

RESEARCH ARTICLE

Self-medication practices among 2nd year medical students in a rural medical college of Telangana state

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ABSTRACT


Background: Self-medication is a part of self-care, hence responsible use of drugs by physician is vital to prevent their acute and chronic adverse effects. People take medicines with their previous experiences and old prescriptions. People also take drugs on suggestion of pharmacist, friends and relatives during mild illness and emergencies. **Aim and Objectives:** To study the prevalence, knowledge, perception, and reasons in practice of self-medication among undergraduate medical students in rural medical college of Telangana state. **Materials and Methods:** Study was conducted among 2nd year medical students of Kamineni Institute of Medical Sciences, Narketpally, Nalgonda, Telangana by using questionnaire. **Results:** 129 students participated in study of which 96% of medical students use drugs for self-mediations. Allopathic drugs (86%) are commonly using drugs. Students use drugs for fever (74%), cold and cough (68%), headache (50%), and pain (41%). Frequently using drugs are antipyretics (62%), and non-steroidal anti-inflammatory drugs (NSAIDs) (48%), cough suppressants (43%) and antibiotics (34%). The sources of drug information are old-prescription (53%) and pharmacists (30.6%). Reasons for self-medication are mild nature of illness (79%) and urgency. **Conclusions:** Self-medication is common practice in medical male and female students. They commonly use allopathic medicines like paracetamol and other NSAIDs for fever and sore throat. They use self-medication during mild diseases and also urgency. Frequently use old prescription and pharmacist's assistance as sources of drug information.

KEY WORDS: Self-medication; Medical Students; Over the Counter Drugs; Medical Conditions; Drug Information

INTRODUCTION

According to WHO "self-medication is the selection and use of medicines by individuals to treat self-recognised illnesses or symptoms."^[1] Self-medication is used as a part of self-care. In history, human beings considered themselves as responsible for their own health. To protect and maintain their own health, man used substances which were available

locally. From 19th century onwards, medical profession has emerged as an important profession in caring human health from their scientific discoveries of diagnostics, surgeries and medicine as a result of which patients became passive in their self-care. Following these developments, around 1960, self-care and self-medications were considered as unscientific. As health care system became more expensive, but with the emergence of increased number of chronic non-communicable diseases most of which could be modified by self-care and by reducing risk factors, responsible use of self-medication with over the counter (OTC) drugs as part of self-care in addition to other activities like hygiene, nutrition and exercise became common.^[1,2] For effective and safe self-medication, patients have to take all responsibilities as good physician does. This includes correct identification of symptoms or diseases, correct dosage, determining end

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results, taking precautions for adverse effects and co-morbid conditions.^[3]

Patients acquire medicines for self-medication by using old prescriptions, sharing medicines among relatives and friends, left over medicines from previous illness and medical stores which don't require prescriptions and also home remedies.^[4,5]

Among college students, medical, dental and midwives have shown an increased use of medications because of direct advertisement of pharmaceutical companies in advertisements in prime television channels, magazines and internet.^[6,7] It has increases the use on non-prescription and herbal medicines can causes serious consequences on economy and individuals and to the country. Students may not be communicated or shared with treating physicians may lead lot drug interactions.

Most of the self-medication drugs are from allopathic system but drugs from other systems are also used. Strict legislation with regard to accessibility to these drugs and educating the community on self-medication is essential for effective use of medicines required.^[8]

India being a developing country with poor health services and availability of wide range of drugs without prescription has resulted in an increase in self-medication. It can increase the chances of resistance to antibiotics, wastage of resources, sufferings, drug dependence and adverse effects.^[1,9,13,14]

Various studies have shown an increase in inclination for self-medications among college students due to high vulnerability or influence from advertisements, friends and of self-experimentations. It varies from county, region and period. It's important to study the self-medication regularly and in different population. Currently very few studies published from this region.

Objectives of Study

1. To study the prevalence of self-medication practice among undergraduate medical students in rural medical college of Telangana state
2. To find the student's knowledge, attitude and practice of self-medications.

MATERIALS AND METHODS

Ethical clearance was obtained from institutional ethical committee, Kamineni Institute of Medical Sciences (KIMS), Narketpally. It was a cross sectional study among the undergraduate (5th semester, about to complete 2nd MBBS) students of KIMS, Narketpally, Nalgonda district, Telangana state, affiliated to Dr. NTR Health University in October 2016. Predesigned questionnaire (14 questions) was used for

study. The study is conducted during regular pharmacology class, prior to distribution of questionnaire; students were explained about the importance of study, self-medication, objectives and aim of study. We requested all students for prompt and completeness of answers to the best of their knowledge and verified for completeness while collection. It was also clarified that participation is purely voluntary based. All the students actively and voluntarily participated in the study.

Statistics

Data was analysed by using simple statistics (MS Excel) and expressed in proportion.

RESULTS

129 students participated in the study and majority of them were females (67% $n = 87$). The mean age of participants was 19.55 ± 0.62 years. Prevalence of self-medications among 2nd year medical students was 96% ($n = 124$) with slightly high results among males (97%) than females (95%). Majority of self-medicated drugs were allopathic drugs (86%, $n = 112$), followed by Ayurveda (4.1%, $n = 5$), homeopathic (4.8%, $n = 6$), Unani (0.8%, $n = 1$) system of medicines and home based medicines (2.4%, $n = 3$). Most common symptom in students for self-medication was fever (74.2%, $n = 92$) followed by cold and cough (68.5%, $n = 85$), headache (50.8%, $n = 63$), pain (41.1%, $n = 51$), diarrhoea (27.4%, $n = 34$), vomiting (18.5%, $n = 23$), sore throat (14.5%, $n = 18$), hyperacidity (14.9%, $n = 18$), ulcer in mouth (12.9%, $n = 16$) [Figure 1].

Students most frequently used antipyretics (62.9%, $n = 78$) followed by analgesics and anti-inflammatory drugs (48.4%, $n = 60$), cough suppressants (43.5%, $n = 54$), antibiotics (34.7%, $n = 43$), antihistamines (20.9%, $n = 26$), anti-diarrheals (20.2%, $n = 25$), antiemetics (20.2%, $n = 25$), multi-vitamins (19.4%, $n = 24$) and anti-ulcer drugs (11.3%, $n = 14$) [Table 1].

One third of students took antibiotics (34.7%, $n = 43$), of which only 12 (27.9%) reported that they have completed the entire course of antibiotics, whereas the other 31 (72.1%) students have agreed that they did not complete the entire course.

Regarding the knowledge of adverse drug effects (ADRs) for medicines they are taking as self-medication, only 39 (31.5%) students are aware of ADRs and 85 (68.5%) students are not aware of ADRs. About the experience of ADRs among students, 11 (8.9%) students have experienced ADRs and remaining 113 (91.1%) have not experienced any ADRs during self-medication.

The source of information about drugs used for self-medications were mainly old prescription ($n = 66$, 53%)

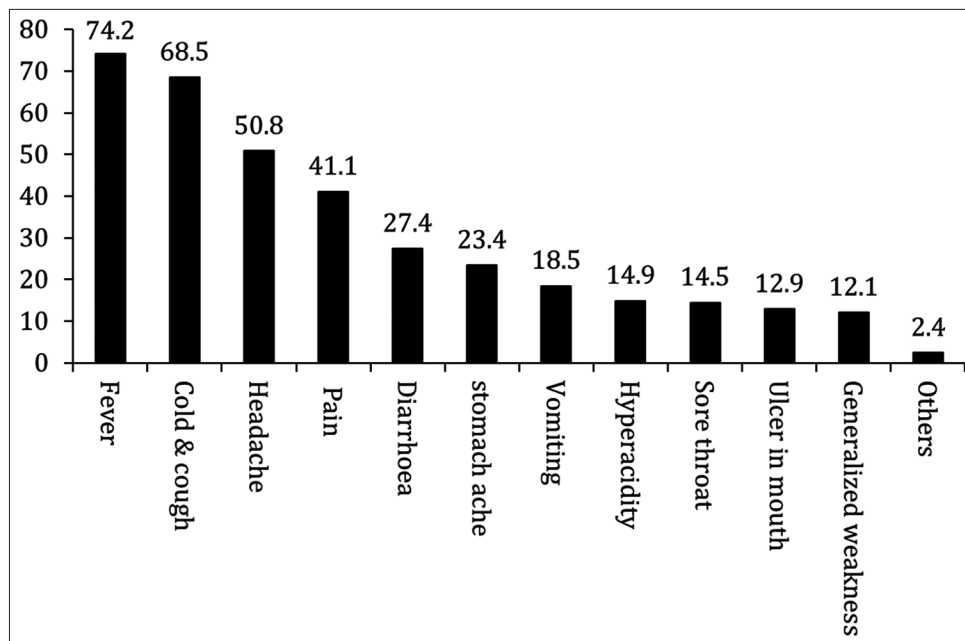


Figure 1: Medical conditions for which students take self-medications

Table 1: Commonly used drug groups for self-medication

Drug groups	Frequency (%)
Antipyretics	78 (62.9)
Analgesics and anti-inflammatory	60 (48.4)
Cough suppressants	54 (43.5)
Antibiotics	43 (34.7)
Anti-histamines	26 (20.9)
Antidiarrhoeal	25 (20.2)
Antiemetic	25 (20.2)
Multi-vitamins	24 (19.4)
Anti-ulcer	14 (11.3)

followed by pharmacists assistance ($n = 38$, 30.6%), academic knowledge and books ($n = 35$, 28.2%), friends and seniors ($n = 33$, 26.6%), advertisement (8.1%), internet (8.8%) and others especially parents in case of girls ($n = 12$, 9.7%) [Table 2].

Majority of them were taking self-medication because of mild nature of illness ($n = 79.8$, $n = 99$), few for urgency ($n = 27$, 21.7%), time saving measure ($n = 19$, 15.3%), and very few to save money ($n = 8$, 6.4%), privacy ($n = 4$, 3.2%), and other reason ($n = 1$) [Figure 2].

Many students were going to continue self-medications as a part of self-care ($n = 52$, 41.9%), with regard to disadvantages of self-medications, students reported following disadvantages-lack of knowledge on dosage and frequency of administration ($n = 86$, 69.4%), followed by adverse drug reactions ($n = 45$, 36.3%), wrong medications ($n = 33$, 26.6%), disease aggravations ($n = 22$, 17.7%) and drug interactions ($n = 39$, 31.5%). Medical students who

were aware of OTC and generic drugs were ($n = 88$, 71%) and ($n = 77$, 62.1%) respectively.

In our study, we enquired the opinion of students on methods to prevent the growing trend of self-medication, 90 (72.6%) students had belief that by creating awareness and education regarding implication of self-medication, 53 (42.7%) students by preventing the supply of medicine without prescription, 34 (27.4%) students by enforcing strict rules with regard to misleading pharmaceutical advertising, 27 (21.8%) students by working towards making health care facilities easily available and 9 students do not have any opinion (Table 3).

DISCUSSION

In the present study, prevalence of self-medication among undergraduate medical students is 96% and more frequently observed in males (97%) than females (95%). Majority of students use allopathic medicines (86%) then other systems like Ayurveda, homeopathic and Unani systems. Students are taking medications based on symptoms; most frequently observed symptoms are fever, cold and cough, headache, pain, diarrhoea, vomiting and gastric irritation. The following drug class/drugs are commonly used-antipyretics (62.9%, $n = 78$), analgesics and anti-inflammatory (48.4%, $n = 60$), cough suppressants (43.5%, $n = 54$), antihistamines (20.9%, $n = 26$), anti-diarrheals (20.2%, $n = 25$), antiemetic (20.2%, $n = 25$), multi-vitamins (19.4%, $n = 24$) and antiulcer drugs (11.3%, $n = 14$) for the relief of respective symptoms. 34% students also take antibiotics for various reasons and out of them only 27% of students complete the entire course. Main sources of information for self-medication are old prescription

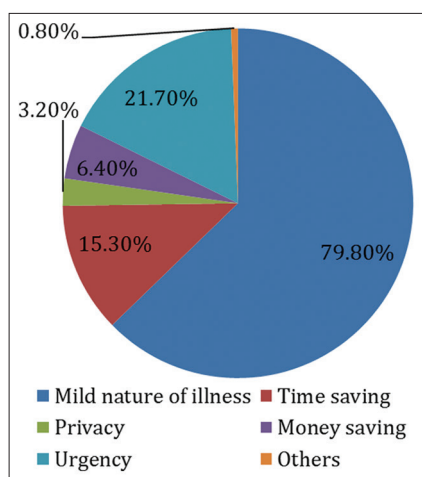


Figure 2: Reasons for self-medication among students (%)

Tables 2: Sources of drug information for procuring drugs

Drug information	Frequency (%)
Old prescription for same illness	66 (53.2)
Pharmacist	38 (30.6)
Academic knowledge and books	35 (28.2)
Friends and seniors	33 (26.6)
Internet	11 (8.8)
Any other specify	12 (9.7)
Advertisement	10 (8.1)

Table 3: Methods to prevent the growing trend of self-medication

Methods to prevent self-mediations	Frequency (%)
Awareness and education regarding implications of self-medication	90 (72.6)
Prevent the supply of medicines without prescription	53 (42.7)
Enforcing strict rules regarding misleading pharmaceutical advertising	34 (27.4)
Working towards making health care facilities easily available	27 (21.8)
No opinion	9 (7.2)

(n = 66, 53.2%) and pharmacists (30%). Main reason for self-medication is due to mild nature of illness (89%). 25% of students wanted to continue the self-medication. But when enquired about the measures to reduce the practice of self-medication, majority of the students suggested to create awareness and education (72%), prevent the supply of medicines without valid prescription (42%), stringent rules on advertisement (27%) and creating more health care facilities (21%) to low socioeconomic groups.

Humans have always wanted to maintain their good health to avoid suffering and also to feel good. To preserve good health, self-care plays a prominent role by maintaining good hygiene, include nutritious food, self-medication etc.

Responsible self-medication includes use of medicines rationally, safely and effectively without prescription for self recognisable, acute, chronic and recurrent medical conditions.^[1,4] In this study, self-medication prevalence is higher than other studies which range from 71% to 78%.^[4,10] Frequency of self-medication among males and females varies in various studies, in this study results are in par with Jain et al. in 2015.^[13] However, some studies show more females (52.9–91.7%) than male students (28–87%) practicing self-medication.^[4,9-11,35] It shows females are showing more interest in self-care than males. Most common system of medicine used in the current study was allopathic and results are in consistent with other studies like Kumar et al. (72.7%, 2013), Kasulkar and Gupta (90.9%, 2015) and Rohit et al. (82.9%, 2010).^[4,10,12] Most of the students take medications symptomatically, common symptoms observed are fever, cold and cough, headache, pain, etc., and commonly consumed medicines are antipyretics, analgesics and anti-inflammatory, cough suppressants, antihistamines, etc. Most common use of antipyretics and analgesic (esp paracetamol) in our study was consistent with most parts of India and across the world like costal part (74%)^[4] South India^[18] Gujarat (43%),^[9] Nagpur (80.6%),^[10] Uttar Pradesh (61.2%),^[12] Rajasthan (73.77%)^[13] Nepal,^[16] Pakistan,^[23] Egypt,^[24] Mozambique^[28] Iran,^[27] and Ethiopia.^[21] Most common source of information for selection and procurement of drug was old prescription;^[22] it may be because of physicians repeating similar prescription for similar symptoms. In Kasulkar and Gupta (2015) study, only 17% students used old prescription but majority of students used reading materials (52.3%) as source of information.^[10] Second common source of information was from pharmacists (30%),^[9] who are easily accessible in India and do not need prescription for dispensing most of drugs which was also seen in Gujarat (68.18%)^[9] and Ethiopia.^[21] Influence of friends and seniors was less and consistent with other studies like 18.4%,^[4] 11.4%,^[10] 16.98%^[13] and 5.6%.^[14] Minute percentage of students were also influenced by advertisements and internet which is similar to other studies.^[4,12-14] People also use their previous experiences as source for procuring drugs in some countries like Ethiopia,^[21] Pakistan^[23] and Malaysia.^[26] The most frequent reason for self-medication is mild nature of illness like other studies.^[4,10,11] Other reasons for self-medication were urgency or emergency, economical, to save time or lack of time and to maintain privacy which are comparable with other studies.^[4,10,11] Because of their low socioeconomic status, people depend more on pharmacist to save money on doctor’s fees, unnecessary investigations and prescription of expensive drugs and polypharmacy. Use of antibiotics among students for various reasons was slightly high, and completion of course of antibiotics was low which were consistent with some of the previous studies conducted in developing countries like India,^[4,9,19,20] Nigeria^[29], Egypt^[24] Ghana^[30] and Greece.^[31] Most commonly used antimicrobial agent (AMAs) was beta-lactam group (amoxicillin).^[29-31] AMAs are frequently used for sore throat in china^[32] and Europe,^[33] for malaria and urinary tract

infections,^[15] gastroenteritis^[25] in Nigeria, for common cold in Turkey^[34] and Greece.^[31] Percentage of students who want to continue self-medications were less as compared to Kumar *et al.* study (56.8%).^[4] Students used self-medication to reduce suffering, discomfort and to feel better. Drugs can be justified if used rationally. Most students have poor knowledge and use drugs irrationally, abused and also used expired drugs. Other problems of self-medications are addiction liabilities, antibiotic resistance and poisoning.^[4] Which can lead to more suffering, requiring treatment and adding to cost.

To reduce the self-medication practice, majority of students suggested measures like creating awareness and education, using valid prescription for procuring drugs, stringent rules on advertisement and creating more health care facilities to low socioeconomic groups. Since multiple factors are involved at different locations with regard to self-medication, hence it needs more multicenter studies to evaluate multiple factors.^[4,9]

Limitations of the study are single centre, small sample size, and female students out-number the males. In this type of studies, to come to conclusion on self-medication practice among undergraduate medical students, we need sample from all the batches from 1st year to final year, should be multicentric and include both urban and rural colleges.

CONCLUSION

Most of the medical student's use allopathic drugs as a part of self-medication. Students use antipyretics, non-steroidal anti-inflammatory drugs, cough suppressants and antihistamines. Common reasons for using self-medication are minor nature of illness and urgency to relieve symptoms. Common sources of drug information for students are old prescription and pharmacist's assistance for procuring drugs. Hence regulatory authorities need strict implementation of rules on distribution of drugs by pharmacists. Since medical students lacks knowledge on dose, frequency and adverse effects of drugs, they should be educated about merits and demerits of self-medication and ask them to acquire the knowledge about drugs before using them. It needs strong rules and regulations from regulatory bodies to control pharmacist's distribution. Pharmacist's knowledge on drugs and disease is limited. Pharmacists are interested in profits; hence they may sell expensive and unnecessary drugs to people.

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