

An online exploratory study of self medication among pharmacy graduates in India

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Abstract

The aim of this online exploratory study was to describe and evaluate the self medication practices, reasons behind self medication, use of antibiotics without prescription among pharmacy graduates in India using internet as a tool for data collection. The emails were sent with study questionnaire to about 342 pharmacy graduates. The results were based on feedbacks which were provided by respondents who mailed back the completed study questionnaire. 85% of the responders were pharmacy postgraduates. A total of 67% of pharmacy graduates used Crocin in last six months without prescription of a physician. Antibiotics (azithromycin) were reported to be used by 29.8% of the respondents without prescription. Approx. 20% of the respondents confirmed to take antibiotics as long as not feeling well. Cough and cold (60.6%) was the main indication for self medication. Most of the pharmacy graduates (68%) felt no need of consulting a physician for minor illness. More than half (56.1%) of the respondents confirmed that they use to give medication brought without prescription to their family members too. Pharmacist or druggist (39.2%) was found to be the main source of information and advice on self medication. It was concluded that the prevalence of self medication is high among pharmacy graduates in India and internet (email) can be used as an effective research tool for conducting health outcome research studies in India. The issue of self medication should be addressed by the respective Pharmacy council and other health authorities of India.

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Key words:

Online, Self medication, Pharmacy Graduates, India

How to Cite this Paper:

Pahuja Ritu*, Singh Himmat¹, Rohit Manisha², Gupta Gaurav³, Bhasin Priya⁴ "An online exploratory study of self medication among pharmacy graduates in India", *Int. J. Drug Dev. & Res.*, Oct-Dec 2011, 3(4): 200-207

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Article History:-----

Date of Submission: 19-08-2011

Date of Acceptance: 20-10-2011

Conflict of Interest: NIL

Source of Support: NONE

INTRODUCTION

Self medication is defined as the use of medication by a patient on his own initiative or on the advice of a chemist or druggist or pharmacist or a lay person instead of consulting a medical practitioner [1]. Self medication is a major problem in today's health care system, especially in developing countries like India.

In developed countries, the medicines which are available only on prescription of a medical practitioner are easily available over the counter in developing countries [2]. The serious issues concerned with self medication are wastage of resources, microbial resistance, adverse drug reactions and drug-drug interactions.

There have been many studies and surveys conducted on self medication among rural population, educated youth population etc. The attitude and practices regarding self medication among Pharmacy graduates in India is still unknown. To the best of our knowledge, there is no study conducted among pharmacy graduates on self medication using internet as a tool for data collection in India.

Email as a Research Tool: World Wide Web has opened the door for a new era of knowledge sharing [3]. It has already been a part in the field of business, health industry, marketing, entertainment, social groups across the globe. According to recent reports, in 2010 approximately 1,173,108,018 (1.1 billion) population in India are active internet users. Mumbai has about 3.24 million internet users, while capital of India, New Delhi has approximately 2.66 million internet users. A total of 94% of population use Internet for email purposes [4]. Use of electronic surveys for health-related research is still in its infancy, though it provides exciting new opportunities such as easy access to samples, low administration costs and its un-obtrusiveness and friendliness to respondents [5], [6].

Despite of rapid growth in internet usage, internet has not been utilized to its maximum for online studies, surveys and data collection in India. The main aim of this study was to use internet as a research tool to study the self medication among Pharmacy graduates in India.

OBJECTIVES

The aim of this study was to study the pattern and practices of self medication among Pharmacy

Graduates in India. Secondary objective of the study was to introduce email as a simple, economic and user friendly research tool in conducting health sciences research studies.

MATERIALS AND METHODS

Study Subjects: Judgemental sampling method was used for administering the study questionnaire, with an understanding that selected subjects had a pharmacy degree and sound knowledge of drugs. The email IDs were randomly picked from mail directories of two Government Pharmaceutical Educational Institutes in north India. The emails were sent with study questionnaire to about 342 pharmacy graduates. The response to the email was considered as consent of the subject to participate in the study.

Study Design: This email based exploratory study involved a simple questionnaire survey. In this study, a simple, plain text questionnaire containing a cover letter with the objective of this study was e-mailed as attachment file to all email accounts. All the respondents were requested to complete the questionnaire and submit the survey via a return e-mail. This was a descriptive survey and data was summarized as counts and percentages. The questionnaire consisted of question on brands of medicine, indications for self medication, reason for the practice, attitude for the practice, storage of medicines etc. In nut shell, the questionnaire consisted of 14 questions with multiple choices; hence, the sum total of percentage is not always 100%.

Ethical Consideration: The confidentiality of the responders was maintained. The study was conducted in accordance with e-Health Code of Ethics and Helsinki Declaration of 1975 [7], [8], [9].

Sample Size: Email was sent to a total of 342 email IDs of pharmacy Graduates who were either working in pharmaceutical industry or pursuing higher education. Out of 342 pharmacy graduates, only 110

responded to the email containing study questionnaire and gave their consent for participation in the study. Out of the 110 respondents, 07 were excluded from the study for providing the incomplete information.

Data Collection: Data was collected from Feb, 2011 till June, 2011. The email containing the questionnaire was resent as a reminder on same address at the end of the first week. Data was mainly collected on the knowledge regarding OTC medicines and attitudes toward self-medication and practices. Descriptive statistics including mean, standard deviation and percentage were calculated using Microsoft Excel version Windows® XP professional as data analysis tool.

RESULTS

A total of 110 completed questionnaires were returned by email. Out of 110, seven were excluded from the study due to incomplete information. The

results of this study were based on 103 (30%) respondents as shown in Table 1.

Table 1: Demographic details of the respondents (N=103)

Gender	
Male	63.0%
Female	37.0%
Age	
18-25 Years	72.0%
25-50 Years	28.0%
Education	
Graduation	6.0%
Post Graduation	85.0%
PhD	9.0%
Personal Habits	
Smoke	0.0 %
Drink	10.0 %
Both	6.0 %
None	84.0 %

Figure 1: shows the drug groups/classes commonly used for self-medication. It was observed that analgesics and antipyretics (57.1%) were the most common drug group used for self medication followed by cold medication (14.3%).

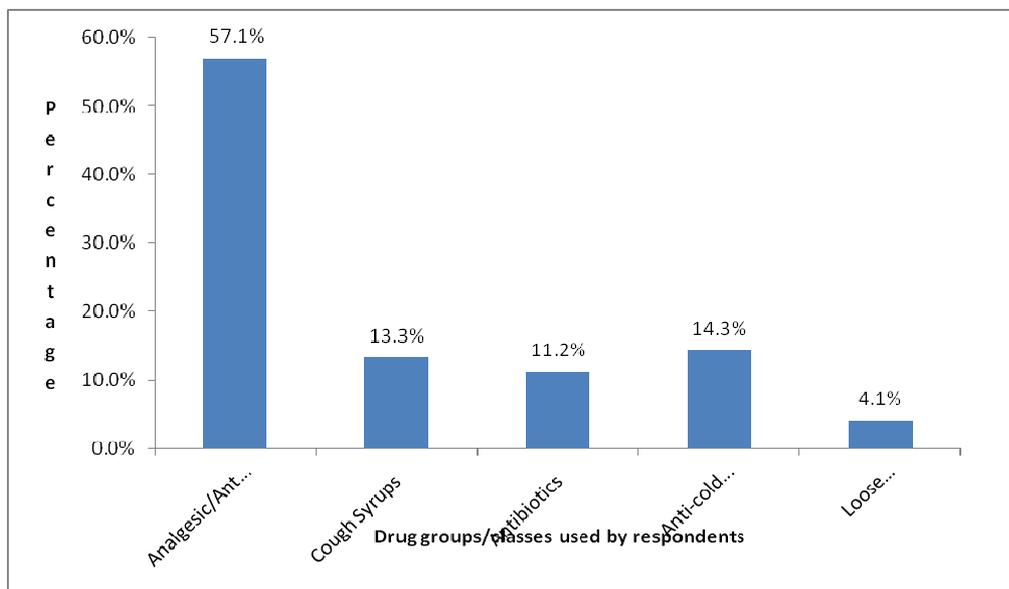


Figure 1: Drug groups/classes used by respondents for self medication

Cough and cold (60.6%) were the commonest indication for self medication, followed by headache, fever (38.4% each) and throat infection (17.2%) as shown in Figure 2.

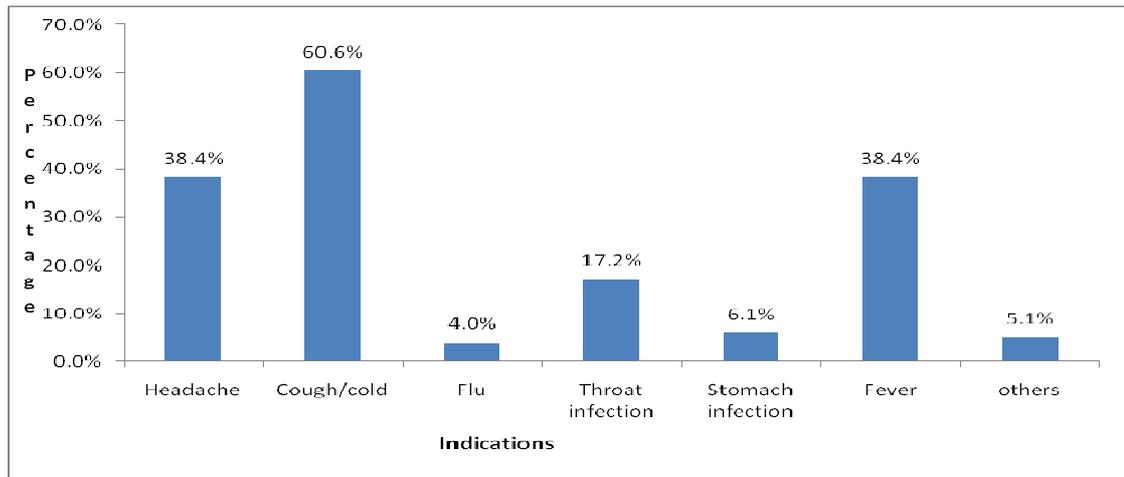


Figure 2: Common indications for self medication

Maximum respondents (67.0%) used Crocin for fever without consulting a doctor, followed by D-Cold total for cold, Azithromycin for throat infection (29.8 % each) and Vicks action 500 for cold (25.5 %) as shown in Table 2.

Table 2: Frequency of drugs used by the respondents for self medication

Drugs	Indication	Percentage	Frequency
Crocin	Fever	67.0%	69
Norflox	Stomach Problems	2.1%	2
Ibugesic plus	Pain	19.1%	19
D-Cold Total	Cold	29.8%	31
Azithromycin	Throat Infection	29.8%	31
Roxid	Throat Infection	5.3%	5
Vicks action 500	Cold	25.5%	26
Saridon	Headache	7.4%	8
Amoxicillin	Bacterial infection	6.4%	7
Nimesulide	Fever	22.3%	23

Figure 3 show that 68% of the total respondents did not feel a need to consult a doctor for minor illness. Only 1% of the respondents confirmed the unavailability of medical practitioner in nearby community as a reason for self medication and a total of 10% of the respondents practice self medication for economical reasons.

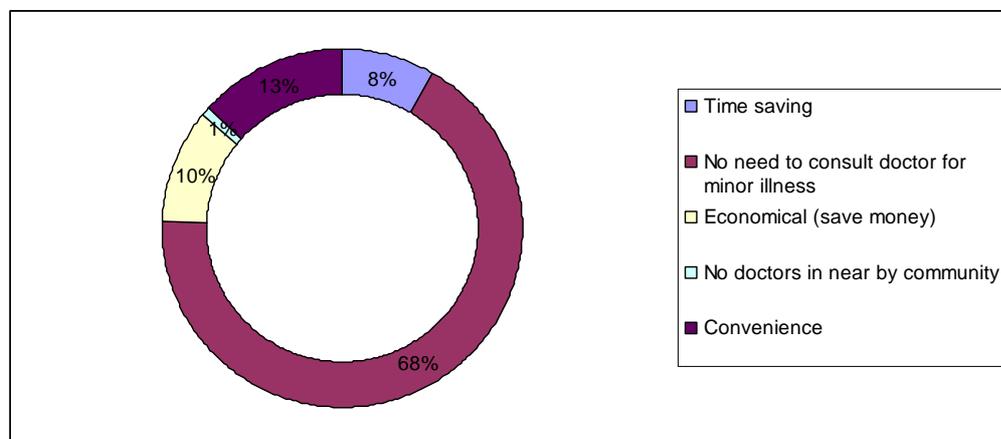


Figure 3: Reasons for self medication

A total of 39.2% of the respondents confirmed to receive the information about medicines for self medication from their pharmacists, 24.7% learned self medication from doctor's prescriptions provided during their prior illness. Friends, advertisements and books comprised 10.3%, 3.1% and 22.7% respectively as shown in Figure 4.

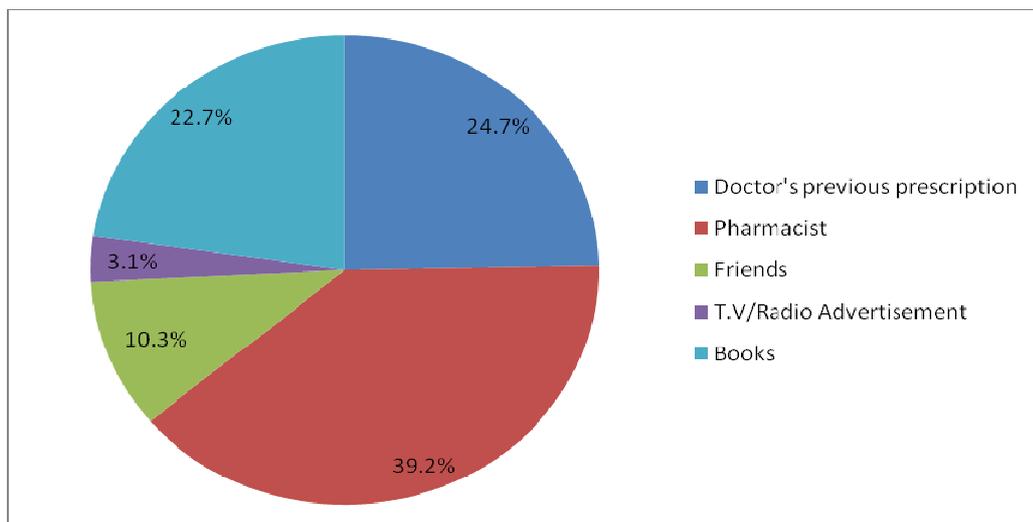


Figure 4: Sources of information for self medication

56.1% of the respondents reported to use the medication without prescription for their family members along with them as shown in Table 3.

Table 3: Use of medication brought without prescription by respondents and their family members

Who uses the medication brought without prescription?	Response
Yourself	35.7%
Family members	7.1%
Both of above	56.1%
Others (friends/neighbours)	1.0%

Maximum (40.5%) respondents took antibiotics without prescription for 3-5 days; while 20.3% of the respondents took antibiotics as long as they did not become well as shown in Figure 5.

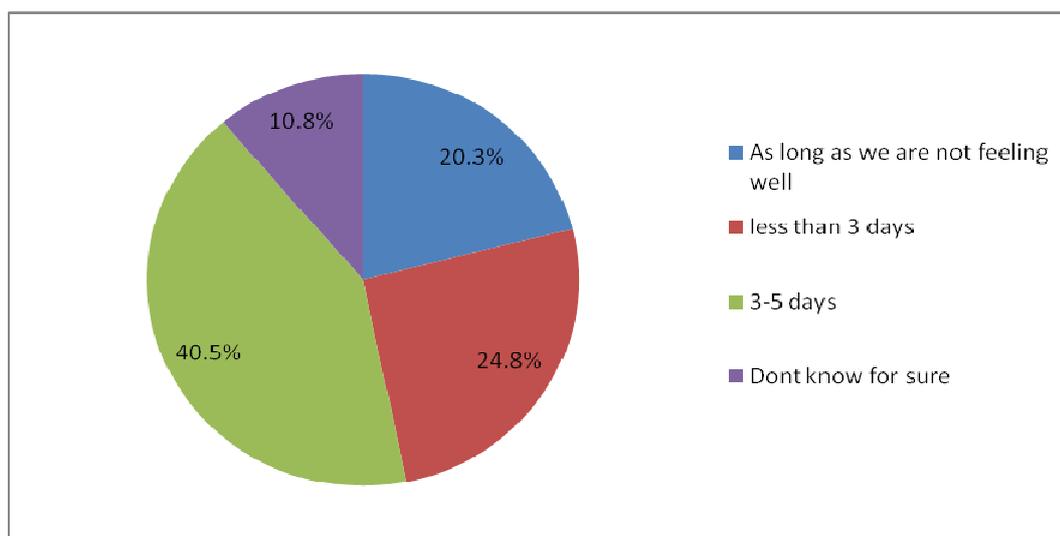


Figure 5: Time period for which respondents took antibiotics without prescription

Most of the respondents (81.5%) knew that self medication may lead to complications.

Table 4: Awareness about complications due to self medication

Do you think that buying and using medication without consulting doctor or physician may lead to complications?	Response
Yes	81.5%
No	18.5%

Only 12.3% of the respondents found pharmacist or chemist asking for medical practitioner's prescription before selling the medicines; while approx. 51% of the respondents found pharmacist or chemist never asked for a prescription as shown in Table 5.

Table 5: Requirement of medical practitioner's prescription by pharmacist or chemist before selling the medicines

Medical practitioner's prescription required by pharmacist or chemist	Response
Yes	12.3%
No	50.6%
Sometimes	37.0%

DISCUSSION

In the present study, only 103 (30%) out of 342 pharmacy graduates sent back completed questionnaire form and participated in this email based online study. It is clear from this study that even pharmacy graduates took email based questionnaire or online surveys too casually. The internet has not yet been utilized to its maximum as a research tool. The response rate of the participants in this email based study (30%) was comparable with that of study conducted in Bangladesh by Islam MS [10] (response rate= 29%). The possible reason for this may be the similar health sector development, informatics, geographical and cultural values of Bangladesh and India.

Crocin was used by maximum number (67%) of respondents for fever without a prescription. The use of Crocin by maximum number of respondents in this study was in accordance with the findings of the study conducted by Verma RK *et al* [11]. A total of 29.8% of the respondents reported to use antibiotics

(azithromycin) for throat infection. This finding is supported by the recent study conducted by World Health Organization in India, which concluded that 53% of Indians take antibiotics without prescription [12]. Cough/cold, fever and headache were the most common ailment for which respondents took medicines without prescription (60.6%, 38.4% & 38.4% respectively).

In the present study 20.3% of the respondents reported to take antibiotics as long as they are not became well. Self medication of antibiotics is one of the main reasons for antibiotic resistance in India.

Nimesulide which is banned in western countries and in India in children below 12 years of age due to its well known adverse effects is still found to be used by 22.3% of the respondents. WHO strictly discourages the use of nimesulide and aspirin, which is suspected to cause severe damage to the liver and brain in children suffering from chicken pox and flu [13]. Nimesulide is easily available over the counter without prescription in India.

The main reason for self medication among 68% of the respondents was common notion of not consulting the doctor for minor illness. Convenience of buying medicines (13%) over the counter from nearby drug store was the second most common reason for self medication [14].

Most of the respondents (39.2%) received the knowledge about the medicines for self medication from their pharmacist or druggist. This finding was in accordance with the results of the study conducted in Bangladesh by Islam MS. in which majority (77%) of the respondents sought advice from chemist of druggist to take medicines for minor ailments. A total

of 24.7% of the respondents, used doctor's prescription for prior illness as a source of information for self medication for similar ailment.

One important finding of this study was that 56.1% of the respondents used the medication without prescription and gave same medication brought without prescription to their family members also for similar kind of ailments. This practice may lead to adverse drug reaction as dose prescribed in children and adults are always different.

Approximately 6% of the respondents had habit of both smoking and drinking. Alcohol is a major a key ingredient in case of drug interactions.

Though, 81.5% of the pharmacy graduates knew that even after having sound knowledge of drugs, self medication might lead to complication. Self medication was found to be prevalent (67%) among pharmacy graduates. According to more than half (50.6%) of the respondents pharmacist or chemist never asked them for a prescription before selling the medicines.

CONCLUSION

Self-medication is prevalent among pharmacy graduates with 67% of respondents using atleast an antipyretic as self-medication in the six-month period preceding the study. Crocin and antibiotics were the drugs most commonly used drugs for self-medication.

The common sources of information about medicine for minor ailment were the chemist or drug store owner. Antimicrobials were also taken without consulting a doctor. It can be concluded from this study that internet and email can be used as an effective research tool for conducting health outcome research studies in India.

It is the moral duty of all pharmacy students to avoid self medication. Pharmacy graduates have sound knowledge about medicines but not in diagnosis of a disease. Government should insist on drugs being supplied by the pharmacist or chemist only on a valid

prescription. A strict drug control must be implemented, rationally restricting the availability of drugs to the public. These measures would surely help in achieving the goal of complete patient safety and solving the drug related issues due to self medication.

Limitations of the study: In this study, the sample size was too small to represent whole population. The other limitation was the confounding variables and chances of recall bias as few questions were regarding the past practice on self medication. Further studies on the prevalence, the factors influencing and the appropriateness of self medication are required to be conducted with a sample large enough to represent the whole population.

ACKNOWLEDGEMENT

I would like to thank all the respondents for their valuable time and participation. I would also like to thank Dr. Gaurav Gupta, Owner & Pediatric Consultant, Charak Care Clinics, Mohali for his expert guidance and suggestions.

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