Original Article

A Comparative Study to Assess Knowledge, Attitude and Practice Regarding OTC Drugs Among Second-Year Medical Students of 2021 Batch in A Tertiary Care Teaching Hospital

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ABSTRACT

Introduction: Over-the-counter (OTC) drugs are more commonly used than prescription drugs for self-medication worldwide. The Advantages of OTC drugs are decreased doctor visits and lower costs compared with prescription drugs. Overuse of OTC drugs can lead to adverse reactions, drug interactions, overdosing, and other medication-related issues.

Method: A cross sectional survey was conducted among 2nd year medical students, in the form of pre-test containing questions about OTC drugs. After sensitization on the same topic, same questions were provided in the form of post-test and results were analysed.

Result: Out of 250 students, 217(87%) students responded in pre-test while 220(88%) responded during post-test. During test, 39% were female and 61% were male. Most common ailment is fever for which self-medication has been done. We found significant improvement in knowledge and in attitude after sensitization about the use of OTC drugs. Majority of students (80%) agreed that self-medication should not be done.

Conclusion: We concluded that majority of participants practiced self-medication. Awareness and dangers of misuse of OTC medications among all participants was less. Therefore, it is suggested that proper education/awareness programs should be implemented regarding self-administration of OTC drugs.

Keywords: OTC drugs, self-medication, prescription.

INTRODUCTION

Over-the-counter (OTC) drugs are more commonly used than prescription drugs for self-medication worldwide[1]. OTC drugs are drugs that can be legally purchased without requiring a prescription from a registered medical practitioner. OTC drugs are primarily used for conditions, when there is no need for medical attention or supervision, and OTC drugs must be reasonably safe and well-tolerated[2-3].

Many people use OTC drugs as their first line of treatment, without formal prescription, because they are affordable and easily accessible from drug stores[4].

The advantages of OTC drugs include, no need for visits to doctor and lower costs when compared to prescription drugs. Overuse of OTC drugs can lead to adverse reactions, drug interactions, overdosing, and other medication-related issues. The public should use OTC drugs carefully to avoid adverse events associated with overuse of OTC drugs and should increase their knowledge and understanding regarding potential dangers of overuse of OTC drugs[5-7].

OTC drugs are classified into many categories according to WHO Anatomical Therapeutic Chemical (ATC) classification. They include analgesics, laxatives, antacids, cough and cold preparations, antihistamines, dermatological, throat preparations, nasal preparations, and antidiarrheals[8]. The Food, Drugs, and Cosmetic Act was implemented in 1938 which authorized the FDA to issue clear guidelines for drugs to be sold by prescription only and to be sold as OTC[9]. In India, "over the counter drugs" has no legal definition, so all the drugs not included in the list of "prescription drugs" are considered as OTC drugs.

Many people use OTC drugs, without reading the directions to use them[10]. Significant problems and malpractices were identified with OTC drugs such as sharing of OTC drugs, expired medicine usage, doubling the drug dose when they are ineffective, OTC storage, and not reading labels and expiry dates[11]. Therefore, government should introduce awareness programmes through television/newspaper/social media regarding proper use of OTC drugs and difference between OTC drugs and drugs which should be used with prescription only.

The aim of this study was, therefore, to assess the practice of self-medication with OTC drugs, the prevalence of the risky practice, and its associated factors.

METHOD

It was a cross sectional survey conducted by Department of Pharmacology, GSVM Medical College, Kanpur, UP. As a part of undergraduate teaching, first we organised a pre-test, and provided 15 questions on google form online (time - 20 minutes) about knowledge, attitude and practice regarding OTC drugs among second year medical students (2021 batch). In, the questionnaire we included five questions based on Likert scale, four questions were open

ended, four questions were closed ended while rest two questions were based on attitude/practice towards OTC drugs. We recorded the answers, and then students were sensitised about OTC drugs. After sensitisation, same questionnaire was provided online on google form in the form of post-test (time - 20 minutes) and answers were analysed. Consent regarding questionnaire was taken from students.

RESULTS

Out of 250 students, 217 (87%) students responded in pre-test while 220 (88%) responded in post-test. (Table 1)

Table 1: Percentage of students in pre-test and post-test

	Total students	Responded	Not responded
Pre test	250	217(87%)	33(13%)
Post test	250	220(88%)	30(12%)

Gender and Age distribution of students during pre and post-test has been shown in Figure 1 and figure 2 respectively. During both Pre and Post-test, 31% of participants were female while 69% were male. During both test 45% students belong to age group of 21-22 years, while 27% belong to 19-20 years and 25% belong to 23-24 years age group.

During pre- test 76% students either somewhat/moderately aware about OTC drugs while during post-test 95% students were moderately/Extremely aware. Table 2 also shows that during pre-test maximum number of students were neither aware about drugs included in OTC list nor they were reading the instructions written over package. However, frequency of using OTC drugs was almost similar during both pre and post test.

Figure 3 shows that maximum use of OTC drugs was for fever (22%) followed by skin problems (16%), Acidity (14%) and Headache (11%). Response was almost same during pre and post-test.

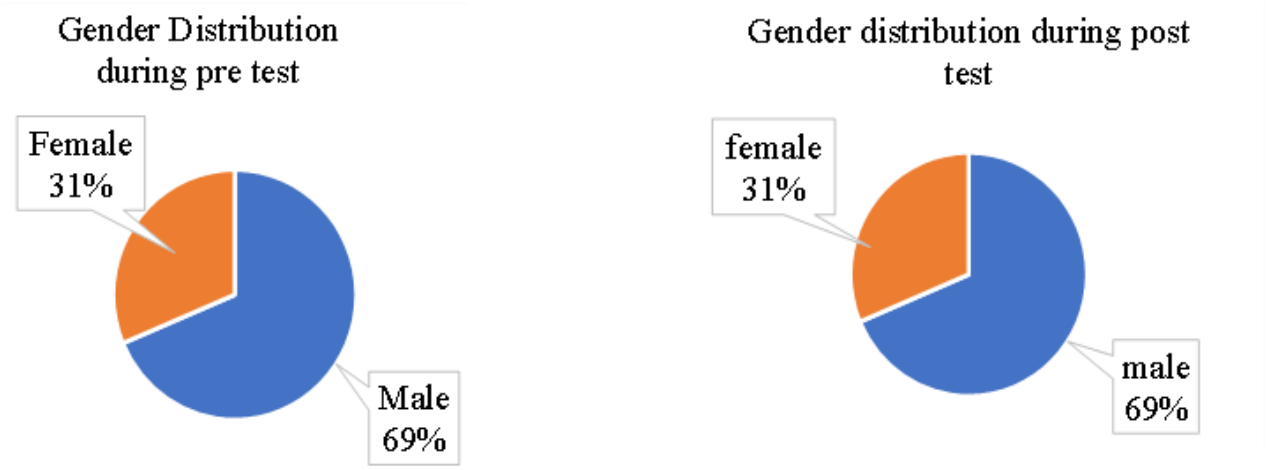

Figure 1: Gender distribution of the participants

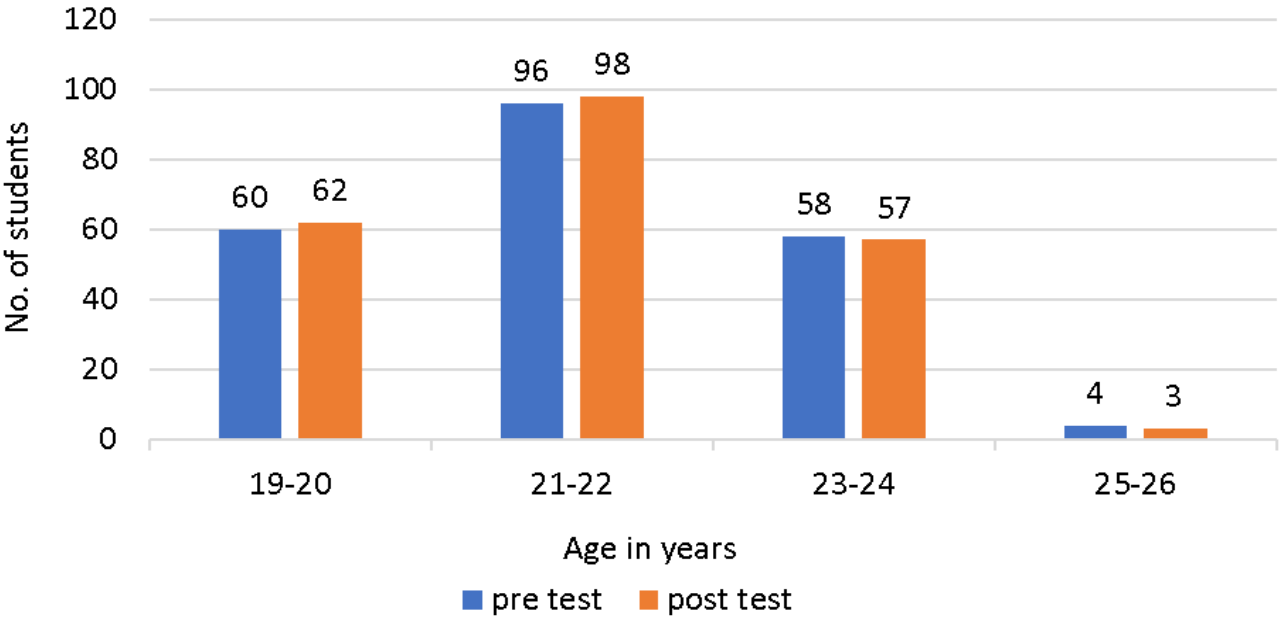

Figure 2: Age distribution of the participants

Table 2: Responses (based on Likert scale) of students over Knowledge/Awareness about OTC drugs

Are you aware about OTC drugs	Not aware	Slightly aware	Somewhat aware	Moderately aware	Extremely aware
Pre test (n=217)	7	3	90	75	42
%	(3)	(1)	(41)	(35)	(20)
Post test (n=220)	4	2	5	90	119
%	(2)	(1)	(2)	(41)	(54)
Do you know about drugs included in OTC list	Not aware	Slightly aware	Somewhat aware	Moderately aware	Extremely aware
Pre test (n=217)	23	46	84	30	34
%	(10)	(21)	(39)	(14)	(16)
Post test (n=220)	13	22	38	104	43
%	(6)	(10)	(17)	(47)	(20)
Have you read the instruction on the package insert before using the OTC drug	Never	Almost never	Occasionally	Almost every time	Always
Pre test (n=217)	36	51	84	29	17
%	(17)	(24)	(39)	(13)	(7)
Post test (n=220)	28	18	45	84	45
%	(12)	(9)	(20)	(39)	(20)
How much did you understand the instruction	Never	Almost never	Occasionally	Almost every time	Always
Pre test (n=217)	58	44	49	45	21
%	(27)	(20)	(23)	(20)	(10)
Post test (n=220)	20	36	13	93	58
%	(9)	(16)	(6)	(42)	(27)
How frequently you took self-medication/ OTC drug	Never use	Almost never	Occasionally/ Sometimes	Almost every time	Frequently
Pre test (n=217)	49	31	61	34	42
%	(23)	(14)	(28)	(16)	(19)
Post test (n=220)	5	39	64	34	33
%	(22)	(18)	(29)	(15)	(19)

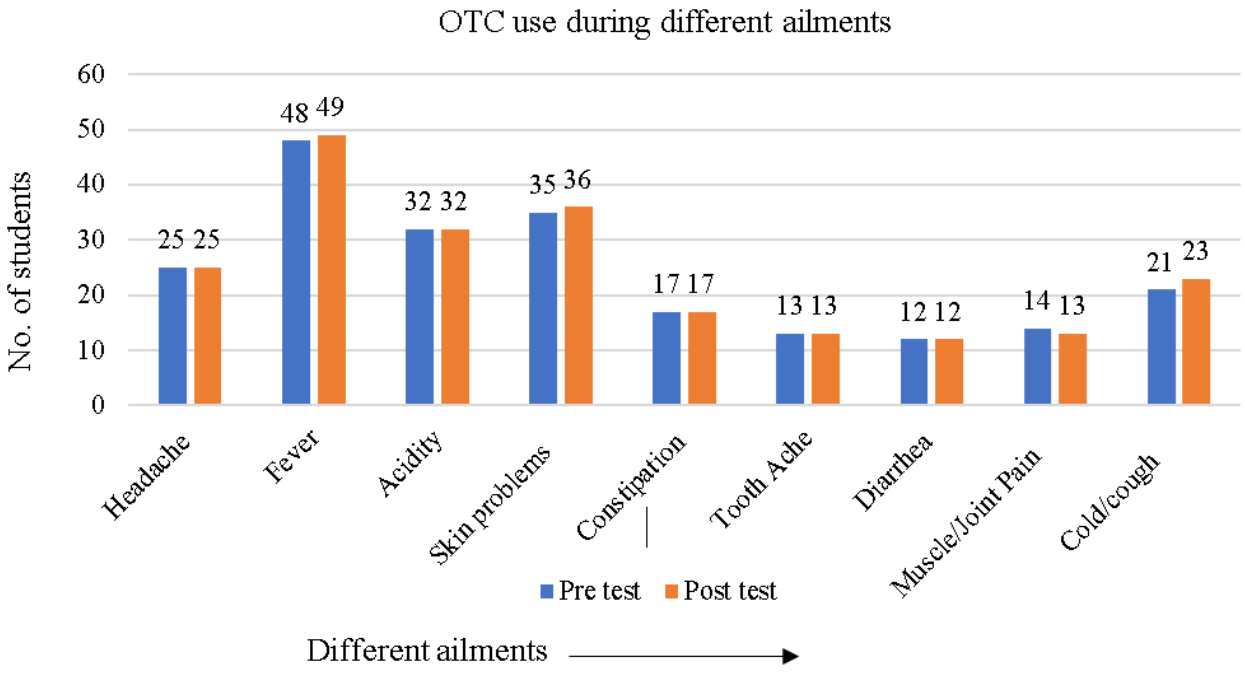

Figure 3: Disease/ medical condition for which OTC drugs have been used

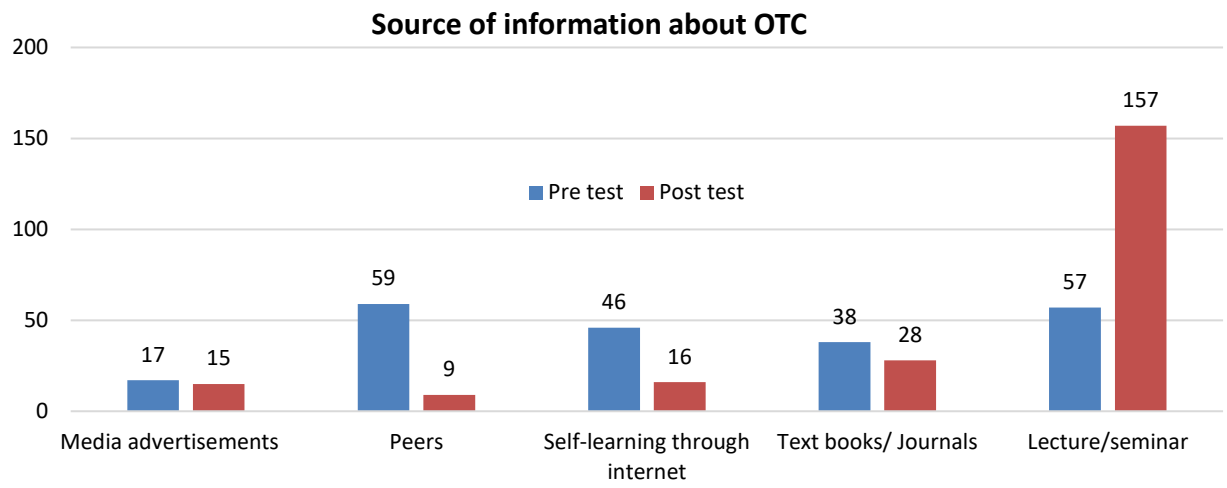

Figure 4: Source of information about OTC drugs

During pre-test major source of information about OTC was from Peers (27%) followed by Lecture (26%), self-learning (21%), text books (17%) and 7% from media advertisements. During post test 71% students reported that source of information was Lecture.

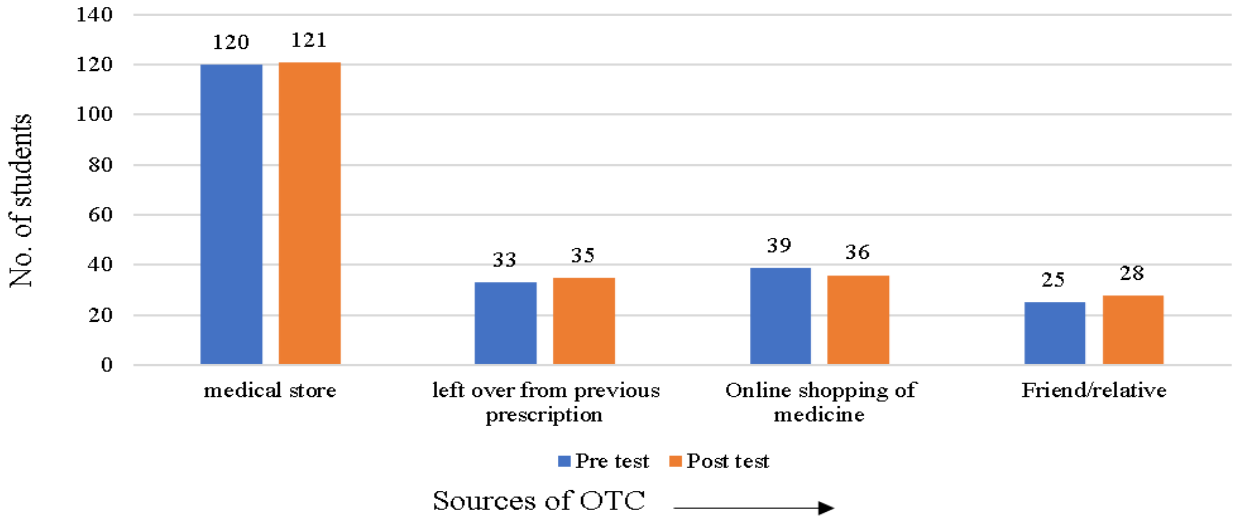

Figure 5: Sources of obtaining OTC drugs for self-medication.

Medical store (55%) was the main source of obtaining the OTC drugs during pre and post test, while other sources were online shopping (18%), left over medicines (15%) and about 11% obtained from friends/relatives.

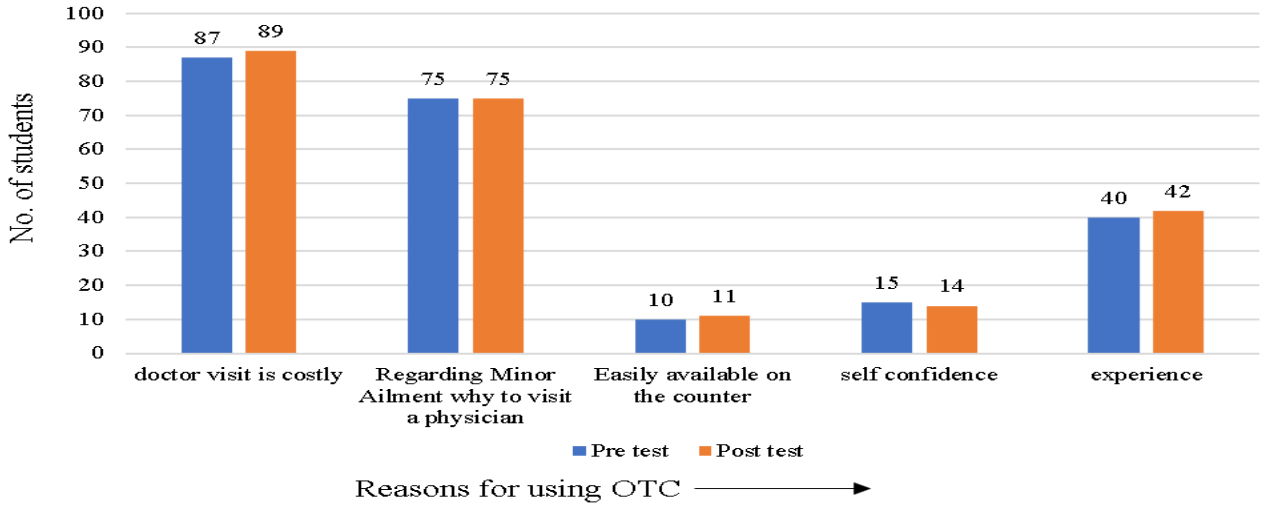

Figure 6: Different reasons for using OTC drugs

During both pre and post-test, maximum students (about 40%), used OTC medicines because visit to a doctor was costly while 35% think that for minor ailments, why to visit a doctor. About 18% used OTC based on previous experience of using OTC drugs.

Table 3: Responses of students towards open questions with closed answers

Do you easily get antibiotics/ anti-anxiety drugs without prescription	Yes, Always	Yes, Sometimes	Never
Pre test (n=217)	113	73	31
Post test (n=220)	115	71	34
Did you get relief upon self-medication	Yes, Always	Yes, Sometimes	Never
Pre test (n=217)	98	77	42
Post test (n=220)	102	76	42
Have you experienced any adverse effects	Yes, Always	Yes, Sometimes	Never
Pre test (n=217)	43	124	50
Post test (n=220)	51	120	49
What did you do for the adverse reaction	Stop taking medication	Consulted pharmacy staff	Consulted a doctor
Pre test (n=217)	156	20	41
Post test (n=220)	152	16	52

Above table shows that about 50% students got antibiotic/antianxiety easily as OTC drugs during both pre and post-test, while 34% got sometimes and 14% never got these medicines. About 45% of them always got relieve, 35% sometimes and 20% never got relieved during both the tests. About 20% of students always got adverse effects, 57% got sometimes and 23% never had any adverse effects. On getting adverse effect about 70% stopped medication, 10% consulted a pharmacist/ healthcare staff and 20% consulted a doctor.

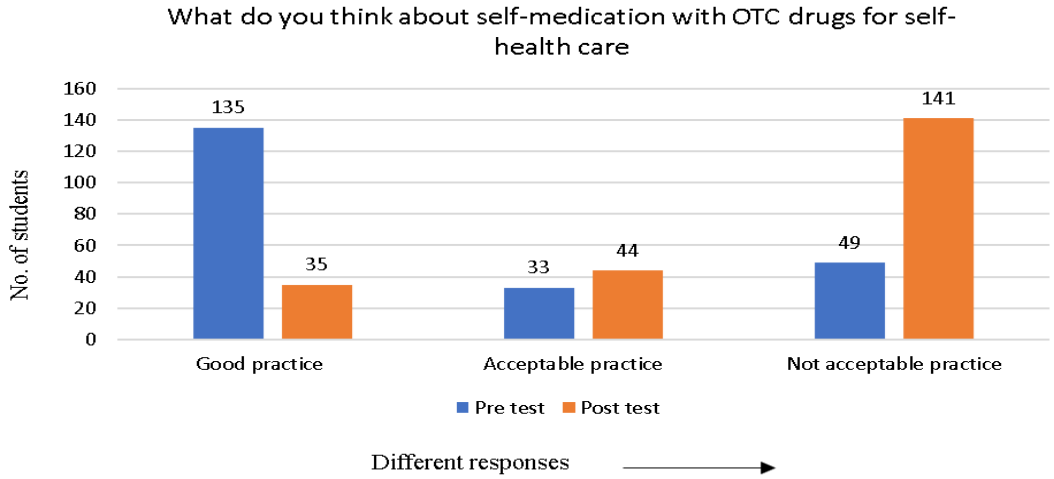

Figure 7: Responses of students towards practice- based questions about OTC Drugs

During pretest 62% students think that OTC drug use is a good practice, 15% think it acceptable while 23% think it to be not acceptable. During posttest 65% think it not acceptable, 20% acceptable and 15% thinks it is a good practice.

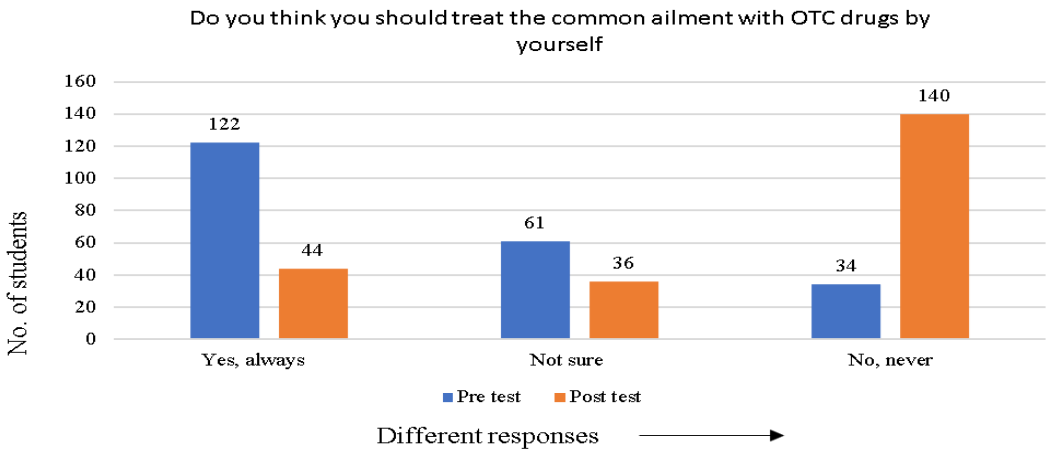

Figure 8: Responses of students towards practice- based questions about OTC Drugs

During pretest 56% students think that common ailments should be treated by self, 28% were not sure and 16% think that it should never be done. During Post-test only 20% students agreed that it should be treated by self, 16% were not sure and 64% think that it should never be done.

DISCUSSION

Use of OTC drugs is very common among Indians, without having knowledge about their indication or adverse effects. Several studies have 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[12-14].

This study was conducted among second year medical students and maximum participants belong to age group of 21-22 years(45%), while about 27% belong to 19-20 years and about 25% belong to 23-24 years age group. Out of them 31% were female and 69% were male.

This study showed that during pre- test 76% students were either somewhat/moderately aware about OTC drugs while during post-test 95% students were moderately/Extremely aware. About 63% of students were using OTC drugs. In another questionnaire-based study which was conducted by our department with students of 2018 batch, majority (98.90%) of the students were aware of OTC drugs and self-medication was seen among (95.09%) of the medical students[15]. In another study conducted among medical students in Karnataka, it was revealed that 53% students practiced self medication[16], while study conducted by Mourya et al stated that the overall prevalence of self-medication was 77.33%[17].

This study shows that maximum use of OTC drugs was for fever (22%) followed by skin problems (16%), Acidity (14%) and Headache (11%). Same departmental study during 2020 stated that the most common aliment for which maximum number of students have taken OTC was Fever (36.07%)[15]. In another study conducted by Mourya et al, it was shown that highest % of indication for self -medication was found to be fever (31.56%)[17]. Another study in South India revealed that cough and cold are the most common reason for OTC drugs[18].

This study shows that (during both pre and post-test) maximum students (about 40%), used OTC medicines because visit to a doctor was costly while 35% think that for minor ailments, why to visit a doctor. Previous study in our department stated that most common reason for self-medication or use of OTC drug was “for minor ailment why see Dr advice” (55.19%) followed by the reason that “Going to doctor were cumbersome (12.02%) and “free availability in market” (22.96%)[15]. Maurya et al stated that the most common reason for self-medication was easy accessibility (21.55%) followed by self-confidence (17.24%), time saving (16.03%), no enough time for consultation (7.07%), safe and well tolerated (5.69%), low cost (3.28%)[17].

In our study, we found that students easily get (around 80%) antibiotics or even antianxiety drugs, and most of the times they get relieved (80%) by self-medication with incidence of adverse effects always associated in 19% and sometimes in 57% of participants. Previous study in our department showed that only 16.54% students reported adverse drug reaction[15]. Another study reported that 18.62% of participants experienced side effects from OTC drugs[17].

This study also found that, during pretest 62% students think that OTC drug use is a good practice, 15% think it acceptable while 23% think it to be not acceptable. After sensitisation, their attitude changed towards OTC drugs and in post-test 65% think it is not acceptable, 20% thinks acceptable and only 15% thinks it is a good practice. Previous study of our department showed that maximum students (68%) think self-medication with OTC is a good practice[15]. Maurya et al also showed that majority of the participants believed use of OTC drug is a good practice[17].

Finally, this study also showed that, during pretest 56% students think that common ailments should be treated by self, 28% were not sure and 16% think that it should never be done. Post-test showed that, only 20% students agreed that it should be done. In previous study showed that, 44% think that common ailments can be treated by using OTC drugs[15]. We can clearly observe that after sensitisation there is change in attitude towards use of OTC drugs. Adequate counselling/education can improve self-medication practice and made them understand how it will improve their quality of life and in better management of the disease.

CONCLUSION

This cross-sectional study showed that use of OTC drugs is very common among medical students, facilitated by the easy availability of drugs. Majority of the them believed, use of OTC drug is a good practice, but their knowledge about OTC is inadequate, they are not aware about correct drug indication, what is the ideal duration for the drugs, what is the dose regimen of the drugs and when to stop the drugs. Excessive use of non-OTC drugs as OTC can lead to extra burden of cost and development of resistance. The scenario among general population may be worse leading to more complications and more adverse events associated with excessive/inappropriate use of drugs. So, there is need to implement strict laws by the government about categorisation/dispensing of OTC/nonOTC drugs, conducting awareness programs and restricting drug advertisements for public.

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