

Knowledge, Attitude And Practice Of Self-Medication Among Engineering Students In Trivandrum Corporation.

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Abstract

Background: Self-medication is defined as the use of drugs to treat self-diagnosed disorders or symptoms and may involve intermittent or continued use of a prescribed drug for chronic or recurrent disease or symptoms. This can mask the signs and symptoms of underlying disease, create drug resistance and delay diagnosis. There are also increased chances of illegal use of medicines and drug dependency. Self-medication is influenced by many factors such as age, sex, income, self-care orientation, education level, medical knowledge, access to drugs, and exposure to advertisements. Investigating self-medication among engineering students is important as they constitute a segment of society that is highly educated and more influenced by media and internet that promote self-medicating behavior.

Objective: This study was conducted to assess the knowledge, attitude and practice of self-medication and its associated factors among engineering students of Trivandrum Corporation, Kerala, India.

Methods and materials: A cross-sectional study was conducted among 200 engineering students of Trivandrum Corporation during February-April, 2021. Knowledge, attitude and practice of self-medication were assessed using a semi-structured questionnaire which was made available through social media platforms. Data was analyzed and summarized as frequency and percentage. Associations were tested using Chi-square test and Independent t-test. A p-value of less than 0.05 was considered statistically significant.

Results: Out of the 200 participants, 120 (60%) students had practiced self-medication. 57.5% were males. The mean age of the participants was 20.74± 1.755 SD. 25.5% of participants belonged to Computer Science group. 78.5% respondents correctly defined self-medication. The major sources of information about self-medication were previous experience with similar condition, advice from health professionals in the family and previous medical prescriptions. Majority of the students were aware of the pharmacological contents of the drugs they used, dose, side effects and interactions. 61.5% participants considered self-medication harmful with risks of side effects and use of wrong drugs. Time saving and ease and convenience were the major reasons for self-medication. 45% opined that the growing trend of self-medication should be prevented. Creating awareness among the public and taking measures to prevent the supply of medicines without prescriptions were the major recommendations. Minor illness (90.8%) and previous experience with similar illness (55%) were the major reasons for not consulting a doctor. Headache, cough/cold or sore throat and fever were the major indications for self-medication. Majority preferred allopathy for practicing self-medication. Nausea/ vomiting and weakness were the major adverse effects. Antipyretics (84.2%), cough syrups (48.33%) and analgesics (46.67%) were the major classes of drugs used.

Conclusion: Self-medication practice is high among engineering students although the majority are aware of the risks and side effects involved. The knowledge level was fairly good and the participants had a positive attitude towards self-medication. Creating awareness and educating the students regarding the safe and appropriate practice of self-medication is necessary.

Keywords: Self Medication, Knowledge Attitude and Practice, Engineering students

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I. Introduction

Self-medication is defined as the use of drugs to treat self-diagnosed disorders or symptoms, or the intermittent or continued use of a prescribed drug for chronic or recurrent disease or symptoms. It includes acquiring medicines without a prescription, purchasing drugs by resubmitting or reutilizing an old prescription, taking medicines on advice of relatives or others, or consuming left over medicines already available at home. It is the most common form of self-care that is becoming increasingly significant in many countries including India.

Widespread availability of over-the counter (OTC) medications has promoted self-medication. Pain-killers, cough and cold remedies, anti-allergy medicines, vitamins, energy tonics etc are the most commonly available OTC medications. Antimicrobials are also commonly used for self-care through self-medication. Although these medications are considered risk free and useful for the treatment of common health problems, their excessive use can also lead to serious side-effects and unfavorable reactions. The most common indications for self medication include fever, headache, common cold, and gastrointestinal symptoms such as acidity, diarrhea, and constipation.

Self medication increases the chances of illegal use of drug and drug dependency .It can mask the signs and symptoms of underlying disease thereby complicating the problem, creating drug resistance and delaying diagnosis.

Globally self medication is practiced with varied frequency due to differences in cultural and socioeconomic factors and disparities in health care systems. In India, proportion of self medication is high because of the easy availability of wide range of OTC drugs coupled with inadequate professional health care resources. Studies have shown that self medication is influenced by many factors such as age, sex, income, self-care orientation, education level in general and medical knowledge in particular, access to drugs, and exposure to advertisements also influence the practice.

Rationale

In India, a few studies have been carried on self-medication practice of the general public as well as among healthcare professional students. However data on engineering students is limited. It is assumed that the pattern of self-medication may differ in these populations as their curriculum is devoid of medical training. Therefore, it is important to characterize the problem in such population. Moreover they constitute a segment of the society that is highly educated,more inclined to information about health and are more influenced by media and internet that promote self medicating behavior and more inclined to information about health. Thus, a study on knowledge, attitude and practice (KAP) of self medication among engineering students was crucial for reducing inappropriate use of medicines.

Objectives

Primary objective: To assess the knowledge, attitude and practice of self medication among engineering students of Trivandrum corporation

Secondary objective: To study the associated factors of self medication among engineering students of Trivandrum corporation

II. Materials And Methods

A cross-sectional study was conducted among students of various engineering colleges of Trivandrum corporation, Kerala,India during February and April 2021 through social media platform using a self administered questionnaire. Every consecutive student who consented to be in the study was recruited to the study till the required sample size was met. A similar study conducted in south India by Mohd Fayazuddin et al showed that 40.63% engineering students practiced self medication(1). This was used as the parent study to calculate the sample size. Applying this in the formula $(Z\alpha/2 pq)/d^2$ where 'p' is the expected proportion in population based on previous studies or pilot studies and 'd' is the relative precision of 20 %,the sample size was fixed as 150, after allowing a non-response rate of 5%. ($Z = Z\alpha = 1.96$ for 95% confidence interval, $q = 1-p$) A semi structured questionnaire was used to collect data on study variables like knowledge ,attitude and practice of self medication, sociodemographic factors like age, gender and branch of study and other variables like reason, indication,side effects experienced and drugs used. The students participating in the study were informed of the aim of the study, their role in the study, benefits gained by their participation, confidentiality of information and their right to participate or withdraw from the study.

Ethical considerations: This study was under taken as a research project to fulfill the curriculum requirements of Graduate in Medical Council of India in 2021. Informed consent was obtained from each participant. Participation in this study didn't involve any additional costs to the participant. Confidentiality was maintained throughout the study. There were no conflicts of interest. It was expected that results of the study would be presented in conferences and journals.

Statistical analysis

Data was analyzed using SPSS version 16 .Qualitative variables were expressed as proportions and quantitative variables as mean and standard deviation. Chi-square test of independence and Fisher's Exact Test were used to test the association between categorical variables. A p-value of <0.05 was considered statistically significant.

III. Results

A total of 200 engineering students participated in the study. Out of this 115 were males (57.5%) and 85 were females (42.5%). The age of the students ranged from 18 to 28 with a mean age of 20.74 ± 1.755 SD and median age of 20 (Table 2). The participants belonged to various branches of engineering namely, Computer Science (25.5%), Civil Engineering (24.5%), Mechanical Engineering (24.5%), Electrical and Electronics Engineering (EEE) (18.5%), Electronics and Communications Engineering (ECE) (7%). [Table 1]

Knowledge

Out of the 200 respondents, 157(78.5%) correctly defined self medication while 21(10.5%) did not know the meaning of self medication. [Table 1]

The choice of drugs used for self medication was mainly based on previous experience with similar medical condition (70%) followed by advice from health professionals in the family (53.3%) and previous prescriptions (41.67%) [Figure 4]. Majority (99.2%) of those who practiced self medication knew that drugs should not be used after expiry date. 56.7% of them were aware of the active pharmacological contents of the drugs. 56.7% were aware of the dose, side effects and interactions of drugs they used.[Table 1].Most of the participants, 123(61.5%) responded that self medication was harmful. Among them 104(84.6%) responded that self medication was harmful due to the side effects of drugs. 100(81.3%) believed that it was due to use of wrong drugs [Table 1]. Among 77 respondents (38.5%) who considered self medication as harmless, 53(68.8%) believed self medication as time saving and 49 (63.6%) considered that for ease and convenience. [Figure 2]

Attitude

136(68%) participants were of the opinion that medicines for self medication can be stored at home for use as and when needed. 99(49.5%) agreed that self medication is a part of self care. 66 (33%) had a positive attitude towards starting or continuing with self medication while 78(39%) had neutral stand on it. Half of the respondents were of the opinion that it was not appropriate to advice self medication to friends while 26% remained neutral.. 90(45%) participants thought that the growing trend of self medication should be prevented. Creating awareness among public (70%) and preventing supply of medicines without prescription (61.1%) were the major recommendations for that [Figure 5]

Practice

Out of the 200 participants, 120(60%) had practiced self medication at some point of life [Figure 1].Out of this 64 were males and 56 were females. Among them 78(65%) have practiced self medication within the last 6 months. The frequency of self medication practice among them in the last 6 months ranged from less than 5 in 37.2% to more than 10 in 37.2%. [Table 1]

There was no statistically significant association between self medication practice and the socio-demographic variables, namely age, gender and branch of study [Table 2]

The major reason for taking medicines without consulting a doctor was minor illness when the participants didn't feel the need to consult a doctor (90.8%) followed by previous experience with similar medical condition (55%).[Table 1]. The major indications for self medication included headache (73.3%), cough/cold/ sore throat (68.3%) and fever (65%). [Figure 2]

Antipyretics (84.2%) were the most common group of drugs used followed by cough syrups(48.33%) and analgesics(46.67%).[Figure 4] 19(9.5%) had taken antibiotics without consulting a doctor, out of which only 8(42%) participants completed the course. Majority of the participants (47.5%) preferred Allopathic drugs as self medication. 33.3% of those who faced some kind of adverse drug reactions stopped the drug while 25% consulted a doctor. [Table 13].10 participants experienced some kind of adverse drug reactions. The major adverse drug reactions were nausea/ vomiting and weakness [Figure 3].

Table no 2			
Association of socio-demographic factors with Self medication practice			
Variable	Frequency (%)		Chi square test value
	Practiced self medication	Did not practice self medication	
Gender			
Male	64(32%)	51(25.5%)	

Female	56(28%)	29(14.5%)	2.131	0.189
Branch				
Computer Science	35(17.5%)	16(8%)	6.635	0.156
Civil Engineering	31(15.5%)	18(9%)		
Mechanical Engineering	22(11%)	27(13.5%)		
EEE	23(11.5%)	14(7%)		
ECE	9(4.5%)	5(2.5%)		
Association of age with practice of self medication				
Variable	Frequency (%)		t test value	p value
	Practiced self medication	Did not practice self medication		
Age	120(60%)	80(40%)	1.971	0.050

Figure 1- Proportion of self medication practice

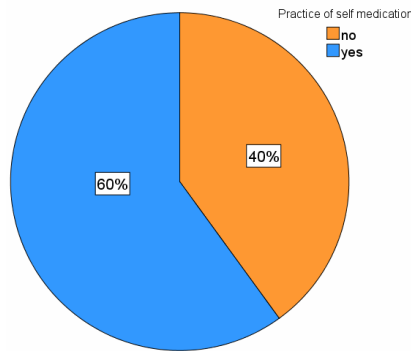


Figure 2- Indications for selfmedication

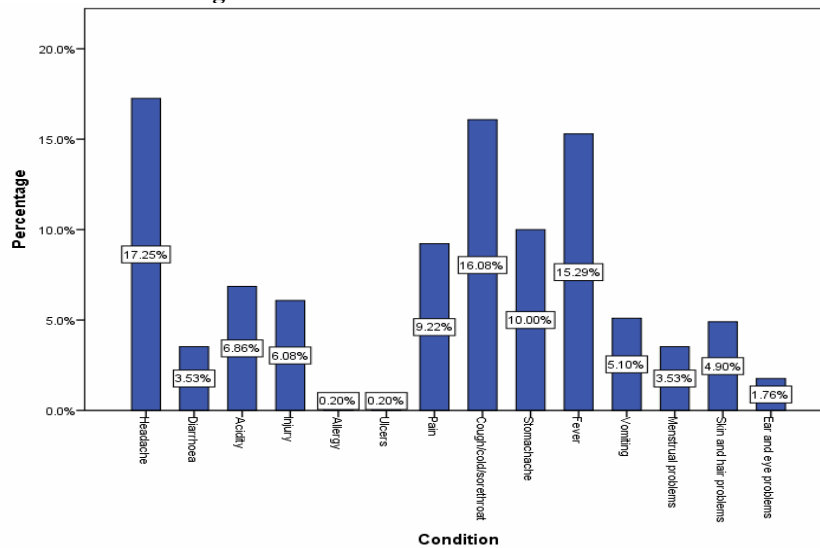


Figure 3 -Side effects of self medication

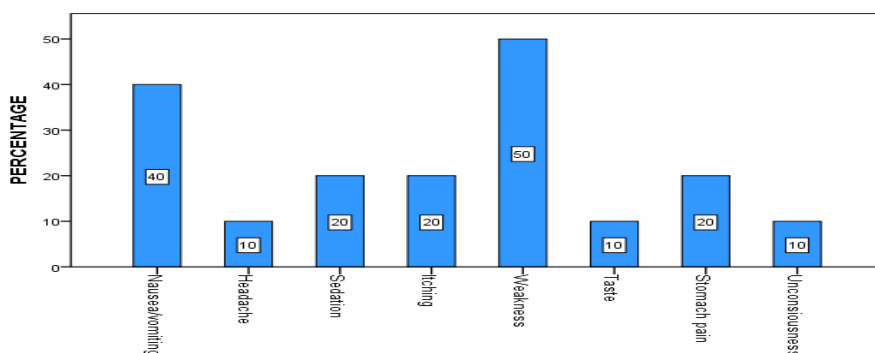


Figure 4 -Drugs used for self medication

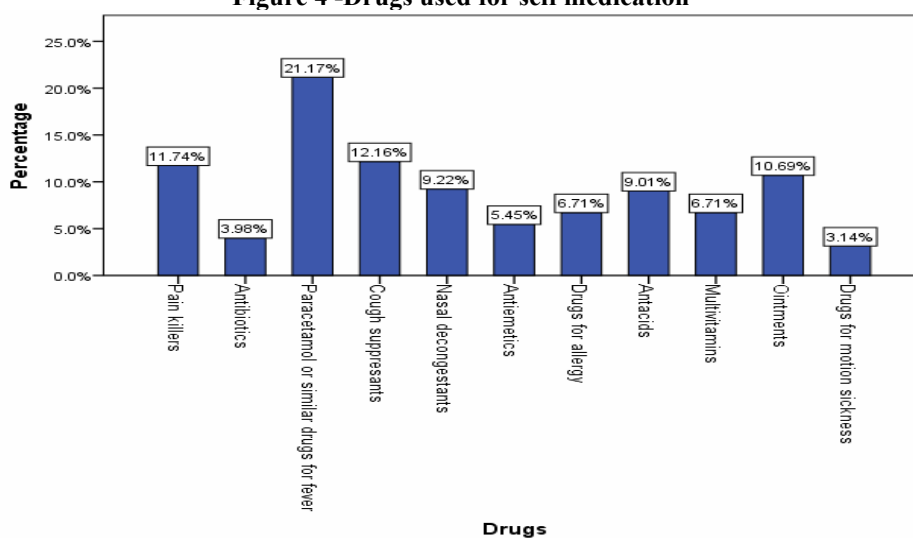
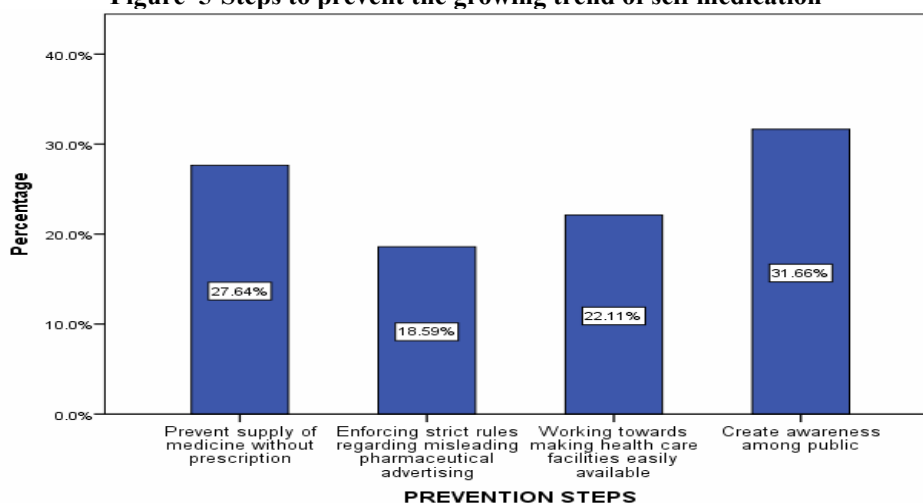


Figure 5-Steps to prevent the growing trend of self medication



IV. Discussion

Inappropriate use of medicines can lead to many problems(17).Factors which increase self medication practice include socio-economic factors, ready access and easy availability of drugs, lifestyle changes and increased potential to manage certain illness through self care(19)

Knowledge

In our study 78.5% respondents were aware of the correct meaning of self medication. Previous experience with similar medical condition was the main source of information about self medication, in 70% of participants. This was similar to the results obtained in a study conducted in Ethiopia(10). In studies conducted among engineering students in South India (1) and in West Bengal (8) the major reason for self medication was minor illness. In studies conducted by Kayalvizhi S et al(9), and Suleiman Ibrahim Sharif et al (2), time saving and need for quick relief were the commonest reasons.

Among those who practiced self medication, majority (99.2%) knew that drugs should not be used after their expiry date. 56.7% were aware of the active pharmacological contents of the drugs before using them. 56.7% were aware of the dose, side effects and interactions of drugs they used. These results were similar to those obtained in a study done in Nepal (20)

In our study, most of the participants, 123(61.5%) responded that self medication was harmful. Their result was similar to that in a study done in South India (1)Major reasons for harm with self medication were believed to be due to side effects of drugs(84.6%) and use of wrong drugs (81.3%). The major reasons for considering self medication was that it was time saving. These results were comparable to those obtained in a study conducted Bahrain (12)Headache, fever, common cold, pain etc were the major indications for self medication as reported by many studies(6).Our study also resulted in similar results. In a study conducted by Mulugeta Tarekegn Angamo et al (11) abdominal pain and cough were the major indications. Flu, eye and ear symptoms, gastric problems, allergy ,constipation, dysmenorrhoea were the other indications reported (2,12)

Attitude

In our study, 68% opined that medicines can be stored at home for self medication., 49.5% agreed that self medication is a part of self care, 33% thought it was ok to continue with or start self medication half of the respondents were of the opinion that it was not appropriate to advice self medication to friends39, 5% participants agreed that self medication should be avoided, 30.5% respondents disagreed to the practice of self medication. The practice of self medication was reported harmful by the participants in a study by Mohd Fayazuddin et al (1). Risk of adverse drug reactions, use of wrong drugs, missing the diagnosis and drug dependence were the major reasons for considering self medication harmful in a study conducted in Bahrain(12).The reasons for considering self medication harmless included time saving, economical, quick relief learning opportunity, ease and convenience and crowd avoidance(12).These are similar to the results revealed by our study.

Our study revealed that 45% participants thought that the growing trend of self medication should be prevented. Creating awareness among public (70%) and preventing supply of medicines without prescription (61.1%) were the major recommendations from those who opined that self medication should be prevented. This was similar to the results obtained in a study conducted among engineering students in South India(1) in which the, participants opined that the growing trend of self medication should be prevented. Creating awareness among the public, preventing the supply of medicines without prescription, enforcement of strict rules regarding misleading pharmaceutical advertising and increasing availability as well as accessibility of health facilities were the recommendations made (1) Some studies showed that students had a positive attitude towards self medication(12,17,18).The tendency to store medicines in households is more in the developing countries as the disease burden is more and health service resources are less(15).In some studies people considered self medication to be a part of self care (1)

Practice

In our study, the practice of self medication among the participants was 60% which is alarmingly high when compared to a study done in a similar study population in South India(6). In some studies practice of self medication ranged from 38% to 98%.(1, 21).In a study conducted by Alves RF et al (2020) (5), the practice of self medication was 54.3% while in another study done by Subhashini et al (6)the practice was 69.32%..Mohd Fayazuddin et al(1) reported that the practice of self medication among engineering population was 40.63%.Various studies have revealed that the self medication practice among college students ranged between 38% to 98% (7).

In this study the practice of self medication was found to be more among males (53.3%). The result was similar to that obtained in studies conducted in Islamabad(4) and Karnataka (3).In our study there was no statistically significant association between self medication practice and the socio-demographic variables. Studies on association of socio demographic factors namely age, gender and branch of study with self medication showed no significant association Some studies gave similar results(1,2) while some others showed that males practiced self medication more than females(3,4)

In our study, the major reason for not consulting a doctor was minor illness when the participants didn't feel the need to consult a doctor (90.8%).Similar finding was seen in many studies (1,8).Time saving and quick relief were the reasons in some other studies(22).

In our study headache (73.3%) was the major indication for self medication, followed by cough/cold/ sore throat (68.3%) and fever (65%). This was in accordance with studies done in South West Ethiopia(10)and Karnataka (3).

19 among the 120 participants who practiced self medication had taken antibiotics without consulting a doctor, of which only 8(42%) had completed the course. This might be because of the decreased awareness about drug resistance among engineering students. This could be a potential reason for indiscriminate use of antibiotics for self medication practice(22).Majority of the participants (47.5%) preferred Allopathic drugs as self medication(4).

In our study, 10 participants who practiced self medication experienced some kind of adverse drug reactions. The major adverse drug reactions experienced were nausea/ vomiting and weakness. This is in contrast to diarrhea and sedation which were the common adverse effects in many studies(15) 33.3% of those who faced some kind of adverse drug reactions stopped the drug while 25% consulted a doctor.

Antipyretics(84.2%) were the most common group of drugs used by the participants in the study in our study, followed by cough syrups(48.33%) and analgesics(46.67%).This was similar to the results obtained in various studies in which the major classes of drugs used for self medication were antipyretics, and analgesics.(1,3).Studies conducted by MulugetaTarekegn Angamo et al(11), Zafar et al (13) and PR Shankar et al (14) showed that antimicrobials were commonly used by college students as self medication. Antiemetics, eye drops and nasal decongestants were the commonly used drugs in a study conducted in Sharjah (2) Antacids were also reported (15) The most common adverse effects were sleep problems, allergic reaction ,headaches, tiredness or dizziness ,nausea/ vomiting , and diarrhea/ abdominal pain.(13). Our study also revealed similar results.

V. Conclusion

The practice of self medication is high among engineering students. Majority of them were aware of the risk of side effects They had a fairly good knowledge and a positive attitude towards self medication. This inference was drawn solely based on the response given by the participants. Education and awareness regarding the responsible use of self medication is therefore essential.

Implications of the study

Inappropriate self medication can cause wastage of resources among others. It can lead to drug interactions and even drug addiction. The practice of self medication among engineering students is high. Students' knowledge regarding the benefits and risks and their attitude towards the practice of self medication is important. Therefore, creating awareness and educating them about safe practice of self medication is necessary.

Limitations of study

Since the study was done in a limited area it may not necessarily reflect the characteristics of the general population.

Recommendations

Basic health related knowledge should be included as a part of the curriculum in all University programs. Multiple actions of intervention need to be adopted. Steps to monitor the drug selling system should be undertaken. Irrational dispensing of antibiotics without prescription should be strictly monitored to prevent drug resistance. Health authorities need to ensure that only 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.

Conflicts of interest: Nil

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