

## A SURVEY OF KNOWLEDGE, ATTITUDE AND PRACTICES OF SELF MEDICATION IN PUNE REGION

Kasabe Gauri H, Tiwari Smita A, Ghongane Balasaheb B

### ARTICLE INFO

Received: 20<sup>th</sup> Jun 2015

Revised: 30<sup>th</sup> Jul 2015

Accepted: 31<sup>st</sup> Aug 2015

**Authors details:** Department of Pharmacology, BJ Government Medical College, Pune, Maharashtra, India

**\*Corresponding author:** Kasabe Gauri H  
Department of Pharmacology, BJ Government Medical College, Pune, Maharashtra, India  
**Email:** gauri.kasabe248@gmail.com

**Keywords:** Antibiotic resistance, self medication, over-the-counter drugs, post graduate medical students

### ABSTRACT

**Background:** Paucity of drug related information and easy accessibility to over-the-counter drugs has contributed to the high incidence of self-medication. Strict regulations regarding drug dispensing and community awareness of related issues is need of the hour. **Aim:** To do the Survey of Knowledge, Attitudes and Practices about self medication in medical, non medical and patients group in Pune region. **Methods:** This questionnaire based study was carried out in postgraduate medical students, non-medical graduate students and patients. **Results:** 30 from each group- Postgraduate medical students, non-medical graduate students and patients participated in the study. All of the post graduate medical students and non-medical graduate students self medicate, 90% of patients self medicate. The reason for self medication of 87% of post-graduate students is convenience and that form on-medical graduate students and patients is commonly cost saving. **Conclusion:** Media and pharmacists play an important role in decision of self-medication in lesser educated population; this can be modified into an advantage by utilizing it for creating awareness about the growing antibiotic resistance in the society amongst the common population and also making them aware of certain drug schedules of primary concern to them. The awareness needs to be created in the common population, that certain patient sub-groups e.g. Patients on polypharmacy, pregnant patients, those with liver/ kidney disorders and extremes of age should possibly consult a physician before self-medicating even with OTC for safety concerns. Therefore future research may be needed to study the outcome of such patient education and its impact.

### INTRODUCTION

Self-medication is defined as the selection and use of medicines by individuals (or a member of the individuals' family) to treat self-recognized or self-diagnosed condition or symptoms<sup>[1]</sup>. Paucity of drug related information and easy accessibility to over-the-counter drugs has contributed to the high incidence of self-medication. Strict regulations regarding drug dispensing and community awareness of related issues is need of the hour. An epidemiological study conducted in Brazil included 1,509 working nurses, it reported a prevalence of 24.2% of self-medication in this subset of population<sup>[2]</sup>. This study makes us aware of the fact that internationally too, self medication has been on the rise.

In India certain common problems viz. headache, fever, flu, diarrhoea and sore throat are being treated at home. Whereas some minor ailments can be relieved with over the counter (OTC) medications such as Paracetamol or with some other traditional or herbal medicines, without physician consultation<sup>[3]</sup>. The trend is increasing among youths and common among students.<sup>[4]</sup>

Antibiotic resistance is a worldwide growing problem, with negative patient outcomes. Antimicrobial-resistant pathogens have become a threat to patients and have also increased health care costs.<sup>5</sup> Noncompliance with infection control precautions and the inappropriate use of antimicrobial agents have been identified as the main risk

factors for the emergence of antimicrobial resistance<sup>[6,7]</sup>. It also leads to increase in the economic burden as many patients have to be started on higher antibiotics. There are potential risks of self-medication practices such as incorrect self-diagnosis, delays in seeking medical advice when needed, infrequent but severe adverse reactions, dangerous drug interactions, incorrect manner of administration, incorrect dosage, incorrect choice of therapy, masking of a severe disease and risk of dependence and abuse<sup>[8]</sup>. Medicines act as a double edged sword they can restore your health and improve the quality of your life; at the same time, if it is not used correctly can cause serious harm to your body. In this purview, Dr Mashelkar report advises inclusion of OTC (Over The Counter) drugs in Schedule K to ensure quality and timely availability of commonly required medicines to the lay population<sup>[9]</sup>. The phrase "OTC" has no legal recognition in India, all the drugs not included in the list of prescription-only drugs" are considered to be non-prescription drugs (or OTC drugs). OTC Drugs means drugs legally allowed to be sold "Over The Counter" by pharmacists, i.e. without the prescription of a Registered Medical Practitioner<sup>[9]</sup>. Over the counter drugs (OTC) are meant for self medication and are of proven efficacy and safety, yet their improper use due to lack of knowledge of their side effects and interactions could have serious

implications, especially in extremes of ages (children and old age) and special physiological conditions like pregnancy and lactation<sup>[10]</sup>. The problems due to self-medication are magnified when non-OTC drugs are also used for self-medication. The literature suggests that no sector of the medical community is immune to the problem of drug abuse of which the worst offenders include physicians<sup>[11,12]</sup>. Both general drug knowledge and access to prescription medications are potential factors for self-prescribing<sup>[13]</sup>.

The details of rational and good prescribing practices are imbibed in all medical students who study allopathic medicine for four and half years. Other than writing prescriptions they are also trained for identifying, the drug related adverse effects and drug interactions. Such expertise and skills get honed with increasing experience and practice of the physician.<sup>[14]</sup> Other reasons that are responsible for self-medication or self-prescription among physicians include the complaint of extensive demands on their time and relatively unpredictable schedules; special issues of privacy and confidentiality also do arise such that their own medical knowledge may alter their needs or perceived needs for care delivered by others.<sup>[14]</sup> Similarly, various studies have unraveled the fact that self-medication is a common phenomenon amongst doctors and they too are reluctant to seek professional help even if required.<sup>[15]</sup> A study reported that the rate of self-medication with antibiotics amongst doctors was nine out of 10, and that of antidepressant drugs was 50%. An Australia done recently evaluated the beliefs about self-medication in doctors. It found that, 90% doctors supported self-medication in case of acute illnesses whereas 25% of them supported the same in chronic illnesses.<sup>[16]</sup>

**Aim:** To evaluate their current Knowledge, Attitudes and Practices regarding the Self Medication.

## MATERIALS AND METHODS

**Study design:** Analytical Cross sectional survey based study

**Ethical approval:** The study was approved by the BJGMC, Institutional Ethics committee and informed consent was taken from all the volunteers.

**Study period:** A period of 3 months i.e. June, July and August 2014

**Inclusion criteria:** Random selection of post graduate medical students, non-medical graduate students and patients attending various OPD at B.J. Govt. Medical College and SGH Pune, a tertiary care teaching hospital in Western Maharashtra.

Medical Group includes normal healthy volunteers of medical post graduate students of various departments i.e. Medicine, Surgery, Anatomy, Pharmacology, Pathology, Physiology, Preventive and Social Medicine and Non Medical group includes students of Engineering final year and Patients group includes patients attending Medicine, Surgery, Skin and Chest medicine OPD. Volunteers vary in age group from 18 years to 60 years of both sexes.

**Exclusion criteria:** Any past or present Psychiatric history.

**Grouping:** A survey was conducted among the three groups namely, Post graduate medical students, Non-medical graduate students and Patients

**Sample size:** N=90 (In each group n=30)

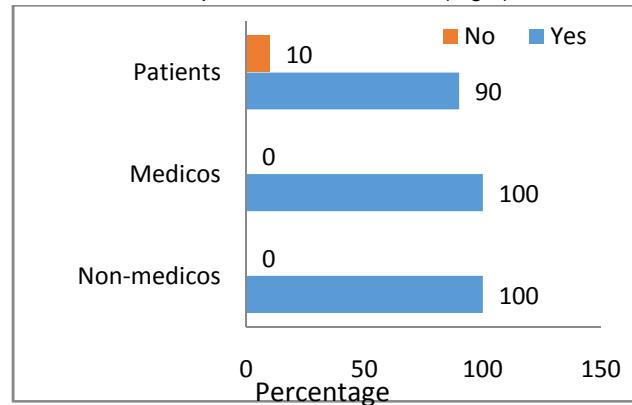
## Methodology

The survey was performed using a semi-structured questionnaire designed by experienced faculty of Pharmacology and these questions were approved by Ethics Committee. It included 20 questions pertaining to the responders' Knowledge, Attitudes and Practices regarding the self-medication. The questionnaire was distributed to fill the answer among 30 post graduate medical students, 30 non-medical graduate students and 30 patients attending various OPD. [Questionnaire mentioned in annexure 1]

**Statistical analysis:** The data was entered in Microsoft excel 2007 for record and calculations. All the results are presented as percentages of total responses.

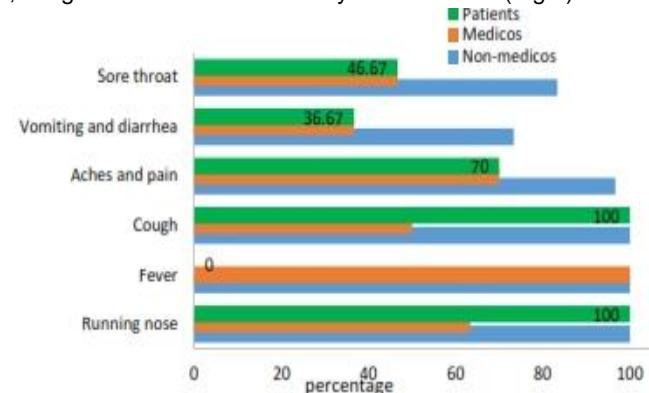
## RESULT

Total of 90 volunteers, 30 from each group- Postgraduate medical students, non-medical graduate students and patients participated in the study. All of the post graduate medical students and non-medical graduate students self-medicate, 90% of patients self-medicate. (Fig 1)



**Fig1: Percentage of self-medication among various groups**

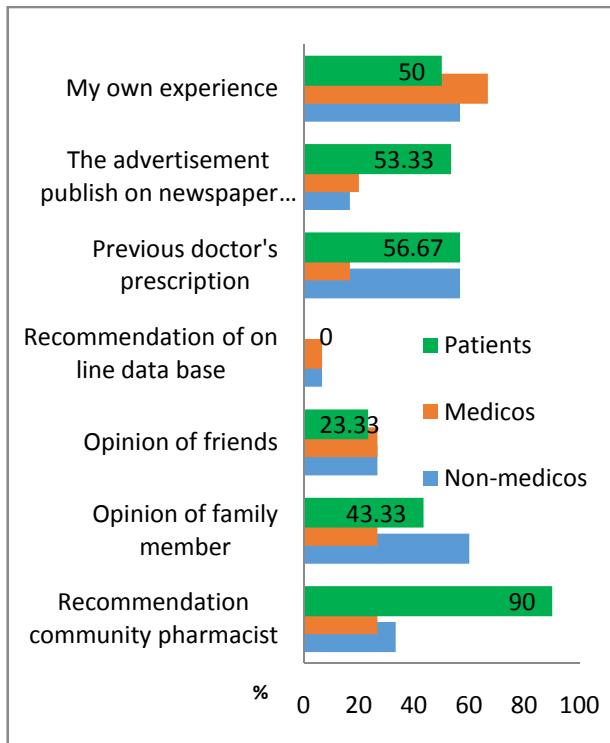
Paracetamol was the most commonly used drug for self-medication in all groups namely post graduate medical students, non-medical graduate students and patients attending various OPD. All of the patients had suffered from running nose and cough and self-medicated for the same, whereas educated non-medical students had running nose, cough and fever for which they self-medicate. (Fig 2)



**Fig 2: Most common indication among various groups**

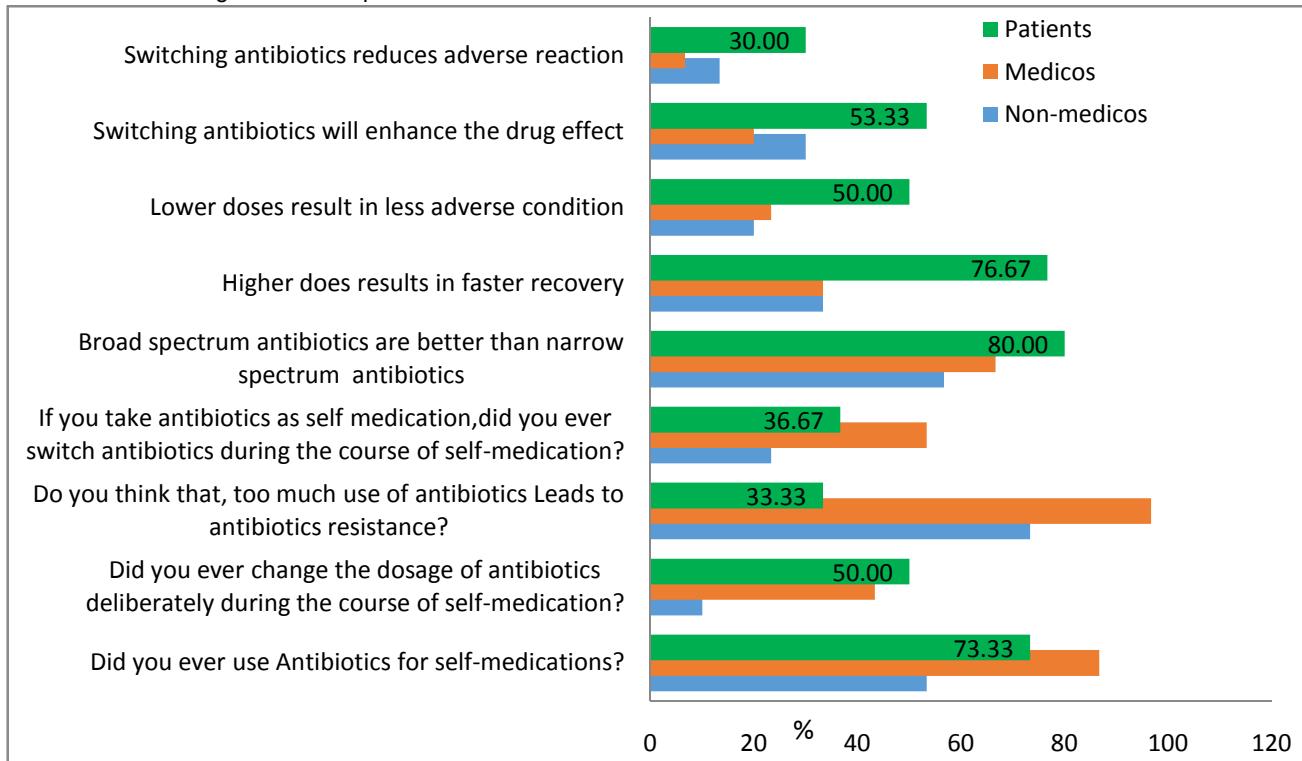
87% of post graduate medical students self-medicate due to convenience, In 73.33%, cost saving is the reason for self-medication. Among Graduate medical students and patients, cost saving is the most common reason for

self medicate. 66.67% of medical students take drugs for self medication as per their own experience. 60% of graduate non-medical students follow opinion of family member for drugs to be taken for self medication. 56.66% take drugs according own experience and previous doctor's prescription. (Fig 3)

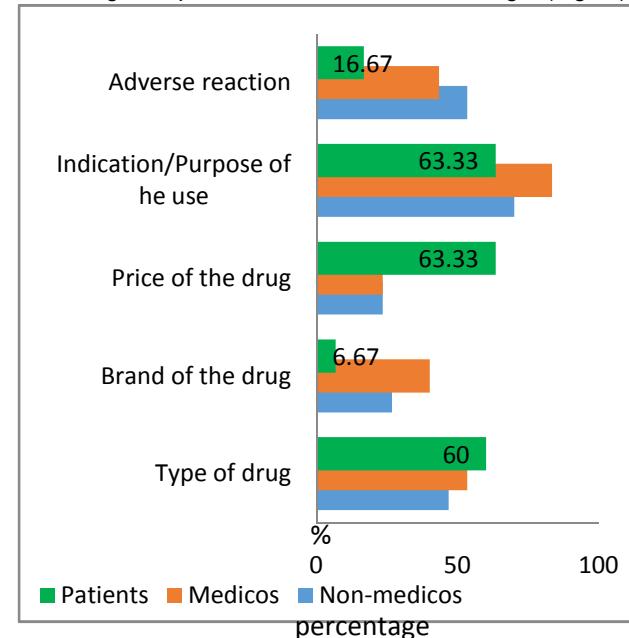


**Fig 3: Methods for selection of drug among various groups**  
And 90% patients follow community pharmacist to take drugs for self medication. 83.33% of medical students take drugs according to indication for which it is used.

70% of graduate non-medical students use drugs as per the indication of drugs. 63.67% of patients take medicines



according to price and indication of drug. (Fig 4)



**Fig 4 : Criteria for selection of drug**

60% medical students have knowledge of doses, duration of therapy, Side effect and interaction of drugs they have used. 36.66% of nonmedical students and only 16% of patients have knowledge of doses, duration of therapy, side effect and interaction of drugs they have used. 50% medical students check package inserts to know the dosage of drug. 60% of nonmedical students consult pharmacist and 63.33% of patients take drugs according to their previous experience. (Table 1)

**Fig 5: Knowledge about Antibiotic Resistance among various groups**

86.67% of medical students, 53.33% of nonmedical students, 73.33% patients take antibiotics for self medication. 43.33% of medical students, 10% of nonmedical students, 73.33% patients change the dosage of antibiotics deliberately during the course of self-medication. 96.66% of medical students, 73.33% of nonmedical students, 33.33% patients think that, too much use of antibiotics Leads to antibiotics resistance. 50% of medical students, 26.67% of nonmedical students, 60% patients experienced side effect of any drug. 66.66% of medical students, 56% of nonmedical students, 80% patients think that Broad spectrum antibiotics (Antibiotics acting over a wide range of infections /or which kill most of the infection) are better than narrow spectrum (Antibiotics acting over a small range of infection/or which kill selected bacteria) antibiotics. 76.67 % of patients think that Higher dose result in faster recovery. 53.33% of medical students, 43.33% of nonmedical students, 76.67 % patients think self medication is a good practice for self health care (Fig 5)

**Table 1: Comparison of knowledge among groups about Self Medication (Refer Annexure 1)**

Parameter (expressed as a percentage of the whole)	PG medical students	Non medical graduate students	Patients
Knowledge of doses, duration of Therapy, Side effect and drug interaction( %)	60%	36.66%	16.66%
Knowledge of package inserts ( %)	90%	56.66%	20%
Knowledge about co-prescription of alternative 'pathies'- Ayurveda( %)	33.33%	46.66%	60%

## DISCUSSION

In present study, Paracetamol was the most commonly used drug for self medication was in all groups namely post graduate medical students, non-medical graduate students and patients attending various OPD. One of the reasons for this could be attributed to fever being the most common indication for self medication followed by running nose and cough. These results are in accordance with another study done in second year nursing students of nursing college of Haryana, where Paracetamol (59.05%), analgesics (39.05%) and antibiotics (26.67%) were commonly used as self medication. Whereas headache (42.86%) was also a contributing factor in this study which prompted use of self-medication<sup>[17]</sup>.

Criteria for selection of drug in patients was cost-driven, whereas in post graduate medical students, non-medical graduate group it was the indication for use, which governed the selection of drug. It is found that, The knowledge about dose, duration of therapy, side effects and interaction was sound in post graduate medical students but it was relatively limited in patients group .A

similar study done in nursing students reported that 59.66% of students had knowledge regarding drugs and 51.26% were aware of possible adverse.<sup>[17]</sup>

In present study, the knowledge of package inserts was also limited in the patient group. Regarding use of medication from other pathies the literate population, e.g. post graduate medical and non-medical graduate students consumed it to a limited extent ,but the lesser educated group i.e the patients (in this study) followed alternative pathies (e.g. Ayurveda etc) far more stringently hence landed up more commonly in drug interactions due to such polypharmacy.

Most patients were influenced by community pharmacist (90%), TV advertisement or newspaper (56.6%) while selecting drug for self medication which means a big representative fraction of society as compared to the educated graduate and postgraduate group which relied less on such information sources. These results are also reinforced in a few studies, which concludes that rural pharmacist do have a role as drug counsellors<sup>[18]</sup> and media and reading material (14.10%) add in further knowledge to assist in choosing drugs for self -medication<sup>[19]</sup>

The patients also used previous doctors' prescription in certain cases which may or may-not be suited for the respective clinical condition, on the contrary may account for additional adverse effects or worsening of the symptoms. On the other hand the more educated group i.e. graduate non -medical students follow opinion of family members or rely on their own experience for self medication.

Antibiotic resistance is a known problem worldwide and is ever growing. One of the main reason is the meagre knowledge about the antibiotic resistance in common population. As rightly pointed in one of the studies that self-medication can lead to incorrect or delay in diagnosis or increased resistance among pathogens due inappropriate use and selection of resistant bacterial strains<sup>[20,21]</sup> . Irrespective of level of education, people amongst all groups in the present study, took antibiotics as a self -medication. Although this study no assess specific indications for antibiotic self-medication but one such study quotes that common cold, sore throat, and sinusitis were the leading cause in European countries and it also emphasized the fact that these conditions are commonly known to be of viral origin , requiring no antibiotic treatment<sup>[21]</sup>. In the present study 50% of lesser educated group had the belief that, lower doses of antibiotic have lesser adverse effect ,76% believed that higher doses result in faster recovery and 80% of them preferred taking broad spectrum antibiotics as against narrow spectrum with the thought that, the earlier have better results. The fascinating paradox is that though educated group was well with aware that antibiotics come under schedule 'H', they used them for self-medication (86.6% and 53.3%).The other important finding of the study is that the lesser educated group despite of having limited knowledge about antibiotic resistance yet changed doses of antibiotics and switch to other antibiotics as and when they felt appropriate. The relevance of this finding lies in the fact that there is an urgent need to sensitize the

common population about the growing perils of antibiotic resistance. An interesting study was done in university students that compared the practise of self-medication with antibiotics. This study reported that though such practises were lesser amongst the pharmacy and nursing colleges as compared to nonmedical students; yet they were irrational as knowledge did not correlate with the behaviour [22] therefore driving home the point that level of education is not an excuse for violating rules of schedule H.

## CONCLUSION

All of the students receiving education of graduate level or above ,self-medicate with the only reason of convenience and the false belief that they have adequate knowledge of drug ,dosage schedule and adverse effects .Whereas lesser educated population mainly self medicate to cut down cost on health-care ,though their knowledge is totally limited about drugs ,schedule and adverse effect. Media and pharmacists play an important role in decision of self-medication in lesser educated population; this can be modified into an advantage by utilizing it for creating awareness about the growing antibiotic resistance in the society amongst the common population and also making them aware of certain drug schedules of primary concern to them. The awareness needs to be created in the common population , that certain patient sub-groups e.g. patients on polypharmacy, pregnant patients, those with liver/ kidney disorders and extremes of age should possibly consult a physician before self-medicating even with Over The Counter Drugs OTC for safety concerns. Therefore future research may be needed to study the outcome of such patient education and its impact.

**Limitation of study:** sample size is small so more research is required to study the effect of Self Medication on antibiotic resistance and drug-drug interactions and more research is required to study Self Medication in patients suffering from different diseases .

**Acknowledgements:** I sincerely thank the College of Engineering students and the Department of Medicine, Surgery, Pharmacology, Skin, B.J.G.M.C. for their help.

**Conflict of interest:** Nil

## REFERENCES

1. Gholap MC, Gholap VR. Assesss the self medication practices among staff nurses. Indian journal of sciences. 2013;4(1):81-84
2. Griep RH, Rotenberg L. Self medication among nursing workers from public hospitals. 2009 ;6:1015-1022
3. Eldalo. Parent self-medication to children. Saudi Journal for Health Sciences .2013;2 2:105
4. Alkhaja KAJ. Evaluation of the knowledge, attitude and practice of self medication among first year student.Medical practice and principle. 2006;15(4):270-275.
5. Cosgrove SE. The relationship between antimicrobial resistance and patient outcomes, mortality, length of hospital stay, and health care costs. Clin Infect Dis. 2006; 42 ( 2 ): S82–S89
6. Ward MA, Diekema DJ, Yankey JW. Implementation of strategies to prevent and control the emergence and spread of antimicrobial-resistant microorganisms in US hospitals. Infect Control HospEpidemiol. 2005; 26:21-30
7. Kollef MH, Micek ST. Strategies to prevent antimicrobial resistance in the intensive care unit. Crit Care Med. 2005; 33:1845-1853.
8. Kenna GA, Wood.Prescription Subscription Use by Pharmacists and Other Health Professionals. Journal of the American Pharmacy Association.2004;44(6 ):684- 693.
9. Ministry Of Health And Family Welfare Government Of India , November 2003, Report Of The Expert Committee On A Comprehensive Examination Of Drug Regulatory Issues, Including The Problem Of Spurious Drugs [cdsco.nic.in/html/html/Final%20Report%20mashelkar.pdf](http://cdsco.nic.in/html/html/Final%20Report%20mashelkar.pdf) cited at 18 June 2015 at 12:10 pm
10. Gholap MC , GholapVR.Assesss the self medication practices among staff nurses.Indian journal of sciences .2013;4(1):81-84
11. Murray MD, Callahan CM .Improving Medication Use for Older Adults: An Integrated Research Agenda. Annals of Internal Medicine.2003; 139: 2425-2459
12. Dabney AD, Onset of Illegal Use of Mind-Altering or Potentially Addictive Prescription Drugs among Pharmacist. Journal of the American Pharmaceutical Association. 2001; 41(3): 392-400
13. Dabney AD, Onset of Illegal Use of Mind-Altering or Potentially Addictive Prescription Drugs among Pharmacist. Journal of the American Pharmaceutical Association. 2001; 41(3): 392-400
14. Balbisi EA, AmbizasEM. Self Prescribing of Non controlled Substances Among Pharmacists. Am J Health-Syst Pharm. 2005; 62(23):2508-2511
15. Rosen, Ilene M, Christie, Jason D, Bellini, Lisa M,Rucinski. J., Cybulski, E .Mentally III Doctors. British Journal of Hospital Medicine.2004;33:90-94
16. Sexton R. Maintaining the Wellbeing of GPS. British Medical Journal.2003;326:7391, S1014
17. Goel D., Gupta S., Self-medication patterns among nursing students in North India.Journal of Dental and Medical Sciences.2013;11(4 ) : 14-17
18. Shakirat Bello, Ibrahim K Bello, community pharmacist impacts on self-medication management among rural Dwellers kwara state central.nigeria.International Journal of Research and Development in Pharmacy and Life Sciences .2013; 2(5): 611-619
19. Girma Belachew Gutema , Girma Belachew Gutema, Diriba Alemayehu Gadisa, Zerihun Abebe Kidanemariam, Derbew Fikadu Berhe, Abera Hadgu Berhe, Mussie ,Ghezu Hadera, Self-Medication Practices among Health Sciences Students: The Case of Mekelle University .Journal of applied pharmaceutical sciences. 2011;01 (10): 183-189
20. Hughes CM. Benefits and risks of self-medication. Drug Saf. 2001; 24: 1027-1037.

21. Nalini G K, Self Medication in Allopathic medical doctors in Karnataka, India. *British journal of medical practitioner*. 2010;3(2):325
22. Ansam F. Sawalha, A descriptive study of self-medication practices among Palestinian medical and nonmedical university students. *Research in Social and Administrative Pharmacy*. 2008(4):164–172