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Assessment of Engineering Students for Medical Sword: Self Medication

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Abstract		Original Research Article

Background: Self-medication is defined as the use of medication for self-treatment without advice of physician either for diagnosis, prescription of treatment. This study was done to determine the knowledge, attitude & practice of self medication among undergraduate engineering students of Engineering College in Kanpur. *Material and Methods*: A self-developed, pre-validated questionnaire consisting of close-ended questions based on study and history of self-medication in last 6 months was taken, filled by all four year undergraduate engineering students. Total 350 participant's data was collected, organized and calculated as frequency and percentages. *Results*: Among 350 study participants, 86.00% were involved in self medication practice. The average number of drugs consumed per student in a 6 months period was 2.37. The most common drugs used were analgesics 253 (40.22%), followed by anatacids 149 (23.69%) and cough/cold remedies were the third more common drug 72(11.45%). In the present study 156 (44.57%) students thought that self medication was harmful & 194 (55.43%) thought that they should go to a doctor for illness. *Conclusion*: Engineering student's response was positive towards self medication. Therefore awareness regarding inappropriate use of self medication and drug side effects should be provided among engineering students through educational programs and motivates them to consult physicians for their illness.
Keywords: Drugs, engineering students, self –medication, self-prescription.

INTRODUCTION

Self medication in simple words is defined as the use of medication by a patient on his own initiative or on the advice of a Pharmacist or by any lay person instead of consulting a medical professional [1,2]. According to the World Health Organization (WHO), self-medication is when individuals treat anonymously diagnosed diseases by selecting medications by themselves [3]. Prior studies available on self-medication stated that it is very common practice, especially in economically deprived communities and internationally, self-medication has been reported as being on the increase rate [4, 5]. Regrettably, in many developing countries, medical health care is quite expensive and in some places not easily available thereby making self medication a clear choice in healthcare service field [6]. Moreover, it has been noted that purchase of drugs that can be done with prescription in developed countries is not applicable in so many developing countries [7]. 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 [8]. On the other hand, if done appropriately, self-medication can readily relieve acute medical problems, can save the time spent in waiting to meet a doctor, may be economical and can even save lives in few conditions. Self-medication is an area where governments and health authorities need to ensure that it is done in a responsible manner, ensuring that safe drugs are made available over the counter and the consumer is given adequate information about the use of drugs and when to consult a doctor [9]. Despite this, there is a paucity of studies on self-medication among engineering students therefore the present study was done to determine the knowledge and practice of self- medication among engineering students in Kanpur, Uttar Pradesh.

MATERIAL AND METHODS

A descriptive cross-sectional study was carried out among the all four year undergraduate Engineering

students in Kanpur, Uttar Pradesh in the 15 days time period of November 2019. Undergraduate students of all four years who were willing to participate in the study were enrolled. A briefing was given about the purpose of the study, and the procedure of completing the questionnaire was explained. Ethical Committee clearance and students consent was taken before the study. Out of total 350 engineering students of college, 325 were agreed for study and selected. Out of 325 participants, 24 students were excluded due to submission of incomplete questionnaire. Among 301 included participants of study 211 were males and 90 were females. A self-developed, pre-validated questionnaire consisting close-ended items was used, questionnaire consisted of questions on reason for self medication, indications of self medication, source of drug information etc.

Study participants were given half hour to complete the questionnaire in their classroom. After the given time each participant was requested to deposit their dully filled questioners in the box kept in the classroom. Total 301 students submitted completely filled questioner, completed data was collected and calculated in frequency and percentage.

RESULTS
In the present study out of the 350 students 301 (86.00%) had taken self medication and 49 (14.00%) were not taking self medication. The sex wise variation of self medication rate, 80 (22.86%) females

were taking self medication while males were more in number 221 (63.14%).Table-1

Table -2 indicates that a total of 629 drugs were consumed by 301 students over a period of six months. The average number of drugs consumed per student in a six months period was 2.37. The most common drugs used were analgesic 253 (40.22%), followed by antacids 149(23.69%), drug for cough/cold 72(11.45%), antibiotics 50(7.95%), multivitamins 48(7.63%), antispasmodics 30 (4.77%) and antihistamines 27 (4.29%).

Of the total 350 students, 156 (44.57%) students based on their knowledge stated that self medication was harmful & 194 (55.43%) said that they should go to a doctor for illness. Out of the 350 students 197 (56.28%) had knowledge about dose, side effects & interactions of the drugs while only 153 (50.83%) were unaware about it. Table-3.

In this study reason for self medication were based on the main symptom of the illness which were basically body pain 201 (57.42%), acidity 91 (26%), cough and cold 35 (10%), and fever 23 (6.57%). [Table-4] Main reasons for not taking advice of medical professional were also vary in the current study such as social 97(27.71%) was most common followed by advised by parents which was 95(27.1%) and previous experience 78(22.28%)Table-5.

Table-1: Demographic distribution of all engineering students n=350 (%)

Variation	Number (n)	Percentage (%)
Sex		
Male	221	63.14
Female	80	22.85
Year wise distribution		
First year students	110	31.42
Second year students	95	27.14
Third year students	87	24.85
Fourth year students	58	16.57

Table-2: Pattern of total drug used among engineering students (n=629)

Drugs	Number of drug consumed (n)	Percentage (%)
Analgesics	253	40.22
Antacids	149	23.69
Cough/Cold drugs	72	11.45
Antibiotics	50	7.95
Multivitamins	48	7.63
Antispasmodic	30	4.77
Antihistamine	27	4.29

Table-3: Knowledge based distribution of students n=350

Variable	Number of respondents (n)	Percentage %
Are you aware about self-medication a) Yes b) No	185 165	52.8% 47.1%
Are you aware about side effects of self-medication a) Yes b) No	197 153	56.2% 50.8%
Is self-medication is allowed without knowledge a) Yes b) No	168 182	48% 52%
Is self-medication harmful a) Yes b) No	156 194	44.5% 55.4
Will you go to doctor for treatment a) Yes b) No	194 156	55.4% 44.5%

Table-4: Self-medication for main symptom of the illness

Symptoms for self-medication	Total number/percentage (n/%)
Body pain	201 (57.42%)
Acidity	91 (26%)
Cough and cold	35 (10%)
Fever	23 (6.57%)

Table-5: Reasons for self medication

Reasons for self medication	Total number/percentage (n/%)
Social Media	97(27.71%)
Advice by parents/guardians	95(27.14%)
Previous Experience	78(22.28%)
Didn't feel any need	48 (13.71%)
Time Constraints	14(4%)
Doctor not available	10(2.85%)
Money Constraints	8(2.2%)

DISCUSSION

Self medication increases the chances of illicit use of drugs and drug dependency and most of all masking the sign and symptoms of underlying disease hence are complicating the problem, creating drug resistance and delaying diagnosis [10-12] In India, the *Drugs and Cosmetics Act, 1940* (DCA), the *Drugs and Cosmetics Rules, 1945* (DCR) regulates the import, manufacture, distribution and sale of drugs and cosmetics. The "OTC" (over the counter) has no legal implications in India.3 Hence "OTC Drugs" means drugs legally allowed to be sold "Over The Counter" by pharmacists, i.e. without the prescription of a Registered Medical Practitioner. Prescription-only drugs are listed in *Schedules H and X* of the Drug and Cosmetics Rules [13]. Drugs listed in *Schedule G* (mostly antihistamines) do not need prescription to purchase but require the following mandatory text on the label: "Caution: It is dangerous to take this preparation except under medical supervision [14]".

In the present study 86% participants had taken self medication which was found similar to study done by Parakh R *et al.* in 2013 where 75.7% were taking self-medication [2]. Similarly studies done by Meena A *et al.* and Verma R among university students found that 65% to 87% students were taking self-medication [15,16]. Our present study has 63.14% male participation in self medication which was similar to study done by Parakh R et al and Shabaz B [2,17].

Bhavna P at Ahemdabad in year 2012 observed that the common drugs used for self-medication were Paracetamol (43.64%), Aspirin (16.97%), Ibuprofen (12.12%) and cetrizine (12.73%)[18]. Similarly PR Shankar *et al.* also found the commonest drug used was Paracetamol in 69 instances (43%) followed by some other analgesic in 37 instances (23%) [19]. Patel MM in the study stated that 43.03% was from painrelievers like Diclofenac, Paracetamol, Mefanamic acid etc. 21.51% of self-medication was from cough remedies [14]. Analgesics were most commonly used drugs by engineering students in the present study followed by anatacids which may be because of poor dietary habits.

Of the total 350 students, 44.57% students stated that self medication was harmful and rest 55.43%

students used to notion that they should visit doctor for illness. 56.28% students had knowledge about dose, side effects and interactions of the drugs which was considerable while 50.83% students did not have any knowledge which was similar to the results study done by Shveta S at Punjab in 2011[20]. High rates of knowledge about dose, side effects and drug interactions among the engineering students signifies that with advanced technical information, non medical background students has shown an increasing trend of using social media to find out about diseases and their treatment[2].

In the current study the commonest indications for self-medication were body pain 57.42%, acidity 26%, cough/common cold 10%, and fever 6.57% results were found similar to studies done by Parakh R *et al.* and James H *et al.*[2,21]. Internet and social media 27.71% were the main source of information for self-medication followed by parents and guardians 27.1%. Similarly V D Phalke *et al.* reported Advertisement in newspaper, TV, Radio and magazines as main sources[22] Whereas study done by Parakh P *et al.* and Gupta V *et al.* found that parents were the main source of information for self-medication [2,23].

CONCLUSION

High prevalence of self-medication is common practice among the engineering students. Antacids, analgesics and antibiotics were the most common drugs used in the present study. Strict policies need to be implemented on the medicine advertisement on social networking sites and selling of medications without proper prescription should be formed to prevent this problem from increasing. We should also try to give emphasis and create more awareness about appropriate use of self-medication and the adverse drug reaction arising from self-medication among students as well as their parents.

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