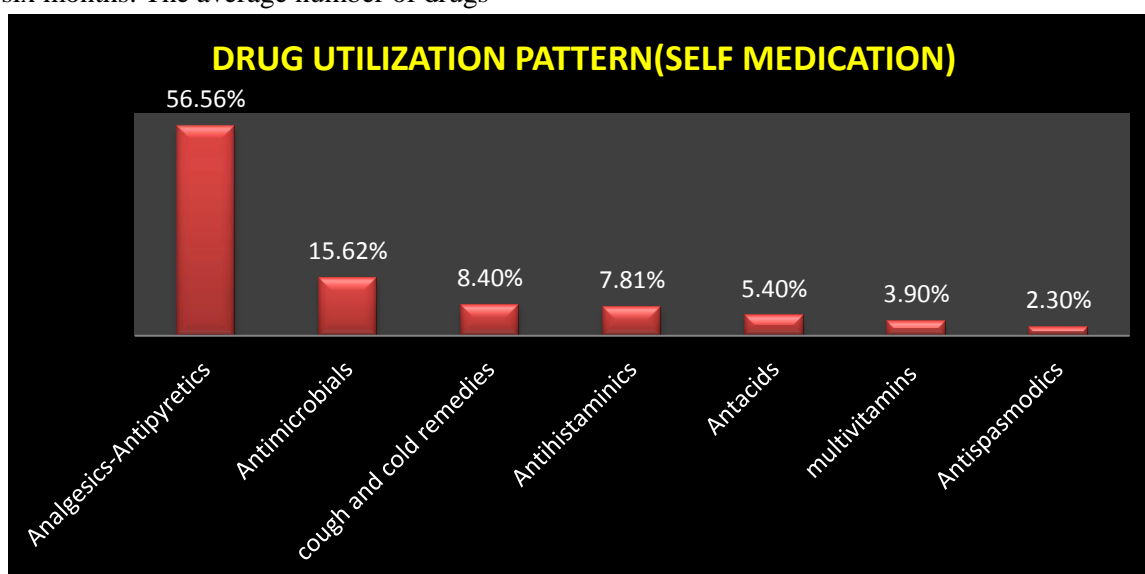


Figure 2: Pattern of drug usage among engineering students

Completion of course of antimicrobials:

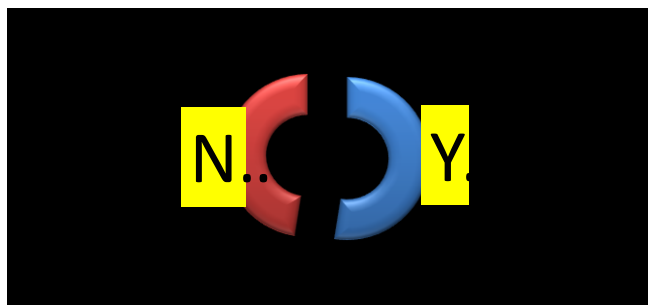


Figure 3: completion of course of antimicrobials

Knowledge:

Of the total 346 students, 161 (46.56%) students thought that self medication was harmful & 185 (53.4%) thought that they should go to a doctor for illness.

Of the 262 students who took self medication 153(58.3%) had knowledge about dose, side effects & interactions of the drugs they took & 109(41.6%) did not.

Main Symptoms:

The main symptom of the illness were fever seen in 176(67.1%) of the students followed by, cough/common cold 104(39.69%), headache 84(32.061%) & body pain 54(20.6%)

Main reason for not going to the doctor (Table 1):

Reason	Total (%)
Didn't feel the need	98(37.4%)
Minor illness	97(37.02%)
Treatment advised by guardians/seniors/known person	95(37.2%)
Previous experience	81(30.9%)
Time constraints/ Late night	31(11.8%)
Far place	11(4.1%)
Doctor not available	10(3.81%)
Money constraints	10(3.81%)

Main source of self medication (Table 2):

Source	Total(%)
Guardians	144(54.9%)
Previous experience	114(43.5%)
Friends	76(29%)
Previous prescription	70(26.7%)
Chemists	66(25.1%)
Advertisements	32(12.2%)
Books/Internet	21(8%)
Seniors	13(4.9%)

Adverse drug reactions:

29.77% students reported adverse drug reactions in our study. No serious ADRs were reported. Sedation, itching, redness were the most common ADRs reported in our study as shown in figure 3.

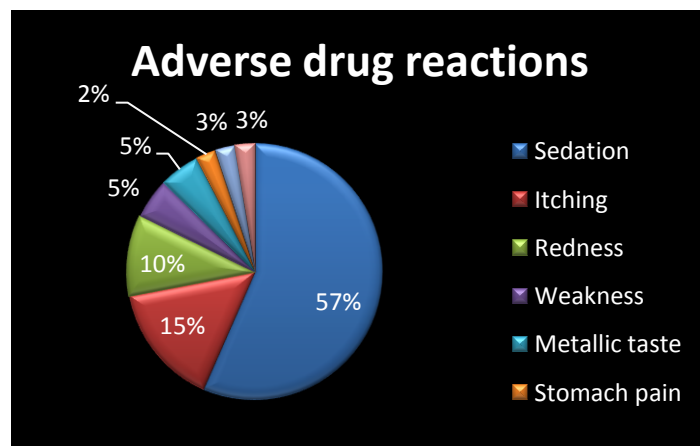


Figure 3: Adverse drug reactions of the drugs

Discussion

Prevalence:

In our study of the total 346 engineering students of all the 4 years were studied of which 70.5% were male & 29.4% were females, out of these 75.7% students were taking self medication. In comparison to our study, prevalence of self medication among university students ranges from 38.5 %- 92%.¹⁰⁻¹⁵ While it was 12.7% to 95%^{16, 17} in other developing countries while similar studies among non

medical university students have shown self medication rates ranging from 65% to 87%.^{18, 19} In our study 22.13% females & 77.86% males were taking self medication. In a study among students in India showed higher prevalence of self medication among males, while another study done in Bahrain showed a slightly higher prevalence of self medication in females.^{12, 20}

Knowledge & attitude:

Of the total 262 students, 46.56% students thought that self medication was harmful. 58.3% students had knowledge about dose, side effects and interactions of the drugs which was considerable in spite of having non medical background. Patterns in general population in Punjab showed a lower knowledge of these i.e. 32% had knowledge of dose of the drugs and 23% had knowledge about side effects of the drugs²¹ while 43.4% had knowledge about drug interactions and 32.7% had knowledge about drug profiles in a study on non medical university students in Punjab.²² This was higher than the general population but lower than our study. High rates of knowledge about dose, side effects and drug interactions among the people with technical, non medical background has shown an increasing trend of use of internet to find out about diseases and their treatment.

Self medication:

Common indication:

The commonest indications for self-medication were fever 67.1%, cough/common cold 39.6% & headache 32.06%, this was in accordance to studies done earlier.^{10-14, 20, 21} Guardians were the main source of information for self-medication 54.9% followed by previous experience 43.5% and friends 29%, in a similar study among non medical university students in Malwa region doctors were the major source for self medication (53.04%), followed by parents 26.8% and friends 9.5%²² but in non medical students of Udaipur friends and family members¹⁸ were the major source which coincides with our study. A different scenario was seen in a study on general population in which chemists were the major source followed by friends and advertisements.²¹ This shows that guardians and friends play a major role in influencing the self medication patterns in college students whereas general population is mostly shadowed by chemists about the use of medicines. The main reason for self-medication and not going to the doctor was that they didn't feel the need to consult a doctor

37.4% followed closely by minor illness and treatment advised to the students by others, this was in accordance to previous studies^{10, 13, 21} whereas time saving and minor illness in a study¹¹ and time saving and high consultation fee.²³ The main source of self medication in our study were guardians (54.9%), followed by previous experience (43.5%), In India among non medical students previous prescription & chemists formed the main source of information.^{10, 11, 21}

Drugs:

(a) Analgesics

Analgesics have been reported to be the most commonly used group of drugs among medical and non medical population.^{12-14, 16, 20-21} Our study also found similar results. Among the analgesics, Paracetamol, alone or in combination was the most commonly used drug. This correlates well with fever being the most common indication for self medication.

(b) Antimicrobials

In our study 15.62% of students used antimicrobials and Azithromycin was the most commonly used antibiotic. General population showed antimicrobials use to be 11%.²¹ This was comparatively lower. In one Iranian study, 48% non medical students practiced antibiotic self-medication.²⁴ Interestingly, only 4.8% students at Gondar College of Medicine and Health Sciences in Ethiopia used antimicrobials while doing self-medication.¹³ In our study 52 % respondents completed the course of antimicrobials. In comparison other studies have reported rates as low as 26.8% & 37.6%.^{25, 26}

Adverse drug reactions (ADRs):

29.77% students reported adverse drug reactions in our study which is more than double of that reported in a previous study in medical students,¹² this may be attributed to the better knowledge of drugs and their adverse effects among medical students. No serious ADRs were reported. Sedation, itching, redness were the most common ADRs reported.

Conclusion

High prevalence of self medication in our study is a cause of concern. As in other studies Analgesics-antipyretics &

antimicrobials form the most common drugs used. Improper use of antimicrobials will promote the emergence of resistant strains. WHO in 2011 has warned about increasing incidence of drug resistance with irrational drug use? Proper information & awareness on the use of drugs along with enforcing restrictions on the sale of drugs will help to promote responsible self medication.

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