

DOI: <https://dx.doi.org/10.18203/2319-2003.ijbcp20241654>

## Original Research Article

# Evaluation of knowledge, attitude and practices of second year MBBS students about over the counter drugs

Ashmitha Sharma, Aparna Chincholkar, Ankita Sawant\*

Department of Pharmacology, MIMER Medical College, Talegaon Dabhade, Maharashtra, India

**Received:** 13 May 2024

**Accepted:** 05 June 2024

### \*Correspondence:

Dr. Ankita Sawant,

Email: [ankitasangeeta0714@gmail.com](mailto:ankitasangeeta0714@gmail.com)

**Copyright:** © the author(s), publisher and licensee Medip Academy. This is an open-access article distributed under the terms of the Creative Commons Attribution Non-Commercial License, which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

## ABSTRACT

**Background:** The utilization of over-the-counter (OTC) drugs among medical students during academic exams has raised concerns about health risks and potential implications. This cross-sectional study aimed to estimate the prevalence of OTC drug utilization among medical students.

**Methods:** A cross-sectional study was conducted using pre-validated questionnaire. The data obtained was tabulated, analysed and the results were calculated in percentages. 150 students had participated in this study of which 100 were selected by simple random sampling.

**Results:** The use of OTC drugs was common amongst undergraduate students. Majority of students (92%) who participated in the study had used OTC drugs at some point in their life. Commonly used OTCs were antacids (73%) and the most common indications for use of OTCs was cough and cold (92%). 87% of students preferred OTC drugs due to ease and convenience while 44% preferred OTC drugs due to lack of time to consult the doctor. Doctors (32.3%) followed by family and friends; textbook/journals were found to be the most common source of information on OTC drugs.

**Conclusions:** A tendency to choose self-medication over doctor's consultation by most of the undergraduate medical students was consistently seen in the present study. This unrestrained use of OTC drugs certainly possesses several health risks. Awareness should be created among undergraduate medical students to restrict the use of OTC drugs and efforts should be undertaken to increase the sale of drugs without prescription.

**Keywords:** Over-the-counter drugs, Self-medication, Medical students

## INTRODUCTION

Over the counter (OTC) or non-prescription drugs refers to pharmaceuticals that can be dispensed without prescription from a registered medical practitioner to the consumer.<sup>1</sup> Because of their price and accessibility, self-medication with OTC drugs has become more popular in recent years.<sup>2,3</sup> This empowers people to take ownership of their health, eases burden on the health care system, allows physicians to focus on vital patients and minimizes work absences due to minor illnesses.<sup>4</sup>

OTC drugs have no legal recognition in India. At present, there is no schedule for OTC drugs in the Drugs and

Cosmetics Rules 1945. Hence, any drug outside schedule H, G, and X is considered to be an OTC drug.<sup>5</sup> Analgesic, antacids, cough and cold medicine, antibiotics and vitamin supplements are some examples of commonly used OTCs.<sup>6,7</sup> In India local pharmacies dispense OTC medicines on demand even in absence of valid prescription.<sup>8,9</sup>

People mistakenly believe that OTCs are safer and sometimes better than prescription medications because they do not require a prescription.<sup>10</sup> Self-medication is becoming more widely recognized as a form of self-care. Self-medication must be based on accurate medical information to avoid irrational use of drugs which can

result in resources waste, augmented drug resistance of pathogens and can lead to grave health hazards like prolonged sufferings, drug reaction and drug dependence. Major shortfall of self-medication with OTC drugs is lack of clinical evaluation of the patient's condition by trained healthcare professionals which may mask the diagnosis of serious illness and cause delays in appropriate treatment.<sup>11-13</sup>

Practice of use of OTC drugs is common among medical students as they are exposed to the subjects in medicine and OTC drugs are more easily accessible to them.<sup>14</sup> Medical students must be aware of OTC medications in order to conduct better medical practices and avoid any unexpected medical events as future medical practitioners.

## METHODS

### Study design

It was a cross sectional, observational questionnaire-based study.

### Study area

The study was conducted at the Medical College, Pune.

### Study population

Students of second year MBBS were a part of the study population.

### Study period

The duration of the study was for 2 months.

### Sample size

The sample size was 100.

Previous studies have reported that awareness was present in 50% students.<sup>12</sup> At type 1  $\alpha$  error=0.05 at allowable error 20%, the minimum required sample size is 96.

### Sampling technique

Type of sampling was simple random sampling.

100 filled forms were selected randomly by using a computer generalized random number table.

### Selection criteria

Inclusion criteria included second year MBBS students willing to participate.

This study was conducted after obtaining the approval of the institutional ethics committee.

The information was generated using Google forms. The form was circulated among students. All the participants were asked to read the participant information sheet stating the purpose of study and give their consent for this anonymous survey.

In the pretested validated questionnaire, 22 multiple choice questions about OTC drugs were included pertaining to the pattern of OTC drug's use, reason and indication for OTC drug's use, list of drugs commonly used for self-medication.<sup>8,13</sup>

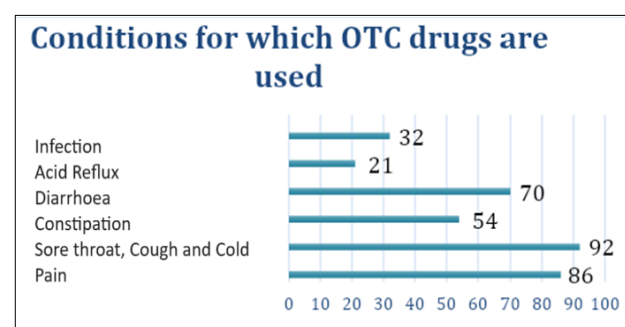
## Statistical analysis

The information from the completed questionnaire was recorded using Microsoft excel sheets. Data was expressed as counts and percentages.

## RESULTS

The questionnaire for this study was filled by 150 students, out of which 100 responses were selected for evaluation by simple random sampling. Students were asked a series of questions assessing the level of knowledge, attitudes and practice towards use of OTC drugs.

Out of 100 students, 66 students were aware about OTC drugs and 70 students knew what Schedule H drugs are. About 78% students had knowledge about who has the authority to decide whether a drug is marketed as an OTC or prescription only drug.



**Figure 1: Conditions for which OTC drugs are used.**

The mostly commonly used OTC drugs by students were antacids (73%), antipyretics (72%) and analgesics (69%). Very few students took vitamin supplements (41%) and anti-allergics (36%).

It was observed that 50% students bought OTCs rarely while 9% bought them very frequently.

**Table 1: Reason for using OTC drugs (n=100).**

| Reason for using OTC drugs     | N  |
|--------------------------------|----|
| Ease and convenience           | 87 |
| Cost of physician's service    | 44 |
| Lack of time to consult doctor | 27 |

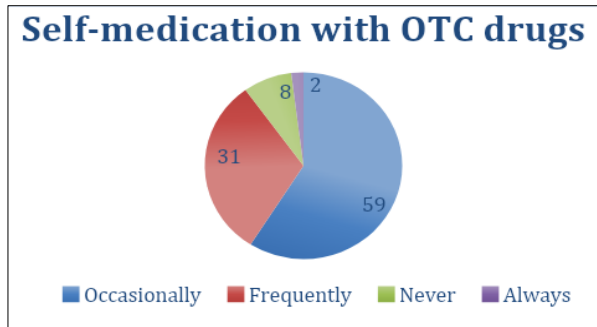


Figure 2: Self-medication with OTC drugs.

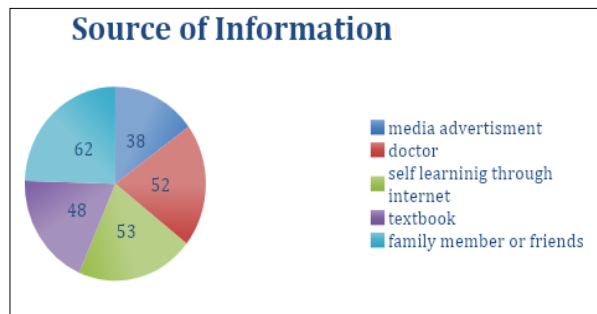


Figure 3: Source of information (n=100).

Table 2: Awareness about adverse reactions of OTC drugs (n=100).

| Parameters                                                                                          | Responses |
|-----------------------------------------------------------------------------------------------------|-----------|
| <b>Are you aware of misuse of OTC drug medication?</b>                                              |           |
| Yes                                                                                                 | 85        |
| No                                                                                                  | 15        |
| <b>Did you experience any adverse effects of the OTC drug which you took?</b>                       |           |
| Yes                                                                                                 | 19        |
| No                                                                                                  | 81        |
| <b>To whom should you report adverse drug reactions if occurred with drugs that you have taken?</b> |           |
| Pharmacovigilance cell                                                                              | 12        |
| Doctor                                                                                              | 72        |
| Pharmacist                                                                                          | 7         |
| Manufacturing company                                                                               | 4         |
| No one                                                                                              | 5         |

Among the participants, only 22 students always read the important information given on the label and 78 students considered indications for use of OTC preparation.

It was observed that 19% participants had experienced adverse drug reactions at some point of time while using OTC drugs and the majority of the student's consulted doctors when they observed adverse drug reactions due to OTC drugs.

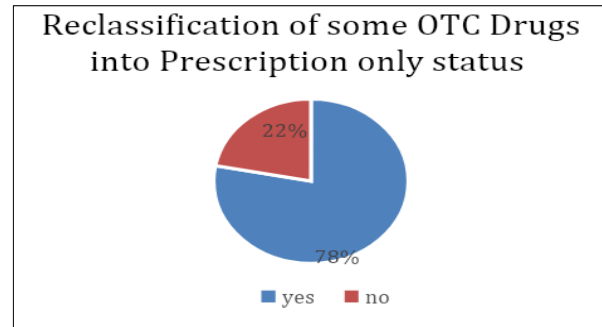


Figure 4: Reclassification of some OTC drugs into prescription only status.

## DISCUSSION

In present study, the most commonly used OTC drugs by participants were Antacids followed by analgesics and antipyretics. While in other studies analgesics were found to be the most commonly used OTCs.<sup>8,17,18</sup> In the present study, the most common indication for use of OTC drugs was for quick relief from cough, sore throat and cold, followed by pain. According to a study done by Ghosh et al the most common symptoms leading to use of OTC drugs were fever and pain and the drugs most commonly used were cough and cold preparations, analgesics and antipyretics.<sup>15</sup> This could be because these are the most prevalent illnesses that frequently affect many people and for which medications are usually available in pharmacies as OTC drugs.

Self-medication using OTC medications is used by 92 percent of the respondents. Majority of the students (59%) were using OTCs occasionally. In previous studies the prevalence of self-medication with OTCs varied from 55.6 to 100%.<sup>16,17</sup>

In the present study, we observed that the most common reason for students not seeking proper prescription from a doctor was ease, convenience and lack of time. Similar findings were reported in other studies.<sup>8,15</sup> People are compelled to take OTC medications without contacting a doctor because of costly medical consultation fees, easy availability to pharmaceuticals in the pharmacy without a valid prescription, absence of strict rules over medical advertising, and the need to save health-care expenses.

It was also observed that the majority of the students had adequate knowledge about OTC medicines. The awareness of OTC medicines, generic medicines and their adverse effect was more among students in this study as compared to study done by Simundic in which patients were included.<sup>3</sup> This reflects the influence of medical knowledge. Hence medical students are less likely to misuse OTCs as compared to the general population. This observation was found in line with a study conducted by Sood et al.<sup>18</sup>

Only 21% of students in the current research believe that self-medication using over-the-counter medications is an acceptable practice. In research by Waghmode et al it was discovered that 53 percent of second-year MBBS students deemed self-medication to be acceptable.<sup>8</sup>

The present study revealed that the most common source of OTC drug information was from family, friends and relatives followed by self-learning through the internet. This observation was different from the previous studies where the most common source of information were doctors and media advertisements.<sup>7,19</sup>

## CONCLUSION

A tendency to choose self-medication over doctor's consultation by most of the undergraduate medical students was consistently seen in the present study. This unrestrained use of OTC drugs certainly possesses several health risks. Awareness should be created among undergraduate medical students to restrict the use of OTC drugs and efforts should be undertaken to increase the sale of drugs without prescription.

*Funding: No funding sources*

*Conflict of interest: None declared*

*Ethical approval: The study was approved by the Institutional Ethics Committee*

## REFERENCES

1. US Food and Drug Administration. Drug Application for Over the Counter Drugs. 2012. Available at: <http://Fda.gov/drugs>. Accessed on 06 March 2024.
2. Chan V, Tran H. Purchasing over-the-counter medicines from Australian pharmacy: what do the pharmacy customers value and expect? *Pharm Prac*. 2016;14:782.
3. Simundic AM, Filipi P, Vrtaric A, Miler M, Nikolac Gabaj N, Kocsis A, et al. Patient's knowledge and awareness about the effect of the over-the-counter (OTC) drugs and dietary supplements on laboratory test results: a survey in 18 European countries. *Clin Chem Lab Med*. 2018;57(2):183-94.
4. Patel PD, Patel KP, Malhotra SD. Survey of use of over the counter drug and other than over the counter drugs among medical students, nursing, and technician staff of a tertiary care teaching hospital. *Int J Basic Clin Pharmacol*. 2017;6(3):592-6.
5. Moumani B, Tahaine L, Albsoul-Younes A. Parents' Knowledge, Perception and Practices of Over the Counter Medicines Used for Their Children. *Jordan J Pharm Sci*. 2011;108(399):1-8.
6. Nagaraj M, Chakraborty A, Srinivas B. A Study on the Dispensing Pattern of Over the Counter Drugs in Retail Pharmacies in Sarjapur Area, East Bangalore. *J Clin Diagnost Res*. 2015;9(6):FC11-3.
7. Parikh D, Sattigeri BM, Kumar A, Brahmabhatt S. A survey study on use of over the counter (OTC) drugs among medical students, nursing, and clerical staff of a tertiary care teaching rural hospital. *Int J Res Med Sci*. 2013;1(2):83-6.
8. Waghmode RI, Jagtap RP, Todkar RR, Ghongane BB. Evaluation of Knowledge, Attitude and Practices of Second Year MBBS Students, Interns and Pharmacists about 'Over the Counter (OTC) Drugs'. *J Med Sci Clin Res*. 2018;6:1273-7.
9. Venkataraman G, Gangadharappa SK, Jacob J, Bhaskar N, Kulkarni SB, Gupta A. Assessment of self-medication practice among students of a dental college of Bangalore city: A cross-sectional study. *J Indian Assoc Public Health Dent*. 2017;15:73-7.
10. Gupta VK, Gupta CD, Patel JR. Assessment of Awareness and Attitudes towards Over the Counter (OTC) Drugs amongst Urban Population: A Questionnaire Based Study. *Res J Pharm Biol Chem Sci*. 2012;3(2):1037-41.
11. Patel PD, Patel KP, Malhotra SD. Survey of use of over the counter drug and other than over the counter drugs among medical students, nursing and technician staff of a tertiary care teaching hospital. *Int J Basic Clin Pharmacol*. 2017;6(3):592-6.
12. Gupta S, Singh M. Self-medication among North Indian first-year undergraduate healthcare students: A questionnaire-based study. *Trop J Med Res*. 2016;19:162-7.
13. Puranik A, Totade S. Knowledge, Attitude and Practices of 2nd Year MBBS students on Over the counter drugs. *Int J Curr Res*. 2018;10(02):65062-5.
14. Abay SM, Amelo W. Assessment of Self-medication practices among medical, pharmacy, health science students in Gondar University, Ethiopia. *J Young Pharmacists*. 2010;2(3):306-10.
15. Subramanian S, Satyanarayana V, Bhandare B. A study on knowledge and practices of over the counter medications among 2nd year medical students. *Int J Basic Clin Pharmacol*. 2015;4(7):1074-81.
16. Sawhney V, Bhat MY, Singh Z. A descriptive study of prevalence, pattern, and attitude of self-medication among second professional medical students in a tertiary care centre. *Int J Basic Clin Pharmacol*. 2015;4(3):542-6.
17. Rekha MS. A study in the use of over the counter drugs among 1st year medical students in a tertiary care teaching hospital. *J Pharmacol Toxicol Stud*. 2015;3(1):20-4.
18. Sood M, Bajaj JK, Grewal N. Evaluate use of over the counter drugs among medical students in a tertiary care teaching hospital. *Int J Basic Clin Pharmacol*. 2019;8(5):973-6.
19. Oviya VJ, Lakshmi T. A Study on Knowledge and Practices of Over the Counter (OTC) Medications Among 2nd Year Dental Students. *Int J Curr Adv Res*. 2017;06(04):3057-9.

**Cite this article as:** Sharma A, Chincholkar A, Sawant A. Evaluation of knowledge, attitude and practices of second year MBBS students about over the counter drugs. *Int J Basic Clin Pharmacol* 2024;13:526-9.