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A questionnaire based study regarding the knowledge, attitude and practice of self-medication among undergraduate medical students

Pradnya Deolekar[1*], Pramila Yadav[2], Sandesh Deolekar[3], Aanchal Gwalani[4]
[1] Associate Professor, Department of Pharmacology, DY Patil School of Medicine, Maharashtra, India
[2] Professor, Department of Pharmacology, DY Patil School of Medicine, Maharashtra, India
[3] Professor Department of Surgery, DY Patil School of Medicine. Nerul, Navi Mumbai, Maharashtra, India
[4] Resident· Department of Pharmacology, DY Patil School of Medicine, Maharashtra, India

Abstract
Introduction: Self-medication is usually defined as intake of any type of drugs for treating oneself without professional supervision to relieve an illness or a condition. Self-medication is a common type of self-care behaviour in the general public, but medical students differ in such practice, as they have knowledge about drugs and diseases.
Aims and Objectives: To estimate the prevalence and to find out the existing knowledge, attitude and pattern of practice regarding self-medication among the undergraduate medical (MBBS) students.
Methods: A questionnaire eliciting self-medication practices was distributed to university students.
Results: Self-medication practices were reported by 81.25% of the surveyed students. The most common indications for self-medication were to relieve the symptoms of headache 258 (79%), cough, cold and sore throat 250(76.9 %), fever 200(61%), stomach-ache 168(51.6%). Analgesics 260(80%) were the most common drugs used for self-medication.
Conclusions: Self-medication was widely practiced among the students. Educating benefits and risks of self-medication is the need of the hour for medical students as they are the future health care professionals.

Keywords: self-medication, medical students

Introduction

Self-medication has been reported as being on the rise internationally [1]. Self-medication involves acquiring medicines without a prescription, resubmitting old prescriptions to purchase medicines, sharing medicines with relatives or members of one's social circle or using leftover medicines stored at home [2].

Self-medication is now increasingly being considered as a component of self-care [3]. Economic, political, and cultural factors have stimulated a constant increase in self-medication worldwide, turning this practice into a major public health problem [2]. The prevalence rates are high all over the world; up to 68% in European countries, while much higher in the developing countries 31% in India, 59% in Nepal, in Pakistan around 51% [4].

Various factors determining self-medication include: socioeconomic factors like growing empowerment, improved quality of education, health consciousness, advanced technology like internet and other communication systems, modern lifestyle, easy accessibility to the medicines, awareness about treatment of illnesses and rehabilitation, inappropriate nutrition [5].

The practice of self-medication has brought the concept of over the counter drugs which are also called as non-prescription medicines. These drugs are available without doctor's prescription through pharmacies [6]. Irrational self-medication is detrimental to health as it enhances the risks of adverse drug reaction, antimicrobial resistance and also leads to wastage of resources [7]. Over-dosage or under-dosage may lead to damage of organs or incomplete cure. Repeated self-medication can also produce drug dependence to certain drugs and misdiagnosis by professionals if being visited for incomplete cure, as symptoms are masked temporarily [8].

For medical undergraduates such practice has special significance as they are exposed to knowledge about diseases and drugs. Hence this study was undertaken to assess practice and perception of self-medication among undergraduate medical students.

Methodology

It is a cross-sectional study in which study population consisted of 400 undergraduate (2nd year MBBS) medical students of a Medical College Nerul, Navi Mumbai, India.

Any event of use of over the counter (OTC) or prescription medicines without consulting a doctor will be considered as self-medication. All the students were explained about the type and purpose of the study and informed that participation is voluntary and their collected information will not be shared and it would be anonymous. Students were given a questionnaire that include both open and close ended questions about self-medication practice. The study questionnaire was developed and was first pre-tested in ten respondents and suitable modifications done. The final version of the questionnaire was distributed to the students. Approval

was taken from scientific research committee of the institute.

Statistical Analyses
Data was analysed and presented as counts and percentages.

Results
A self- completion questionnaire was used to survey self-medication among medical students in a college. The students were from the first and second year. Data was collected from 400 students aged 19 to 23 years, out of them 175 (43.75%) were males and 225 (56.25%) were females. Out of 400 students total 325 (81.25%) students took Self-medication and the rest 75 (18.75%) students have not taken Self-medication till now.
Headache 258(79%) is the commonest reason for self-medication followed by cough, cold, sore throat 250(76.9%) and fever 200(61%); Stomach-ache 168(51.6%), diarrhoea 152(46.7%)and 55(16.9%) of the students took self-medication for anxiety before exams.
(80%) of students used analgesics/painkillers, 61% of students used multivitamins, 60% used decongestants, 46% used antibiotics, 42% students used antipyretics like paracetamol, 40% used antispasmodics, 24.6% used antacids, by 21.5% Modafinil and 16.9% of them used Beta blockers.

Knowledge
Most common reasons for taking Self-medication were that there was no need to visit the doctor for minor illness (72.3%), being time saving (61%), providing quick relief (55%), ease and convenience of taking Self-medication (47.6%) also to provide himself/ herself a learning opportunity (27.6%),
The most common reasons for not taking Self-medication were lack of knowledge about
Medicines (73.33%), followed by risk of adverse effects (72%), and risk of using wrong drugs (66.6%) and misdiagnosing (66%).
The source of information for self-medication is given in the following table no 1.

Table 1: Source of information

Source of information	N	%
Pharmacy	195	60
Previous prescriptions	48	15
Media, Internet	39	12
Textbooks	26	08
Friends	17	05

Attitude
Most common reasons for taking Self-medication were that there was no need to visit the doctor for minor illness (72.3%), time saving (61%), providing quick relief (55%), ease and convenience (47.6%), avoiding crowd (13.8%). 24.6% students perceived self-medication as economically feasible. Very few (14.4%) students were confident about their knowledge of self-medication.

Practice
A total of 325 (81.25%) students took self-medication whilst 75 (18.75%) students haven't taken any till now. Among those students who took Self-medication 220 (67.69 %) students sometimes practised while 85 (26.1%) students rarely practised and 20 (6.1%) students always practised self-medication.
The indications for self-medication is given in the following table no 2.

Table 2: Indications for self-medication

Indication	N	%
Headache	258	79.38
Fever	200	61
Cough, cold, sore throat	250	76.9
Stomach ache	168	51.6
Menstrual symptoms	110	48.8
Vomiting	110	33.8
Diarrhea	152	46.7
Anxiety symptoms before exams	55	16.9

The following drugs were used for self-medication as shown in the following table no 3**.**

Table 3: Drugs used for self-medication

Medications	N	%
Analgesics	260	80
Multivitamins	200	61
Decongestants	199	60
Antimicrobials	150	46.1
Antispasmodics	145	40.4
Antacids	80	24.6
Modafinil	70	21.5
Beta Blockers (Propranolol)	55	16.9

Discussion
The great availability of pharmaceutical products these days, ready access to drugs; quality of health-care, the increased potential to manage certain illnesses through self-care; economic, political and cultural factors have contributed to the growth of self-medication world-wide. Growing empowerment, resulting from improved educational levels and greater access to information, combined with increased individual interest in personal health, is resulting in growing demand for direct participation in health-care decisions.
The main objective of this study was to assess the prevalence of self-medication and the attitudes of students about self-medication. The study found that the overall prevalence of self-medication among the students of a Medical College, Nerul, Navi Mumbai was 81.25% which is higher than that of Jagadeesh *et al* which showed a prevalence of 66%. Our prevalence rate is almost consistent with other researches, Patil *et al* 88.18%, Rajanish *et al* 88.5%, whereas a study in Mangalore revealed the prevalence of 78.6% [9-12]. While a study among medical students from Bangladesh reported self-medication prevalence of 100% [13]. The reason for higher prevalence rate is because medical students are more aware of drugs as it is a part of the curriculum, as compared to other non-medical students. Female students practiced more self-medication (56.25%) as compared to male counterpart (43.75%) may be due to their menstrual and hormonal problems.

It was seen that saving time (therefore no need to visit practioner) and availability of old
Prescriptions were main reasons (61%) for self-medication. Similar reasons were reported by
University students from Brazil, Malaysia and Pakistan [4, 14]. As we know, self-medication can treat minor disorders and thus lessens the burden of therapy on the part of patients as well as reduce the pressure on medical staff in developing countries with inadequate health facilities but self-medication can be associated with certain serious problems that the individual may encounter [15].
Self-medication often delays proper treatment of the disease. It can give temporary, symptomatic relief and thus masks symptoms, possibly indicative of a more serious problem e.g. malaria. Analgesics can conceal serious medical issues like migraine and other CNS conditions [16].
The source of knowledge regarding the drugs is discussed in the following. Pharmacy shops were the most common source 195(60%) to obtain drugs for self-medication in our study. Similar results have been reported in a study done among students in Malaysia and Nigeria [14]. It is worth mentioning that despite a lack of training in diagnosis and prescribing medications, pharmacists dispense medications to consumers based on the patient's symptoms or request for particular medications. This can lead to misuse, overuse, polypharmacy, adverse drug events, drug interactions and antibiotic resistance [17].
48(15%) got information from previous prescriptions, 39(12%) of them mentioned Internet, media and magazines, 26(8%) of students mentioned the source is from their medical books and 17(5%) said they got information from their friends. It is ironical that internet is still not a common source of information for self-medication.
Our study revealed that headache, cough, sore throat and fever were the top reasons for self- medication. The results are similar to a studies done in Malaysia and Karachi where in students reported headache and fever were the top indications for self-medication [4, 14].
Of many conditions that were self-treated, headache was very common. Other commonly treated ailments included coughs, colds and acidity. The high use of analgesics for self-medication confirms the findings that analgesics are the commonly used over-the-counter medicines [18]. The most misused drug i.e. analgesics or pain relievers on long term could lead to gastritis, peptic ulcers and even analgesic nephropathy [19].
The use of multivitamin preparations is 61%. Multivitamins were also used commonly as supplements for promoting health, for preventing the illness, for boosting the immune system, for prevention of stress and to top up the regular nutrition [20]. The indiscriminate use of vitamin supplements is an alarming trend. To compensate for unhealthy eating habits, people are going overboard with intake of tonics and vitamin supplements. It is estimated that vitamin supplement sales have gone up by 200 percent [21].
Antimicrobials accounted for 150(46%) use which is undesirable especially if the disease is viral. Self-medication with antibiotics is of public health concern because inappropriate use of antibiotics results in antibiotic resistance and in emergence of mutant forms of microbes which is a major problem worldwide especially in developing countries like India [22].
The use of CNS stimulants like Modafinil 70(21.5%) is limited indicates either unawareness about it or hesitation to use because of adverse effects of drug. Beta blockers 55(16.9%) taken for anxiety before exam accounted for a lesser incidence. The reason could be same as that of Modafinil.
Very few 47(14.4%) students were confident about their knowledge of self-medication. Most of the student felt the advantage of taking self-medication avoided visit to the doctors for minor illness 235(72.3%), but their lack of confidence about the drugs they consumed possess serious health issues about the correct diagnosis and therefore the appropriate medications and knowledge about their side effects.
20 (6.1%) students always practised self-medication. The number of students always practising self-medication is less indicating healthy approach towards it.
The limitations in this study was based on the information obtained from the students which are prone to recall error and bias in reporting.

Conclusions

The results indicate that self-medication was quite common amongst undergraduate medical students, facilitated by the easy availability of drugs from pharmacy. Self-medication is a common form of health care with potential benefits as well as hazards. Hence, it is very important to increase the awareness about the advantages and disadvantages of self-medication in medical college students. This will improve their knowledge, attitudes and practices about it, which is an important aspect for medical students as they are the future health care professionals.

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