

**Research Article****PRACTICE OF SELF-MEDICATION AMONG MEDICAL STUDENTS IN MANIPAL****Khandelwal S.M.Sc. (Medical Pharmacology)¹, Deb D M.Sc. (Medical Pharmacology)², Gonsalves J M.Sc. (Medical Physiology)³**¹Lecturer, Department of Pharmacology, Melaka Manipal Medical College (Manipal Campus), Manipal University, Manipal, Karnataka, India-576104²Lecturer, Department of Pharmacology, Melaka Manipal Medical College (Manipal Campus), Manipal University, Manipal, Karnataka, India-576104³Selection Grade Lecturer, Department of Physiology, Melaka Manipal Medical College (Manipal Campus), Manipal University, Manipal, Karnataka, India-576104**Corresponding Author :** Khandelwal S, **Email:** smita042001@gmail.com

Abstract: **Objective:** To estimate the prevalence of self-medication among medical students, compare the frequency of self-medication practice between first year and second year medical students and evaluate the socio-demographic factors that are associated with this practice. **Methods:** First and second year medical students of Melaka Manipal Medical College (Manipal Campus), Manipal were included for the study. A written informed consent was obtained from the participants prior to the study. Self-administered, structured pre-tested questionnaires which consisted of closed- and open-ended questions were used for the study. Questionnaire included questions on demographic information and various socio-economic variables. **Results:** A total of 231 students (first year students, n=126; second year students, n=105) responded to the questionnaire. The most commonly self-prescribed drugs were pain killers, anti-pyretics, vitamins, antacids and herbal/homeopathic medicines. Consumption of antipyretics, antiallergics and hormonal pills were significantly higher among year 2 students compared to year 1 ($p < 0.05$) Intake of antibiotics, analgesics, vitamins, antacids and tonics was found to be almost equal. Year 1 students were found to consume higher amounts of antidepressants and sleeping pills compared to year 2 though the difference was statistically insignificant. **Conclusion:** Self-medication practice among medical students studying in MMMC was significantly higher among the second years compared to first years. In addition to allopathic drugs, herbal/homeopathic medicines were also commonly used. Self-medication practice is rampant among students and urgent corrective measures are warranted.

Keywords: self-medication, students, self-administered questionnaire, socio- demographic factors

INTRODUCTION

Self-medication is defined as obtaining and consuming drugs without the advice of a physician either for diagnosis, prescription or surveillance of treatment.¹ Self-medication can be considered as the most common form of self-care in health.² It affects both developed and under developed countries. It may include the use of herbs, the retention and re-use of prescription drugs or the direct purchase of prescription-only drugs without medical input.³ Self-medication is a fairly common practice in the world, especially in economically deprived communities.² Self-medication is particularly relevant in countries where there is lack of enforcement of regulations leading to availability of prescription medicines over the counter.^{4,5}

Practice of self-medication has both positive and negative aspect. If practised correctly, it has positive effect on individual and health care system. It allow patients to manage their own health, thereby, promoting self empowerment.² The WHO has also pointed out that responsible self-medication can help prevent and treat ailments that do not require medical consultation and provides a cheaper alternative for treating common illnesses.⁶ However, it is also important that self-medication is accompanied by appropriate health information.

On the other hand, self-medication results in widespread use of medicines which may be associated with serious adverse effects. Several studies have reported that inappropriate self-medication results in wastage of resources and entails serious health hazards such as adverse drug reactions, prolonged suffering and drug dependence.^{2,7,8}

Economic, political, and cultural factors have stimulated a constant increase in self-medication worldwide, turning this practice into a major public health problem. Although there is currently a huge amount of medicines available in the market, this does not equate with an improvement in quality.⁹ In developing countries self-medication usually leads to inadequate drug utilization patterns and is especially worrying when it involves specific diseases (e.g. diarrhoea or the common cold) or prescription drugs such as antibiotics.¹⁰ Improving knowledge about rational drug use at an early age may be a good way of increasing the population's knowledge concerning health, medicines and self-medication. Nevertheless, the effect of educational intervention to promote appropriate drug use has not previously been well studied in young populations.^{11,12}

Studies on the prevalence and factors associated with self-medication among medical students are necessary to help with

the planning of interventions to improve the use of medicines in student population.

Thus, in this study we estimated the prevalence of self-medication among medical students, compared the frequency of self-medication practice between first year and second year medical students and evaluated the socio-demographic factors that are associated with this practice.

MATERIALS AND METHODS

Study design

This was a cross-sectional, questionnaire based study.

Study setting and population

The study was conducted with MBBS students of Phase I Stage I, Batch 26 (Year 1, n=126) and Phase I Stage II, Batch 24 (Year 2, n=105) in Melaka Manipal Medical College (Manipal Campus), Manipal.

Ethical issues

Prior permission was obtained from the institutional ethics committee for conducting the study. The purpose of the study was explained to the participating students and confidentiality was ensured. A written informed consent was obtained from every student before filling the questionnaire.

Study procedure

Self administered, structured prevalidated questionnaire consisting of both closed-ended and open-ended questions were used. It also included demographic information, questions on socio-economic variables such as health seeking behaviour, previous self-use of drugs, conditions for which the drugs were self-prescribed, sources of drugs, names of drugs used, sources of information on drugs and reasons for self-prescribing and presence of any long-term illness. The questionnaire was pre-tested for content and design on 15 individuals and suitable modifications were done. The final version of the questionnaire was used and the participating students were requested to fill the questionnaire.

Data analysis

Data collected was analysed using SPSS version 16. Prevalence of self-medication among the students was expressed using descriptive statistics (frequency and percentage). Chi-square test and Fischer’s exact probability test were performed to analyze associations and differences in self-medication practice between the first and second year students. A probability value of < 0.05 was considered as significant.

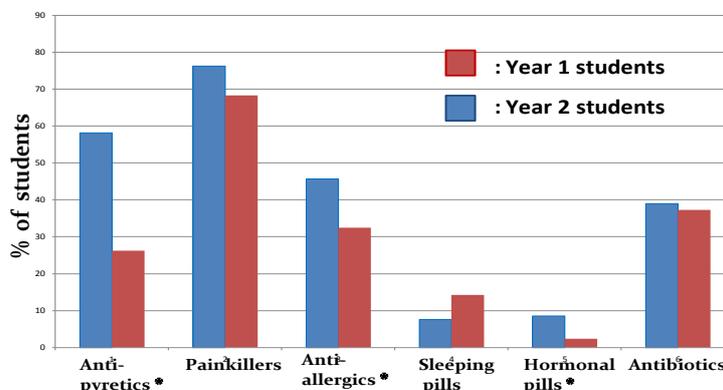
RESULTS

A total of 231 students participated in the study. Number of males was 133 (57.6%) and number of females was 98 (42.4%). The mean age of students was 19.5 years with a standard deviation of 1.5.

Table 1: Pattern of self-medication among medical students

Medicines	No. of first year students (n= 126)	No. of second year students (n=105)	Total no. of students (n=231)	% of students
Pain killers	86 (68.3 %)	80 (76.2 %)	166	71.9
Anti-pyretics	33 (26.2 %)	61 (58.1 %)	94	40.7
Antibiotics	47 (37.3 %)	41 (39.0 %)	88	38.1
Vitamins	109 (86.5 %)	96 (91.4 %)	205	88.7
Antacids	47 (37.3 %)	48 (45.7 %)	95	41.1
Sleeping pills	18 (14.3 %)	08 (7.6 %)	26	11.3
Herbal/Homeopathic	67 (53.2 %)	59 (56.2 %)	126	54.5

The most commonly self-prescribed drugs were pain killers, anti-pyretics, vitamins, antacids, and herbal/homeopathic medicines.

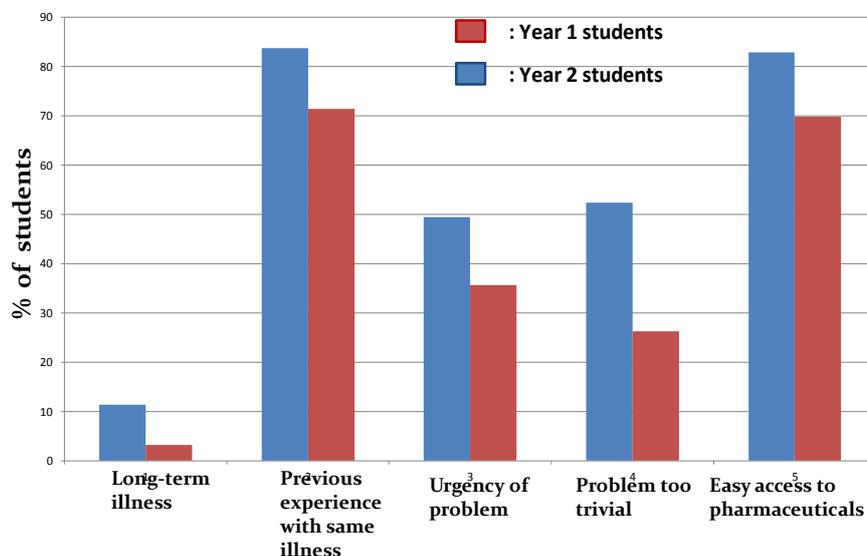


* Significant relationship observed (p<0.05)

Graph 1: Comparison of self-medication practice between first year and second year medical students

Consumption of antipyretics, antiallergics and hormonal pills were significantly higher among year 2 students compared to year 1 ($p < 0.05$). Intake of antibiotics, analgesics, vitamins, antacids and tonics was found to be almost equal. Year 1

students were found to consume higher amounts of antidepressants and sleeping pills compared to year 2 though the difference was statistically insignificant.



Graph 2: Common reasons cited for self-medication

DISCUSSION

Several studies have reported the practice of self-medication in medical and non-medical students. The present study showed that self-medication was widely practiced by the medical students of the institute. The most commonly self-prescribed drugs were pain killers, anti-pyretics, vitamins, antacids, and herbal/homeopathic medicines. The findings for the use of pain killers and anti-pyretics are consistent with the other studies showing that a significant number of students self-prescribe these drugs.^{13,14} In the study conducted in Karachi by Syed et al, analgesics were the most common (88.3%) followed by antipyretics and antibiotics; the study in Bahrain (2006) by James et al also reported analgesics to be the most commonly used drug group (81.3%).^{15,16}

It is likely that self-medication would be more prevalent in second year medical students as they have more knowledge about the drugs and the disease. Consumption of antipyretics, antiallergics and hormonal pills were significantly higher among year 2 students compared to year 1 ($p < 0.05$). Intake of antibiotics, analgesics, vitamins, antacids and tonics was found to be almost equal between year 1 and year 2 students. Year 1 students were found to consume higher amounts of antidepressants and sleeping pills compared to year 2. Similar results were also reported in the study conducted by James et al.¹⁷ This implies that a higher level of medical education is associated with increased practice of self-medication. However, in the study conducted by Sontakke et al. the prevalence of self-medication among first and second year medical students did not differ significantly.¹⁴

In our study, common reasons cited for self-medication were long-term illness, previous experience with the same illness,

problem were too trivial, urgency of problem and easy access to pharmaceuticals. This is comparable to the study conducted by Syed et al which showed that previous experience with similar symptoms and the problem seeming to be too trivial were the commonest reasons for self-medication.¹⁵ Some studies have also cited low economic status and non-availability of health care facility as major reasons for practicing self medication which was not found in our study.¹⁸ Hussain (2008) reported that the main reason to self-medication practice among university students were lack of time and low cost consultation.¹⁹

There are a few shortcomings of this study like recall bias, not revealing truth by the students and missing of some drugs used for self-medication. As this is a questionnaire based study, students were expected to complete the questionnaire independently but mutual influence between students could not be entirely ruled out.

Practice of self-medication among the students is a matter of grave concern as it can lead to a multitude of problems. Self-medication can have serious ramifications like global emergence of multi-drug resistant pathogens, drug dependence and addiction, masking of malignant and potentially fatal diseases, hazards of misdiagnosis, problems relating to over and under dosaging and side effects due to specific drugs.²⁰⁻²⁵

In our study, consumption of drugs like antidepressants and sleeping pills by the first year medical students is a serious issue and requires intervention to prevent complications. A holistic multidisciplinary approach should be taken to combat this growing hidden problem and awareness among the medical students needs to be created. Self-medication practice

is widespread among students and urgent corrective measures are necessary.

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Informed consent**Student's consent**

I, hereby declare that I am participating in this questionnaire study with my own interest and willingness.

Signature : _____

Questionnaires

SELF-MEDICATION PRACTICE AMONG MEDICAL STUDENTS IN MELAKA MANIPAL MEDICAL COLLEGE (MMMC), MANIPAL CAMPUS, MANIPAL

Medicines consumed by students on self prescription

Medicine	YES	NO
Pain killers		
Anti-pyretics		
Anti-allergics		
Antibiotics		
Vitamins		
Antacids		
Tonics		
Sleeping pills		
Antidepressants		
Hormonal pills		
Herbal / Homeopathic		