

Influence of pharmacology on knowledge, attitude and practice of self medication in 2nd year medical students: Observational questionnaire based study

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Abstract

Background: Self medication has been misused by use of non-prescription drugs amongst students which has become a serious problem. The youth is especially exposed to the media and the increased advertising of pharmaceuticals poses a larger threat to the young population.

Aims & Objectives: To determine the influence of Pharmacology on Knowledge, Attitude and Practice of Self Medication in 2nd year Medical Students

Materials and Methods: Self administered, semi structured validated questionnaires as pretest will be given at the beginning of 2nd year (3rd term) followed by post test at the end of 2nd year (5th term). Study was done among 105 and 109 in 3rd and 5th term 2nd year medical students.

Results: Out of 118 second year medical students, 105 were of 3rd term and 109 were of 5th term. In 3rd term 58 were males and 47 were females, while in 5th term, 61 were males and 47 were females. In 5th term students knowledge regarding use of drugs for self medication were 106(97.2%), 104(95.4%), 108(99%), 86(78.8%), 69(63.3%) and 94(86.2%) compared to 3rd term students which were 45(42.8%), 36(43.2%), 56(53.3%), 63(60%), 24(22.8%) and 53(50.4%) respectively. Attitude wise 98(89.9%) in 5th term and 82(78%) believe that drug should not be taken which has expired date. 103(94.5%) of 5th term students and 101(96.1%) of 3rd term students had felt the necessity of medical knowledge towards self-medication. Among the participants participating self-medication, majority 96(88%) in 5th term and 91(86.6%) 3rd term followed allopathic system of medicine.

Conclusion: In our study 5th term students were more confident and well versed with pharmacology and hence better knowledge, attitude and practice was observed compared to 3rd term students.

Keywords: Self medication; Pharmacology teaching; Medical students.

1. Introduction

Irrational use of medicines is a major problem worldwide. WHO estimates that more than half of the all medicines are prescribed, dispensed or sold inappropriately, and that of all patients fail to take them correctly.[1] As per WHO, 'rational use of medicines requires that the patients receive medication appropriate to their clinical needs in doses that meet their own individual requirements for an adequate period of time, and at the lowest cost to them and to their community'[3]. Self-medication has certain advantages as it is convenient, economical, and medical resources are not wasted for minor illnesses.[2]

Irrational use of drugs include inappropriate use of antimicrobials, under usage or over usage of drugs, incorrect dose and route of administration, unnecessary use of drug combinations and expensive medicines, polypharmacy and inappropriate self medication.[3]

The World Health Organization has defined self-medication as "use of pharmaceutical or medicinal products by a consumer to treat self-recognized disorders or symptoms, the intermittent or continued use of medication previously prescribed by a physician for chronic or recurring disease or symptom, or use of medication

recommended by lay sources or health workers not entitled to prescribe medicine.”[6]

Self-medication is widely practiced worldwide and often considered as a component of self-care.[3] Self-medication is widely practiced both in developed and developing countries. Medicines for self-medication are often called 'non-prescription' or 'over the counter' (OTC) and are available without a doctor's prescription through pharmacies. Self-medication is now increasingly being considered as a component of self-care.[5]

The problem of self-medication is very high in India as medicines are easily available in chemist shops without a prescription.[5] Use of self-medication is highly prevalent in both urban and rural community varying from 32.5% to 81.5%.[7-9] Self-medication is also reported to be quite popular among Indian medical students.[8] In several studies it has been found that inappropriate self-medication results in wastage of resources, increases resistance of pathogens and generally entails serious health hazards such as adverse drug reactions, prolonged suffering and drug dependence.[10,11] On the other hand, if done appropriately, self-medication can readily relieve acute medical problems, can save the time spent in waiting to see a doctor, may be economical and can even save lives in acute conditions.[5]

The World Health Organization (WHO) has also pointed out that responsible self medication can help to prevent and treat ailments that don't require medical consultation and can provide a cheaper alternative for treating common illnesses. However, it is also recognized that responsible self medication must be accompanied by appropriate health information.[12]

Being future medical practitioners, self-medication is a special concern in medical students. They have easy access to information from various sources like media and advertisements.

Hence, the current study has been undertaken to assess the influence of pharmacology on knowledge, attitude and practice of self medication in medical students and to minimize consequences.

2. Methodology

This was as a questionnaire-based study conducted after getting approval from the Institution Ethics Committee. After obtaining the informed consent and explaining the objective of the study to the 2nd year MBBS students, a self administered, semi structured validated questionnaires as pre-test will be given at the beginning of 2nd year (3rd term) followed by post test at the end of 2nd year (5th term). Study was done among 105 and 109 in 3rd and 5th term 2nd year medical students in BGS Global Institute of Medical Sciences, Bangalore.

The survey was descriptive and data were summarized as frequency and percentages. The χ^2 test was used to test the difference between proportions. A p value of less than 0.05 was considered significant. Some of the questions had multiple options to choose from; therefore the sum total of percentages is not always 100%.

3. Results

The present study was carried out among 105 medical students in 3rd term and 109 medical students in 5th term. In 3rd term 58 were males and 47 were females, while in 5th term, 61 were males and 47 were females. The mean age was 19.9 yrs (Range 19-21 yrs) in 3rd term and 20.6 yrs (Range 19-22 yrs) in 5th term. Among 3rd term, 36 (34.2%) students and in 5th term 105 (96.3%) students knew about generic name; 47 (44.7%) students in 3rd term and 107 (98.16%) students in 5th term knew about expiry date; 23 (21.9%) students in 3rd term and 99 (90.8%) students in 5th term knew about the side effects of the drugs taken.

Table 1: Knowledge regarding drugs used for self-medication

Drugs	3 rd term	5 th term	P value
Generic name	45(42.8)	106(97.2)	<0.0001
Dose	36(34.2)	104(95.4)	<0.0001
Duration	56(53.3)	108(99)	<0.0001
Frequency of administration	63(60)	86(78.8)	0.0027
Side effects	24(22.8)	69(63.3)	<0.0001
Expiry date	53(50.4)	94(86.2)	<0.0001

*Figures in the parentheses indicates percentage

Figure 1: Attitude towards duration of Antibiotic treatment

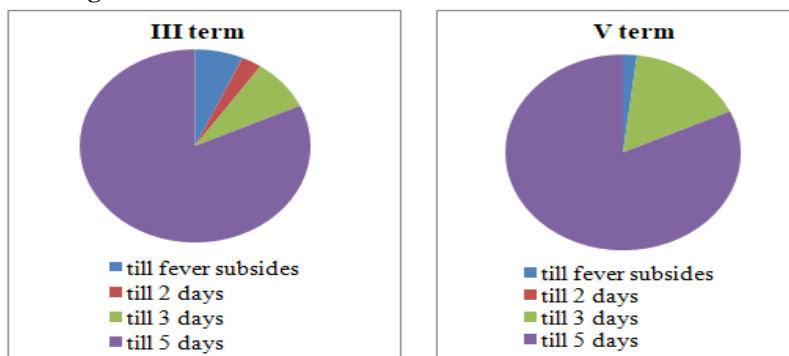


Table 2: Attitude on self medication

Questionnaire	3 rd term	5 th term	P value
1. Do you think self medication is a good practice?			
Yes	17(16.1)	37(33.9)	0.0028
No	88(83.8)	72(66)	0.0028
2. What is your attitude towards expiry date?			
Can be taken without second thought	2(1.9)	0(0)	
Can be taken knowing little risk	21(20)	9(8.2)	0.0134
Cannot be taken at all	82(78)	98(89.9)	0.0181
3. Do you think any kind of advice or education is required from trained staff or registered doctors regarding self medication?			
Yes	101(96.1)	103(94.4)	0.557
No	4(3.8)	6(5.5)	0.557
4. Do you try to see information about the drugs in the internet before consuming?			
Yes	47(44.7)	38(34.8)	0.139
No	58(55.2)	69(63.3)	0.4181

Table 3: Attitude toward reason for preferring self medication

Reason for preferring self medication	3 rd term	5 th term	P value
Minor ailments	47(44.7)	59(54.1)	0.4343
Physician consultation fee expensive	16(15.2)	11(10)	0.257
Lack of time to consult	13(12.3)	9(8.2)	0.3207
Unavailability of the health care professionals	7(6.6)	5(4.5)	0.5086

Only 19(18%) students in 3rd term and 2(1.8%) students in 6th term were self medicating without consulting. A total of 77 (73.3%) students in 3rd term and 56(51.3%) students in 6th term knew the drugs from parents and 8(7.6%) students in 3rd term and 43(39.4%) students in 6th term knew from internet.

Table: 4 Frequency of self medication practiced

Frequency	3 rd term	5 th term	P value
Once in a week	4(3.8)	7(6.4)	0.3869
Once in a month	14(13.3)	11(10)	0.4296
Once in 3 months	29(27.6)	27(24.7)	0.6356
Once in 6 month	38(36.1)	47(43.1)	0.0443
Others	20(19)	17(15.5)	0.5045

Table 5: Sources of procurement of self medication

Source	3 rd term	5 th term	P value
Free sample	8(7.6)	16(14.6)	0.1018
First aid kit/ box	37(35.2)	22(20.1)	0.0417
Chemist	44(41.9)	59(54.1)	0.0736
Left over	16(15.2)	12(11)	0.3591

Table 6: Sources of information for self medication

Source	3 rd term	5 th term	P value
Friends/Family members	38(36.1)	21(19.2)	0.0056
Internet	41(39)	32(29.3)	0.135
Senior students	11(10.4)	19(17.4)	0.1429
Books	12(11.4)	37(33.9)	<0.0001
Media	3(2.8)	0(0)	0.0797

Fig 2: Common reasons of self medication

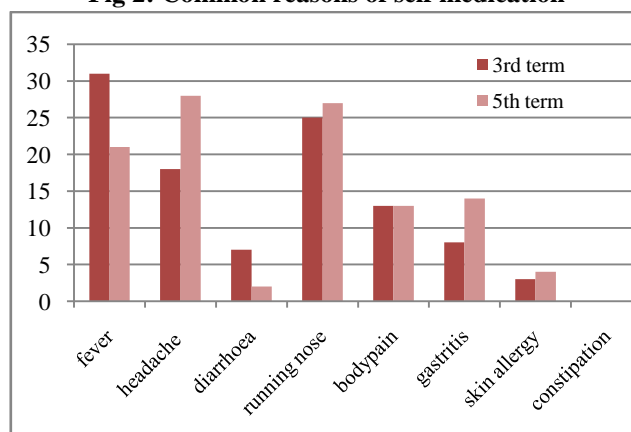


Fig 3: Common drugs used for self medication

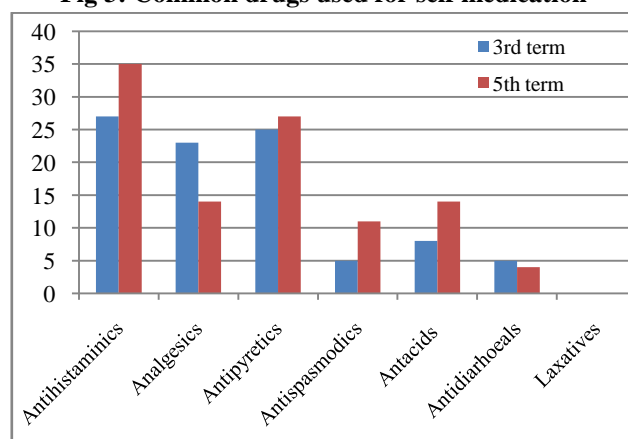


Table 7: Common modalities of treatment

Modalities of treatment	3 rd term	5 th term	P value
Allopathy	91(86.6)	96(88)	0.7567
Ayurvedic	3(2.8)	8(7.3)	0.1377
Unani	1(0.9)	0(0)	0.3071
Homeopathy	10(9.5)	5(4.5)	0.1573

4. Discussion

Concerning with the demographic details male students comprises larger population (55%) compared to females (44%) which is in concordance with the study done by Badiger *et al.*[20] The students in 3rd term were between 19-20 y and in 5th term between 19-21 y which is in concordance with a study done by Mehta.[23]

4.1 Knowledge

Among 2nd year student's 5th term students had significantly higher knowledge about generic name, correct dose, duration and frequency of administration, adverse effect and expiry date of self-medicated drugs as compared to 3rd term students. This is because they had better exposure to pharmacology teaching module compared to beginners. Both year students had fairly good knowledge of frequency of administration.

4.2 Attitude

A significant number of students in 5th term think self medication is a good practice if education from trained staff or registered doctors regarding self medication is done. 5th term students have good attitude towards expiry date compared to 3rd term students. In both groups the reason for self medication was due to minor ailments.

Most of the students in both term believed that the duration of antibiotic treatment should be 5 days, except for 24% in 3rd students believed that it is taken only for 3 days. Through the duration of treatment varies from 3 days to 10 days depending upon the condition and severity.

This suggests that public health education and increased awareness are important for making self-medication safe and useful.[27] This has also been noted by the WHO report 1995 and by Hughes.[24,25] This confirms that increasing medical knowledge affects prescribing behavior of medical students with James.[26]

4.3 Practice

In our study the prevalence of self medication among 3rd term and 5th term students is 88.9% and 92.3%. In studies conducted in Karnataka the prevalence of self medication was 88.1% in Gulbarga [13], 91.3% in Belgaum [14], 78.6% in Mangalore [15] and 92% in Derlakatte[16]. In studies conducted in other parts of India, the prevalence of self medication was 94% in Nepal [17], 71.7% in Nagpur [18], 93.85% in Gujarat[19], 57.05% in west Bengal[20] and 76% in Karachi.[21]

There was no significant difference in frequency of administration in both groups. About 90% of students in both term believed that allopathy remains the best mode of treatment.

Most students from both term procured medicines from chemist as 'over the counter drugs' OTC as these medicines are easily available in developing country without prescription. Learning pharmacology (33%) was most common source of information among 5th term students compared to 3rd term students where most common source of information was internet (39%). This is similar to a study done by Patel.[27]

The most common condition for which self medication practiced were fever, headache and running nose in both terms. Similar study conducted by Sontakke, stated that fever and pain were most common condition for which self medication was practiced by medical students.[28]

Antihistaminics, Analgesics and antipyretics were most commonly practiced as self-medication. This is similar to a study where antipyretics, analgesics, antihistamines and antibiotics are commonly self medicated in medical students.[22] Paracetamol was the most commonly used drug for both Analgesic and Antipyretic effect. This correlates well with headache being the most common indication for self-medication. Paracetamol is widely used for headache, fever and body ache and pain. Among antihistaminics, Cetirizine is the most commonly used in both groups.

5. Conclusion

In our study 5th term students were more confident and well versed with pharmacology and hence better knowledge, attitude and practice was observed compared to 3rd term students. Further, appropriate self medication can prevent acute medical problems, drug resistance, and polypharmacy and can be economical too.

References

- [1]. The rational use of drugs. Report of the Conference of Experts. Geneva, World Health Organization, 1985.
- [2]. K. Jagadeesh, K. N. Chidananda, Sreenivas P; Study on self-medication among 2nd year medical students; *International Journal of Basic And Clinical Pharmacology*; 2015; 4 (1): 164-167.
- [3]. KD Tripathi: *Essential of Medical Pharmacology*; 7th edition; JP publications.
- [4]. Hughes CM, McElnay JC, Fleming GF. Benefits and risks of self medication. *Drug Safety* 2001; 24:1027-37.

- [5]. Kamat VR, Nichter M. Pharmacies, self-medication and pharmaceutical marketing in Bombay, India. *Soc Sci Med*. 1998; 47(6):779-94.
- [6]. World Health Organization. Guidelines for Regulatory Assessment of Medicinal Products for Use in Self medication, 2000. Available at <http://www.apps.who.int/medicine/docs/en/d/Js2218e>. Accessed 14 Jan 2014.
- [7]. Lam CL, Catarivas MG, Munro C, Lauder IJ. Self-medication among Hong Kong Chinese. *Soc Sci Med* 1994; 39: 1641-7.
- [8]. Sanghani S, Zaveri HG, Patel V J. Self-medication: Prevalence and Pattern in urban community. *J Pharmacovigilance Drug Safety* 2008; 5: 95-8.
- [9]. Phalke VD, Phalke DB, Durgawale PM. Self-Medication Practices in Rural Maharashtra. *Indian J Community Medicine* 2006; 31: 34-5.
- [10]. Kiyangi KS, Lauwo JAK: Drugs in home: danger and waste. *World Health Forum* 1993; 14:381-4.
- [11]. Clavinjo HA: Self-medication during pregnancy. *World Health Forum* 1995; 16:403-4.
- [12]. World Health Organization (WHO) Guidelines for the regulatory assessment of Medicinal Products for use in self-medication. [Last accessed on 2013 Feb 5]. Available from <http://www.apps.who.int/medicinedocs/en/d/Js2218e/>
- [13]. Shivaraj B Patil, Vardhamane S. H, Patil B.V; Self-Medication Practice and Perceptions among Undergraduate Medical Students: A Cross-Sectional Study; *J Clin Diagn Res*. 2014 Dec; 8(12): HC20–HC23
- [14]. Serah Johny, SS Torgal, Anna Mathew; Assessment of Knowledge, Attitude and Practice of Self-medication among Second Year MBBS Students; *Indian Journal of Pharmacy and Pharmacology*, 2017; 4(1); 42-44.
- [15]. Kumar N, Kanchan T, Unnikrishnan B, Rekha T, Mithra P, et al. Perceptions and Practices of Self-Medication among Medical Students in Coastal South India. *PLoS ONE*. 2013; 8(8):e72247.
- [16]. Sanjeev Badiger, Rashmi Kundapur, Animesh Jain; Self-medication patterns among Medical students in South India; *Australasian Medical Journal; AMJ* 2012;5 (4): 217-220.
- [17]. Raj Kumar Mehta, Sujata Sharma; Knowledge, Attitude and Practice of Self-Medication among Medical Students; *IOSR Journal of Nursing and Health Science (IOSR-JNHS)* 2015; 4 91) Ver. I.
- [18]. Arti A. Kasulkar and M. Gupta Self Medication Practices among Medical Students of a Private Institute; *Indian Journal of Pharmaceutical Sciences*; 2015; 77(2): 178-182.
- [19]. Vachhani Parth K., Sondarva Divyesh B., Singh Anil P; A study on impact of pharmacology teaching on knowledge, attitude and practice of self medication among medical students; *World Journal of Pharmacy and Pharmaceutical Sciences*; 4 (09):1062-1068.
- [20]. Banerjee, T Bhadury; Self-medication practice among undergraduate medical students in a tertiary care medical college, West Bengal; *Journal of Postgraduate Medicin*; 2012; 58 (2): 127-131.
- [21]. Zafar SN, Reema S, Sana W, Akbar JZ, Talha V, Mahrine S, et al. Self medication amongst university students of Karachi: Prevalence, knowledge and attitudes. *J Pak Med Assoc* 2008; 58:214-7.
- [22]. Sanjeev Badiger, Rashmi Kundapur, Animesh Jain et al; Self-medication patterns among medical students in South India; *Australasian Medical Journal*; 2012, 5(4): 217-220.
- [23]. Raj Kumar Mehta, Sujata Sharma et al; Knowledge, Attitude and Practice of Self-Medication among Medical Students; 2015; 4 (1) Ver. I: 89- 96.
- [24]. Hughes CM, McElnay JC, Fleming GF. Benefits and risks of self-medication. *Drug Saf* 2001; 24:1027–37.
- [25]. Shankar PR, Partha P, Shenoy N. Self-medication and non-doctor prescription practices in Pokhara valley, Western Nepal: a questionnaire-based study. *BMC Fam Pract* 2002; 3-17.
- [26]. James H, Handu SS, Khalid AJ, Khaja ASO, Sequeira RP. Evaluation of the Knowledge, attitude and Practice of Self-Medication among First-Year Medical Students. *Med Princ Pract* 2006; 15:270-5.
- [27]. Pragna Patel, Arpit Prajapati, Barna Ganguly et al; Study On Impact Of Pharmacology Teaching On Knowledge, Attitude And Practice On Self-medication Among Medical Students; *International Journal of Medical Science and Public Health* 2013; 2(2): 181-186.
- [28]. 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(2): 561-4.