ORIGINAL ARTICLE

Attitudes, patterns and awareness on the use of self-medication and non-doctor prescription methods among undergraduate medical, nursing and physiotherapy students of a tertiary care setting in south Gujarat

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Abstract

Background: According to WHO Self-medication can be defined as the use of drugs to treat self-diagnosed disorders, or the intermittent or continued use of a prescribed drug for chronic or recurrent disease or symptoms. **Aim & Objective**: To assess and improve the level of awareness regarding self-medication non-prescription medicines and over the counter drugs, to assess the prevalence and determinants of self-medication practices among undergraduate students. **Settings and Design**: A cross-sectional study design was used to carry out a study at tertiary care centre. **Methods and Material**: Sociodemographic characteristics, self-medication knowledge and general questions on self-medication were asked from study participants. **Statistical analysis used**: SPSS software version 26. Self-medication knowledge was scored and categorized as excellent/good and poor knowledge. Comparison of knowledge scores among medical, nursing and physiotherapy students was done using ANOVA test. **Results:** The prevalence of OTC drug usage was found out to be 304(79.4%). Highest prevalence was noted amongst medical students i.e., 186(83.4%) followed by nursing and physiotherapy students which were similar at 55(73.3%) and 63(74.4%) respectively. Mean knowledge scores of MBBS, nursing and physiotherapy students showed significant results with F-statistic value of 21.63 (p=0.00). **Conclusions:** Self-medication happens to be a common practice among medical and paramedical students.

Introduction

According to WHO Self-medication can be 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.(1) Conveniently it can be explained selection of medicines for use without any doctor's prescription or over the counter (OTC) medicines for any illness or symptoms.(2)

Self-medication is now becoming a concern because it is practiced by the majority of people. (3)

Inappropriate usage of medications without consulting any registered practitioner can be problematic afterwards raising serious concerns upon microbial resistance, drug interaction, addiction, organ damage etc.

We studied the pattern of usage and awareness on self-medication and use of drugs by non-prescription methods among undergraduate medical and paramedical students of a tertiary care teaching hospital. People who are related to medical profession are having a better chance to make general population familiar with the pros and cons of self-medicating themselves.

Overenthusiastic usage of non-prescription medicines directly from the pharmacy or friends help may soon result in rise in drug resistance. Students are the first from their family to study medicine and if they have enough knowledge regarding the side effects and use of medicine it might have a beneficial effect in reducing the usage of non-prescription medicines.

Few similar studies had been carried out in certain parts but a regional familiarity of common illness and consumed drugs stands to be the purpose of carrying such study among a more exposed population.

Aims & Objectives

To assess and improve the level of awareness regarding self-medication non-prescription medicines and over the counter drugs, assess the prevalence and determinants of self-medication practices in undergraduate students, to find out the common drug use and reasons behind not using prescription medicine and doctor consultation and to document the difference in knowledge about self-medication among medical, nursing and physiotherapy students.

Material & Methods

Study Type -A Cross Sectional study design was used.

Study area- Tertiary care centre.

Study Population- Medical and paramedical students (Nursing and Physiotherapy students) were study participants Goals and objective, benefit of study, confidentiality, autonomy and risks were explained to the participants on google forms itself before filling up the responses.

Sample Size calculation and Sampling technique-The purposive sampling method of enrolment of undergraduate medical, nursing and physiotherapy courses at tertiary care centre was done. Final sample size of 383 was achieved based on the responses obtained from all study participants via medical, nursing and physiotherapy students.

Inclusion Criteria:-
a) All the undergraduate medical students of tertiary care teaching hospital were invited to be involved in the study.
b) All the undergraduate nursing students of nursing college attached to tertiary care teaching hospital were invited to be included in the study.
c) All the undergraduate physiotherapy students of physiotherapy college attached to the tertiary care teaching hospital were invited to be included in the study.

Exclusion Criteria:-
a) Improper/Incompletely filled questionnaire.
b) All the student participants not present on the day of administration of questionnaires.

Variables-A Semi-structured questionnaire having 38 questions in total were asked in four sections comprising of consent, sociodemographic characteristics, self-

medication knowledge and general questions on self-medication. For the purpose of assessing the knowledge of students regarding self-medication the questionnaire distributed included certain questions collecting basic information on self-medication understanding of students. These included common drugs and their different categories which come under OTC, what are prescription drugs and why they are different from over-the-counter drugs, can self-medication cause addiction, antimicrobial resistance, interference with other drugs, etc. Questions regarding OTC availability of oral contraceptives, pregnancy kits and condoms were also covered to find average knowledge scores of the students.

Data sources/ measurement- For assessing knowledge about self-medication, each correct answer was awarded with a score of 1 and wrong answer with a score of 0, with this a score of less than 7 (<50% marks) was considered as poor, 8-11 (50-75% marks) as good and more than 11(75-100% marks) with excellent knowledge about self-medication.

Statistical Methods: The responses were collected in google forms and were downloaded as excel sheet format, sorted as per requirement. After proper documentation and recording of the data analysis was done using SPSS version 26. Proportions were calculated for various objectives. Comparison of knowledge scores among medical, nursing and physiotherapy students was done using one way ANOVA-analysis of variance test.

Ethical Considerations: All the obtained information is kept confidential throughout study and participants were also assured of this there is no scope of disclosure of individual identity. Study has been approved under ICMR-STS Programme. Permission from Institutional Review Board of tertiary care Centre was also obtained. Institutional Approval Number is- No. GMCS/STU/Ethics/Approval/9509/20 date- 29/5/2020

Results

A total of 402 students participated in the survey, of whom 386 gave their agreement to be included. Of those, 3 were determined not to have provided reasonable responses, bringing the number of students who provided favorable responses to 383 in total. Out of which 208(54.3%) were female and 175(45.7%) were male, majority of the participants were of age group 19-23 years, the mean age of the respondents being 20.21$\pm$1.54 years. The participants included 223(58.2%) medical students, 85(22.2%) physiotherapy students and 75(19.6%) nursing students *(Table 1)*.

The prevalence of OTC drug usage was found out to be 304(79.4%). Highest prevalence was noted amongst medical students i.e., 186(83.4%) followed by nursing and physiotherapy students which were similar at 55(73.3%) and 63(74.4%) respectively.

About 147(40.8%) of the students reside within 2 km of the hospital, followed by 82(22.8%) of the students residing >10 km from the hospital followed by 70(19.4%) of the students residing at a distance of 5-10 km from the hospital while 61(17%) of the students were residing 2-5 km from the hospital (n=360).

Knowledge about self-medication

Mean knowledge score for self-medication was calculated for all participants from 3 different courses and it was found that highest mean score was for the medical students (MBBS) which stood at 7.92$\pm$ 2.32, which was considered good, followed by 6.93$\pm$2.05 of nursing students which was considered poor and least was 6.05$\pm$2.12 of physiotherapy students which was also considered poor. Analysis of variance test was applied between mean knowledge scores of MBBS, nursing and physiotherapy students. Result was statistically significant with F-statistic value of 21.63, df=2 and p value of 0.00 *(Table 2)*.

Practices and usage pattern:

When asked which common medical conditions they self-medicate for, 295(77%) students responded. On analysis of which fever was found to be the most common condition for which maximum 191(64.7%) respondents used self-medication, next to it by far distance was headache for which 84(28.5%) respondents used self-medication, followed by common cold, cough, diarrhoea and acidity, further details of which are present in *Table 3*. Paracetamol was found to be the most often used medicine, being used by all 285 (92.8%) respondents out of the 307 students (80.15%) who specified commonly used drugs under self-medication practise. Aspirin was shown to be the second-most regularly used drug, being used by 80 (26%) respondents, followed by levocetirizine 37 (12.05%), ibuprofen 34 (11.1%), azithromycin 32 (10.42%), diclofenac 31 (10.1%). Further details are mentioned in *Table 4*.

Paracetamol along with distant second aspirin seemed to be commonest drugs used amongst the students. When asked whether these drugs can also be life threatening if used irrationally only 113(29.5%) students were aware of such potential, rest being unfamiliar.

Out of 320 responses maximum respondents 296(92.5%) found self-medication to be effective for their illness and/or symptoms. Following on which out of 314 respondents most of them 262(83.40%) didn't face any side effects after self-medicating themselves for their illness or symptoms.

As it came to our knowledge out of 326 respondents, only 96(29.60%) students tried to alter the dosage of the drugs to be taken either because the drugs did not work or they were experiencing side effects.

Pattern of visit to doctor or medical practitioner upon falling ill

A large proportion of students i.e., 238(62.1%) students visit a doctor only when self-medication fails to relieve their ailment or medical condition or when it develops into a chronic issue. However, 145(37.9%) respondents indicated that they always went to the doctor when a symptom or disease materialized. This clearly mentions about the extent of self-medication practices amongst the medical and paramedical students included in the study.

Reason for using self-medication

When we tried to find the reasons behind considering self-medication rather than visiting a doctor then most of the students 205(53.5%) found that minor conditions do not require doctor's consultation and other reasons for practicing self-medication were emergency conditions 131(34.2%), time saving 57(14.9%), to save money 11(2.9%) and 184(48.0%) said they use self-medication for all i.e., to save time, money and in emergency conditions.

Source of information regarding use of drug

When asked where they got their knowledge about which drug to use and how much to take, the students gave the answers listed below.

As for the source of advice, about 1/3rd 133(34.72%) of them depended upon a doctor i.e., previous prescription or without prescription, about another 1/3rd 102(26.6%) got advice from family members, neighbors, friends, 50(13.05%) took pharmacist help and only 11(2.9%) students consult their own self-knowledge for guidance on how to treat their illness by self-medication.

Regarding drug dosage, the majority of respondents 163(42.6%) consulted a pharmacist, 132 (34.5%) studied the instructions for use, 53 (13.8%) enquired of friends, family, or neighbors who had previously used the drug, and at least 35 (9.1%) turned to the internet for the same.

Discussion

Self-medication offers both advantages and disadvantages but the pattern of practice is what determine the effect. Unreasonable and ill-suited use of self-medication is what brings the disadvantages causing shortage of supplies for the needy, drug interactions and much more. It is well recognized to lead to drug addiction, according to a few studies. (4) It can also result in concerns about the use of antibiotics developing resistance against infections, and this is likewise backed by few researches. (5)

The prevalence recorded from the study stood at 304(79.4%), which was comparable to similar studies conducted among medical students of Nagpur (6) and in medical students of Mangalore.(7) Prevalence was much higher than studies conducted in Iran(8), (33.7%) and Egypt(9), (55%). These differences could be due to different sample size of study population and varied healthcare facilities. Use of self-medication was found higher among the male students 325(85%) which was quite similar to a study conducted in AIIMS Delhi (10), whereas studies from Nagpur (6) and Eritrea(11) indicated the opposite.

Even though similar studies were conducted in different regions, common conditions against which self-medication was practiced included fever, cough, cold, headache, acidity. Medical students of Jammu also indulged in self-medication**,** fever and headache being common followed by cough, cold and sore throat.(12) Similar symptoms were also faced by undergraduate pharmacy students of Bangladesh with diarrhea and vomiting also being common self-medicated medical conditions reported by some students.(13)

We found the common self-medicated drugs belong to categories of analgesics, anti-pyretics, antihistamines, antacids, antibiotics. According to the Nagpur Study, the majority of these medications were used, with analgesics, antipyretics, and antacids being particularly popular. (6) Another study carried out in Iran found antibiotics to be the most common drugs under self-medication practice. (8)

Students who were questioned about the rationale for self-medication practices gave the following responses: saving time, saving money (due to expensive consultations), and avoiding the necessity for a doctor's consultation for minor ailments. The findings were consistent with those of numerous other studies. South Indian students gave similar responses, with adequate pharmacological knowledge being another frequent factor.(7) Similar findings were reported in a study of urban Puducherry households. (14)

Like previous studies (15,13) we found that pharmacist, family members and friends, doctors' prescription were the common source of information. In the group of self-medication users 61(16.6%) exhibited any side symptoms or problem following medication, quite lower experience of 9.2% was found in Eritrea study.(11) And much higher rates were reported by university students of Iran (8) of about 34.95%.

Of the 324 respondents in our study, 96 (29.60%) sought to alter the dosage of the drugs they were taking. This proportion was similar to that discovered in another study (11), but a very high value 60% was observed in Egyptian medical students, which is unrelated to our study.(9)

Awareness of drug interaction in our study stood at 230(59.8%) which was appreciably lesser than 78.70% reported in Central Indian Study.(16) As stated by the respondents, 356(93.5%) check expiry date before use, a near percentage of 92.33% was found in another study (6) and comparably less (85.60%) was founded in undergraduate pharmacy students of Bangladesh.(13)

Paracetamol was found to be most used drug, however a very low awareness 115(29.5%) about lethal potential of paracetamol was recorded. This seems to be alarming situation with need of increasing awareness about healthy & educated self-medication practices. Assessment of knowledge scores about self-medication using ANOVA test among medical, nursing and physiotherapy students showed significant difference with p-value of 0.00. Multivariate correlation was also evaluated, but failed to find relation between variables.

Conclusion

Study findings reflect that self-medication happens to be a common practice among the medical and paramedical students. Most students manage common illnesses including fever, headache, cough, common cold, acidity, and diarrhoea with use of common drugs including paracetamol, levocetirizine, ibuprofen, azithromycin, diclofenac. Most common causes were time and financial constraints, minor illnesses, and emergencies. For self-medication, pharmacist's, family, friends, and a doctor's previous prescription were the main sources.

Recommendation

Self-medication can't be considered entirely unfavourable, use of doctor's previous prescription or doctor's consultation without prescription could be considered as a justified self-medication practice and such attitude is rather safe and healthy solution to the illnesses. Regular vigilance is required to know the magnitude of self-medication. As medical and para-medical students are going to be future health care professionals they must be aware of serious concerns of self-medication not only at individual but also at societal level also. They have major responsibility to stop this cycle of self-medication not only among themselves but also in general population. Self-medication practices are increasing along with urbanization, necessitating increased awareness and the implementation of strict regulations on controlling medical supplies which can be helpful to avoid unnecessary self-medication practices preventing complications such as drug resistance and addiction in the future.

Limitation of the study

No specific limitation. Purposing sampling technique and sample size was based on frequency of student's responses

Relevance of the study

Self-medication practices has always been an issue in all. Medical and paramedical students due to their partial knowledge tend to self-medicate even more especially during covid-19 when no specific cure was available. That's why this study was planned among this population.

Authors Contribution

All authors have contributed equally.

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Tables

TABLE 1 COURSE WISE DISTRIBUTION OF STUDENT PARTICIPANTS (N=383).

Course	Year				Intern	Number	Percentage
	1	2	3	4			
MBBS	63	60	66	14	20	223	58.2%
Nursing	-	16	23	29	7	75	19.6%
Physiotherapy	17	41	19	8	N/A	85	22.2%

TABLE 2 COMPARISON OF KNOWLEDGE SCORE AMONG MEDICAL, NURSING AND PHYSIOTHERAPY STUDENTS USING ONE WAY ANOVA TEST (N=383)

Source of variation	Sum of squares	df	Variance	F	P value
Between groups	214.09	2	107.05	21.63	0.00
Within groups	1880.48	380	4.95		

TABLE 3 DISTRIBUTION OF COMMON CONDITIONS WHERE SELF-MEDICATION IS PRACTICED BY STUDENT PARTICIPANTS (N=383).

Condition			Frequency	Percentage (%)
Fever			191	64.70
Cough			34	11.50
Common cold			35	11.90
Sore throat			10	3.40
Gastric distress	Acidity		17	5.80
	Dyspepsia		2	0.70
	Acid reflux, GERD		2	0.70
	Diarrhoea		18	6.10
	Constipation		1	0.30
	Nausea vomiting		11	3.70
Pain/ache	Non-specific pain		26	8.80

Condition			Frequency	Percentage (%)
	Period/menstrual cramps		6	2.03
	Cramps		2	0.70
	Leg pain		1	0.30
	Headache		84	28.50
	Stomach ache		7	2.40
	Toothache		1	0.30
	Muscle pain		1	0.30
	Joint pain		1	0.30
Nasal complaints	Rhinorrhoea		3	1.01
	Sneezing		2	0.70
	Sinusitis		1	0.30
	Nasal congestion		2	0.70
Others			20	6.78
Total			295	77.00

TABLE 4 PRACTICES AND USAGE PATTERN OF MOST COMMON DRUGS WHILE SELF-MEDICATING AMONG PARTICIPANTS (N=383)

Name of drug	Frequency	Percentage (%)
Paracetamol	285	92.80
Aspirin	80	26.00
Levocetrizine	37	12.05
Ibuprofen	34	11.10
Azithromycin	32	10.42
Diclofenac	31	10.10
Cetrizine	28	9.10
Omeprazole	14	4.60
Amoxicilin	9	2.90
Chlorpromazine	8	2.60
Nimesulide	6	1.90
Pantoprazole	4	1.30
Rabeprazole	2	0.60
Total participants	307	80.15