



KNOWLEDGE, ASSESSMENT AND PRACTICE OF OVER THE COUNTER (OTC)
DRUGS AMONG 4TH SEMESTER (2ND YEAR) MEDICAL STUDENTS IN GSVM
MEDICAL COLLEGE, KANPUR

*¹Dr. Pooja Agrawal, ²Dr. Virendra Kushwaha, ¹Dr. Mangeshkumar Tripathi, ¹Dr. Sarita Singh and ³Dr. S. K. Barman

¹Department of Pharmacology, GSVM Medical College, Kanpur, Uttar Pradesh, India.

²Department of Pharmacology, GMC Azamgarh, Uttar Pradesh, India.

³Department of Community Medicine, GMC Banda, Uttar Pradesh, India.

*Corresponding Author: Dr. Pooja Agrawal

Department of Pharmacology, GSVM Medical College, Kanpur, Uttar Pradesh, India.

Article Received on 10/06/2020

Article Revised on 30/06/2020

Article Accepted on 20/07/2020

ABSTRACT

Background: In our country there is easy availability of drugs over the counter leading to their unintentional misuse and abuse. Over the counter availability of drugs does offer the benefit of easy access to medicines and allows individuals to become in charge of their own health. Use of over the counter drug as well as self-medication is a very common problem in India. Medical students are of no exception at this mal-practice. This study was to assess the extent of knowledge and practices of over the counter (OTC) drugs among 2nd year Medical students in Ganesh Shankar Vidyarthi memorial (GSVM) medical college, Kanpur, questionnaire based study was conducted among 183 numbers of 2nd year medical students. **Methods:** Our study was a prospective cross sectional study conducted on second professional MBBS students. Authors administered a self-structured questionnaire to the students. The data obtained was tabulated, analyzed and the results calculated in percentages. **Results:** Most common conditions/symptoms for self-medication were Fever (36.07%) followed by headache (28.41%), cold (20.21%), Acidity (13.1%), Skin problem (3.28%) followed by diarrhea (2.19%) and muscle/joint pain (2.19%). (16.40%) of them experienced adverse reactions on OTC self-medicated drugs. (72.13%) read the instructions over package insert before using the OTC drugs and (54.64%) students understood the instruction. (67.76%) think that self-medication with OTC were good practice and (44.27%) think that common ailments can be treated by using OTC drug by yourself. Minor Ailment why see Doctor Advice (55.19%), Available freely on the counter (22.96%) where the some of the reasons for using OTC drugs. Text books / journals (40.43%) followed by Self-learning through internet (22.40%) were the most common source of information used to Know about OTC drugs. **Conclusions:** OTC medication is widely used among medical students who are studying pharmacology. It is important to create awareness about harmful effects of OTC drugs among medical students as they are future health care providers and prevent untoward consequences.

KEYWORDS: Over the counter drug, Self-medication, Questionnaire.

INTRODUCTION

‘Over The Counter (OTC) Drugs’ means drugs legally allowed to be sold over the counter, i.e. without the prescription of a Registered Medical Practitioner.^[1] In India, though the phrase ‘over the counter drugs’ has no legal recognition, so all the drugs not included in the list of ‘prescription drugs’ are considered as OTC drugs. In India, 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. All the non-prescription drugs which are sold over the counter to the general population also fall under these act and legislation.

Prescription Drugs fall under two schedules of the Drug and Cosmetics Rules, 1945: Schedule H and Schedule X. The Ministry of Health and Family Welfare in India published a notification in 2012, to incorporate a separate schedule H1 under the Drugs and Cosmetics Rule, 1945 for regulating sale of antibiotics, certain anti-TB drugs and habit forming drugs to decrease illicit use of OTC drugs.

Trend of using OTC drugs/self-medication is high in India. Self-medication increases the chances of illicit use of drug^[2] and drug dependency. Due to uncontrolled use of OTC drugs, signs and symptoms of underlying diseases are suppressed hence incidence of delayed

diagnosis, complications, treatment failure and drug resistance are increasing.^[3-6] In several 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.^[7-9] These are major causes of concern worldwide particularly in developing countries where antibiotics are often available without a prescription.^[10]

In our society, it is a common practice to treat most illnesses by self-medication. Self-medication is very common in medical students.^[11-12] A high level of education and professional status has been mentioned as predictive factor for use of OTC drugs/self-medication^[13], medical students are important member in this self-medicated group. There are many reasons for the increased likelihood of self-medication among medical students. Very few studies were conducted with usage of OTC drugs in our State. In this scenario, we planned a study to assess the level of Knowledge and practice of OTC drugs among 2nd Professional medical students. The objective of this study was to assess knowledge, practices of self-medication patterns, over the counter (OTC) drug usage, for which symptoms/diseases they use OTC drugs most of the time and overview the occurrence of ADR due to usage of OTC drugs among 2nd professional MBBS students.

MATERIAL AND METHOD

The present study was conducted among 2nd year Medical student of GSVM Medical College, Kanpur. It

is prospective, cross sectional questionnaire based study carried out in 2nd year medical student during the lockdown period due to the corona pandemic.

We did this study among all the 2nd year medical students on online basis.

We prepared a self-structured questionnaire (16 Questions) with the help of a link. We gave all the instruction prior to students how to go to the link and have instructed them not to be biased and don't take help of any type of sources like textbook, google or peers.

We have told them it is just to assess their knowledge and experience at their level. The questionnaire consist of two section. In section 1, they have to fill their Name, Age, Sex, Roll no. and Mobile number and after completing which they will be directed to section 2 where they have to answer the questions.

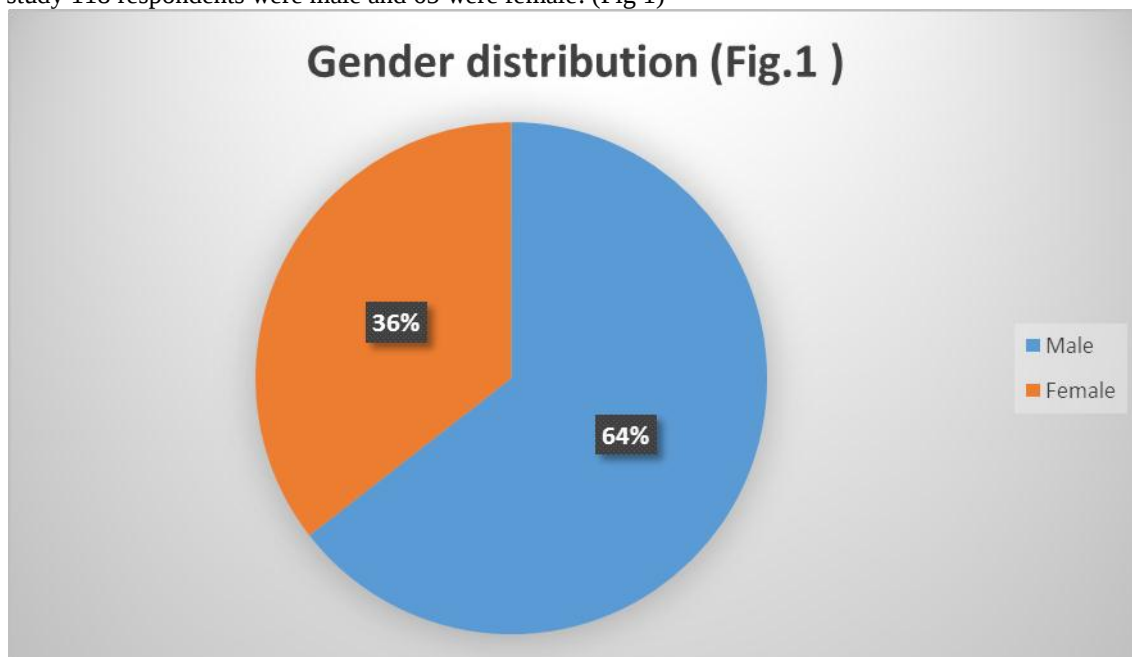
Total 30 mins was given to them and within 30 mins they have to submit their responses.

After that all the data were analyzed in percentage and averages.

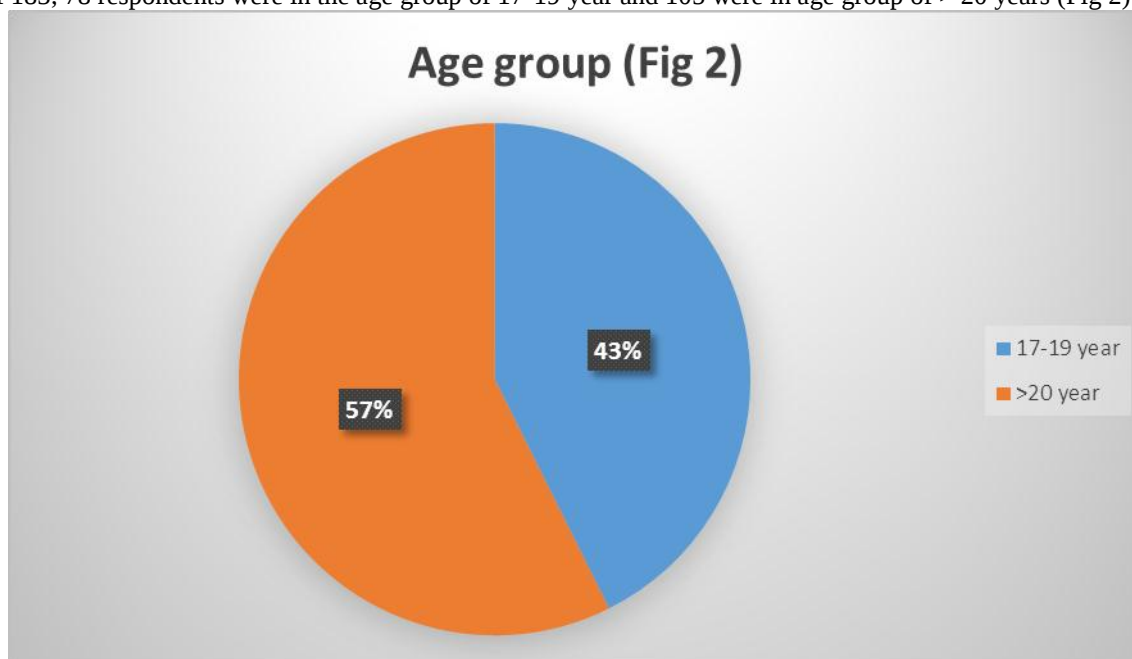
Questionnaire consisted of questions regarding awareness of OTC, type of drug self-medicated, source of information etc.

RESULTS

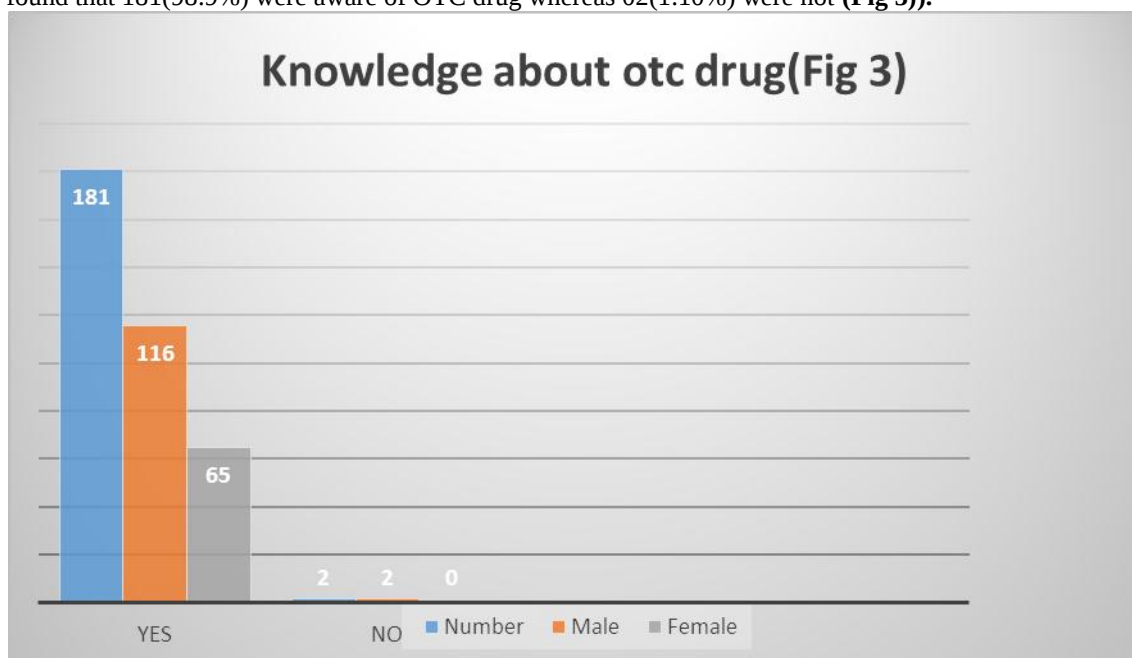
In our study 118 respondents were male and 65 were female. (Fig 1)



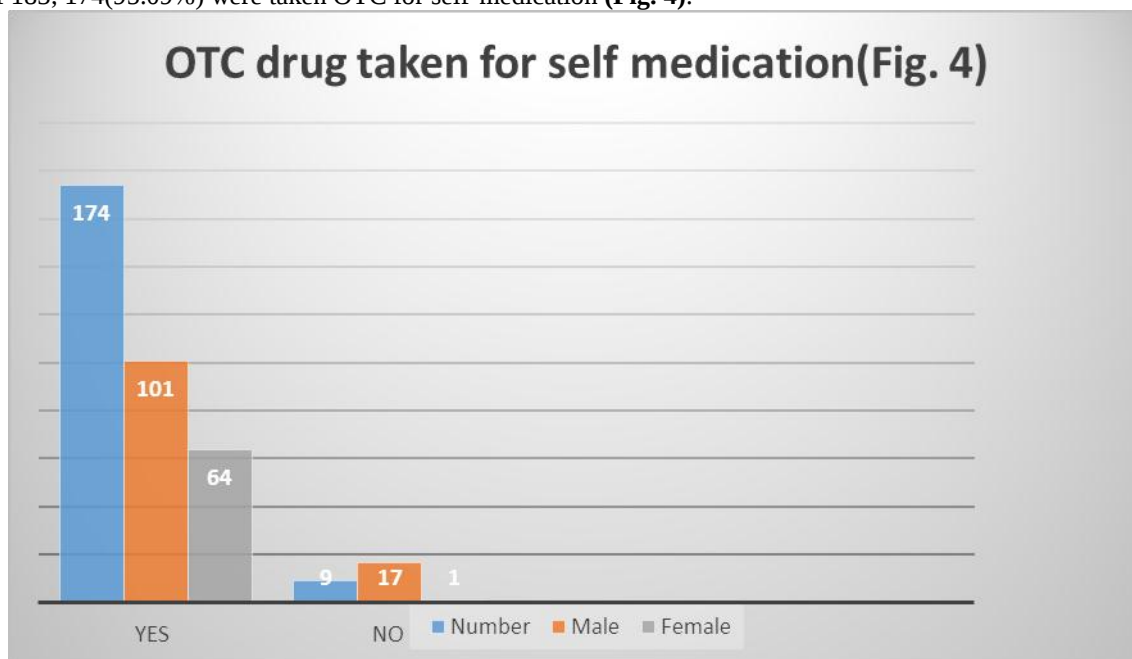
Out of 183, 78 respondents were in the age group of 17-19 year and 105 were in age group of > 20 years (Fig 2)



It was found that 181(98.9%) were aware of OTC drug whereas 02(1.10%) were not (Fig 3).



Out of 183, 174(95.09%) were taken OTC for self-medication (**Fig. 4**).



Maximum number of students 134(73.22%) used OTC rarely, while 11(6.01%) students used once in 15 days,

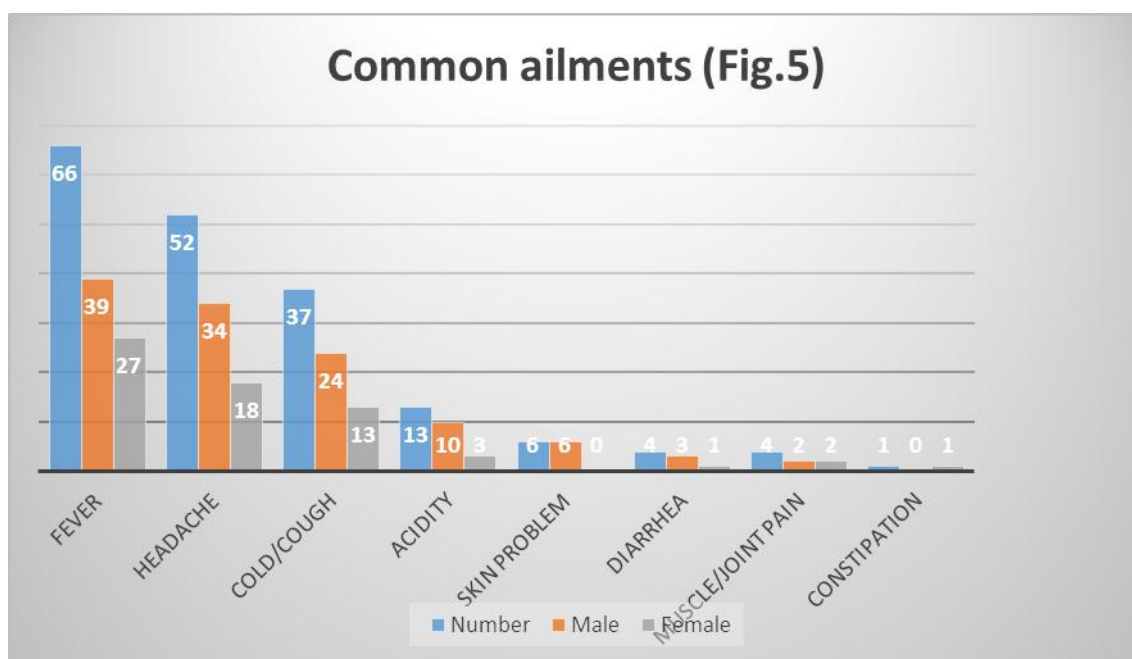
31(16.94%) used it once a month and 07(3.83%) used it once a week (**Table 1**).

Table 1: Frequency of taking OTC drugs.

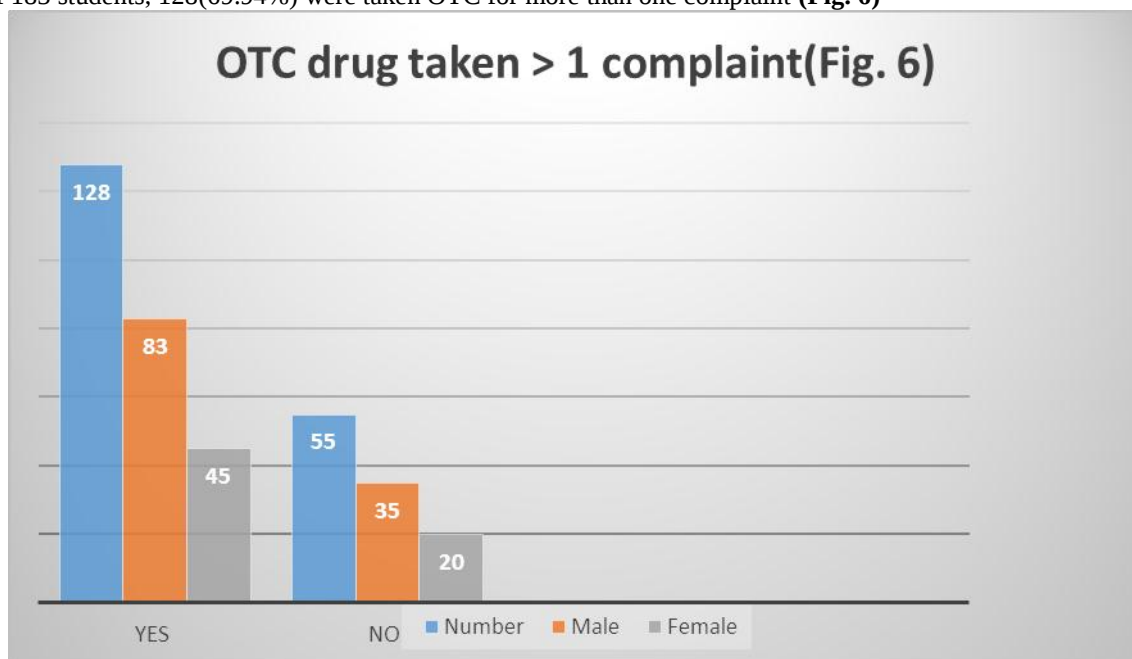
Frequency of taking OTC drugs	Number (%)	Male	Female
Once a week	07(3.83%)	06(3.27%)	01(0.54%)
Once a month	31(16.94%)	19(10.38%)	12(6.55%)
Once in 15 day	11(6.01%)	06(3.27%)	05(2.73%)
Rarely	134(73.22%)	88(48.08%)	46(25.13%)

When we see the common ailment for which maximum number of students have taken OTC were Fever (36.07%) followed by headache (28.41%), cold

(20.21%), Acidity (13.1%), Skin problem (3.28%), diarrhea (2.19%) and for muscle/joint pain (2.19%) (**Fig 5**).



Out of 183 students, 128(69.94%) were taken OTC for more than one complaint (**Fig. 6**)



When we see the reason which provoked the students for self-medication or use of OTC drug were “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%) (**Table 2**).

Table 2: Reasons for using OTC drugs.

Reason	Number (%)	Male	Female
Going to doctor cumbersome	22(12.02%)	16(8.74%)	06(3.27%)
Minor Ailment why see Dr Advice	101(55.19%)	60(32.78%)	41(22.40%)
Confidence in self-medication	18(9.83%)	14(7.65%)	04(2.18%)
Available freely on the counter	42(22.96%)	31(16.93%)	11(6.01%)

40.43% of the students got the information about OTC drug through text book or Journals (**Fig 7**).

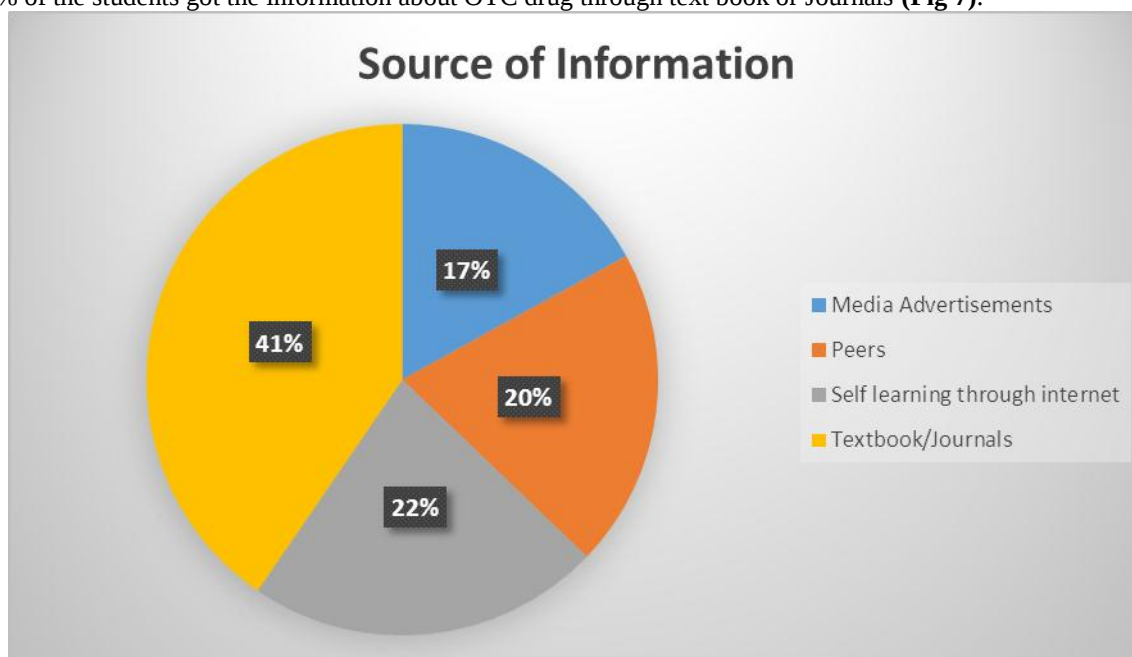


Fig 7: Source of information about OTC drugs.

Maximum number of students (72.13%) read the instructions over package insert before using the

drugs (**Table 3**) and (54.64%) students understood the instruction (**Table 4**).

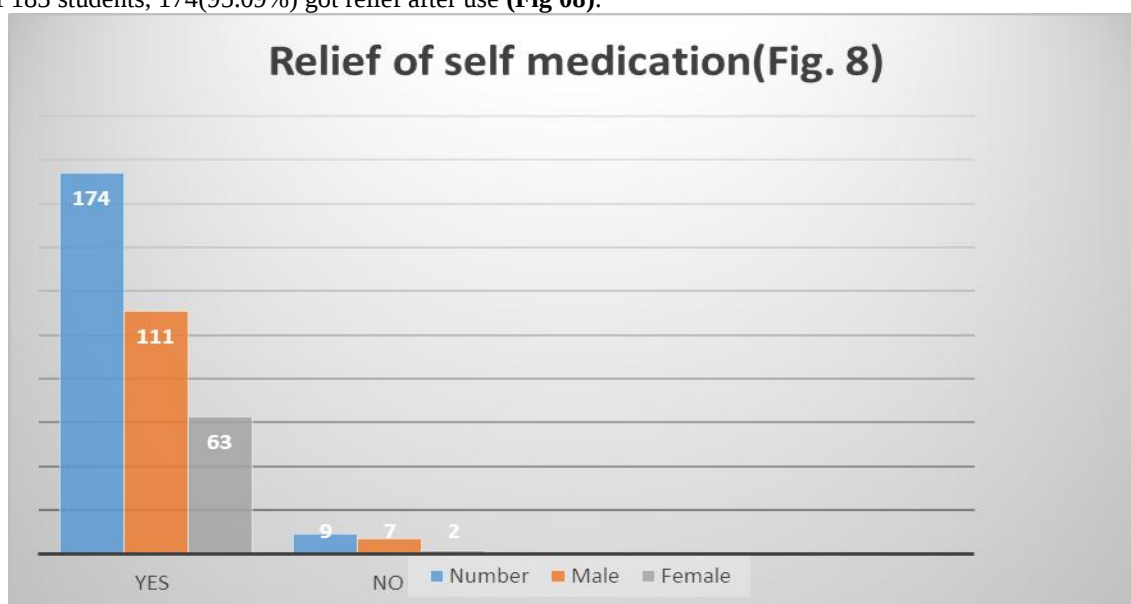
Table 3: Do u Read Instructions over package insert before using OTC drug?

Do you read Instruction	Number (%)	Male	Female
Yes, Always	132(72.13%)	82(44.80%)	50(27.32%)
Yes, Sometimes	49(26.77%)	34(18.57%)	15(8.19%)
Never	02(1.10%)	02(1.10%)	00(0%)

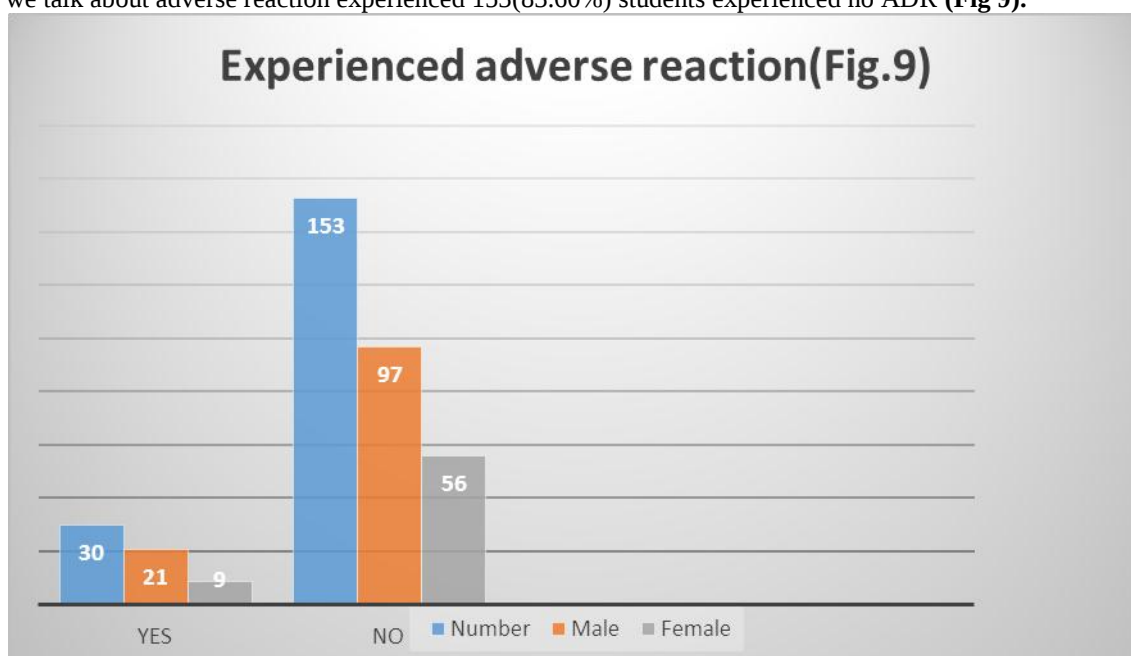
Table 4: How much did you understand the instruction?

Understood the instruction	Number (%)	Male	Female
Fully understood	100(54.64%)	60(32.78%)	40(21.85%)
Partly understood	83(45.36%)	58(31.69%)	25(13.66%)
Did not understood at all	00	00(0%)	00(0%)

Out of 183 students, 174(95.09%) got relief after use (**Fig 08**).



When we talk about adverse reaction experienced 153(83.60%) students experienced no ADR (**Fig 9**).



124 students (67.76%) think that self-medication with OTC was good practice (**Table 05**) and 81(44.27%)

think that common ailments can be treated by using OTC drug by yourself (**Table 06**).

Table 05: What do you think about self-medication?

Self-medication Practice	Number (%)	Male	Female
Good practice	16(8.74%)	13(7.10%)	03(1.69%)
Acceptable practice	124(67.76%)	76(41.53%)	48(26.22%)
Not acceptable practice	43(23.50%)	29(15.84%)	14(7.65%)

Table 06: Do you think you can treat common ailments with OTC drug by yourself.

Can treat common ailments with OTC drug	Number (%)	Male	Female
Yes, I can	81(44.27%)	58(31.69%)	23(12.56%)
Not sure	96(52.45%)	57(31.14%)	39(21.31%)
No, I cannot	06(3.28%)	03(1.63%)	03(1.63%)

DISCUSSION

Use of OTC drug and self-medication is becoming an increasingly important area within healthcare. World Health Organization considers self-medication as part of the self-care that helps efficient use of the burdened health care system^[14] with guidelines for the regulatory assessment of medicinal products for use in self-medication. The recent trend is to expand the list of over the counter medicines and to increase the availability of controlled drugs; this will give more liberty and choice to the people to take informed treatment decisions.^[8,15]

In our study it was found that among 183 students who filled up questionnaire majority (98.90%) of the participants were aware of OTC drugs. Self-medication was seen among (95.09%) of the medical students. In another study conducted among medical students in Karnataka revealed 53% students practicing self-medication.^[16]

Regarding the morbidities which prompted the medical students to practice self-medication, Fever (36.07%) was most common followed by Headache (28.41%). In studies conducted among first-year medical students in Bahrain (2006).^[17] Headache was the most common one (70.9%) followed by cough/common cold, stomach-ache, and fever and also it differs from a study carried out in South India which revealed cough and cold as the most common reason.^[18]

In response to the question on the frequency of use of over the counter drugs most of the students responded that they used these drugs rarely (73.22%) or once in 15 days or once a month. In this study authors did not come across students using OTC drugs chronically.

In our study 55.19% stated that the reason behind self-medication is "Minor Ailment why see Doctor Advice" followed by Available freely on the counter (22.96%).

Since the study involved 2nd year MBBS students most of them were aware of the trade names or constituent salts of the drugs. Very few students reported adverse drug reaction with commonly used OTC medications. In

our study only 30 students (16.54%) reported any adverse drug reaction.

Looking at the source of information used to know about OTC drugs, Text books / journals (40.43%) was the most common source followed by Self-learning through internet (22.40%) which is similar to a comparable conducted studies.^[18,19,20] On the contrary, other studies revealed the source of information as self decision^[21], seniors^[22,23], family and friends^[24,25] and previous prescriptions.^[26,27,28,29] It is a common tendency among medical professionals to practice self-medication when they themselves feel sick. The practice of self-medication gets incorporated in the medical professional's right from their undergraduate days.

An important limitation of our study is comparison of the usage pattern with other sections of the society as well as hospital staff (nurses). Another important aspect could have been comparison of OTC drug consumption and pattern by rural and urban population.

Authors would like to follow up present study with sessions on awareness regarding OTC drug use. Periodic training and talks on self-medication are necessary for MBBS students. The inputs of the training will be basics of pharmacology, adverse effects of drugs, and prescription drugs and its importance. This will sensitize the students regarding the irrational use of medicines in terms of Self-medication and will also guide in the designing various health education strategies which, are required to educate the students and the community in large.

It should always be emphasized that students should make it a habit to inquire about the use of over the counter drugs from their patients while taking history. Some of these OTC drugs can contribute to important drug-drug interactions. Student knowledge in this aspect will help them in future counseling of their patients.

CONCLUSION

This cross-sectional study has found that use of OTC drugs is very common among medical students,

facilitated by the easy availability of drugs, and information from textbooks/seniors. A significant number of students are unaware of the adverse effects of the medication that they themselves take and suggest to others. Being medical students, use of OTC drugs emerge as a huge problem, they not only use OTC drugs but also suggest these drugs to their friends, family members and other members of society who seek their help. Potential problems of inappropriate use of OTC drugs should be emphasized to the students to minimize this risk. Restriction of sale of drugs with potentially harmful effects should be implemented effectively with monitoring systems between the physicians and pharmacists. Steps can also be taken to educate pharmacists on the need to cross-check with the prescribing physician while dispensing such drugs.

In our study being a Medical student 22.4% of them take help of Internet as source of Information for self-medication and OTC then what is the percentage in general public?? There is higher chances of use of internet in general public without knowing ADRs and drug interaction so there is need to do this type of study in general public also and the regulatory authorities also take attention on this type of practice of self-medication with OTC drugs.

ACKNOWLEDGEMENTS

We are thankful to all the 2nd year Medical students of Ganesh Shankar Vidyarthi Memorial (GSVM) Medical College for spending their valuable time to answer our questionnaire that helped us to successfully complete our study.

REFERENCES

- Food and Drug Administration (FDA). Drugs @ FDA Glossary of Terms. Available at <http://www.fda.gov/Drugs/informationondrugs/ucm079436.htm>. Accessed July 15, 2011.
- McCabe SC, Teterb CJ, Boyda CJ. (Illicit use of prescription pain medication among college students). *Drug and Alcohol Dependence*, 2005; 77(1): 37-47.
- Ferris DG, Nyirjesy P, Sobel JD, Soper D, Pavleti A, Litaker MS. (Over the Counter Antifungal Drug Misuse Associated With Patient Diagnosed Vulvovaginal Candidiasis). *Obstet Gynecol*, 2002; 99(3): 419-25.
- Calabresi P, Cupini LM. (Medication-overuse headache: similarities with drug addiction). *Trends Pharmacol Sci*, 2005; 26(2): 62-8.
- French L, Horton J, Matousek M. (Abnormal vaginal discharge: what does and does not work in treating underlying causes). *J Fam Pract*, 2004; 53(11): 805-14.
- Ashina S, Zeeberg P, Jensen RH, Ashina M. (Medication overuse headache). *Ugeskr Laeger*, 2006; 168(10): 1015-9.
- Badiger S, Kundapur R, Jain A, Kumar A, Pattanshetty S, Thakolkaran N et al. (Selfmedications pattern among medical students in South India). *Australasian Medical Journal*, 2012; 5(4): 217-20.
- James H, Handu SS, Khalid AJ, Khaja A, Ootom S, Sequeira RP. (Evaluation of the Knowledge, Attitude and Practice of Self-Medication among first-Year Medical Students). *Med Princ Pract*, 2006; 15: 270-275.
- Hem E, Stokke G, Reidar Tyssen R, Grønvold NT, Vaglum P, Ekeberg O. (Self-prescribing among young Norwegian doctors: a nine-year follow-up study of a nationwide sample). *BMC Med*, 2005; 3: 16.
- Pagane JA, Ross S, Yaw J, Polsky D. (Self medication and health insurance coverage in Mexico). *Health Policy*, 2007; 75: 170-7.
- Abay SM, Amelo W. (Assessment of Self-Medication Practices among Medical, Pharmacy, Health Science Students in Gondar University, Ethiopia). *Journal of Young Pharmacists*, 2010; 2(3): 306-10.
- Vedrana AV, Vladimir T, Zdravko L. (Content of home pharmacies and self medication practices in households of pharmacy and medical students in Zagreb, Croatia). *Croat. Med. J*, 2005; 46(1): 74-80.
- Martins AP, Miranda AC, Mendes Z, Soares MA, Ferreira P, Nogueira A. (Self medication in a Portuguese urban population: a prevalence study). *Pharmacoepidemiol Drug Saf*, 2002; 11(5): 409-14.
- World health organization. WHO guidelines for the regulatory assessment of medicinal products for use in self-medication. WHO/EDM/QSM/00.1. 2000. accessed on 5 July 2011, URL:<http://apps.who.int/medicinedocs/pdf/s2218e/s2218e.pdf>
- Bretagne JF, Richard-Molard B, Honnorat C, Caekaert A, Barthélemy P. (Gastroesophageal reflux in the French general population: national survey of 8000 adults). *Presse Med*, 2006; 35(1): 23-31.
- G. K. Nalini. Self-Medication among Allopathic Medical Doctors in Karnataka, India. *BJMP*, 2010; 3: 325.
- James H et al. Evaluation of the knowledge, attitude and practice of self-medication among first-year medical students. *Med Princ Pract*. 2006; 15: 270-5.
- Gaikwad NR, Patil AB, Khan TA. Comparative evaluation of knowledge, attitude and practice of self-medication among first and second year medical students. *J Datta Meghe Inst Med Sci Univ.*, 2010; 5: 157-62.
- Sontakke SD, Bajait CS, Pimpalkhute SA, Jaiswal KM, Jaiswal SR. Comparative study of evaluation of self-medication practices in first and third year medical students. *Int J Biol Med Res.*, 2011; 2: 561-4.
- Abay SM, Amelo W. Assessment of self-medication practices among medical, pharmacy, and health science students in Gondhar University, Ethiopia. *J Young Pharm*, 2010; 2: 306-10.
- Gutema GB, Gadisa DA, Kidanemariam ZA, Berhe DF, Berhe AH, Hadera MG, et al. Self-medication

- practices among health sciences students: The case of Mekelle University. *J Appl Pharm Sci.*, 2011; 1: 183–9.
22. Girish HO, Divya HM, Prabhakaran S, Venugopalan PP, Koppad R. A cross-sectional study on self medication pattern among medical students at Kannur, North Kerala. *J Evol Med Dent Sci.*, 2013; 2: 8693–700.
 23. Mumtaz Y, Jahangeer SM, Mujtaba T, Zafar S, Adnan S. Self-medication among university students of Karachi. *J Liaquat Univ Med Health Sci.*, 2011; 10: 102–5.
 24. Patel PM, Prajapati AK, Ganguly B, Gajjar BM. Study on impact of Pharmacology teaching on knowledge, attitude and practice on self-medication among medical students. *Int J Med Sci Public Health*, 2013; 2: 181–6.
 25. Badiger S, Kundapur R, Jain A, Kumar A, Patanashetty S, Thakolkaran N, et al. Self-medication patterns among medical students in South India. *Australas Med J.*, 2012; 5: 217–20.
 26. Kumar N, Kanchan T, Unnikrishnan, Rekha T, Mithra P, Kulkarni V, et al. Perceptions and practices of self-medication among medical students in coastal South India. *PLoS One.*, 2013; 8: e72247.
 27. Kumari R, Kiran, Kumar D, Bahl R, Gupta R. Study of knowledge and practices of self-medication among medical students at Jammu. *J Med Sci.*, 2012; 15: 141–4.
 28. Pandya RN, Jhaveri KS, Vyas FI, Patel VJ. Prevalence, pattern and perceptions of self-medication in medical students. *Int J Basic Clin Pharmacol*, 2013; 2: 275–80.
 29. Bashir MS, Bansod KA, Khade A, Konnoju M, Rani U, Vadala KK. Self-medication A comparative study between 2nd and 3rd year medical students. *Int J Basic App Med Sci.*, 2013; 3: 1–7.