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COMPARATIVE ASSESSMENT OF SELF-MEDICATION PRACTICES AMONG UNDER-GRADUATE MEDICAL AND ENGINEERING STUDENTS

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ABSTRACT

Background: The present study was designed to assess the reasons, indications and drug usage pattern for self-medication among medical students and their age matched non-medical (engineering) peer groups. **Methods:** The cross sectional study was conducted at MGM Medical and Engineering Colleges, Kamothe, Navi Mumbai. The participants were medical and engineering students from first to final year with in the age group of 18- 25 years. The data was collected using a pre-tested semi structured questionnaire. The data was analyzed and results were expressed as percentages. **Results:** Out of the total 226 medical and engineering students surveyed, 142 (62%) were females and 84 (37.16%) were males. Self-medication was reported among medical students (68%) as compared to engineering students (27%). The common ailments for which self-medication was used among medical students were fever (89%), common cold (84%), headache (83%) and among engineering students were common cold (73%), headache (71%), cough (65%). Medical students consulted their family (73%), medical books (49%), and old prescriptions (30%); while engineering students consulted the family (56%), pharmacists (33%) and friends (25%) for self-medication. The most common self medicated drugs were antipyretics (70%), analgesics (65%), antibiotics (57%) among medical students; and antibiotics (34%), cough suppressants (34%) and analgesics (20%) among engineering students. The reasons cited for self-medication among medical students were: mild illness (76%), know which drug to take (56%), urgency (43%); and mild illness (48%), time saving (29%), general well-being (25%), among engineering students. **Conclusions:** This descriptive study found that the prevalence of self-medication among medical students was higher as compared to engineering students, facilitated by the easy availability of drugs and information from textbooks/family

Key Words: Self medication, over the counter drugs, antibiotics, medical and engineering students

INTRODUCTION:

Self-medication is the selection and use of medicines by individuals to treat self-recognized illnesses or symptoms[1-2]. This includes acquiring medicines without an authorized prescription, resubmitting old prescriptions to purchase medicines, sharing medicines with relatives or members of one's social circle or using leftover medicines stored at home[3].

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Self-medication with prescription drugs is a problem where pharmacies dispense medicines over-the-counter, as do informal drug shops and small groceries. Leftover medicines in homes are re-used or given to neighbors or relatives who request them[4].

More than 50% of antibiotics worldwide are purchased privately without a prescription and in developing countries it's a greater concern because the use of antibiotics without medical guidance is largely facilitated by inadequate regulation of the distribution and sale of prescription drugs[5]. Self-treatment can mask the signs and symptoms of fatal diseases making it difficult for the doctor to correctly diagnose and treat later. The consequence of self medication include wastage of resources, increased resistance of antibiotics, and health hazards such as adverse reactions, drug interactions and prolonged suffering[5].

The prevalence of self-medication among medical students may be high, facilitated by the easy availability of drugs and information from textbooks or seniors. Large numbers of student are unaware of the adverse effects of the medication that they themselves take and suggest to others[6]. It would be interesting to compare the self-medication practices of medical students with their age matched non- medical (engineering) peer groups. This study would provide information on the prevalence of self-medication among two important professional course students and effective measures to curb the same.

The aim, therefore, is to collect data to substantiate the incidence and causes of self medication with an aim to assess the pattern of self-medication practice among the undergraduate medical and engineering students. Based on the study results future interventions at the level of the individual, college and university can be planned so that necessary corrective steps can be taken to protect the undergraduate students from the adverse outcomes of self medication.

METHODOLOGY

Study design: The present investigation was a cross-sectional, questionnaire-based study.
Study setting: Study was carried out in MGM Medical and Engineering Colleges Kamothe, Navi Mumbai.

Study participants: The participants were medical and engineering students from first to final year. The study samples were within the age group 18- 25 years and were selected through convenient sampling. A total of 226 students: medical (126) and engineering (100) students were surveyed.

Ethical issues: Prior permission was obtained from the ethics committee of the institution for conducting the study. 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.

Questionnaire: A pre-tested, semi-structured questionnaire was designed specifically for the study. The study subjects were informed that the information collected would be anonymous and participation would be totally voluntary. Informed consent was taken in writing. The information pertaining to the pattern of self ‐ medication, indications, causes for self ‐ medication and drugs used for self ‐ medication were included in the questionnaire.

For the purpose of the study, certain medical terms including dysmenorrhea, antipyretics and analgesics were explained to the first ‑ year medical students as well as engineering students

Study Procedure: The pre-tested, semi-structured questionnaire was designed specifically designed for the study. The study subjects were informed that the information collected would be anonymous; and participation would be totally voluntary. The age, sex and year of study were noted. The information regarding the type of medication, illness for which the medication was used and the reason for not consulting a doctor was collected. The pattern of drug use over a six-month period preceding the study was noted. The attitude, knowledge towards self-medication and source of information of those who practiced self-medication were also recorded.

Statistical analysis: The returned questionnaires were checked for completeness of data. The data obtained from the completed questionnaires were analyzed in the computer by using SPSS program Version 10. Descriptive data were expressed as percentage, frequency and mean ± SD

RESULTS

Demographic Profile: A total of 226 students successfully completed the questionnaire. Out of the total 226 medical and engineering students surveyed, 142 (62%) were females and 84 (37.16%) were males. Maximum students among medical (87%) and engineering (85%) branches were hostellers. The details of the pattern of self-medication as practiced by the study population have been enumerated in Table 1.

Table-1: Demographic profile of Medical and Engineering students enrolled for the study

Parameters		Results %	
		MBBS Students (126)	**ENG. Students (100)**
Age (yrs)		20.00	19
Gender	Male	69.04	45
	Female	30.95	55
Course	Ist Year	30.15	22
	IInd Year	23.01	27
	IIIrd Year	32.01	30
	III Final	23.80	21
Day scholar		13.20	15.15
Hosteller		86.79	84.84

Indications for Self Medication: The common ailments for which self-medication was used among medical students was fever (89%) , common cold (84%), headache (83%) and among engineering students were common cold (73%), headache (71%), Cough (65%).

Drugs used for Self Medication: The most common self medicated drugs were antipyretics (70%), analgesics (65%) and antibiotics (57%) among medical students; and antibiotics (34%), cough suppressants (34%) and analgesics (20%) among engineering students.

Sources and Causes for Self Medication: Medical students consulted their family (73%), medical books (49%), old prescriptions (30%); while engineering students consulted their family (56%), pharmacists (33%) and friends (25%) for self-medication. The reasons cited for self-medication among medical students were: mild illness (76%), know which drug to take (56%), urgency (43%); and mild illness (48%), time saving (29%), general well-being (25%), among engineering students.

Table 2: Reasons and sources for self-medication among Medical and Engineering students

Particulars		MBBS (n=126)	Engineering (n=100)
Reason for Self Medication	• Mild illness	76.19	48
	• Time saving	40.47	29
	• Cost effectiveness	10.31	4
	• Urgency	43.65	24
	• Privacy	5.5	7
	• General well being	18.25	25
	• Convenience	39.68	16
	• Unavailability of medical services	2.38	3
	• Know which drug to take	56.34	15
	• Physician will prescribe same drug	23.80	5
	• Fear of medical set up	2.38	3
	• Dependence	3.17	3
Sources for Self-Medication	• Family	73.80	56
	• Friends	25.39	25
	• Pharmacist	26.98	33
	• Medical books	49.20	12
	• Old prescription	30.95	20
	• Own decision	17.46	05
	• Media(Advertisement, internet)	26.19	14

DISCUSSION

The present study demonstrates that about 68% of medical and 27% of engineering students practice self-medication. In our study it was found that more female students practice self-medication than male students. Self-medication is more common among undergraduate medical students of the Institute as compared to their engineering counterparts. In India, self-medication practice in the general population has been reported to be around 31%. In studies conducted among first-year medical students in Bahrain (2006), about 44.8% of students practiced self-medication while in Karachi the percentage is 76%[7-8].

A study conducted among medical students in Karnataka revealed 53% students practicing self-medication[9]. However, dearth of data regarding the incidence of self-medication practice across Indian creates difficulty in comparing the extent of self-medication among undergraduate students of the institute in the national perspective. The prevalence of self-medication determined by the present study is also quite high and needs to be addressed seriously. A matter of concern here is that despite the widespread practice of self-medication among medical students, only 54.76% were actually aware of the mode of action of the drugs and 51% their common side effects as compared to 15% among engineering students. Only 33% knew about ‘over-the-counter’ medication and ‘Schedule H’ Drugs. It is also worthy to note here that the study participants belong to well educated, conscious and well aware category of society. The high prevalence of self medication among them is indeed a serious cause for concern. Although it is true that self medication can help treat minor ailments that do not require medical consultation and hence reduce the pressure on medical services, particularly in the

underprivileged countries with limited health care resources, irrational and rampant self-medication can have adverse health outcomes that outweigh its benefits.

It was found that common cold, cough, fever and headache were the predominant morbidity for which both medical and engineering students practiced self-medication. Among medical students, the common ailments for which self-medication was used were fever (89%), common cold (84%) and headache (83%); and among engineering students: common cold (73%), headache (71%) and cough (65%). Other causes of morbidity prompting the students to practice self-medication included medical conditions like diarrhoea, vomiting, pain in the abdomen due to heartburn/ peptic ulcer and worm infestation. In studies conducted among first-year medical students in Bahrain (2006),[7] headache was the most common cause (70.9%), followed by cough, common cold, stomach ache and fever. Headache (72.4%) was also the most common morbidity among medical students seeking medication[8]. In the study conducted in Ethiopia,[10] fever and headache were the most commonly reported symptoms for self-medication followed by cough and common cold.

It was observed that the classes of drugs that were commonly used for self-medication among medical students were Antipyretics (70%), Analgesics (65%) and Antibiotics (57%). Among engineering students Antibiotics (34%), cough suppressants (34%) and Analgesics (20%) were commonly used without prescription. This is similar to studies done earlier which showed Analgesics (81%), Antibiotics (6%), and Antipyretics (43%) as the widely misused drugs for self-medication[11-13].In the study conducted in Karachi,[8] Analgesics were the most common (88.3%) followed by Antipyretics and Antibiotics; the study in Bahrain (2006)[7] also reported analgesics to be the most commonly used drug group (81.3%). Results of the present study demonstrate that (5.5%) of medical students used drugs with potentially harmful adverse effects and potential for addiction and abuse i.e. steroids 4.7 % and emergency contraceptives (9.5 %). It may be emphasized that the engineering students take more medications for anxiety (8%), to stay awake at night (10%) and as memory boosters (14%) as compared to medical students.

The high usage of antibiotics (57%) among the medical students as observed is the study is a matter of concern. Study conducted in Bahrain (2006), shows that antibiotics comprise of 6% of the total share of drugs for self-medication[7]. The reason provided by the researchers for limited use of antibiotics in medical students in Bahrain is that the governments in the countries to which the study respondents belonged have strict regulatory policies about the prescription and over-the-counter (OTC) sale of antibiotics. However, some studies conducted in developing countries with similar intent have reported a higher use of antimicrobials for self-medication, especially where there is increased incidence of infectious diseases and antibiotics are freely available OTC[14-15]. This suggests that use of antimicrobials is high when there is lack of implementation of proper regulatory control over the OTC sale of these drugs. Thus, the availability of drug groups such as antibiotics without prescriptions is a source of great concern. These drugs may not be as easily available or assessable to general population as they are to medical students who can obtain the drug by virtue of their profession. The most common reasons cited by medical students for self-medication were nature of illness (mild illness; 76%), know which drug to take

(56%), urgency (43%) and mild illness (48%) whereas among engineering students the reasons attributed to self-medication were time saving (29%), general well-being (25%). The fact that those with a mild illness practiced self-medication has got serious implications as many diseases may initially appear to be mild but misdiagnosis and wrong treatment may invite serious health hazards.

This finding is in congruence with the findings of the study conducted in Bahrain (2006)[7] where 45.5% of students preferred self-medication as it is time-saving while 25.4% preferred it due to minor nature of illness. Similar reasons were documented by other studies[3,16]. Other common reasons reported in other studies includes: cost-effectiveness, useful in case of urgency and confidence in self-diagnosis[13]. Medical students cited their source of information for self-medication in most cases as family (73.80%), Medical books (49.20%) and old prescriptions (30.95%). For engineering students the sources of information were: family 50%, pharmacist 33% and friends 25%.

The present study demonstrates that self-medication is widely practiced among medical students as compared to engineering students. It is a common tendency among medical professionals to practice self-medication when they themselves feel sick. This particular practice however has its pros and cons. While responsible self-medication is a convenient alternative to treat minor illness as well manage acute emergency, inappropriate self-medication often has many adverse effects[17.] Drawbacks associated with self-medication include the global emergence of multi-drug resistant pathogens, drug dependence and addiction, masking of malignant and potentially fatal diseases hazard of misdiagnosis problems relating to over and under dosing, drug interactions and tragedies relating to the side effects profile of specific drugs. [18]Misplaced confidence can lead to inappropriate self-medication and can expose the participants to all the risks associated with inappropriate use of medications. Moreover, the practice of self-medication gets incorporated in the medical professional's right from their undergraduate days[19].

CONCLUSION

This descriptive study found that the prevalence of self-medication among medical students was higher as compared to engineering students, facilitated by the easy availability of drugs, and information from textbooks. A significant number of students were unaware of the adverse effects of the commonly used drugs that they themselves take and suggest to others. Since inappropriate self medication has the potential to cause serious harm, not only to the students themselves but also to those whom they suggest medication, potential problem of self medication should be emphasized to the students to minimize this risk.The finding of the present study emphasizes the importance of incorporating responsible self-education as an intrinsic component in medical curriculum.

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