

**Original Article**

**SELF MEDICATION PRACTICE AMONG MEDICAL, PHARMACY AND NURSING STUDENTS**

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**ABSTRACT**

**Objective:** The main objective of this study was to identify the commonly used drugs, indications, reasons, factors and to assess the attitude of medical, pharmacy and nursing students towards self-medication.

**Methods:** A prospective cross-sectional study was carried out in students of Medical, Pharmacy and Nursing college of Adichunchanagiri Institutions B. G Nagara from October 2014 to March 2015. Relevant information was obtained by using the questionnaire after taking the consent from students. The obtained data were analyzed by SPSS version 17.0.

**Results:** 736 students were enrolled in the study, with the age group of 17-26 y. In that 516 (70.1%) were females, 220 (29.9%) were male students. Females were self-medicating more (96.5%) than males (89.54%). The most common drugs used as self-medication are antipyretics (83.15%), antihistamines (26%), analgesics (25%). Fever and headache are the most common illness for self-medication reported. Among the reasons for self-medication, 86.54% students were reported that they used self-medication due to lack of time to consult the physician, 54.89% and 54.07% were reported that they felt their health problem is not serious and for their quick relief respectively.

**Conclusion:** Study concluded that the prevalence of self-medication practice is more among the medical and paramedical students because they are having easy access to knowledge related to the diseases and drugs. Among the three groups of students the prevalence of self-medication is more among nursing students.

**Keywords:** Self-medication, Over the counter drug, NSAIDS

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**INTRODUCTION**

Medication plays a vital role in health care, and it is an important therapeutic tool in the hands of health care professionals. In medical and paramedical students trend towards the use of self-medication is growing day by day. Self-medication is defined as the use of any medication for self-recognized illness or symptoms by selecting and using medicines without consulting doctors. Self-medication differs from self-care in that it involves drugs that may do well or cause harm [1].

Self-medication is a fairly widespread practice in the world, particularly in economically deprived communities. When practiced correctly, self-medication has a positive impact on individual and healthcare system. It allows patients to take responsibility and build confidence to manage their own health, thereby, promoting self-empowerment. Furthermore, it can save the time spent in waiting for a doctor, and even save a life in acute condition and may contribute to decreasing health care cost [10]. Self-medication is very common among medical, pharmacy and nursing students than the general population and it is influenced by many factors like age, gender, income and medical knowledge.

There are many reasons which may contribute to self-medication. These students can easily get information and knowledge from drug indices, literature, and other students and lecturers to self-diagnose and self-medicate [2]. Some of the reasons for such common practice include non-licensed providers of medicines, availability of prescription medicines in open markets, actions of unregistered practitioners, use of leftovers and medicines obtained from family members or friends with previous similar symptoms. The increased advertising of pharmaceuticals poses a larger threat of self-medication to the younger population in general. In developing countries like India, easy availability of wide range of drugs coupled with inadequate health services resulted increased proportions of drugs used as self-medication compare to prescribed drugs. Self-administering of drugs results in many physiological changes that could theoretically affect absorption, first pass metabolism, protein binding, distribution and elimination of the drug. An appropriate

dose for one person can be an overdose for another thus, the individual is ill advised in subjecting himself to potentially dangerous self-medication. A major drawback of self-medication is the lack of clinical evaluation of the patients, which could result in misdiagnosis and delay in appropriate treatment. Inappropriate self-medication at the community level could lead to the drug-induced diseases and waste of expenditure. Since over the counter drugs can be used for self-medication without the advice of the physician, their use is often not recorded in the individual medication history. The need to treat OTC drugs like all the other medications and to monitor self-medication practices are more and more recognized.

The misuse of non-prescription drugs amongst students 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. This raises concerns of incorrect self-diagnosis, drug interaction, and use other than for the original indication. A survey on widely advertised medications indicated that the majority of college students used at least one of the advertised products, without discussing this with their physicians [9].

In several studies, it has been found that Self-medication is associated with many drugs related problems such as wastage of resources, increased resistance of pathogens, serious health hazards such as adverse drug reactions, drug interactions, and drug dependence [4]. Even if the drugs were used correctly, self-use may result in a number of serious health hazards. Adherence to treatment and quality of life are also affected by self-medication.

The World Health Organization (WHO), reported about self-medication that sub-optimal prescribing practices such as inadequate dosing, incomplete treatment courses and indiscriminate drug use have contributed to the emergence and spread of antimicrobial resistance [2]. The prevalence of self-medication amongst university students in previous studies was found to be about 76% in Karachi, Pakistan, 45% in Turkey, 88% in Croatia, and 94% in Hong Kong [5].

Similar study conducted in Karnataka states that a majority of the students acquired the drugs for self-medication from pharmacies; thought that previous doctor's advice in a similar situation was a more important reason for self-medication; would seek the advice of a physician or pharmacist for different ways of self-treatment, and quite interestingly thought that self-medication was not very safe [2]. On the other hand, non-healthcare students acquired the drugs from healers and friends.

In India, a recent study was conducted in Andhra Pradesh, regarding the assessment of self-medication practices among pharmacy and nursing students at a tertiary care teaching hospital. The objectives of the study were ailments treat through self-medication, the types and sources of this non-prescribed medicine, the relationship between the level of education and self-medication practice, factors influence self-medication practices among university students and strategies can be crafted to discourage self-medication practices in general. They found about 86.54% of students practiced self-medication. On the other hand, self-medication can also have a positive impact on the health care if it follows guidelines issued by the WHO as it reduce the workload on medical services, helps to treat self-limiting minor illnesses and cost saving. The World Health Organization has emphasized that self-medication must be correctly taught and controlled. Determination of the extent, pattern and problems related to self-medication is very important [8]. The present study was undertaken to determine the main indications and drugs used for self-medication. We also determine the prevalence, attitude and reasons for self-medication among medical, pharmacy and nursing students.

## MATERIALS AND METHODS

### Study site

The presents study was conducted in Adichunchanagiri institute of medical science (AIMS), Sri Adichunchanagiri College of Pharmacy (SACCP) and Adichunchanagiri College of Nursing (ACN), B. G. Nagara, Mandya district, Karnataka.

### Study design

This was a "A prospective cross-sectional study".

### Source of data and materials

The data will be directly collected from the students, with the help of student informed consent form, well-prepared questionnaire and data collection form.

### Study period

6 mo.

### Study criteria

The students who willing to participate & giving consent were included in the study. The study includes 1<sup>st</sup> year to 4<sup>th</sup> year medical, nursing, B pharma students and 1<sup>st</sup> year to 6<sup>th</sup> year Pharm D. Students, those who are studying in Adichunchanagiri institute of medical science (AIMS), Sri Adichunchanagiri College of Pharmacy (SACCP), Adichunchanagiri College of Nursing (ACN), B. G. Nagara, mandya (dis), Karnataka. The students who are taking prescribed medicines from the registered medical practitioners were excluded from this study.

### Study procedure

The study was conducted at Adichunchanagiri institute of medical science (AIMS), Sri Adichunchanagiri College of Pharmacy (SACCP), Adichunchanagiri College of Nursing (ACN), B. G. Nagara; We requested the principals of the respective institutions to make the necessary arrangements for the study.

The data was collected in the suitably designed pre-tested semi-structured questionnaire, which contains 11 questions regarding the self-medicated drugs, the illness for self-medication, reason, attitude, and perception about self-medication. The obtained data are analyzed by using SPSS 17.0.

**Table 1: Demographic details of participants (n= 736)**

Age	Age group	No. of students		Percentage (%)	
		17-19	428		58.5%
	20-22	271		36.8%	
	23-26	38		4.8%	
Course	Gender (N)	Self-medicated		Not self-medicated	
		No. of students	Total	No. of students	Total
Medical (n=227)	Male (84)	63	196	21	31
	Female (143)	133	(86.3%)	10	(13.7%)
Nursing (n=195)	Male (16)	16	194	0	1
	Female (179)	178	(99.5%)	1	(0.5%)
Pharmacy (n=314)	Male (120)	100	290	20	24
	Female (194)	190	(92.3%)	4	(7.6%)

**Note:** Total 736 students were assessed regarding their practice, attitude and perception regarding the self-medication behaviour out of 736 students 29.9% (n=220) were males and 70.1% (n=516) were females the mean age of the respondents was 19±1.5, the prevalence of the self-medication among the study participants was 92.39%. A proportionately large no of females were self-medicating 97.0% (n=501) than males 81.36% (n=179). The total population of our study includes 227 medical, 195 nursing and 314 pharmacy students. Among them, 196 medical students (86.3%), 290 pharmacy students (92.35%) and 194 nursing students (99.4%) were practiced self-medication. (table 1)

**Table 2: Categories of medication that are preferred by the students for self-medication**

S. No.	Drugs taken by students	Percentage of students (%)
1	Antipyretics	83.2
2	Antihistamine	26.2
3	Analgesics	25.2
4	Cough syrup	20.1
5	Antiulcer drugs	15.8
6	Antibiotics	7.8
7	Anti-diarrhoeal drug	7.4
8	Antiemetic drug	6.9
9	Anti-allergic	6.6
10	Antacids	5.8
11	Eye drops/ear drops	3.1
12	Skin preparation	2.9
13	Others	5.44

Note: About 83.15% of respondents used the antipyretics which was most common followed by, antihistamines (26%) analgesics (25%) and so on.

## RESULTS

Seven hundred and thirty-six students were included in the study, out of which 220 were males and 516 were female students. Amongst them 227 were medical students, 314 pharmacy and 195 nursing. About 92.39% of the students reported the use of self-medication and 7.8% were not using the self-medication.

**Table 3: Frequency of reported complaints**

S. No.	Common Illness	No. of students	Percentage (%)
1	Fever	581	78.9
2	Headache	425	57.7
3	Cold/flu	306	41.6
4	Cough	275	37.4
5	Pain	175	23.8
6	Stomach pain	169	23.0
7	Diarrhoea	135	18.4
8	Gastritis	114	15.5
9	Vomiting	100	13.6
10	Throat infection	85	11.5
11	Allergy	74	10.1
12	Others	87	11.9

Note: Fever and headache are the most common illness reported by the students enrolled in the study. Out of 736 students, 78.9% reported fever followed by a headache (57.7%), cold/flu (41.6%), cough (37.4%) pain (23.78%) and so on as shown.

**Table 4: Source of knowledge regarding self-medication (n=736)**

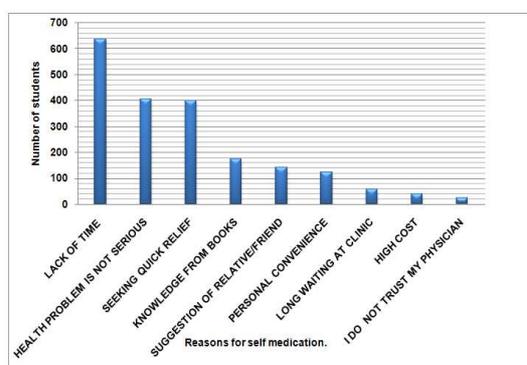
Source of knowledge for self-medication	Frequency of students	Percentage (%)
From books	363	49.3
Family and relatives	303	41.2
Friends	124	16.8
Lectures	124	16.8
Media/internet	34	2.7

Note: 49.3% of students feel that they got knowledge about drugs from books followed by family and relatives (41.2%), friends (16.8%), Lectures (16.8%) and media/the internet (2.7%).

**Table 5: Source of drugs used for self-medication (n=736)**

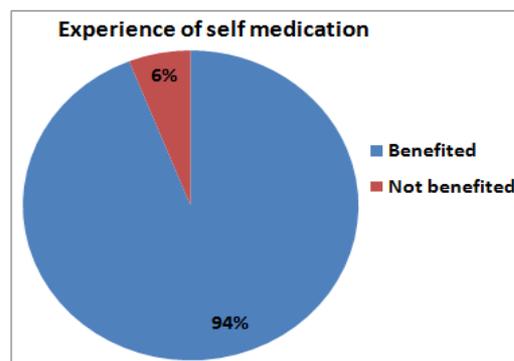
Source	No. of students	Percentage (%)
Pharmacy	515	96.9
Parents	205	27.8
Friends	113	15.3
Relatives	61	8.28
Herbal store	51	6.9

Note: Majority of the students told that their source of drug for self-medication was a pharmacy (96.9%) but others also told parents (27.8%), friends (15.3%), relatives (8.28%) and herbal store (6.9%).

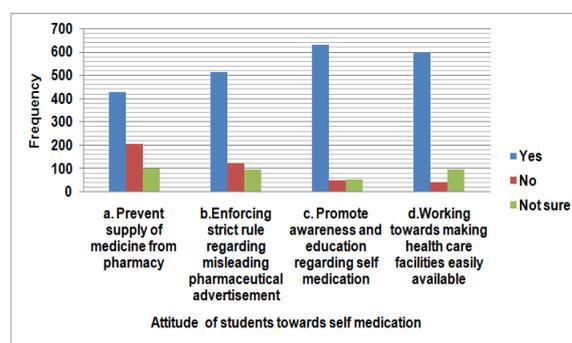


**Fig. 1: Reasons for taking self-medication. (n=736).**

The major reasons for the self-medication were "lack of time" followed by "health problem is not serious", "seeking quick relief" etc as shown



**Fig. 2: Experience regarding self-medication:** among 736 students 695 (94%) were believed to be benefited from self-medications and the other 41 (6%) were experienced that the self-medication is not benefited to them



**Fig. 3: Students opinion to prevent self-medication. (Total No: 736)**

For reducing the growing trend of self-medication, most of the students suggested that 'promote the awareness and education regarding self-medication' were very important. Other participants told 'working towards making health care facilities easily available' as a second most strategy to reduce self-medication. Followed by students whom perceives to enforce strict rule regarding misleading pharmaceutical advertisement and less students were supporting to prevent supply of medicine from pharmacy (fig. 3)

## DISCUSSION

WHO states that "Self-medication is the selection and use of medicines by individuals to treat self-recognised illnesses or symptoms." Self-medication is considered as an element of self-care [3]. Among 736 students, females were more than males in our study. More of the students were pharmacist followed by medical students and nursing students. 92.39% of the students reported the use of self-medication and 7.61% were not using the self-medication practice. Female students were self-medicated more compare to men [13]. Our study was conducted with a large sample size compared to other studies conducted in India [2, 3, 6 and 11]. Among a total number of population 196 medical students (86.3%), 290 pharmacy students (92.35%) and 194 nursing students (99.4%) were practiced self-medication, and we found nursing students are self-medicated more followed by the pharmacy and medical students.

Our study finding shows that antipyretics are the most common class of drugs i.e. 83.2% used as self-medication followed by antihistamines 25%, analgesics 20.10%, antiulcer 15.89% drug, antibiotics 7.88%, antiarrhoeal 7.47% [4], the finding were similar to a study conducted at Yenepoya Nursing College, Yenepoya university, Mangalore, Karnataka [2]. But in a study conducted in Kasturba Medical College, Manipal reported that 39.3% students used antibiotics as self-medication, but in our study it was around 7.88%. The rate of antibiotics usage reports are less than the study conducted in other studies from India [3, 4 and 8].

Table 6: Perception of students towards self-medication (n=736)

Perception	Yes				No				Not sure			
	Total	M	P	N	Total	M	P	N	Total	M	P	N
(1) Self medication is a part of self care	493 (66.96%)	164 (22.3%)	208 (28.2%)	121 (16.4%)	87 (11.8%)	40 (5.4%)	24 (3.26%)	23 (3.1%)	156 (21.1%)	66 (9.0%)	39 (5%)	51 (6.9%)
(2) I will continue with this and/or start self medication	310 (42.1%)	132 (17.9%)	128 (17.4%)	50 (6.7%)	149 (20.24%)	25 (3.4%)	61 (8.3%)	62 (8.4%)	277 (37.63%)	69 (9.8%)	125 (17%)	83 (11.3%)
(3) Advice the medication to friends	347 (47.14%)	106 (14.4%)	144 (19.5%)	97 (13.2%)	217 (29.48%)	62 (8.4%)	99 (13.5%)	56 (7.6%)	172 (23.36%)	59 (8%)	71 (9.6%)	42 (5.7%)

Note: (In this table M= Medical, P= Pharmacy, N= Nursing) In our study we divided the overall perception of students towards self-medication into 3 parts. Among 736 students, 66.96% of students [mostly pharmacy students (28.2%)] believed that self-medication is a part of self-care but 11.8% believed that it is not part of self-care [mostly medical professionals (5.4%)] and 21.11% were not sure about it. Mostly medical professionals (9%). Similarly, 42.1% of students told that they will continue/start self-medication practice (mostly medical) whereas 20.24% told that they will not continue or start further (mostly nurses) and 37.63% (mostly pharmacist) were not sure about this. Similarly, 47.14% of students told that they will be advising about self-medication to their friends in near future, but 29.48 told that they will not advice and 23.36% were not sure about it where the majority were a pharmacist.

Fever and headache were the most common illness for taking self-medication. Findings were a similar study conducted by Damodar. G, showed that the conditions like Cold 92.74%, Headache & fever 83.93% were the most common illness for self-medication [3, 6], in our study fever 78.94%, headache 57.74%, were reported. The other study was conducted in Gondar University; Ethiopia was reported that major illness for self-medication practice was fever, headache, and the common cold.

In our study students were reported that the lack of time, minor health problems and seeking for quick relief are the major reasons for taking drugs without a prescription. 23.64% students were reported that they have knowledge about the disease and drugs from books. 19.29% students took medication by accepting the suggestion from friends and relatives, 16.57% used it for their personal convenience. 7.88% were used this medication to avoid the long waiting at clinics, 5.43% of students reported that they were used the self-medication due to the high cost of medical consultation, and finally 3.1% were do not trust their physician.

The study conducted in Kasturba Medical College, Manipal University, Mangalore were reported that the most common reason for self-medication reported by a large number of participants was the illness being too trivial and lack of time to consult a doctor [3, 4]. Similar observations were reported in a few studies from India. However, in a study from Tamil Nadu most students practiced self-medication as it was time saving, whereas in Punjab the most common reason for self-medication was for quick relief [3].

The source of drugs for self-medication was identified as pharmacy and from parents; it is almost same as the study reports from Brazil [16]. Books, relatives and lectures are the main source of knowledge about self-medication. The Same result we can found from the study conducted in Andhra Pradesh [5].

In the present study 493 (66.9%) participants were felt that the self-medication was a part of self-care which was higher to that reported in studies from Ethiopia and Karachi [3], 87 were not accepting this concept, and 156 students were not sure about this concept. 67.3% of Medical students and 44.13% of Pharmacy students are reported that they will continue with or start self-medication. The majority of the Nursing students are not sure about whether they will continue or start this practice. The study shows that among the students enrolled in the study 54.01% of the medical students are reported that they will advise self-medication practice to friends and others [3].

The trend towards self-medication is increasing day by day. Our study participants suggested for preventing the growing trend of self-medication there should be strong policies for prohibiting the supply of medicines without a valid prescription. About 80% participants suggest that health care facilities should be easily available. 69.7% students are suggesting that there should be strict rules regarding misleading pharmaceutical advertisement. 58% of students were reported that there should be a proper rule to control the supply of medicines from a pharmacy without a prescription and above 50% students are reported that there should be the proper method to promote the awareness and education regarding self-medication. In that 41.3% Medical students, 67.24% pharmacy students and 57.3% nursing students have reported the supply of medicines from a pharmacy without prescription should be prevented. Opinion regarding growing trend of self-medication was asked, 100% of Medical students, 92.7% pharmacy, and 82.5% nursing students were showing their positive attitude towards promoting awareness and education regarding self-medication.

From this study, we found that the prevalence of self-medication practice is more among the medical and paramedical students because they are having easy access to knowledge related to the diseases and drugs. In our study population, it is more with nursing students.

Limitations of the study were incomplete information given by some of the students due to lack of time and most of the students forgot the name of drugs which they took long days before. The study findings based on a single center study in south India, hence the study findings can't be generalized in the general population.

## CONCLUSION

The present study concludes that there is a growing trend of self-medication in medical and paramedical students. 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 problems of self-medication should be emphasised to the students to minimise this risk. Making the healthcare system easily available and promoting the education regarding self-medication can reduce the risk of self-medication.

## CONFLICT OF INTERESTS

Declared none

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