



Evaluation of Knowledge, Attitude and Practices of Second Year MBBS Students, Interns and Pharmacists about 'Over the Counter (OTC) Drugs'

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Abstract

Objectives: To understand the pattern of dispensing of OTC drugs by community pharmacists and to assess knowledge, attitude and practices of second year MBBS students, interns and community pharmacists about over the counter drug usage.

Methods: A prospective, cross sectional, observational, questionnaire based study was conducted among community pharmacists, second year MBBS students and interns. A questionnaire comprising of 20 questions about OTC drugs was distributed to them.

Results: It has been shown in our study that on an average 50% participants had knowledge about definition of OTC drugs, the deciding authority of OTC drugs and their misuse. 56% second year MBBS students and 38% of pharmacists answered that adverse drug reactions due to OTC drugs should be reported to the doctors. While 36% pharmacists were not aware about the reporting of adverse drug reactions. Analgesics were the most commonly used class of drugs followed by antipyretics and antacids. 74% medical students and 62% interns preferred OTC drugs due to ease and convenience while 62% pharmacists opined that patients preferred OTC drugs due to lack of time to consult the doctor.

Conclusion: Present study shows that analgesics were the most commonly used class of drug followed by antipyretics and antacids. It has been observed in our study that lack of time to consult the doctor, the ease and convenience of OTC drugs are the most common reasons for their increasing use. Greater vigilance for adverse reactions is needed and the reporting system should be widened to include pharmacists.

Keywords: Over the counter (OTC) drugs, Knowledge, Attitude, Practice.

Introduction

Over the counter (OTC) drugs are defined as the drugs that are safe and effective for use by the general public without a doctor's prescription.^[1]

OTC drugs are often located on shelves in pharmacies with easy access by patients, but may also be available in non-pharmacy outlets, such as grocery stores and convenience marts. OTC drugs

are available for consumers to treat many minor health problems without the supervision of health-care professionals. Though OTC medicines are useful so much so that they decrease the cost of therapy and patient's time. There are also some disadvantages like it reduces opportunities for counselling about possible lifestyle therapies (e.g. exercise and diet), there are chances of misdiagnosis and some adverse drug effect. So it is important to use OTC drugs correctly.^[2]

Trend of using OTC drug is high in India. OTC drugs has no legal recognition in India, but all those drugs not included in the list of 'prescription only' are considered to be non-prescription drugs. At present, there is no OTC schedule in the Drugs and Cosmetics Rules 1945. Hence, any drug outside schedule H, G, and X is considered to be an OTC drug.^[3]

Central Drugs Standard Control Organization (CDSCO) regulates import, manufacture, distribution and sale of drugs and cosmetics by Drugs and Cosmetics Act (DCA) and its subordinate legislation, Drugs and Cosmetics Rules (DCR), 1940 in India.^[4]The reclassification of medicinal products from sale on 'prescription only' to non-prescription (OTC) sale is of current interest in many countries.^[5]

Most individuals assume that OTC medications are safe and free of serious side effects. Due to uncontrolled use of OTC drugs, signs and symptoms of underlying diseases are suppressed hence incidence of delayed diagnosis, complications, treatment failure are increasing.^[6-8] In many studies it has been shown that resistance of pathogens, adverse drug reactions and drug dependence increase to a very high level due to this inappropriate use of drugs without expert opinion.^[9-11]Responsible self-medication can help in preventing and treating minor ailments that do not require medical consultation has been pointed out by World Health Organization (WHO).^[10]

In developing country like India literacy rate is poor due to which responsibility of the pharmacist in helping the consumers to select the appropriate OTC drug increases many folds. Community

pharmacists play a crucial role in optimising medication use and improving patient outcomes, preventing medication misuse and reducing costs. These are often the only point of contact for patients before initiating drug therapy, not only for OTC medication but also for prescription only medicine.^[12] They can provide appropriate, understandable and relevant information to patient about their medications and about various nuggets of OTC. Indian pharmaceutical association has formulated good pharmacy guidelines which stress upon the various roles and responsibilities of pharmacist and one among them is that they should be competent enough to advise patients to select and use OTC drugs appropriately.^[13] Pharmacists should also seek opportunities to participate in health-system patient-education programs and to support the educational efforts of other health care team members.^[14] The increasing trend towards deregulation of more medicines to over the counter status has implications for the primary health care team as well as for consumers and patients.^[15]

There are various risks involved in using OTC drugs such as wrong diagnosis, wrong selection of the drug and wrong dose with its accompanied adverse effects which may pose a danger to the patient's life. Since medical students are the future medical practitioners and have a role in counselling the patients about the advantages and disadvantages of self-medication, OTC drug use assumes a special significance. They also differ from the general population because they are well-exposed to the knowledge about diseases and drugs.

Second year medical students get acquainted with the drugs and pharmacotherapy of diseases which makes them use OTC drugs on a wide scale. Therefore, it is necessary to create awareness about dangerous effects of OTC drugs. Education and professional status are the predictors for the use of OTC drugs.

Hence, for deep understanding of the pattern of dispensing of OTC drugs by pharmacists, to assess the knowledge and practices of over the counter drug usage among second MBBS students and interns a questionnaire-based study was conducted.

Materials & Methods

Study Design: It was a prospective, cross-sectional, observational questionnaire based study.

The Study Setting: It was conducted for a period of 3 months in the teaching tertiary care hospital in India.

Study Population: Study was conducted among community pharmacists, second year MBBS students and interns.

Selection Criteria

Inclusion criteria

1. Community pharmacists, second year MBBS students and interns who were willing to participate in study.

Exclusion criteria

1. Community pharmacists, second year MBBS students and interns were not willing to participate in study and who gave incomplete information.

This study was commenced after getting approval from the Institutional Ethics Committee .It was made clear to the participants that at no point of the study their identity will be revealed. Strict confidentiality was maintained. Self -designed pre-validated questionnaire with 20 multiple choice questions about OTC drugs was given with sufficient time to answer. The questionnaires were handed over to the participants after explaining the purpose of the study. Any doubt regarding questionnaires was clarified by investigators. Written informed consent was obtained from each respondent. The collected data was checked, reviewed and organized for its completeness. Only completely filled questionnaire were selected for final data analysis.

Statistical analysis

The completed questionnaire information was recorded using Microsoft Excel sheet and percentages of responses were calculated.

Results

A total of 350 participants responded to questionnaire regarding OTC drugs. Out of these, 100 were second year MBBS students, 200 were interns and 50 were community pharmacists.

Flow Chart No.1: Number of participants

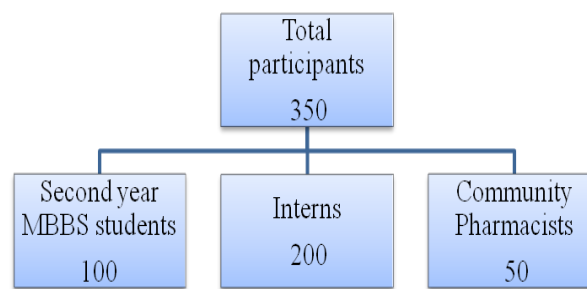


Table No.1 Response to knowledge based questions

Sr. No	Questions	Second year MBBS students% (n=100)	Interns% (n=200)	Community Pharmacists % (n=50)
1	What is definition of OTC drugs?	50%	59%	64%
2	Who is the deciding authority about OTC drugs?	72%	93%	70%
3	Do you know the schedule 'H' drug?	98%	96.5%	100%
4	Are you aware about misuse of OTC drugs?	77%	92.5%	68%

It has been observed in table-1 that 50% second year MBBS students, 59% interns and 64% community pharmacists gave correct response to definition of OTC drugs. 72% second year MBBS students, 93% interns and 70% community pharmacists knew the deciding authority of OTC drugs. Likewise 77% second year MBBS students, 92.50% interns and 68% community pharmacists were aware about the misuse of OTC drugs.

Table No.2 Commonly used class of OTC drugs

Class of drug	Second year MBBS students % (n=100)	Interns % (n=200)	Community Pharmacists % (n=50)
Analgesics	52%	67.5%	50%
Antipyretics	25%	20%	20%
Antacids	13%	5%	30%
Vitamins	2%	1.5%	0%
Cough suppressants	5%	6%	0%
Anti -allergics	3%	0%	0%

Table -2 shows 52% second year MBBS students, 67.50% interns and 50% community pharmacists

use analgesics most commonly, followed by antipyretics and antacids.

Figure No.1 Reasons for usage of OTC drugs

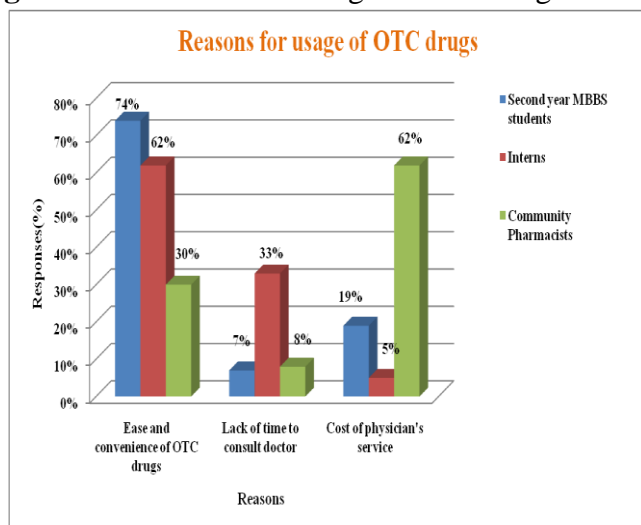


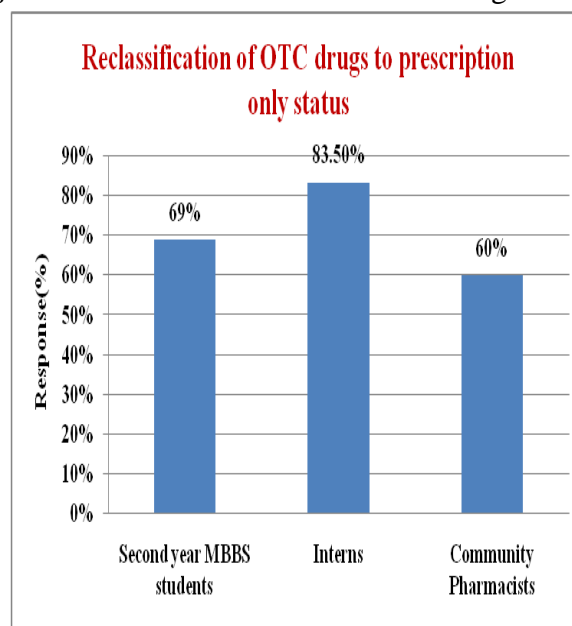
Figure 1: 74% medical students and 62% interns revealed that ease and convenience was the main reason for use of OTC drugs. While 62% community pharmacists opined that lack of time to consult the doctor was the main reason.

Table No.3 Reporting of adverse drug reactions encountered due to OTC drugs

Second year MBBS students % (n=100)	Interns % (n=200)	Community Pharmacists % (n=50)
Doctor :- 56%	<u>Senior doctor</u> :- 51%	Doctor :-38%
Pharmacovigilance cell :- 12%	Pharmacovigilance cell :-14%	Pharmacovigilance cell :-22%
Manufacturing company:- 28%	Manufacturing company :-35%	Manufacturing company :-4%
No one :- 4%	No one:-0%	No one :-36%

It has been shown in table 3 that 56% medical students and 38% community pharmacists opined that adverse drug reactions encountered due to OTC drugs were to be reported to doctors. While 51% interns felt the need to report to senior doctors. While 36% pharmacists were not aware about the reporting of adverse drug reactions.

Figure No.2 Reclassification of OTC drugs



It has been shown in figure 2 that 69% medical students, 83.50% interns and 60% community pharmacists consider that some OTC drugs must be reclassified to 'prescription only' status to avoid adverse drug reactions and drug interactions.

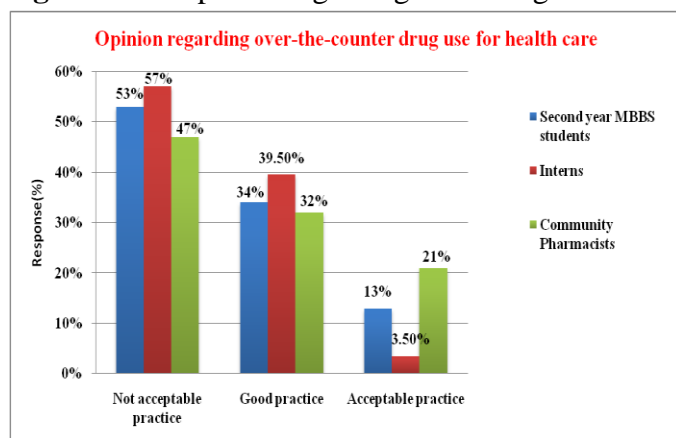
Table No.4 Sources of information about OTC drugs

Sources	Second year MBBS students % (n=100)	Sources	Interns % (n=200)	Sources	Community Pharmacists % (n=50)
Media advertisements	24%	Media advertisements	38.5%	Media advertisements	34%
Doctors	25%	<u>Senior doctors</u>	13.5%	Doctors	30%
Text books/ Journals	17%	Text books/ Journals	27%	Text books/Journals	16%
Self learning through internet	10%	Self learning through internet	21%	Self learning through internet	8%
<u>Family members/ Friends</u>	24%	-	-	<u>Medical representative</u>	12%

Table 4 shows that media advertisements and doctors are most common sources of information of OTC drugs for community pharmacists, second year MBBS students and interns. It has been shown in

table No. 4. In case of second year MBBS students family members and friends play major role as the source of information

Figure No.3 Opinion regarding OTC drugs



It was observed in figure 3 that 53% second year MBBS students, 57% interns and 47% community pharmacists opined that OTC drug use is not acceptable practice for health care.

Discussion

In this survey, study population comprised of community pharmacists, second year MBBS students and interns. In the present study 56% second year MBBS students and 38% of the pharmacists answered that adverse drug reactions due to OTC drugs should be reported to the doctors. While 36% pharmacists were not aware about the reporting of adverse drug reactions. These findings have a significant role in reporting system of adverse drug reactions i.e pharmacovigilance cell to prevent unnecessary adverse drug reactions and interactions. So it is very essential to make the informed treatment decision on the part of patients. OTC drug use is also associated with increased risk of abuse, which is becoming an area of national concern. So, there is a need to avoid unnecessary exposure to medications among the health-care community and the consumers. In compliance with the study by Ghosh et al, it has been observed in our study that the lack of time to consult doctor and the ease and convenience are the most common reasons for the increase in OTC use.^[16]

Interestingly, there has been a decrease in prescription drug use but an increase in the use of OTC medications, herbals, and dietary supplements.^[17] Regulations on the purchase and use of OTC drugs are required to prevent unnecessary adverse drug reactions, drug-drug and drug-food interactions. The burden on the healthcare system to treat drug toxicities due to more use of OTC drugs can be reduced and the health resources can be utilized for better purposes.^[18]

In this study, on an average 50 % community pharmacists, second year MBBS students and interns had knowledge about OTC drugs definition. Similar observation was made in a study by Abinaya Ravichandran et al.^[18] Analgesics were the most commonly used class of drugs, which is also observed by Rahul Shroti et al .^[19]

Looking at the source of information used to know about OTC drugs, it has been observed that the information regarding OTC drugs was obtained from various sources viz; media advertisements, doctors, text books/journals and self -learning through internet. In the present study, media advertisements and doctors were found to be the most common sources of OTC drug information. Similar results were reported in the study conducted Rekha MS et al.^[20] As advising consumers on the selection and proper use of over-the-counter (OTC) medicines forms the key component of pharmacy practice it has been observed in our study that 36% pharmacists stated that they counsel the consumers before dispensing the drugs.

Conclusion

In present study, medical interns have shown a fare degree of knowledge, good attitude and perception towards the use of OTC drugs as compared to community pharmacists and second year MBBS students which shows that education and professional status are the predictors for the use of OTC drugs. Analgesics were the most commonly used class of drug followed by antipyretics and antacids. It has also been observed that lack of time to consult the doctor and the ease and convenience of OTC drugs are the most common reasons for

their increasing use. Greater vigilance for adverse reactions is needed and the reporting system should be widened to include pharmacists. A well-designed training programme on the identification, prevention and management of prescription and misuse of OTC drugs is mandatory in undergraduate pharmacy and pharmacology curriculum. Doctors and pharmacists need to clarify their roles about how they shared goal of the safe and effective use of medicines. This will require more communication between doctors and pharmacists. Effective government control over the sale of OTC medications are strongly needed to avoid the adverse drug reactions, drug-drug and drug-food interaction of OTC drugs. An education campaign for health care providers, pharmacists and the public around the risks of inappropriate use of drug is warranted and further research could be done to explore effective strategies to address the various social factors underlying a culture of OTC drug use.

Acknowledgement

We would like to thank the second year MBBS students, interns and community pharmacists who participated in the study.

Conflict of Interest

The authors declare no conflict of interest.

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