

Cross-Sectional Study on Knowledge, Attitude and Practice of Self-Medication and Its Determinants in the City of Hyderabad, Telangana

By

Hanvitha Khambampati

*Dissertation submitted for the partial fulfillment of the
MBA Hospital and Health Management*

Academic year, 2015-2017



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TO WHOMSOEVER IT MAY CONCERN

This is to certify that **HANVITHA KHAMBAMPATI**, student of **MBA Hospital and Health Management** from The IIHMR University, Jaipur has undergone internship training at **FHI 360**, Hyderabad from **February 13, 2017 to May 12, 2017**.

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.

We wish her all success in all her future endeavors.



Dr. Ashok Kaushik
Dean – Academics and Student Affairs
The IIHMR University, Jaipur



Dr. Jagjeet Prasad Singh
Associate Professor
The IIHMR University, Jaipur

The certificate is awarded to

Dr. Hanvitha Khambampati

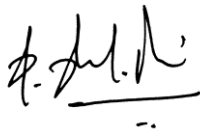
in recognition of having successfully completed her
Internship at

FHI 360, Hyderabad

From February 13, 2017 to May 12, 2017

She comes across as a committed, sincere and diligent person who has a
strong drive and zeal for learning

We wish her best for all her future endeavors



David R Damara
Associate Director
FHI360
12 May 2017



The IIHMR University, Jaipur

CERTIFICATE BY SCHOLAR

This is to certify that the dissertation titled **“A Cross-Sectional Study on Knowledge, Attitude and Practice of Self-Medication and its Determinants in the City of Hyderabad, Telangana”** and submitted by **Dr. Hanvitha Khambampati**, Enrolment No. **IIHMR-U/01/2015-17/0281** under the supervision of **Dr. Jagjeet Prasad Singh**, for the award of **MBA in Hospital and Health Management** in the University carried out during the period from **February 13, 2017 to May 12, 2017** 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.

K. Hanvitha

DR. HANVITHA KHAMBAMPATI



The IIHMR University, Jaipur

CERTIFICATE BY SCHOLAR

This is to certify that all ethical issues have been considered while collecting data for my dissertation titled **“A Cross-Sectional Study on Knowledge, Attitude and Practice of Self-Medication and its Determinants in the City of Hyderabad, Telangana”**

K. Hanvitha

DR. HANVITHA KHAMBAMPATI

Chapter 1: Introduction

1.1 Background

William Osler once stated that the desire to take medicine is perhaps the greatest feature which distinguishes man from animals. This desire, however, may at times be detrimental if an individual starts taking medicines on his own, without consulting a medical practitioner. It is often forgotten that drugs are toxic and their therapeutic use is based on a calculated risk, which may vary from minor nausea to potential death.

Self-medication is defined as the practice of selection and usage of medicines by individuals to treat self-recognized symptoms or illnesses [1], without seeking prior medical consultation regarding indication, dosage and duration of therapy [2]. This includes purchasing medicines without a medical prescription, acquiring medicines by resubmitting old prescriptions, using leftover/unused medicines at home, sharing medicines with family, relatives or friends [3] or using medication suggested by lay sources or health workers who are not authorized to prescribe medicines [4]. Over-the-counter (OTC) drugs are self-medication products that can be purchased without a medical prescription and can be used by consumers on their own initiative.

Self-medication acts as a double-edged sword, as it can be both beneficial and deleterious to its users. In the past few years, it has spread widely throughout the world. This can be attributed to the fact that people are increasingly and actively taking responsibility of their own health [5]. Responsible self-medication can be used to prevent and treat minor symptoms and ailments that do not need medical consultation or supervision [6]. Also, it lessens the pressure on medical services, reduces healthcare costs and saves scarce medical resources from being wasted on mild illnesses [7]. However, self-medication cannot be called a completely safe practice, particularly in the case of non-responsible self-medication. There are several risks/dangers associated with non-responsible self-medication, some of which may include faulty self-diagnosis, inappropriate choice of medicines, masking of an underlying severe medical condition, failure to recognize contraindications, potential drug-drug and drug-food interactions, warnings and precautions, incorrect dosage and duration, risk of drug dependence or abuse and increased resistance of pathogens [7].

Over the years, countries across the globe have deregulated many prescription-only drugs to OTC sale. Despite the reclassification of new drugs from prescription to non-prescription status, research data indicate that sale of self-prescription products (buying prescription-only drugs without a prescription) is far more common than sale of OTC drugs [6].

In developing countries like India, where universal health coverage is yet to be achieved, the practice of self-medication is one of the most preferred modes of seeking healthcare [8]. Studies across the country have reported wide variations in prevalence of this practice, ranging from 31 percent in 1997 to 71 percent in 2011 [4]. Also, antimicrobial resistance (AMR) is one of the major public health concerns in developing countries; the relatively easy availability of antimicrobial drugs leads to higher incidence of improper use of such drugs and thus greater levels of resistance when compared to developed countries [9].

Despite its drawbacks, self-medication is an important component of primary healthcare. However, before promoting the practice of self-medication, it must be noted that there are certain critical issues that need to be addressed. Any self-medication product should be safe for therapeutic use. This necessitates the availability of appropriate information (regarding indications, contraindications, dosage and duration of medication) to its consumers. Also, the practice of self-medication is largely dependent on perceptions and experiences, as well as social, cultural, and educational influences of the individuals.

Considering the increasing public and professional concern regarding self-medication, the World Health Organization (WHO) has laid emphasis on correctly investigating and regulating the practice [4]. Thus, there is a need to redefine self-medication from “mere usage of medicines on one’s own initiative” to “competence of individuals to play an informed, rational and independent role in decision-making and management of preventive, diagnostic and curative activities which concern them”.

1.2: Problem Statement

Self-medication is increasingly becoming an important concept of healthcare in several countries across the globe. Unlike other aspects of self-care (making healthy lifestyle choices, self-monitoring etc.), self-medication involves the use of medicines which have the potential of benefitting as well as harming the individual.

In the more privileged and developed countries of the world, the practice of self-medication is a reason for optimism, as it encourages individuals to take an active role in self-awareness and self-management of their health conditions. However, the same is not true in the case of developing countries like India, where even prescription-only drugs can be easily acquired and used without prior medical consultation. Further more, drugs like antimicrobial agents are increasingly finding their way into the hands of the consumers, thereby increasing the prevalence of antimicrobial resistance.

Therefore, it is important for the governments and health authorities to ensure responsible self-medication, with well enforced policies, taking care of all the issues concerning the practice.

1.3: Justification for the Study

The reasons for self-medication practice are multi-factorial. In the realm of socio-demographic and environmental influences, factors such as age, sex, religion, marital status, education, income, urge for self-care, feeling of empathy towards sick family members, lack of health services, inaccessibility of healthcare services, lack of knowledge, misbelief, media advertisements, availability of drugs in other than medical shops etc., have a considerable impact on the self-medication practice by individuals. Other reasons mentioned for self-medication in various literatures are non-seriousness of illness, previous experience of similar illness, economic considerations and lack of availability of healthcare personnel. Hence an elaborate and factor specific assessment of self-medication practice would have better policy implications.

Furthermore, the city of Hyderabad has emerged as the pharmaceutical hub of India. While the city positively supports the economy of the country, there is however, an increasing fear of illegal sale of drugs and non-responsible self-medication in the city [58,59,60]. Also, very few studies on self-medication were conducted in the city. Against this background, the findings of the current study might be helpful for the Telangana Drug Control Administration and other health related organizations and researchers in the country in planning and intervention to solve this public health concern.

1.4: Research Questions

- What is the prevalence of self-medication practice among general population in Hyderabad?
- What are the factors associated with the practice of self-medication among general population in Hyderabad?

1.5: Objectives of the Study

1.5.1: General Objective

The study was undertaken with the objective of determining the knowledge, attitude and practices towards self-medication among residents in Hyderabad.

1.5.2: Specific Objectives

- To determine the knowledge, attitude and practice of self-medication among residents of Hyderabad.
- To determine prevalence of self-medication practice among residents in Hyderabad.
- To identify the determinants of self-medication practices among general population in Hyderabad.

1.6: Operational Definitions

For the purpose of the study, the following operational definitions were used.

- **Self-Medication:** Use of allopathic drugs by consumer to treat self-recognized disorders or symptoms, the intermittent or continued use of drugs previously prescribed by a physician for a recurring disease or symptom, or the use of medication recommended by non-professionals or health workers not authorized to prescribe drugs.
- **Over-the-counter (OTC) drugs:** Self-medication products that can be purchased without a medical prescription and can be used by consumers on their own initiative.
- **Prescription-only drugs:** Drugs that legally require a medical prescription to be dispensed.

Chapter 2: Review of Literature

2.1: Prevalence of Self-Medication

The prevalence of self-medication practice is different across communities in different parts of the world. A study conducted by LamCL *et al.* (1994) among Hong Kong Chinese population showed that the prevalence of self-medication was as high as 92.3 percent [10]. However, in another study conducted by Figueiras *et al.* (2000) in Spain, the prevalence of self-medication was only 12.7 percent [11].

In a study conducted by Zafar *et al.* (2008) amongst university students of Karachi, the prevalence of self-medication was found to be 76 percent [12]. A study conducted by Banerjee *et al.* (2012) to determine the self-medication practice among undergraduate medical students in West Bengal, the prevalence was found to be 57.5 percent [13]. Interestingly, a study conducted by Ali *et al.* (2012) amongst healthcare professionals in a private university in Malaysia, showed the prevalence of self-medication to be 77.6 percent [14]. Whereas, a study conducted by Auta *et al.* (2012) amongst medicine vendors in Nigeria showed a prevalence of 75.4 percent [15]. While a study conducted by Raut *et al.* (2014) amongst nursing students in Vishakapatnam showed a prevalence of 40 percent [16], a similar study conducted by Ali *et al.* (2015) in Bastar, showed a prevalence of 84.5 percent [17].

In another study conducted among teachers by Belkina *et al.* (2014), the prevalence of non-prescription antibiotic usage ranged from 48 percent in Saudi Arabia to 78 percent in Yemen and Uzbekistan [18]. A community based study conducted by Jain *et al.* (2015) in urban area of Southern Rajasthan showed a prevalence of 73.6 percent [19]. While a study conducted by Garofalo *et al.* (2015) among parents in Italy showed a prevalence of 69.2 percent [20], a similar study conducted by Salami *et al.* (2015) among mothers of under five in Nigeria showed a high prevalence of 81.2 percent [21].

2.2: Knowledge of Self-Medication

Though self-medication is one of the most sort out methods for common self-limiting illnesses all over the world, the knowledge of its benefits and risks is not as popular as the practice itself. Studies conducted by Kayalvlizhil *et al.* (2001) [22], Hughes *et al.* (2001) [23] and Sharma *et al.* (2005) [24] revealed that the population had a fairly good knowledge on the benefits of self-medication, as they correctly perceived it to be economical and time-saving, avoiding the need to visit the doctor for minor ailments, while offering easy and quick relief at one's own convenience. The same, however cannot be said regarding the knowledge of consumers with respect to the drugs used, their indications, dosage and duration of usage [23] as well as the side effects of the drugs [25].

Published articles by Stewart *et al.* (2000) [26] and Atsbeha *et al.* (2001) [27] showed that due to lack of knowledge and information, many individuals used the drugs inappropriately. Similar studies from developing countries in Asia [28,29] showed the use of combination preparations with hidden classes of drugs as well as food supplements and tonics of unknown value, as knowledge on self-medication was completely lacking [30].

2.3: Source of Information for Drugs used in Self-Medication Practices

Studies [31,32] indicate that pharmacists, medicine dealers, household members, members within one's social circle and media advertisements act as major sources of information, with largest prevalence being shown from pharmacists and previous prescriptions given to the respondents [31,33].

In a study conducted by Eystathios *et al.* (2009) in Greece, it was found that the major source of information was pharmacists who dispensed drugs without prescription (76.2 percent), followed by leftover unused medicines at home (15.3 percent) and relatives or friends (7.2 percent) [34]. In another study conducted by Marilia *et al.* (2012) in Brazil, it was observed that drug vendors and private clinics were the main sources of modern medicines used in self-medication [35].

2.4: Symptoms/Illnesses that necessitate Self-Medication Practices

As per studies conducted in developing countries of Asia [22,30] and Africa [36,37,38], a wide range indications was found to be favoring the practice of self-medication. The commonest symptoms were fever and headache [30, 39], which accounted to around 60 percent of the illnesses. Also, cough and cold, body aches, gastrointestinal disorders and allergy were found to be other common conditions favoring self-medication [40,41,42].

2.5: Drugs used in Self-Medication Practices

Most of the studies [8,44,45,46] showed that NSAIDS, either alone or in combination with antibiotics were used most commonly in self-medication. Among NSAIDS, the use of Paracetamol [45,47,48] was found to be most common. Among antibiotics, the use of Amoxycillin, Amoxycillin/Clavulanic Acid and Ciprofloxacin [34,49] as well as Azithromycin [50] was found to be more common. In addition, other common drugs used to a lesser extent were respiratory drugs [4,51], gastrointestinal drugs, vitamins and minerals [46,51] and antiallergics [52].

2.6: Determinants of Self-Medication

Few studies showed that self-medication practice was influenced by socio-demographic characteristics of drug consumers like age, gender, employment status and occupation. In a study conducted by Marilia *et al.* (2012) in Brazil, it was observed that employment ($p=0.02$), age ($p=0.02$), having a partner ($p=0.03$) and male sex ($p=0.01$) had significant association with self-medication practice [53]. While a study conducted by Syed *et al.* (2008) in Pakistan showed that the prevalence of self-medication was alarmingly high among educated youth [54], another study conducted by Osemene (2012) in Nigeria showed that education had nothing to do with self-medication practice [55].

Studies indicated that self-medication was also influenced by perceptions and experiences of individuals, few of them being previous good experience with the drug, illness too trivial to visit a doctor, trust in relative's/friend's advice [56], fear from crowd at the clinic/hospital [48], less expensive in terms of time and money [57]. Moreover, it was found that the individuals who perceived their access to healthcare as inconvenient were about twice more likely to self-medicate than individuals who perceived convenient access ($p < 0.05$); also, individuals who were dissatisfied with the quality of healthcare services were three times more likely to practise self-medication than those who were satisfied ($p=0.001$) [37].

Chapter 3: Materials and Methods

3.1: Study Design

A community-based cross-sectional descriptive schedule-based survey (quantitative). The survey included semi-structured close-ended schedule-based interviews to achieve the specific objectives of the study.

3.2: Study Setting

The study was conducted in Hyderabad, the capital city of Telangana, a southern State in India. Hyderabad is a major metropolitan city and urban region covering an area of about 650 square kilometers, with a population size of about 67,31,790, containing about 10,66,289 households (Census of India, 2011) [61]. As per the data from the Greater Hyderabad Municipal Corporation (GHMC) [62], the city is divided into five geographical areas for administrative purposes- North zone (has 26 wards under four circles), South zone (has 43 wards under three circles), East zone (has 17 wards under three circles), West zone (has 14 wards under four circles) and Central zone (has 50 wards under four circles).

3.3: Duration of Study

The study was conducted for a period of 90 days (three months), from February 13, 2017, to May 12 2017, till the completion of the desired sample size.

3.4: Sample Size

Based on review of literature of similar studies conducted elsewhere in the country, the prevalence rate (p) of self-medication for calculation of sample size is taken as 73.6 percent [19].

Sample size is calculated using Cochran's formula:

$$n = Z^2 pq/e^2$$

Where,

n = desired sample size (when the population is greater than 10,000)

Z = the standard normal deviate, usually set at 1.96, which corresponds to 95% confidence level

p = the proportion in the target population estimated to have a particular characteristic

$$q = 1-p$$

e = desired level of precision (± 5 percent)

$$\begin{aligned}n &= (1.96)^2 * 0.736 * 0.264 / (0.05)^2 \\&= 298.5 \\&= 300 \text{ (Approx.)}\end{aligned}$$

Considering 10% of non-respondents, the final sample size = 330

3.5: Sampling Technique

The calculated sample size was divided into five parts for the corresponding five geographical areas, proportionate to population size of each area. Households within these areas were considered as a study unit, assuming that self-medication practices are usually similar in all the members of the same household. Accordingly, 56 households from North zone, 96 households from South zone, 36 households from East zone, 33 households from West zone and 109 households from Central zone were selected to reach the sample size of 330 households. Within each of these five geographical areas, sample was selected using systematic random sampling.

3.6: Sample Selection

3.6.1: Inclusion Criteria

- Individuals aged 18 years and above (both male and female) were interviewed
- Respondents residing in the given geographical area for more than six months
- Only one respondent from each household was included in the study
- Respondents who gave informed consent were a part of the study

3.6.2: Exclusion Criteria

- Individuals below 18 years of age
- Mentally sick individuals
- Individuals who did not give consent
- Respondents who gave partial/incomplete information
- Individuals who took self-medication only for chronic illnesses such as Diabetes and Hypertension (such individuals usually buy medications based on previous prescriptions till the next visit to their doctors is scheduled)

3.7: Data Collection Tool

The data was collected using a simple schedule. The format of the schedule was adapted from similar studies conducted earlier [63,64]. The schedule contained close-ended questions pertaining to the socio-demographic details of the individual (name, age, gender, employment, income etc.), practice of self-medication within three months recall period, symptoms for which medicines were used, reasons for self-medication, types of medicines used, sources of information for self-medication etc. In case the respondent had more than one time use of self-medication in the recall period, further details were recorded for the last episode. The income ranges mentioned in the schedule were based on a recent survey conducted by National Council of Applied Economic Research (NCAER) [65].

3.8: Data Collection Procedure

Direct face-to-face interviews with the individuals were conducted. All the responses were filled by the interviewer (author of the study). For ease of communication with the respondents, questions were translated into local language at times. The households in each geographical area were visited, by employing the procedure described in the sampling technique, using random walk method from the nearest landmark as the focal point in each area, till the desired sample size was achieved.

Households were visited on weekdays between 8 am to 4 pm. A written informed consent was obtained from all the individuals prior to the survey. Even after two such visits if the respondent was non-compliant, he/she was considered as non-respondent. The number of missing respondents (especially males) was reduced by revisiting their households on subsequent weekends, as per their convenience.

3.9: Data Analysis Procedure

The data was checked for partial/incompletely filled information before analysis. Descriptive results on prevalence of self-medication and its associated factors was presented as counts and percentages. The data was coded, tabulated and analyzed using Microsoft Excel and Statistical Package for Social Sciences (SPSS) version 20.0. Bivariate analysis using the Chi square test was performed to test the significance of association between various socio-demographic factors (independent variables such as age, gender, income, level of education etc.) and practice of self-medication (dependent variable).

Chapter 4: Study Findings

4.1: Socio-Demographic Characteristics of the Respondents

Univariate analysis of the socio-demographic characteristics of the respondents as (Table 1), showed that around 58 percent of the respondents were males. In terms of age, around 33 percent of the respondents belonged to the age group of 31-40 years. Most of the respondents were Hindus (78 percent). Around 92 percent of the respondents belonged to nuclear families. Around 27 percent of them had an education level of graduation and above, followed by secondary and higher secondary (26 percent). In terms of occupation, around 23 percent of them belonged to the private sector, followed by students (23 percent). Majority of the respondents belonged to the lower middle income group (34 percent).

Table 1: Socio-demographic characteristics of the respondents (n=330).

Characteristics	No. of Respondents	Frequency %
Gender of the Respondent		
Male	193	58.48
Female	137	41.51
Age of the Respondent		
> 60 years	30	9.09
51-60 years	46	13.93
41-50 years	67	20.30
31-40 years	108	32.72
18-30 years	79	23.93
Religion of the Respondent		
Hindu	258	78.30
Muslim	48	14.40
Christian	21	6.40
Others	3	0.90
Type of Family		
Nuclear	307	91.70
Joint	23	8.30
Marital Status		
Currently Unmarried	69	20.90
Currently Married	254	77.00
Divorced	1	0.20
Widowed	6	1.90

Table 1 (cont.): Socio-demographic characteristics of the respondents (n=330)

Characteristics	No. of Respondents	Frequency %
Level of Education		
Illiterate	40	12.12
Primary	57	17.27
Upper Primary	58	17.57
Secondary and Higher Secondary	87	26.32
Graduation and above	88	26.66
Professional Background		
Healthcare related	24	7.20
Non-healthcare related	306	92.80
Occupational Status		
Salaried- Public sector	64	19.36
Salaried- Private sector	77	23.29
Business	34	10.19
Housewife	53	16.12
Retired & Unemployed	26	8.07
Student	76	22.97
Average Annual Family Income		
> 17 lakhs (Upper)	29	8.70
3.4 lakhs to 17 lakhs (Upper Middle)	68	20.70
1.5 lakhs to 3.4 lakhs (Lower Middle)	125	37.90
< 1.5 lakhs (Lower)	108	32.70
Health Insurance Status		
Insured	62	18.67
Not insured	231	70.13
Don't know	37	11.20
Total	330	100

4.2: Knowledge on Self-Medication

Self-medication was rightly defined as the use of drugs not prescribed by the authorized medical personnel by around 63 percent (208) of the respondents. In response to the question on whether one should use drugs when ill without consulting the doctor, 83.6 percent (276) of the respondents answered “No”. **Table 2** shows the reasons given by the respondents. Around 16.4 percent (54) of them answered “Yes”. **Table 3** shows the reasons given by the respondents.

Table 2: Reasons given by respondents who believe drugs should not be used without seeing a doctor (n=276)

(n= no. of respondents who do not think drugs should be used without seeing a doctor)

Reasons	No. of Respondents	Frequency %
Unsafe	226	82.00
Seldom effective	51	18.50
Requires medical expertise	73	26.50
Likely to be associated with side effects	164	59.50

Table 3: Reasons given by respondents who believe drugs can be used without seeing a doctor (n=54)

(n= no. of respondents who think drugs can be used without seeing a doctor)

Reasons	No. of Respondents	Frequency %
Affordable and cost saving	41	76.32
Readily available and saves time	29	54.30
Equally effective	7	12.35

4.3: Knowledge on Conditions and Drugs that can be used in Self-Medication

When asked about the conditions/illnesses for which self-medication can be used (**Table 4**), majority of the respondents mentioned fever (84.13 percent), common cold (79.00 percent), cough (60.00) and headache (57.09). A majority of the respondents felt that the drugs that can be used without consulting a doctor (**Table 5**) were Paracetamol (95.37 percent), cough syrup (74.65 percent), Aspirin (50.33 percent) and antibiotics like Azithromycin (32.74 percent).

Table 4: Conditions for which Self-Medication can be used (n=330)

Conditions	No. of Respondents	Frequency %
Fever	278	84.13
Headache	188	57.09
Common cold	260	79.00
Cough	198	60.00
Body ache	116	35.00
Diarrhoea	86	26.00
Constipation	45	13.50
Eye infections	38	11.50
Allergies/skin infections	12	3.50
Tiredness	6	1.90

Table 5: Drugs which respondents believe can be safely used without consulting a doctor (n=330)

Drugs	No. of Respondents	Frequency %
Paracetamol	314	95.37
Cough Syrup	246	74.65
Aspirin	166	50.33
Azithromycin	108	32.74
Amoxycillin	46	14.17
Ciprofloxacin	42	12.79
Lasix	15	4.60
Vitamin tablets	55	16.79
Antacids	68	20.72

Majority of the respondents felt that information on drugs such as the name of drug, indication, dosage, frequency and duration of usage, side-effects and contra-indications and drug storage instructions (**Table 6**).

Table 6: Information on the following should be readily known to the consumers (n=330)

Information on	Yes	No	Don't know
Correct name of drugs	270	49	11
Indications of drugs	257	73	-
Dosage of drug	254	74	2
Frequency & duration of use	284	41	5
Side-effects & Contraindications	289	37	4
Drug storage instructions	219	103	8

4.4: Attitude towards Self-Medication

Majority of the respondents: 287 (86.8%) believed that self-medication should not be encouraged and 218 (66.2%) would rather pay a visit to the nearest health facility when ill, than treat themselves, while 112 (33.8%) admitted otherwise (**Table 7**).

Table 7: Reasons given by respondents for practising self-medication instead of visiting a nearby health facility when ill (n=112)

Reason	No. of respondents	% Frequency of respondents
Unfriendly govt. hospital staff	31	27.32
Long delays in govt. hospital	58	51.76
Exploitation by private hospitals	43	38.33
Time and cost effective	52	46.79
Fear of admission	29	25.79
Drug storage instructions	219	103

4.5: Prevalence and Practice of Self-Medication

The prevalence of self-medication was found to be around 72.4 percent (239) (Table 8).

Table 8: Practice of self-medication in the last three months among respondents (n=330)

Response	No. of respondents	% Frequency of respondents
Yes	239	72.4
No	91	27.6

When asked about the drugs used in the last three months, a majority of the respondents mentioned Paracetamol (76.54 percent) and cough syrup (64.32 percent) (Table 9).

Table 9: Drugs used in the last three months by the residents without seeing a doctor (n=239)

Drugs	No. of respondents	% Frequency of respondents
Paracetamol	182	76.54
Cough syrup	153	64.32
Aspirin	32	13.76
Azithromycin	20	8.54
Amoxycillin	28	11.65
Ciprofloxacin	11	4.47
Lasix	3	1.42
Vitamin tablets	16	6.79
Antacids	44	18.76

The most common symptoms/ailments for which self-medication was used were headache (64.34 percent), fever (42.76 percent), common cold (38.49 percent) and cough (35.79 percent) (Table 10).

Table 10: Conditions for which self-medication was used in the last three months (n=239)

Conditions	No. of respondents	% Frequency of respondents
Fever	102	42.76
Headache	153	64.34
Common cold	92	38.49
Cough	85	35.79
Body ache	69	29.24
Diarrhoea	27	11.43
Constipation	24	9.87
Eye infections	11	4.58
Allergies/Skin infections	16	6.79
Tiredness	6	2.56

The respondents mentioned chemist/pharmacist (54.76 percent) as the major source of information of drugs used in self-medication, followed by family members and relatives (37.37 percent) and their own experience (31.48 percent) (**Table 11**).

Table 11: Source of information about drugs used in self-medication (n=239)

Conditions	No. of respondents	% Frequency of respondents
Pharmacist/ Chemist	131	54.76
Family members/relatives	89	37.37
Media advertisements	63	26.42
Internet	9	4.07
Previous prescription of the doctor	66	27.96
Own experience	75	31.48

The major sources of drug procurement were nearby pharmacies (43.76 percent), unused drugs at home (31.34 percent) and family members and relatives (21.78 percent) (**Table 12**).

Table 12: Source of drug procurement (n=239)

Conditions	No. of respondents	% Frequency of respondents
Purchase from nearby pharmacy	104	43.76
Family members/relatives	52	21.78
Unused drugs at home	74	31.34
Govt. health facility	28	11.79
Private health facility	10	4.32
Market/shops	20	8.56

When asked about the reasons for self- medication, a majority of the respondents mentioned the trivial nature of the disease as the main reason for not consulting the doctor (58.70 percent), previous good experience with the drug (56.93 percent), pharmacist's advice being as good as doctor's advice (57.64 percent) and emergency use (49.53 percent) (**Table 13**).

Table 13: Reasons for self-medication(n=239)

Conditions	No. of respondents	% Frequency of respondents
Mild illness, doctor's advice not needed	140	58.7
Lack of time	53	22.31
High consultation and treatment charges	77	32.54
Hospital/clinic too far	31	12.79
Previous good experience	136	56.93
Ease/convenience of use	70	29.43
Emergency use	119	49.53
Trust in family/friends	28	11.86
Pharmacist's advice as good as doctor's advice	138	57.64
Privacy issues	22	9.26
Fragmented healthcare systems	57	23.97

4.6: Significance of Association between Socio-Demographic Characteristics of the individual and the Practice of Self-Medication

Out of total 330 respondents, 239 (72.4%) had used self-medication within last three months recall period. The practice of self-medication was more common among younger age groups 18-30 years (84.5%) and 31-40 years (82.7%) and there was a significant association between age factor and self-medication ($p < 0.05$). Prevalence of self-medication was more common among males as compared to females ($p < 0.05$). Significant association was also found between education level and Practice of self-medication, where participants having education of graduate and above were practicing self-medication more compared to participants having education less than secondary or illiterate persons ($p < 0.05$). Also, significant association was found between lower income levels and practice of self-medication ($p < 0.05$) (**Table 14**).

Table 14: Bivariate Analysis: Socio-Demographic Characteristics of the Respondents & Self- Medication Practice (n=330)

Characteristic (n=330)	Self-medication	Self-medication	P Value
	Yes	No	
Gender of the Respondent			P < 0.05
Male	145(75.6)	48(24.4)	
Female	94(68.4)	43(31.6)	
Total	239(72.4)	91(27.6)	
Age			
> 60 years	16(55.8)	14(44.2)	
51-60 years	24(53.3)	22(46.7)	
41-50 years	44(65.0)	23(35.0)	
31-40 years	88(82.7)	20(17.3)	
18-30 years	67(84.5)	12(15.5)	
Total	239(72.4)	91(27.6)	
Level of Education			
Illiterate	15(42.8)	25 (57.2)	
Primary	35 (68.2)	22 (31.8)	
Upper primary	40 (69.3)	18 (30.7)	
Secondary & Higher secondary	69 (83.2)	18 (16.8)	
Graduation and above	80 (84.7)	8 (15.3)	
Total	239(72.4)	91(27.6)	
Average Annual Family Income			
> 17 lakhs	34 (8.7)	20 (7.5)	
3.4 lakhs to 17 lakhs	52 (20.7)	25 (27.2)	
1.5 lakhs to 3.4 lakhs	73 (37.9)	30 (41.8)	
< 1.5 lakhs	80 (32.7)	16 (23.5)	
Total	239(72.4)	91(27.6)	

Chapter 5: Discussion

The respondents generally had a fairly good knowledge of what is meant by self medication . In spite of this, however many still engaged in self medication, this is similar to the report of a similar study carried out in Nigerian populations [66, 67]. The high prevalence of self medication practiced despite the awareness on the safety among the residents may also have been due to level of education of a greater proportion (majority having attained tertiary level) of the respondents, which puts them in a position to understand the risk and side effects of the drugs used in self medication.

The commonest reasons given by the respondents for practicing self-medication were time and cost effectiveness owing to the long delays in Government hospitals and the exploitation by Private hospitals. These are important factors favoring self-medication, particularly in developing countries and have been reported in other studies. This would mean that health services need to be improved to the point where treatment becomes more accessible and the patient's waiting time is minimized.

As was recorded in most other studies [68,69], fever, headaches, common cold and cough were the most common conditions for which the residents practiced self medication. The respondents largely believed that pain relievers (paracetamol and aspirin) [70] antibiotics (amoxycillin) and cough mixtures [71] were particularly safe enough to be used to treat ailments without consulting a doctor.

These findings are in agreement in previous studies in parts of Africa [72] and Asia [73] which revealed that information on the side effects of self medication products is largely inadequate. Over 60 percent of respondents consequently confessed that more information on self medication products should be made more readily available to consumers just as was discovered in the World Self Medication Industry survey of 2007 [74].

Chapter 6: Conclusion and Recommendations

6.1: Conclusion

The prevalence of self-medication is high amongst the predominantly well educated residents in Hyderabad, despite majority being aware of its harmful effects. Self medication is largely preferred amongst the respondents because of its time and cost effectiveness. There therefore is a dire need to adequately equip the populace with drug information as well as educate the public on the limits and acceptable attitudes and practices of self medication even as the health authorities and pharmaceutical companies put in place more guided safety measures.

6.2: Recommendations

- There should be increasing awareness and education at all levels regarding the importance of professional consultation before drug use, the implications of self medication and the place of responsible self medication.
- Strict policies need to be implemented by the Government and other stakeholders on the advertising and selling of medications to prevent this problem from escalating.
- Strategies should be formulated and policies enforced to prevent the supply of medicines without prescription by pharmacies.
- Strategies should be put in place at all cadres of health care delivery to ensure efficient health services that receiving health care becomes much less difficult and time consuming.
- Further researches should be carried out, probably on larger scale on this global phenomenon as it is a problem that should not be ignored.