

DISSERTATION THESIS

A CROSS-SECTIONAL STUDY ON

KNOWLEDGE, ATTITUDE AND PRACTICE OF SELF-MEDICATION AND ITS DETERMINANTS IN THE CITY OF HYDERABAD, TELANGANA

Submitted by

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Introduction

1.1: Background

Self-medication is the practice of selection and usage of medicines by individuals to treat self-recognized symptoms or illnesses, without seeking prior medical consultation regarding indication, dosage and duration of therapy.

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 or using medication suggested by lay sources or health workers who are not authorized to prescribe medicines.

In the past few years, self-medication 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.

Responsible self-medication can be used to prevent and treat minor symptoms and ailments that do not need medical consultation or supervision. Also, it lessens the pressure on medical services, reduces healthcare costs and saves scarce medical resources from being wasted on mild illnesses.

However, 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 .

1.2: Problem Statement

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 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. Furthermore, drugs like antimicrobial agents are increasingly finding their way into the hands of the consumers, thereby increasing the prevalence of antimicrobial resistance.

1.3: Justification of the Study

Studies reveal factors such as age, sex, religion, marital status, education, income, urge for self-care, feeling of sympathy towards sick family members, lack of health services, inaccessibility of health services, ignorance, misbelief, extensive advertisement, availability of drugs in other than medical shops etc., to 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.

1.4: Research Questions

- What is the knowledge on self-medication practice among general population in Hyderabad?
- What is the attitude towards self-medication practice among general population in Hyderabad?
- 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: Study Objectives

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

Review of Literature

The **prevalence** of self medication 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 . However, in another study conducted by Figueiras *et al.* (2000) in Spain, the prevalence of self-medication was only 12.7 percent .

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 . Whereas, a study conducted by Auta *et al.* (2012) amongst medicine vendors in Nigeria showed a prevalence of 75.4 percent . While a study conducted by Raut *et al.* (2014) amongst nursing students in Vishakapatnam showed a prevalence of 40 percent , a similar study conducted by Ali *et al.* (2015) in Bastar, showed a prevalence of 84.5 percent .

Studies conducted by Kayalvlizhil *et al.* (2001), Hughes *et al.* (2001) and Sharma *et al.* (2005) 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 as well as the side effects of the drugs.

Studies 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.

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). 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.

As per studies conducted in developing countries of Asia and Africa , a wide range **indications** was found to be favoring the practice of self-medication. The commonest symptoms were fever and headache, 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.

Most of the studies showed that NSAIDs, either alone or in combination with antibiotics were used most commonly in self-medication. Among NSAIDs, the use of Paracetamol was found to be most common. Among antibiotics, the use of Amoxycillin, Amoxycillin/Clavulanic Acid and Ciprofloxacin as well as Azithromycin was found to be more common. In addition, other common **drugs** used to a lesser extent were respiratory drugs, gastrointestinal drugs, vitamins and minerals and antiallergics.

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. While a study conducted by Syed *et al.* (2008) in Pakistan showed that the prevalence of self-medication was alarmingly high among educated youth, another study conducted by Osemene (2012) in Nigeria showed that education had nothing to do with self-medication practice.

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, fear from crowd at the clinic/hospital, less expensive in terms of time and money. 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 ($p=0.001$).

Materials and Methods

3.1: Study Design

A community-based cross-sectional descriptive schedule-based survey.

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). As per the data from the Greater Hyderabad Municipal Corporation (GHMC), 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.

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 . 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).

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.

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 were presented as counts and percentages (Univariate Analysis). The data was coded, tabulated and analyzed using Microsoft Excel and Statistical Package for Social Sciences (SPSS) version 20.0.

Bivariate Analysis using 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).

Study Findings

Table 1: Univariate Analysis: Socio-Demographic Characteristics of the Respondents (n=330)

Characteristic (n=330)	Frequency	Percentage
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

Table 1: Univariate Analysis: Socio-Demographic Characteristics of the Respondents (n=330) (cont.)

Characteristic (n=330)	Frequency	Percentage
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

Table 1: Univariate Analysis: Socio-Demographic Characteristics of the Respondents (n=330) (cont.)

Characteristic (n=330)	Frequency	Percentage
Marital Status		
Currently unmarried	69	20.90
Currently married	254	77.00
Divorced	1	0.20
Widowed	6	1.90

Table 1: Univariate Analysis: Socio-Demographic Characteristics of the Respondents (n=330) (cont.)

Characteristic (n=330)	Frequency	Percentage
Level of Education		
Illiterate	40	12.12
Primary	57	17.27
Upper primary	58	17.57
Secondary & Higher secondary	87	26.32
Graduation and above	88	26.66

Table 1: Univariate Analysis: Socio-Demographic Characteristics of the Respondents (n=330) (cont.)

Characteristic (n=330)	Frequency	Percentage
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

Table 1: Univariate Analysis: Socio-Demographic Characteristics of the Respondents (n=330) (cont.)

Characteristic (n=330)	Frequency	Percentage
Average Annual Family Income		
> 17 lakhs	29	8.70
3.4 lakhs to 17 lakhs	68	20.70
1.5 lakhs to 3.4 lakhs	125	37.90
< 1.5 lakhs	108	32.70
Health Insurance Status		
Insured	62	18.67
Not Insured	231	70.13
Don't know	37	11.20

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.

- 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 (n=276)	No. of respondents	% Frequency of respondents
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 (n=54)	No. of respondents	% Frequency of respondents
Affordable & cost saving	41	76.32
Readily available & saves time	29	54.30
Equally effective	7	12.35

Table 4: Conditions for which self-medication can be used
(n=330)

Conditions	No. of respondents	% Frequency of respondents
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 of respondents
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

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

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

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

Prevalence of self- medication among respondents was 72.4 percent.

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

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

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

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

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

Conditions	No. of respondents	% Frequency of respondents
Mild illness, doctor's advice not needed	140	58.70
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

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

Characteristic (n=330)	Self-medication Yes	Self-medication No	P Value
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)	

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

Characteristic (n=330)	Self-medication Yes	Self-medication No	P Value
Age			P < 0.05
> 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)	

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

Characteristic (n=330)	Self-medication Yes	Self-medication No	P Value
Level of Education			P < 0.05
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)	

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

Characteristic (n=330)	Self-medication Yes	Self-medication No	P Value
Average Annual Family Income			P < 0.05
> 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)	

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.

-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 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), antibiotics (amoxycillin) and cough mixtures 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 and Asia which revealed that information on the side effects of self medication products is largely inadequate. Over 80% 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.

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.

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 stake holders 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

Limitations of the Study

- Limited sample size
- Another limitation of this study was the reliance on self-reported data about self medication from the respondents coupled with inability to ascertain drugs used, and their dosages.
- The inability to establish the occurrence of side effects following drug use could also have limited the study.

Thank you