RESEARCH ARTICLE

Evaluation of self medication among professional students in North India: proper statutory drug control must be implemented

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The objective of this study was to describe and examine the branded medicines used by professional students, awareness, trust in medicine system, reasons behind self medication, drug information resources, danger findings and knowledge of drug profile. Samples of 1175 young students belonging to different regions of North India were selected randomly from two institutions of U. P. Technical University. An inclusion criterion was 17-25 years (mean age 20.13±2.32). A total of 153 students were excluded in accordance with the exclusion criteria like incomplete information. The prevalence of self medication among professional students was 87.00%. About 82.97% students had a positive trust in allopathic medicines,80.82% students learn self medication from doctors prescriptions provided during their prior illness.15.65%were alcoholic,16.73% were smokers,11.74%students with chronic problems ,who were considered in danger findings. Only 43.93% students were about drug interaction. Most of the self medication was involved with headache and fever, cough & cold, gastrointestinal Infection, mouth ulcer & Throat infection. Respondents were using Schedule H drugs/potent drugs for minor illness. The results are based on feed backs which were provided by respondents included in study. The percentage of self medication might be change along with locality and region. The prevalence of self medication among professional students in North India is high. This descriptive survey shows that the majority of professional students had a poor knowledge about appropriate self medication while the knowledge of the benefits and risks was not adequate. A number of students consult pharmacists and follow advertisements on drug information. This issue needs to be addressed by the responsible authorities of State Pharmacy Council/Ministry of Health.

Keywords: Self medication, Pharmacist, Drug.

INTRODUCTION

Internationally, self medication has been reported as being on the rise [1, 2]. Self medication is defined as the use of medication by a Patient on his own initiative or on the advice of a Pharmacist or a lay person instead of consulting a medical practitioner [3]. In 1919, the American Pharmaceutical Association estimated that, of the 3.5 billion health problems treated in the USA annually, 57% were treated with a non prescription drug [4]. The World Health Organization has emphasized that self medication must be correctly taught and controlled [1]. Major problems related to self medication is wastage of resources, increased resistance of Pathogens, and generally entails serious health hazards such as adverse reaction and prolonged suffering. Antimicrobial resistance is a current problem world wide particularly in developing countries where antibiotics are often available without a prescription [5].

While responsible self medication, which is limited to over the counter (OTC) drugs, may generate substantial net benefit flows to economies through saving in travel and consultation time and the direct financial cost of treatment [6]. Some conditions are necessary for these benefits to be realized. These conditions aim at ensuring the safety of taking self medicated drugs. They include the following: the drugs used are those indicated for conditions that are self recognizable; the user should know how to take or use the drugs; the effects and possible side-effects of the drug as well as ways of monitoring these side-effects are well communicated to the user; possible interaction with other drugs is known by the user; duration of the course of the drugs is known by the user and when the user must seek professional intervention [7]. The consequences for incorrect diagnosis and dosage include growing resistance to some drugs

and further deterioration in health capital.

Unfortunately, especially in developing countries, professional health care is relatively expensive and in some cases not readily available therapy making self medication an obvious choice of healthcare service [8]. Furthermore, it has been noted that purchase of drugs and many drugs that can only be purchased with prescription in developed countries are OTC in developing countries. Also, lax medical regulation has resulted in the proliferation of counter fee drugs that are in high demand for the treatment of highly prevalent diseases [9].

The reasons for self medication mentioned in the literature are mild illness, previous experience of treating similar illness, economic considerations and a lack of availability of healthcare personnel. The most common medications used for self medication are analgesics and antimicrobials [10, 11]. Study on self medication shows that it is influenced by many factors such as education, family, society, law availability of drugs and exposure to advertisements [12, 13]. A high level of education and professional status has been mentioned as predictive factor for self medication [14].

Self medication is an area where governments and health authorities need to ensure that it is done in responsible manner, ensuring that 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 [1, 10, 15]. Unlike other aspects of self care, self medication involves the use of drugs, and drugs have the potential to do good as well as cause harm. In this context, the Pharmacist has an important role [1, 10]. The present study was undertaken to evaluate the frequency of (i) branded medicines used by professional students, (ii) awareness, (iii) trust in medicinal system, (iv) reasons behind self medication.

SUBJECTS AND METHODS

This study was a questionnaire-based survey approved by the Research and Ethics Committee of the College. A self-developed, prevalidated questionnaire consisting of both open-ended and closed-ended items were used. The study population comprised professional students of the U.P. Technical University, Lucknow. These were young men and women, all Indian nationals, who had 1-4

years ago joined the professional college. All campus students who were willing to participate in the study were enrolled. A briefing was given about the nature of study, and the procedure of completing the questionnaire was explained. Consenting participants completed the questionnaire in the class room.

Samples of 1175 students were selected randomly from two institutions of U.P. Technical University. The inclusion criteria for the selection of students was 17 years and above. Out of all 153 students were excluded in accordance with the exclusion criteria like incomplete information. The questionnaire consisted of questions on type of medicine system, category of medicines and name of a particular medicine. The results are based upon the data obtained from 1022 (86.9%) students. The prevalence of self medication was reported as percentages. The survey was descriptive and data was summarized as counts and percentages, some of the questions had multiple options to choose from, therefore the sum total of percentage is not always 100%.

RESULTS

(A) Baseline characteristics of participants

All the students (n=1175) responded to the questionnaires, of whom 153 were excluded in accordance with the exclusion criteria like incomplete information. Remaining 1022 (86.9%) student's questionnaires were considered for evaluation. Their mean age in years ± SD was 20.13± 2.32 (from 17 to 25 years)

(B) Trust in medicine system

Most of the students had a trust in allopathic medicine system (82.97%) and the percentage of students favoring homeopathy and ayurveda were 21.97% and 16.82% respectively (Table 1).

Table 1. Trust in medicine system

Trust in medicine system	Respondents %
Allopathic	82.97%
Ayurvedic	16.82%
Homeopathic	21.91%
Unani	0.78%

(C) Drug information

80.82% students learned self medication from doctors prescriptions provided during their prior illness. Friends, pharmacist, advertisements and books comprised 36.98%, 31.2%, 13.11%, 7.0% respectively, which provided/guided students for self medication (Table 2).

Table 2. Source of information about drugs used in self medication by students

Drugs informers	Respondents %
Doctors (from prior illness)	80.82%
Friends	36.98%
Advertisements	13.11%
Pharmacists	31.2%
Books	7.0%

(D) Danger findings

15.65% students committed they were alcoholic and 16.73% were smokers. About 11.74% students were with their chronic problems which were non communicable diseases. Awareness about drug interaction with alcohol, smoking, chronic diseases with self medicated medicines was only 43.93 % (Table 3).

Table 3. Dangers findings that might be dangerous in self medications

Dangers finding	Respondents %
Alcoholics	15.65%
Smokers	16.73%
Chronic Diseases	11.74%
Awareness about drug interactions	43.93%
Knowledge of drug profiles	0%

(E) Prevalence of self medication

About 87% positive respondents committed that they were involved with self medication practices. Drugs which were taken by self medication in various diseases states are given below:

Drugs used in headache and fever: Maximum respondents 61.27% used Crocin for fever and headache. Disprin and Combiflam were used in 52% and 26% respectively. Remarkable thing was that Nice and Brufen were also used by students (Figure 1).

Drugs used in cough and cold: 22.21% students used D-Cold Total tablets which were maximum %. Corex was second drug of choice 20.85% and third

drug of choice was Vicks Action-500 16.46% (Figure 2).

Drugs used in G.I. infection/complications: Metrogyl 27.59% were best drug of choice reported by study. Enteroquinol 11.35% and Norflox-TZ 9.8% were considered as second and third drug of choice (Figure 3).

Drugs used in mouth ulcer and throat infection: Maximum respondents 18.59% used Smile gel for mouth ulcers, Becosules 12.32% Glycerine 4.99% was second and third drug of choice. For Throat infection 12.30% students used Strepsils and Vicks 11.35% as second choice (Figure 4).
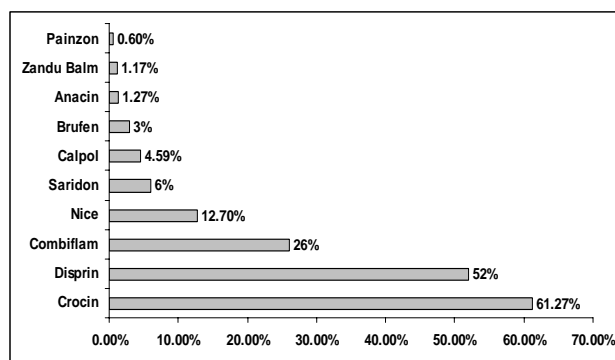

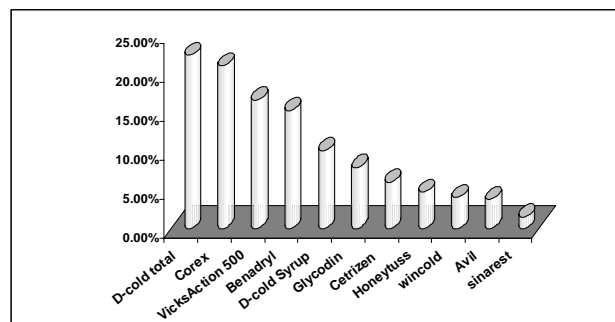**Figure 1.** Drugs used in headache and fever
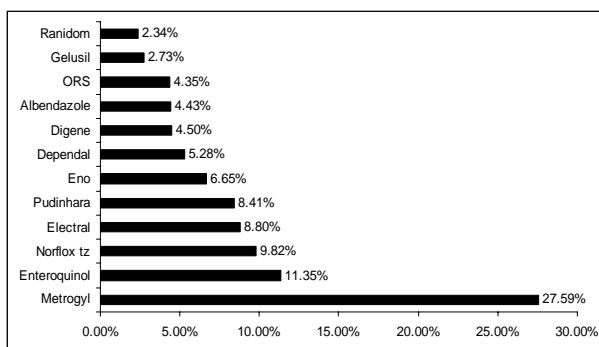

Figure 2. Drugs used in cough and cold

Figure 3. Drugs used in G.I. infection/complications
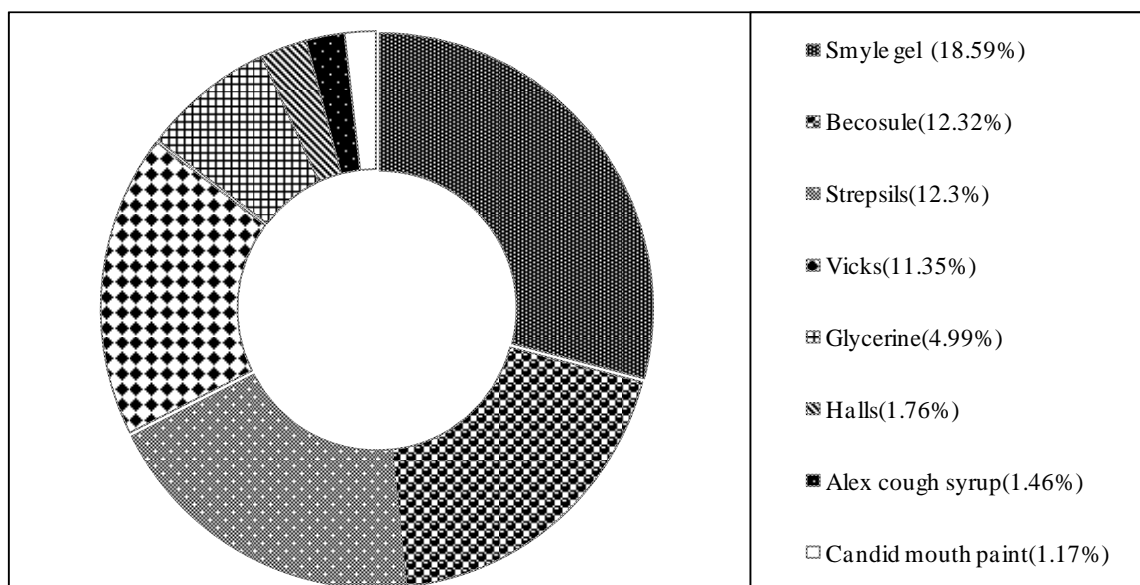
Figure 4. Drugs used in mouth ulcer and throat infections

DISCUSSION

We acknowledge that this type of study, using a self administered questionnaire, is largely dependent upon information given by respondents. Although students were encouraged to complete the questionnaire independently, mutual influence between pupils could not be entirely ruled out. However, given the high level of response, the results should closely approximate the behavior of the adolescent students in North India. Few students consulted pharmacists for information on drugs. In North India, the pharmacist's role is mainly seen as that of a drug salesman rather than that of a healthcare provider. Patient education and awareness campaigns are necessary to promote the role of the pharmacist in India. Students with a previous experience and with mild illness were more likely to practice self medication. This has implications, because many diseases have similar symptoms and a person using previous experience may be exposed to the dangers of misdiagnosis and consequently wrong treatment.

Out of 1022 respondent not a single respondent had knowledge about complete profile of the drug which was taken up by self medication practice. They were not even aware of the dose of drug, duration of therapy, toxic dose of drug, active constituents, indications and side effects of commonly used medicine like Paracetamol used in self medication. Another alarming observation was that Nice and Brufen were also used by respondents to treat headache and fever, while these medicines are considered under Umbrella of Analgesic.

Most of the students used Corex syrup for cold and cough treatment which is most potent drug in initial therapy it is not a safe drug of choice. Second drug of choice was Benadryl. Both are scheduled H drugs and drugs should be taken only with prescriber's advice. White patches in mouth, lesions in tongue, and nodes in mucosal sites of cheek may be considered as primary symptom of cancer that may delay the diagnosis, if patient had the tendency of self medicine.

Major reasons of self medication at student level were time saving, did not need advice from prescriber for minor illness, economic, fear from crowd at clinic. Most of the respondent has positive attitude in self medication in minor illness. However, minor illness symptoms may cause major illness if not diagnosed properly. Most of the fatal diseases have symptoms like fever, body ache, and headache.

CONCLUSION

This descriptive survey shows that the majority of professional students had a poor knowledge about appropriate self-medication while the knowledge of the benefits and risks was not adequate. Thus, to avoid or minimize the dangers of self medication,

firstly the students should be educated about the dangers of indiscriminate use of drugs. Secondly, the physician should be more judicious in prescribing, and must insist on drugs being supplied by the chemist only on a valid prescription. Thirdly, a proper statutory drug control must be implemented, rationally restricting the availability of drugs to the public. These, three measures would definitely reduce the incidence of drug-related mishaps and help in maintaining good health of the individual and society.

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