

Study on Self-Medication with Antibiotics Amongst the Employees of Consulting Firms, Gurgaon

By

Vertika Jain

*Dissertation submitted in partial fulfillment of the requirements of the degree
MBA Hospital and Health Management*

Academic year, 2017-2019



The IIHMR University, Jaipur

1, Prabhu Dayal Marg, Sanganer, Airport
Jaipur 302029, Rajasthan
Ph: 0141 3924700, Fax: 3924738
Website: www.iihmr.edu.in

Study on Self-Medication with Antibiotics Amongst the Employees of Consulting Firms, Gurgaon

By

Vertika Jain

*Dissertation submitted in partial fulfillment of award of
MBA Hospital and Health Management*

Academic year, 2017-2019

ZS Associates, Gurgaon



The IIHMR University, Jaipur

1, Prabhu Dayal Marg, Sanganer, Airport
Jaipur 302029, Rajasthan

Ph: 0141 3924700, Fax: 3924738

Website: www.iihmr.edu.in

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Dr. Vertika Jain**, student of MBA Hospital and Health Management from The IIHMR University, Jaipur has undergone internship training at **ZS Associates, Gurgaon** from **February 2019 to May 2019**

The Candidate has successfully carried out the study designated to her during internship training and her approach to the study has been sincere, scientific and analytical. The internship is in fulfillment of the course requirements.

I wish her all success in all her future endeavors.



Col. (Dr.) Ashok Kaushik
Dean, Academics and Student Affairs
The IIHMR University

16 May 2019.



Dr. Monika Chaudhary
Associate Professor
The IIHMR University



SALES - MARKETING

April 30, 2019

EXPERIENCE CERTIFICATE

This is to certify that Vertika Jain (Emp ID-20389) was interning in our organization from February 4, 2019 to April 30, 2019. At the time of leaving she was working in the capacity of Knowledge Management Associate – Intern based at the New Delhi office.

We wish you all the success in future endeavors.

For ZS Associates India Pvt Ltd

Mohit Sood
Office Managing Principal

ZS Associates India Private Limited

A Subsidiary of ZS Associates International, Inc. CIN - U72200PN2004FTC020841

Registered Office:

World Trade Center, Tower 3, Kharadi,
Pune - 411014, Maharashtra, India

T | +91 20 6739 5000 F | +91 20 6739 5001

www.zsassociates.com

Branch Office:

Block-A4, IT/ITES SEZ of DLF Limited
Village - Silokhera, Sec-30, Gurgaon (Haryana) 122002 India

T | +91 124 679 7000 F | +91 124 679 7001

Impact where it matters.

THE IIMR UNIVERSITY, JAIPUR

CERTIFICATE BY SCHOLAR

This is to certify that the dissertation titled **A study on self-medication with antibiotics amongst the employees of consulting firms, Gurgaon** and submitted by **Dr. Vertika Jain** Enrollment No.:**0691** under the supervision of **Dr. Monika Chaudhary** for award of MBA in Hospital and Health Management in Health and Hospitals of the University carried out during the period from **February 2019 to May 2019** embodies my original work and has not formed the basis for the award of any degree, diploma associate ship, fellowship, titles in this or any other institute or other similar institution of higher learning.



Dr. Vertika Jain



Acknowledgments

No project is done alone and cannot be completed without the support of a team.

I would like to take this opportunity to extend my gratitude to Mrs. Tanvi Vedhera (Consultant), for her advice, support, encouragement, and guidance throughout my training. It would not have been possible to complete this project without the support of Dr Ila Bhatia (Associate) who guided me continuously. Her valuable contribution and guidance have really helped my project.

I owe a whole-hearted thanks and appreciation to the RDE-KM team of ZS Associate for their unconditional support throughout my training.

I would like to extend my sincere thanks to my mentor Dr. Monika Chaudhary for her constant support and encouragement that helped me to complete this project. Without her guidance, this work would not have materialized.

Lastly, I wish to thank all the people and colleagues whose insights and experiences have shaped the content of this report.

I hope I can build upon the experience and knowledge that I have gained and make a valuable contribution in coming future.

(Dr. Vertika Jain)

TABLE OF CONTENT

LIST OF ABBREVIATIONS

LIST OF FIGURES

LIST OF TABLES

1. INTRODUCTION.....	
2. REVIEW OF LITERATURE.....	
5. AIM.....	
6. OBJECTIVE.....	
7. METHODOLOGY.....	
7.1 STUDY DESIGN AND AREA	
7.2 SAMPLING DESIGN AND SIZE	
7.3 DATA COLLECTION PROCEDURE	
8. FINDINGS.....	
9. DISCUSSION.....	
10. SUGGESTIONS.....	
11. LIMITATION.....	

LIST OF ABBREVIATIONS

KM	Knowledge Management
OTC	Over the counter
DDD	Defined Daily Doses
WHO	World Health Organisation
ATB	Antibiotics
LIC	Low income country
MIC	Middle income country

LIST OF FIGURES

Fig 1 Sources of buying ATB
Fig 2 Gender wise distribution of buying ATB
Fig 3 ATB taken in past one year
Fig 4 Reasons to self-medicate with ATB
Fig 5 Cost of ATB taken in past one year
Fig 6 Reasons to self medicate
Fig 7 Knowledge about the red line over the package

LIST OF TABLES

Table 1 Socio-demographic characteristics of the respondents
Table 2 Crosstabulation of educational qualification with frequency of self-medication
Table 3 Crosstabulation of dosage change and time of stopping the medicine
Table 4 Crosstabulation of dosage change with its reason
Table 5 Crosstabulation of source of buying ATB with reason of non-compliance

INTRODUCTION

Twentieth century saw a high burden of infectious diseases that led to high mortality and morbidity across the globe. The need of the hour led to one of the biggest inventions of the time, antibiotics.

Developing countries like India where prevalence of communicable and infectious diseases is high had the widespread of antibiotic use. Despite the benefits of antibiotics (ATB), their injudicious use (due to economic factors, lack of physicians, immediate relief, healthcare policies regarding medical insurance etc.) gave way to antibiotic resistance posing a serious threat to public health. The relaxed laws on prescription in developing countries also make it easier to procure ATB over the counter (without prescription) leading to their unmonitored and callous use.

Self-medication is the consumption of drugs, usually for common health problems, without a prescription from a registered physician. Medicines that do not require any prescription are called OTC drugs. OTC use is a cost-effective way of treating minor illness and reducing symptoms.

A major component of self-care, that is to treat minor illness and avoid primary consultation, is self-medication. In countries like India, Bangladesh etc., where universal access to healthcare is still to be accomplished, self-medication is a very regular way for seeking relief from health-related issues.

Self-medication with ATB is usually not advised as it is linked with the risk of inappropriate use of drugs which exposes the patient to risk of drug interaction. This may mask the symptoms of the disease that the patient is suffering from and cause microbial resistance. This misuse of drugs is more commonly found in the form of acute treatments, inadequate or wrong dosage, using leftover medicines or quitting the treatment on relief from symptoms etc.

Practicing self-medication for drugs like antibiotics might lead to drug resistance therefore there needs to be a check on these practices. The advent emergence of MDR bacterial strains had rung a warning bell not only in India but across the globe. This

resistance will have various disastrous effects like extended period of sickness which will lead to increased frequency of doctor visits, hospital stay causing out of pocket expenditure due to in-stay and medication and in the worst case, death.

In a half decade period between 2000 and 2015, ATButilization had increased by 65% from 21.1 billion defined daily doses (DDDs) to 34.8 billion DDDs. The antibiotic consumption rate increased by 39% from 11.3 to 15.7 DDDs per 1,000 inhabitants per day.

The LMICs with highest consumption in 2015 were India, China and Pakistan. The HICs with highest consumption in 2015 were the US, France and Italy. ¹

This study was done with a focus on self-medication with antibiotic drugs.

¹Global antibiotic use has increased - sparking fears of worldwide resistance [Internet]. nhs.uk. 2019 [cited 24 April 2019].

REVIEW OF LITERATURE

NSAIDs and antibiotics are most common allopathic drugs used for self-medication in this study.²

In the most LIC and MIC countries, ATB can be purchased without prescription, though this practice is considered illegal. In several African, Asian, and Latin American countries, ATB are easily available on increased demands from healthcare institutes, medical dispensaries, and other vendors. Antibiotic use in developing countries is underestimated. The motives for self-medication and antibiotic overuse by laypersons are similar to those for clinical abuse by health professionals: to cut costs and act expeditiously to treat confirmed or suspected bacterial infection.³

The prevalence of self medication was largely high in the patients who had the tendency of accumulating antibiotics at home, those who had pharmacy at easy disposal, people who had had faced issues in seeking health care or the who had procured the medicines from the advice of a layman or a pharmacist based on. Advanced studies supported the evidence of self-medication amongst patients who were either unemployed or were doing great in their workplace and had no time or the ones who had a successful experience with the same medicines⁴

Antibiotic resistance can be tackled in the following manner:

- By using the only prescribed antibiotics by a registered physician
- Complying to the full course, even if the symptoms subside
- By never sharing antibiotics with others or using leftover prescriptions
- Doctors should prescribe and dispense right antibiotics and only when it is truly needed

²S G, Selvaraj K, Ramalingam A. Prevalence of self-medication practices and its associated factors in Urban Puducherry, India. *Perspectives in Clinical Research*. 2014;5(1):32.

³Okeke I, Lamikanra A, Edelman R. Socioeconomic and Behavioral Factors Leading to Acquired Bacterial Resistance to Antibiotics in Developing Countries. *Emerging Infectious Diseases*. 1999;5(1):18-27.

⁴Lescure D, Paget J, Schellevis F, van Dijk L. Determinants of Self-Medication with Antibiotics in European and Anglo-Saxon Countries: A Systematic Review of the Literature. *Frontiers in Public Health*. 2018;6.

SELF MEDICATION WITH ANTIBIOTICS

AIM:

To study the pattern and prevalence of self-medication with antibiotics in the employees of a consulting firm in Gurgaon, Haryana

OBJECTIVES:

- To assess the self-medication pattern in educated people working for a pharmaceutical consulting firm
- To assess the prevalence of self-medication with antibiotics amongst employees of a pharmaceutical consulting firm

METHODOLOGY:

STUDY DESIGN: A descriptive, quantitative study

STUDY AREA: A consulting firm of Gurgaon, Haryana.

STUDY PERIOD: three months (February 2019- May 2019)

SAMPLE SIZE: 200 employees

STUDY TOOL: Questionnaire was developed on Google forms

DATA COLLECTION: Email (Google forms)

Data was collected through Structured Questionnaire send through mail to around 200 employees. Out of 150 who responded, 17 were either pharmacist or MBBS doctors so their responses were dropped. A total of 133 responses were analyzed in the end. Data was collected using Google form survey in an excel format and analyzed

FINDINGS

Two hundred employees were sent the questionnaires, out of which 150 responded. Seventeen out of 150 were either pharmacist or MBBS doctors and thus were excluded so a total of 133 questionnaires were analyzed (response rate 66.5%).

A total of 73 (54.8%) females and 60 (45.2%) males responded to the questionnaire. Out of 133 respondents, 30 had not self-medicated in the past one year. Thus, the prevalence of self-medication was 77.4 %.

Amongst them, almost three-fourths respondents were in the age bracket of 26-35 years making it the major group of respondents.

Table 1. Sociodemographic characteristics on self-medication use (n=133)			
		Self-medicated	Did not self-medicate
Sex	Male	45	15
	Female	58	15
Highest Education	Graduation	31	9
	Post Graduation	68	21
	PhD	4	0
Age	Less than 25	21	5
	26-35 years	77	24
	More than 35	5	1

Table 1 indicates the sociodemographic characteristics on self-medication use (n=133). The prevalence of self-medication was 75 % amongst male while it was almost 80% amongst females.

The prevalence was highest amongst the PhD scholars (100%) amongst the respondents, followed by graduates (77.5%) and finally the post graduates (76.4%).

The prevalence was highest in age group of more than 35 years(83.33%), followed by those who were less than 25 years (80.7%). The age group 26-35 years had a prevalence of 76.2%.

Table 2 Crosstabulation (Highest educational qualification * Frequency)					
		How many times did you self-medicate the antibiotics in the last one year?			
		1-2 time	3-4 time	>5	Didn't self-medicate
Highest educational qualification	Graduation	21 (15.7)	7 (5.2)	3(2.2)	9 (6.7)
	Post Graduation	53 (39.8)	12 (9)	3(2.2)	21 (15.7)
	PhD	3(2.2)	0	1 (0.7)	0
Total		77	19	7	30

A cross tabulation of highest educational qualification and frequency of self-medication is recorded in table 2. Almost 67% respondents were postgraduates while the percentage of graduates was 30%.

A minor group of respondents (3%) had a PhD.

Around 77% respondents had self-medicated with ATB at least once in the last year while approximately 23% said that they had had never taken them without a consultation of doctor.

As many as 66% respondents who had self-medicated at least once with antibiotics in the past year were the postgraduates followed by graduates (30%) and finally the PhD scholars (4%)

Seventy percent people of the 25% who didn't self-medicate were postgraduates while the rest 30% were graduates.

Amidst all the groups, about 41% respondents belonged to a life science background and only 25% of those had never self-medicated.

.

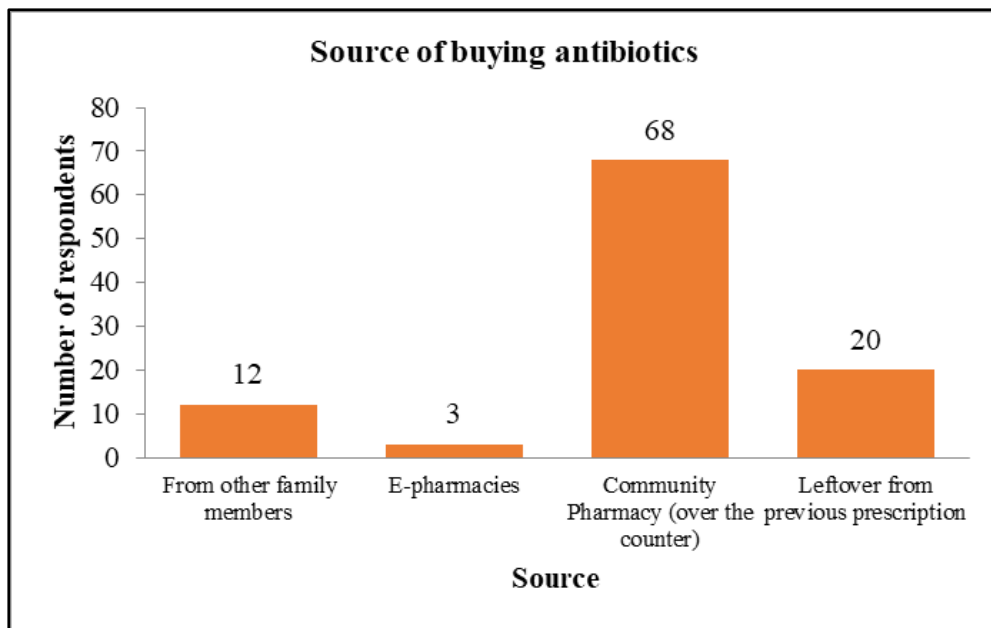


Figure 1

Figure 1 indicates that the major source of obtaining the medicines was community pharmacy (66%) followed by the left overs from the past prescription (around 19%). Around 12 % borrowed it from the family members and 3% had ordered them online

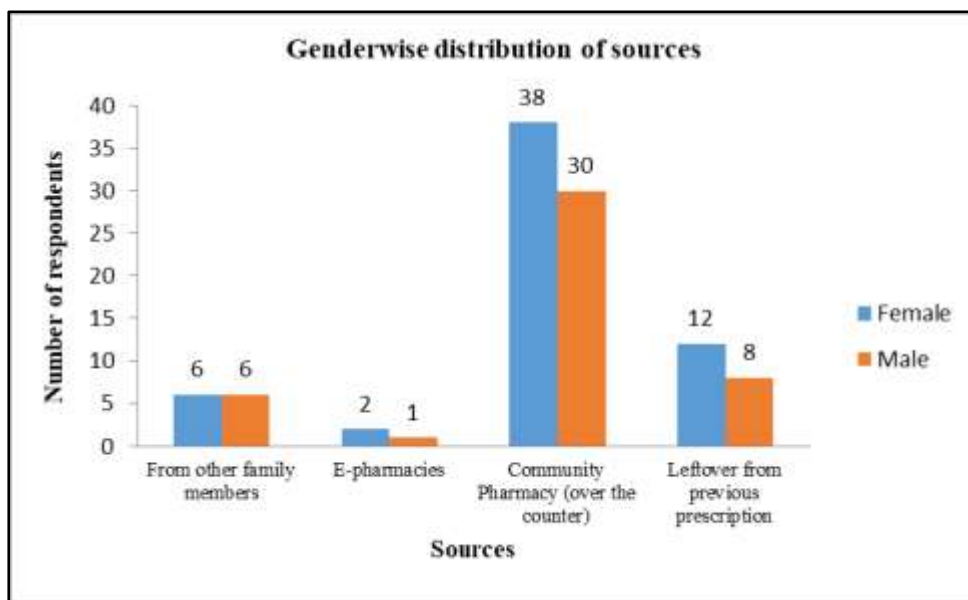


Figure 2

In addition to the above figure, figure 2 has further classified the distribution based on the gender of the respondents.

While the number of females is higher in all the other sources to buy the medicines, it is equal when it comes to borrowing from the family members

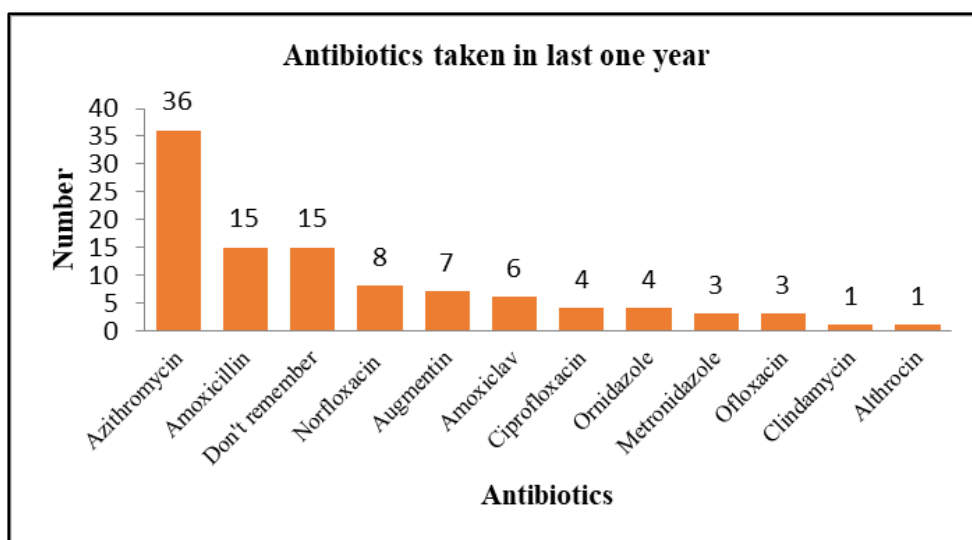


Figure 3

Figure 3 here gives an idea that Azithromycin (64%) has been the most self-medicated ATB in the last year by the respondents followed by amoxicillin (14.5%). Around fifteen percent of the respondents did not remember the medicines that they had consumed.

Table 3 Crosstabulation (Dosage_change* Stop_medicine)					
Did you ever change the dosage of antibiotics deliberately during self-treatment?	When did you normally stop taking antibiotics? (%)				
		After antibiotics ran out	After consulting a doctor/	After symptoms disappeared	At the completion of the course
	No	0	23 (30.6)	0	52 (69.3)
Yes		4 (14.3)	0	24 (85.7)	0

Table 3 gives an idea about the compliance of the respondents towards the antibiotics. Twenty seven percent people admitted they had modified the dosage during the treatment without consulting a physician. About 86% percent people changed their dosage after symptoms disappeared while 14% did so because medicines ran out.

Table 4 Crosstabulation (Dosage_change * why)					
Did you ever change the dosage of antibiotics deliberately during self-treatment?	If you changed the dosage, why did you do it?				
		Compliance issue	Forgot to take the medication	Medicines were over	Stopped working
	No	0	0	0	0
	Yes	8 (28.5)	11(39.28)	4(14.2)	5 (17.8)

Table 4 indicates the reasons of non-compliance by the respondents. About 27% people were found to be non-compliant. Thirty nine percent people said that they forgot to take the medicine while 28.5% admitted having compliance issues. Eighteen percent people stopped ATB as they found them as not efficient anymore and 14% did so because the medicines were over.

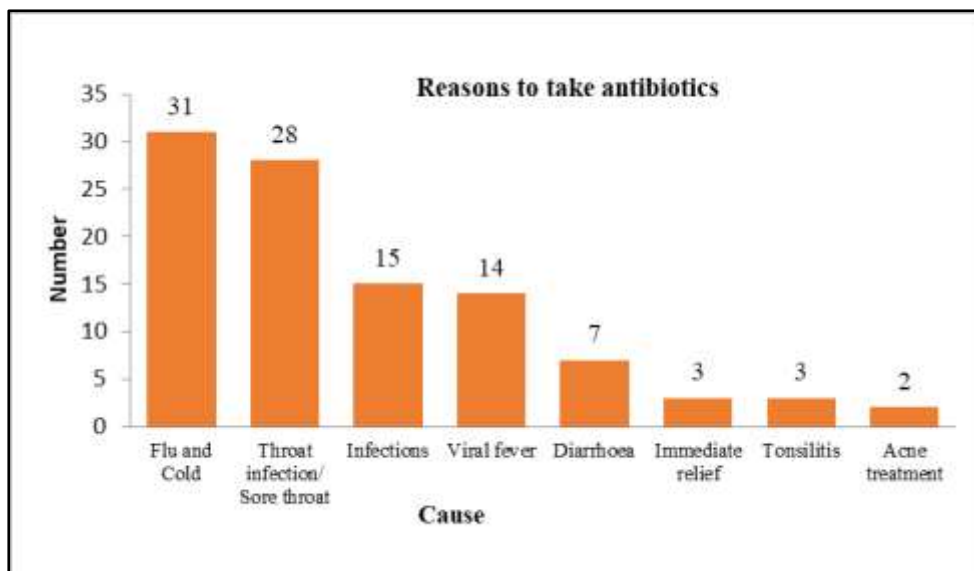


Figure 4

Figure 4 sheds light on the reasons of taking antibiotics. Thirty percent of the respondents had resorted to antibiotics due to flu and cold while 27% did so to get relief from throat infections. Infections and viral fever were the reasons for 14.5% and 13.5

% respondents respectively while around 8% took them because of diarrhoea. Three percent and 2% took them for immediate relief or tonsillitis and acne treatment respectively.

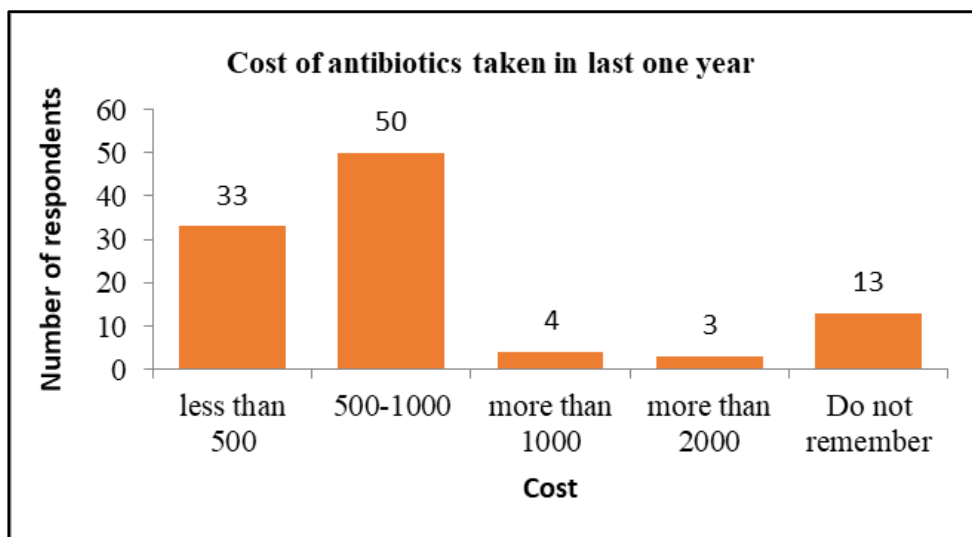


Figure 5

Figure 5 shows the economic burden of antibiotic due to self-medication. Almost 49% of the respondents spent INR 500-1000 on ATB in the last year while 32% had spent less than INR 500. About 13% respondents didn't remember the amount that they had spent on medicines.

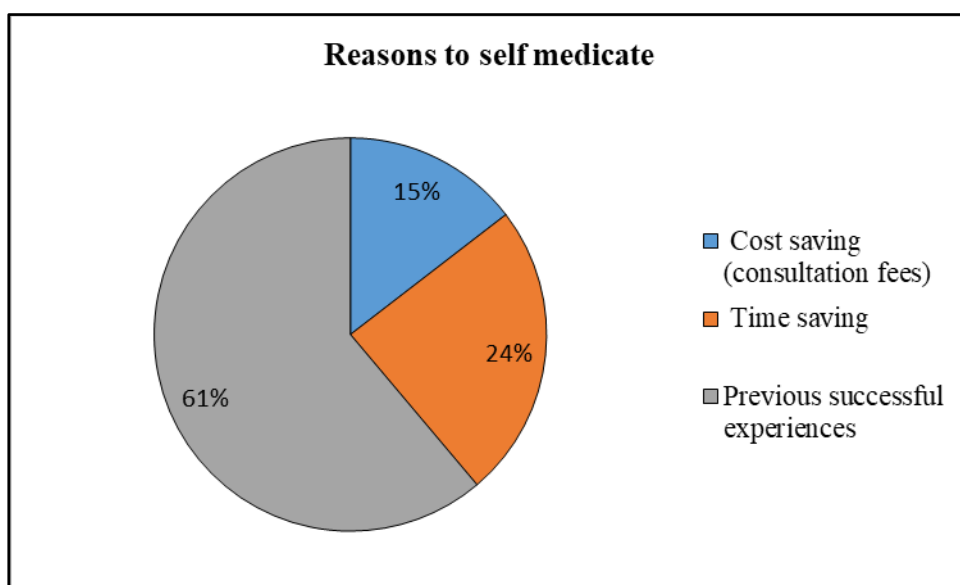


Figure 6

Figure 6 shows that 61% of people chose to self-medicate due to past successful experience while 24% did so to save time. Fifteen percent wanted to save consultation fees, so they chose to self-medicate.

Table 5 Crosstabulation (Source* Reason)				
Where do you usually obtain antibiotics from for self-medication?	What was your reason of self-medication with antibiotics? (%)			
		Cost saving (consultation fees)	Previous successful experiences	Time saving
	Community Pharmacy (over the counter)	11	49	8
	From other family members	2	5	5
	Leftover from previous prescription	2	8	10
	E-pharmacies	0	1	2

Table 5 gives an idea that out of 61% respondents who self-medicated due to previous successful experience, more than three-fourths bought the medicine from community pharmacy.

Out of 15% respondents who self-medicated due to cost saving, almost three-fourths bought the medicine from community pharmacy. While out of 24% respondents who self-medicated due to time saving, almost 40% used left over medicines.

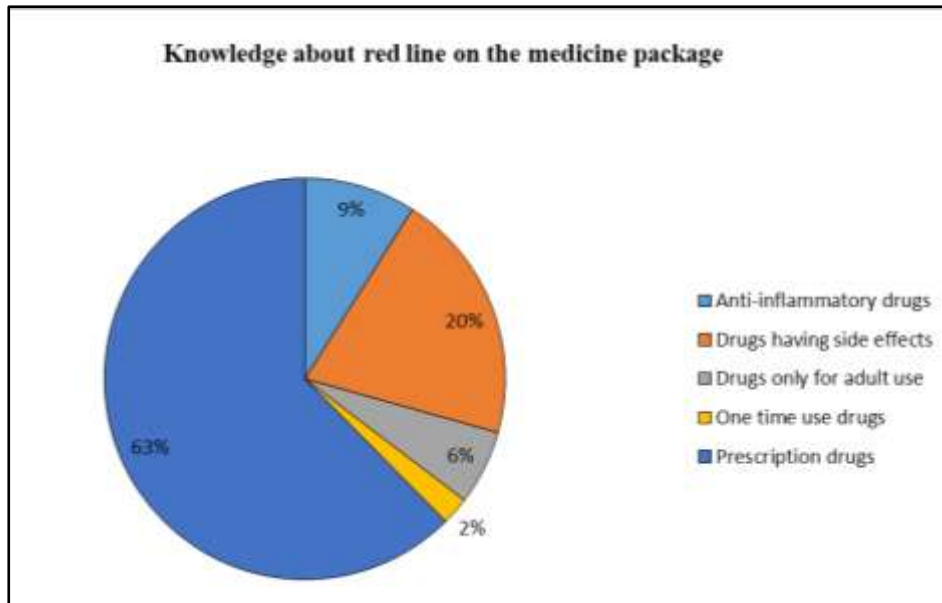


Figure 7

Figure 7 indicates that out of all 133 respondents, almost 63 % people knew that the red line on the package of medicine means that it is a prescription drug and 6% thought it is for adult use. Around one- tenth thought that it is indicative of anti-inflammatory drug while one fifth thought that it indicates that the drug has side effects.

DISCUSSION

This study has been done to assess the prevalence of self-medication with antibiotics in a pharmaceutical consulting firm in Gurgaon. As per the study, the prevalence of self-medication was found to be higher in females as compared to males. Although the intake of antibiotics is more than 75% irrespective of gender, education or age, the prevalence was highest, surprisingly, in the most educated group (PhD scholars) and people who were above 35 years of age, while those younger than 25 years also had a high prevalence.

More than three-fourths of the respondents had self-medicated within the last year with the majority being post graduates, indicating that high education does not reduce the chances of people avoiding self medication unlike other studies. This can also be assumed that internet is also serving as medium for people to self diagnose and further self medicate.

More than half the respondents bought azithromycin, while the most common disease was common cold and flu followed by upper respiratory infections. These results are similar to the studies in Abu Dhabi⁵, Czech Republic⁶, and Northern and Western Europe. This may indicate the misdiagnoses and wrong treatment as azithromycin is not used for these viral infections suggesting that the respondents did not realise the health risks caused by irrational use of ATB and believed that they can be used in any infection irrespective of its origin.

About three-fifth respondents bought ATB from the community pharmacy while one-fifth used the left-over medicines. This sheds light on the weak regulation of pharmacies in the country because despite the law on sale of prescribed medicines, people can procure them OTC. The need of the hour is that the government should take some serious and strict actions on controlling the OTC medicines and availability of medicines without prescription.

⁵ Abasaheed A, Vlcek J, Mohammed M et al (2009) Self-medication with antibiotics by the community of Abu Dhabi Emirate, United Arab Emirates. *J Infect Dev Ctries* 3(7):491–497

⁶ Saradamma RD, Higginbotham N, Nichter M (2000) Social factors influencing the acquisition of antibiotics without prescription in Kerala State, south India. *Soc Sci Med* 50:891–903

Furthermore, three-fifth of the respondents did so due to the past successful experience while a little more than one-fifth did it to save time. The majority of people bought the medicine OTC from community pharmacies due to the past successful experience. A very few respondents also resorted to E-pharmacies, implying that this is another medium to buy medicines without prescription. These reasons were similar to the studies done in Ethiopia⁷ and Jordan⁸

Almost half of the respondents have spent INR 500-1000 on antibiotics. The earlier findings suggest that the treatment was wrong and so this would eventually increase the cost.

In addition, more than one fourth respondents admitted that were non-compliant. They either forgot to take medicines stopped taking them as they were over, but the course wasn't complete.

More than 60% people knew that the red line on the package of medicine meant that the drug is to be taken only by prescription and yet they bought in OTC.

All these findings clearly show that the people are too casual about eating medicine without consulting doctor. They need to be educated and made aware about the serious consequences if irrational use of antibiotics.

This was a study done on educated employees of a pharmaceutical consulting firm but the result show that self-medication is widely prevalent and the topic should be researched further for other sections of the study

⁷ Suleman S, Ketsela A, Mekonnen Z (2009) Assessment of selfmedication practices in Assendabo town, Jimma zone, southwestern Ethiopia. Res Social Adm Pharm 5:76–81

⁸ Sawair FA, Baqain ZH, Abu Karaky A, Abu Eid R (2009) Assessment of self-medication of antibiotics in a Jordanian Population. Med Princ Pract 18:21–25

SUGGESTIONS

Several interventions can be taken to keep a strict check on use of ATB.

- The patients should be made aware about the serious consequences of irrational use of ATB and ATB resistance
- Using all media, various public education programs can be targeted towards the population which had scarce knowledge, wrong information, casual attitude and incorrect antibiotic use
- These awareness campaigns can make use of behaviour change communication and can be followed by an estimation of its productiveness
- Pharmacists should be given due value in improving mass health and can be given authority for restricting antibiotic dispensing without prescription
- Government should formulate guideline for the usage of the drugs by the physician and pharmacist and ensure its implementation
- A regular audit of the prescriptions and pharmacies can also be done

Awareness and strict implementation of guidelines is the key to reduce the self medication.

LIMITATIONS

This study has some limitations.

The study was done at only one organization of Gurgaon and hence it cannot be generalized to the entire population

Additionally, since it's a questionnaire-based study, so honesty and the ability to recollect of the respondent plays a pivotal role in it.

Also, this study was done in a metro study where people are more aware and educated.