

# Research Journal of Pharmaceutical, Biological and Chemical Sciences

## Study of Self Medication Practice among 2<sup>nd</sup> Year Undergraduate Medical Students.

Sunil S Gidamudi<sup>1\*</sup>, Sujata A Jadhav<sup>2</sup>, Chitra C Khanwelkar<sup>2</sup>, Vandana M Thorat<sup>2</sup>, Rohit R Desai<sup>3</sup>, Abhay A Purohit<sup>2</sup>.

<sup>1</sup>Department of Pharmacology, BKL Walawalkar Rural Medical College, Kasarwadi, Maharashtra, India.

<sup>2</sup>Department of Pharmacology, Krishna Institute of Medical Sciences, Karad, Maharashtra, India.

<sup>3</sup>Senior Pharmacovigilance Physician, Quintiles India Pvt Ltd., Bengaluru, Karnataka, India.

### ABSTRACT

To assess and analyze the self-medication practice among 2<sup>nd</sup> year undergraduate medical students. To evaluate factors associated with self-medication. To investigate types of medication commonly used to self-medicate. This was cross-sectional, descriptive, questionnaire based study with three months illness recall. The pre validated questionnaire containing both open-ended and close-ended questions was used for the study. The questionnaire was distributed to all 2<sup>nd</sup> year students attending the Pharmacology class on particular day. Results were analyzed by descriptive statistics. A total of 151 students participated in the study. 93.38% students had self-medicated in the last three months. The drugs most commonly used were the paracetamol (75.18%), cetirizine (28.37%), azithromycin (14.89%) and omeprazole (12.06%). The most common indications were the URTI (75.89%), fever (54.6%), headache (35.46%) and gastric acidity (24.82%). Prior experience (45.39%) was the most common factor associated with self-medication and most common information source being the advice from physician but without prescription (38.29%). Self-medication was most commonly practiced among students of the institute. So, faculties should create awareness and educate the students regarding advantages and disadvantages of self-medication.

**Keywords:** Questionnaire, Indications, Prior experience, Information source.

*\*Corresponding author*



## INTRODUCTION

Self-medication is the selection and use of medicines to treat symptoms or illness.(1) Self-medication is the use of drugs, sometimes prescription drug, sometimes illicit, without consultation with medical personnel.(2) Self-medication is not only involves use of drugs, but also the herbs or house hold remedies on one's own manoeuvre or advice from the others.(3) Over-the-counter drugs are a form of self-medication. The buyer diagnoses their illness and buys a specific nonprescription drug to treat it.(4)

The World Self-Medication Industry (WSMI) define self-medication as "the treatment of common health problems with medicines especially designed and labeled for use without medical supervision and approved as safe and effective for such use."(5)

Self-medication nowadays is most commonly practiced worldwide and is one of the components of self-care. In India also the self-medication is practiced in large scale.(6) Since self-medication involves the drug usage, it has the possibility to do good as well as harm, unlike other modes of self-care.(7)The World Health Organization (WHO) has mentioned that the diseases that do not require medical consultation can be prevented and treated by responsible self-medication and provides a cheaper alternative for treating common illnesses.(8) Authentic medical information must be the basis for the practice of self-medication otherwise there will be wastage of resources, increased pathogenic resistance due to irrational use of drugs, which can also lead to serious health related hazards such as adverse drug reaction and increased morbidity.(9) In India and other developing countries, self-medication is a common practice as it gives a low cost alternative for people who cannot afford the clinical service of high cost and also as many drugs are available over the counter without prescription.(10)

Self-medication in the medical students gives a special significance as they are the next generation medical practitioners.(11) Self-medication by medical students could result in an extraordinarily negative impact in the society.(12) Studies have shown many reasons for the increased self-medication among medical students. These students can easily access to the information from drug indices, drug literature and self-diagnose themselves and self-medicate. In addition, they have easy access to the medication.(13) The medical students have a great role in counseling the patients and patient relatives about the advantages and disadvantages of self-medication.(11) Medical students vary from the general population because they have the knowledge of diseases and drugs.(11) Hence this study had been undertaken to assess the prevalence, to evaluate the factors associated with self-medication and the common drugs used to self-medicate in undergraduate medical students.

## MATERIALS AND METHODS

**Source of data:** 2<sup>nd</sup> year undergraduate medical students studying in Krishna Institute of Medical Sciences Deemed University, Karad, Maharashtra, India.

**Study Design:** A cross-sectional questionnaire-based study.

### Method of collection of Data:

The pre-validated questionnaire containing open-ended and closed-ended questions was prepared and used for the study. The questionnaire was distributed to all students attending the Pharmacology class on particular day. Permission to carry out this project was obtained from the Principal of the Institute and the institutional ethics committee. Students were given the questionnaire at the beginning of class and were asked to submit the completed questionnaire.

### Study tool: The Questionnaire

The questionnaire consisted of six sections. The first section consisted of demographic data of the students; the second section consisted of Self-medication practiced in the past three months (recall method) and for which disease and also the adverse effect if they felt during the treatment period of self-medication. The third section dealt with the modes of self-medication, the fourth with factors of self-medication, the fifth

contained the information source for the medication used and the sixth section dealt with the attitude of students towards the self-medication practiced.

**Inclusion Criteria:**

- ✓ 2<sup>nd</sup> year undergraduate medical students of the institution.
- ✓ Students of both gender and willing to give informed consent.

**Exclusion Criteria:**

- ✓ Those students who were absent on that particular day.
- ✓ Those who are not willing to give informed consent.

**Ethical Permission:**

Ethical permission obtained from Institutional Ethics Committee. The purpose of the study was explained to the participating students and confidentiality was ensured. Informed consent was obtained from every student before filling the questionnaire.

Data was expressed as counts and percentages and analyzed by descriptive statistics. Some of the questions had multiple responses to select from; therefore sum total of percentages was more than 100%.

**RESULTS**

Total 151 students were participated in the study. All were completed the questionnaire correctly giving a response rate of 100%. Out of 151 students 50.33% (n=76) were males and 49.67% (n=75) were females. Majority were in the age group of 18-20 years. (Table 1)

**Table 1: Socio-demographic characteristics**

Socio-demographic data		Number of students n=151	Percentage (%)
Gender	Males	76	50.33
	Females	75	49.67
Age group	18-20 yrs	120	79.47
	21-25 yrs	31	20.53
Phase of study	II/I	21	13.91
	II/II	110	72.85
	II/III	20	13.24

Out of 151 students, 93.38% (n=141) were practiced self-medication in past three month and 6.62% (n=10) were not practiced the self-medication.

The principal morbidities for seeking self-medication included cough and common cold (URTI) as reported by 75.89% (n=107) students, followed by fever 54.6% (n=77), headache in 35.46% (n=50) and gastric acidity 24.82% (n=35) students. (Table 2)

**Table 2: Principal morbidities for seeking self-medication**

Sl. No.	Morbidities	Number of students	Percentage (%)
1	URTI	107	75.89
2	Fever	77	54.60
3	Headache	50	35.46
4	Gastric Acidity	35	24.82
5	Myalgia	22	15.6
6	Allergy	19	13.48
7	Diarrhea	17	12.06
8	Abdominal Pain	11	7.801
9	Dysmenorrhea	8	5.674
10	Nasal Congestion	6	4.255
11	Mouth Ulcer	5	3.546
12	Others	24	17.02

The drugs most commonly used for pain relief were paracetamol in 75.18% (n=106), paracetamol and ibuprofen combination in 11.35% (n=16), diclofenac in 7.09% (n=10), followed by ibuprofen in 4.96% (n=7), nimesulide in 3.54% (n=5), paracetamol and dicyclomine combination in 2.13% (n=3) students.

The drugs self-medicated for respiratory symptoms were cetirizine in 28.37% (n=40), paracetamol + caffeine + phenylephrine + chlorpheniramine combination in 13.48% (n=19), xylometazoline in 5.67% (n=8) followed by chlorpheniramine and codeine combination in 4.25% (n=6), dextromethorphan based cough syrup in 3.54% (n=5) and fexofenadine in 2.83% (n=4) students.

The drugs used for gastrointestinal symptoms were omeprazole in 12.06% (n=17), aluminium hydroxide + magnesium aluminium silicate + magnesium hydroxide combination in 12.06% (n=17), ranitidine in 4.96% (n=7) followed by atropine and diphenoxylate hydrochloride combination in 2.13% (n=3), hyoscine in 2.13% (n=3) and bisacodyl in 1.42% (n=2) students.

The antimicrobial agents used for self-medication were azithromycin in 14.89% (n=21), cefixime in 2.83% (n=4), metronidazole and furazolidone combination in 2.83% (n=4), ornidazole and ofloxacin combination in 2.83% (n=4) followed by amoxicillin and clavulanic acid combination in 2.13% (n=3), amoxicillin in 1.42% (n=2) and cotrimoxazole in 1.42% (n=2) students. (Table 3)

**Table 3: Drugs commonly used for self-medication**

Sl. No.	Drugs	Number of Students	Percentage (%)
1	Paracetamol	106	75.18
2	Cetirizine	40	28.37
3	Azithromycin	21	14.89
4	Paracetamol + Caffeine + Phenylephrine + Chlorpheniramine	19	13.48
5	Omeprazole	17	12.06
6	Aluminium hydroxide + Magnesium Aluminium Silicate + Magnesium hydroxide	17	12.06
7	Paracetamol + Ibuprofen	16	11.35
8	Diclofenac	10	7.092
9	Xylometazoline	8	5.674
10	Ibuprofen	7	4.965

11	Ranitidine	7	4.965
12	Chlorpheniramine + Codeine	6	4.255
13	Nimesulide	5	3.546
14	Dextromethorphan + CPM + Guaiaphenesin	5	3.546
15	Cefixime	4	2.837
16	Metronidazole + Furazolidone	4	2.837
17	Ornidazole + Ofloxacin	4	2.837
18	Fexofenadine	4	2.837
19	Terbutaline + Bromhexine + Guaiaphenesin	4	2.837
20	Others	52	36.88

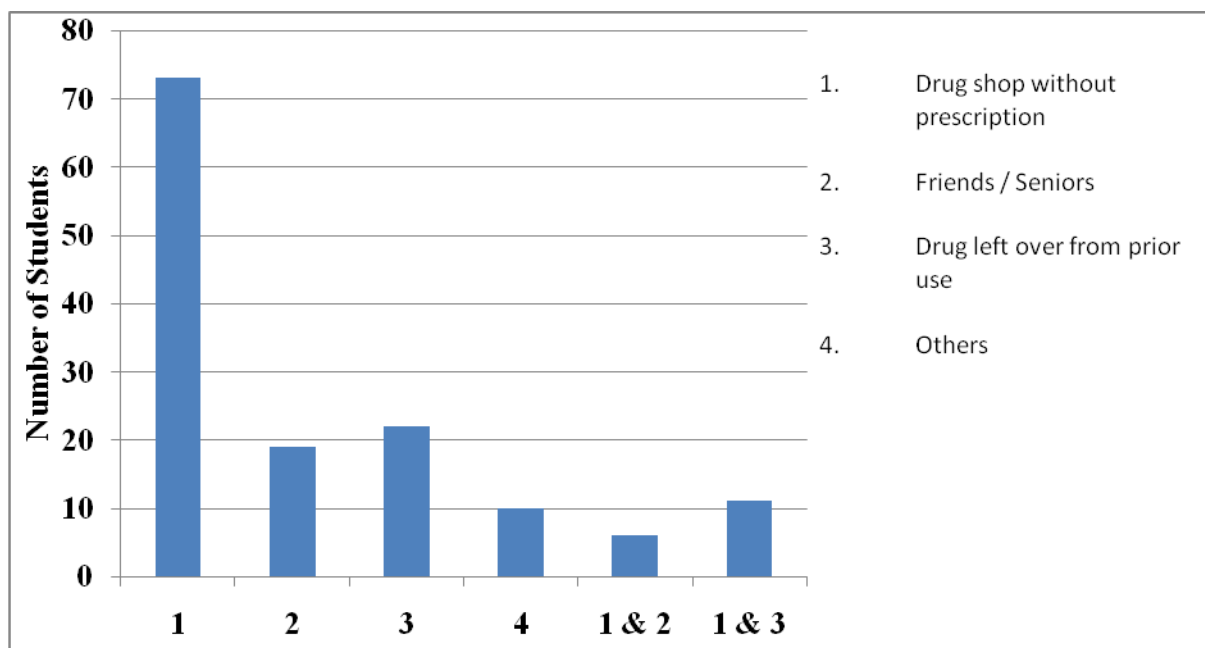
The most common adverse effects encountered during the treatment period were drowsiness in 7.8% (n=11), gastric irritation in 3.55% (n=5) and sedation in 2.13% (n=3) students. (Table 4)

**Table 4: Adverse effects for drugs used for self-medication**

Sl. No.	Adverse Effect	Number of Students	Percentage (%)
1	Drowsiness	11	7.8%
2	Gastric Irritation	5	3.55%
3	Sedation	3	2.13%
4	Loose Stools	2	1.42%
5	Skin Rashes	1	0.71%
6	Tingling, Numbness	1	0.71%

The common mode for seeking self-medication was drug shop without prescription in 51.77% (n=73), followed by drug left over from prior use in 15.6% (n=22) and from friends / seniors in 13.47% (n=19) students. (Graph 1)

**Graph 1: Mode of self-medication**

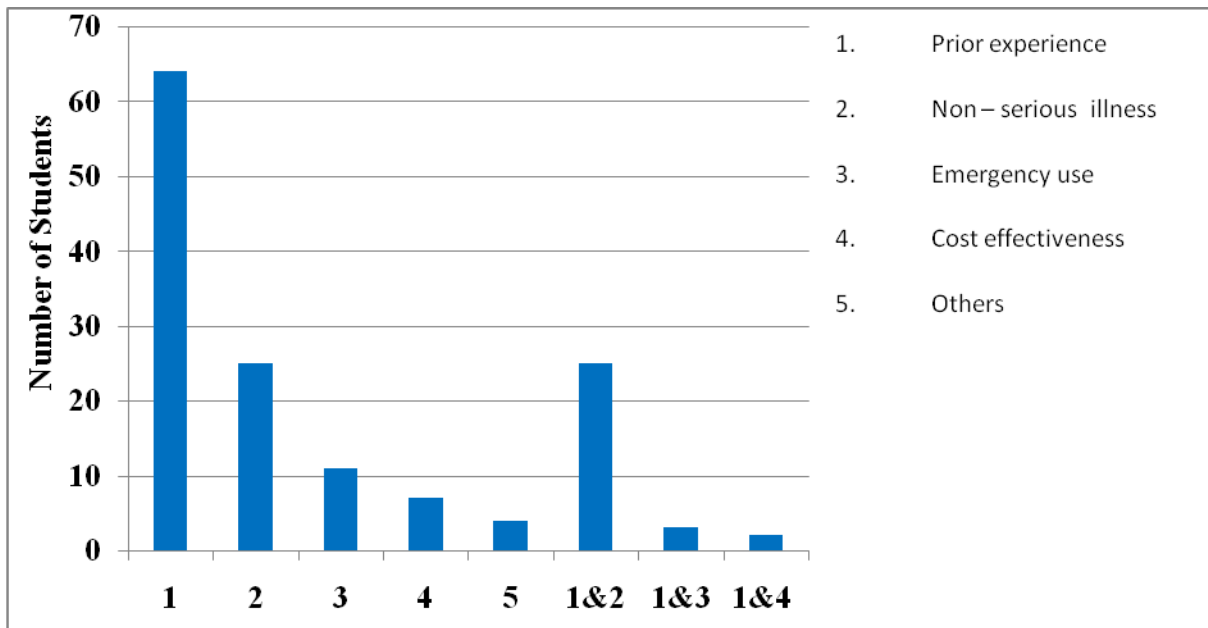


Prior experience in 45.39% (n=64) was the factor which influenced the most for self-medication followed by non – serious illness in 17.73% (n=25) and emergency use in 7.8% (n=11) students. (Graph 2)

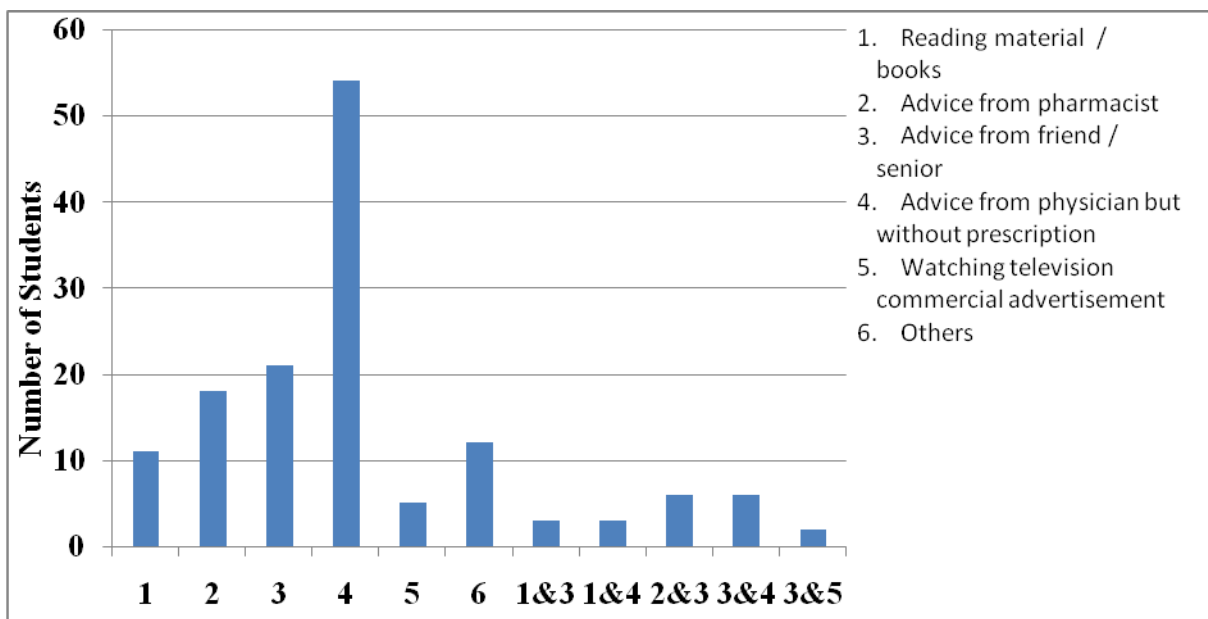
The common information source for the self-medication used were the advice from physician but without prescription in 38.29% (n=54) followed by advice from friend / senior in 14.89% (n=21) and advice from pharmacist in 12.76% (n=18) students. (Graph 3)

58.86% (n=83) students agreed for the self-medication used in certain situations, where as 16.31% (n=23) students disagree for the same and 24.82% (n=35) students dint comment over the practice of self-medication. (Graph 4)

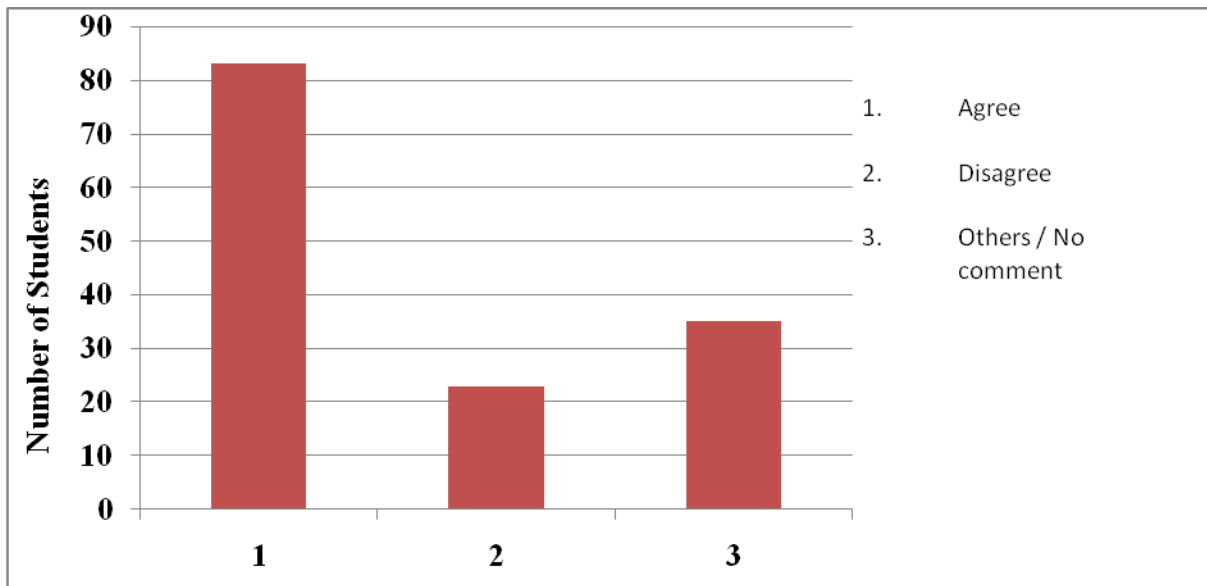
**Graph 2: Factors influencing for self-medication**



**Graph 3: Information source for the self-medication used**



**Graph 4: Attitude of students towards self-medication**



**DISCUSSION**

In this study, response rate of the students was 100%; out of which, 93.38% were practiced self-medication. This is much higher than other similar studies conducted in India i.e. 57.05% in a study conducted in West Bengal(11); 78.6% in Mangalore, Karnataka(1) and 88.18% in Gulbarga, Karnataka.(9) In the studies conducted outside India have the prevalence rate of self-medication were 25.4% in Ethiopia,(14) 55% in Egypt(15) and 55.3% in Karachi.(16)

In our study, the common morbidities seeking for self-medication were cough, cold, fever and headache which are similar to the other studies conducted for undergraduate medical students.(1, 9, 11)Paracetamol was the most commonly used drug to self-medicate in our study followed by the cetirizine and azithromycin which is similar to the studies in Mangalore, Karnataka(1) and Ethiopia(14) where antipyretics were the most commonly used drugs; whereas studies conducted in West Bengal(11) and Gulbarga, Karnataka(9), the common drugs used to self-medicate were the antimicrobial agents. The prevalence of adverse effects observed was 16.31% (n=23) in this study. In a study conducted in Gulbarga, Karnataka(9) the prevalence rate for adverse effects observed was 6.19%.

The common mode for seeking self-medication was drug shop without prescription followed by drug left over from prior use in this study. Old prescriptions were the common mode in other studies.(1, 9) In our study, the prior experience was the most influencing factor for seeking self-medication, whereas mild nature of illness was the common influencing factor in other studies.(1, 9) In other study, time saving was mentioned as the most common reason for self-medication.(17)

The most common information source was advice from physician but without prescription in our study, but it was the text books in another study from India(18) as well as Ethiopia.(14) In this study, 58.86% students feel that self-medication is the part of self-care and belief in practicing self-medication and 24.82% students dint comment on the practice of self-medication which is similar to the other Indian studies.(1, 9)

**LIMITATIONS OF THE STUDY**

The study was depended on self-reported data about self-medication in the past three months thus more chances of recall bias. Moreover, mutual influence between the students could not be entirely ruled out, though the students were supported to complete the questionnaire independently. A longer time frame could have been considered instead of three months as different diseases come in cycles.

## CONCLUSION

Self-medication was most commonly practiced among students of the institute. This observation is possibly due to their education related to pharmacology; however, their knowledge is incomplete and in certain circumstances it may lead to adverse events which is neglected by many students and may lead to serious adverse reactions. So, faculties should create awareness and educate the students regarding advantages and disadvantages of self-medication. At the same time it is very important to educate not only the students and population; but also the pharmacists regarding the over the counter drugs and schedules of Drugs and Cosmetics Act (DCA).

## ACKNOWLEDGEMENT

The authors wish to acknowledge the students for participating in this study and the Principal of the institution for giving the permission to conduct the study.

## REFERENCES

- [1] Kumar N, Kanchan T, Unnikrishnan B, 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(8):e72247.
- [2] Boateng DP. Self-medication among doctors and pharmacists at the Korle Bu Teaching Hospital: Department of Clinical and Social Pharmacy, Kwame Nkrumah University of Science and Technology; 2009.
- [3] Hernandez-Juyol M, Job-Quesada J. Dentistry and self-medication: a current challenge. *Medicina oral: organo oficial de la Sociedad Espanola de Medicina Oral y de la Academia Iberoamericana de Patologia y Medicina Bucal*. 2001;7(5):344-7.
- [4] Olayemi O, Olayinka B, Musa A. Evaluation of antibiotic self-medication pattern amongst undergraduate students of Ahmadu Bello University (Main Campus), Zaria. *Research Journal of Applied Sciences Engineering and Technology*. 2010;2(1):35-8.
- [5] Puwar B. Self medication practice among adults of Ahmedabad city. *Healthline*. 2012;3(2):24-6.
- [6] Banerjee I, Bhadury T. Self-medication practice among undergraduate medical students in a tertiary care medical college, West Bengal. *Journal of postgraduate medicine*. 2012;58(2):127.
- [7] Bajait C, Pimpalkhute S, Jaiswal K, Jaiswal S. *International Journal of Biological & Medical Research*. Int J Biol Med Res. 2011;2(2):561-4.
- [8] WHO. The role of the pharmacist in self-care and self-medication. 1998 [cited 2015 June 18]; Available from: <http://apps.who.int/medicinedocs/pdf/whozip32e/whozip32e.pdf>.
- [9] Patil SB, Vardhamane S, Patil B, Santoshkumar J, Binjawadgi AS, Kanaki AR. Self-Medication Practice and Perceptions Among Undergraduate Medical Students: A Cross-Sectional Study. *Journal of clinical and diagnostic research: JCDR*. 2014;8(12):HC20-3.
- [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. 2011:183-9.
- [11] Banerjee I, Bhadury T. Self-medication practice among undergraduate medical students in a tertiary care medical college, West Bengal. *Journal of postgraduate medicine*. 2012;58(2):127-31.
- [12] Ehigiator O, Azodo C, Ehikhamenor E. Self-medication with antibiotics among Nigerian Dental Students. *Tanzania Dental Journal*. 2010;16(2):48-53.
- [13] Bennadi D, Nandita K, Mythri H. SELF MEDICATION PROFILE AMONG DENTAL STUDENTS, TUMKUR, INDIA. *Asian Journal of Pharmaceutical and Clinical Research*. 2013;6(4):210-2.
- [14] Abay S, 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.
- [15] El Ezz N, Ez-Elarab H. Knowledge, attitude and practice of medical students towards self medication at Ain Shams University, Egypt. *Journal of preventive medicine and hygiene*. 2015;52(4):196-200.
- [16] Zafar SN, Syed R, Waqar S, Irani FA, Saleem S. Prescription of medicines by medical students of Karachi, Pakistan: A cross-sectional study. *BMC Public Health*. 2008;8(1):162.
- [17] Pandya RN, Jhaveri KS, Vyas FI, Patel VJ. Prevalence, pattern and perceptions of self-medication in medical students. *International Journal of Basic & Clinical Pharmacology*. 2013;2(3):275-80.
- [18] Badiger S, Kundapur R, Jain A, Kumar A, Pattanshetty S, Thakolkaran N, et al. Self-medication patterns among medical students in South India. *The Australasian medical journal*. 2012;5(4):217-20.