

Original Research Article

Assessment of self-medication patterns in a rural area of south India: a questionnaire based study

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ABSTRACT

Background: Self-medication is an important health issue especially in developing countries like India, where universal access to health care is yet to be achieved. It is a type of self care behavior, promoted by WHO, since it reduces the cost of treatment, physicians' and patient's time and reduces the burden on the understaffed health system. This study aimed at determining the prevalence and patterns of self medication in rural areas.

Methods: This cross sectional study was conducted in villages covered under rural health centre attached to a medical institution. By systematic random sampling, 458 people from 167 households were administered a pretested questionnaire after obtaining informed consent.

Results: This study reports the prevalence of self medication to be 51.75%. Age, gender and marital status showed a statistically significant higher usage of self medication ($p < 0.01$). Advice from friends, family and neighbours was the commonest mode of attaining self medication, while simple nature of disease was the common reason cited. Fever, myalgia and headache were the common symptoms reported where self medication was used. More than 90% of the respondents considered self medication to be harmless and acceptable (74.3%); and 92.8% would like to continue the practice in future.

Conclusions: Self-medication is one of the common and preferred modes resorted to by the patients, which impacts medical care affecting diagnosis of underlying conditions resulting in delay of appropriate treatment. Awareness and education programs using mass media with involvement of community will help in the rational approach towards self medication.

Keywords: Self-medication, Patterns and prevalence, Attitudes

INTRODUCTION

Self-medication is a burning global issue today. Self-medication can be defined as the use of drugs to treat self-diagnosed disorders or symptoms, or the intermittent or continued use of a prescribed drug for chronic or recurrent disease or symptoms.¹ Self-medication is an age old practice.² Globally almost everyone practices self medication in view of self care of health. Families, friends, neighbors, the pharmacist, previous prescribed

drug, or suggestions from an advertisement in newspapers or popular magazines are common sources of self-medications.³

Today there is an enormous growth in self-medication in India. Some of the possible factors are the urge to self-care, feeling of sympathy toward family members in sickness, lack of health services, poverty, ignorance, misbeliefs, extensive advertisement of drugs and availability of drugs in establishments other than

pharmacies.² In a developing country like India, a large percentage of population, when they fall sick, do not consult the physician for economic reasons. They either consult a drug store (retail pharmacy) and obtain medicine from the shelf, or consult a neighbor who may be having some tablets left over from his/her previous illness.^{4,5} At times, there is a possibility of nothing untoward happening upon following such advice, but it can still be quite dangerous.⁶ Over the counter (OTC) drugs are a form of self-medication. The buyer diagnoses his/her own illness and buys a specific drug to treat it.¹ OTC products provide symptomatic relief for conditions that do not always require medical intervention.⁷

On the other hand, some governments are increasingly encouraging self-care of minor illnesses, including self-medication. World Health Organization (WHO) promotes the practice of self-medication without medical consultations for effective and quick relief of symptoms to reduce the burden on health-care service centers, which are often understaffed and inaccessible in rural and remote hilly and tribal areas.⁸ Responsible self-medication help to reduce the cost of treatment, travelling time as well as doctor's time i.e., consultation time.^{3,9}

However, there is a lot of public and professional concern about the irrational use of drugs. Although OTC drugs are meant for self-medication and are of proven efficacy and safety, their improper use due to lack of knowledge about their side effects and interactions could have serious implications, especially in extremes ages (children and old ages) and during special physiological conditions like pregnancy and lactation. There is always risk of unknown interactions between active ingredients present in OTC drugs and prescription medicines as well as increased risk of worsening of existing disease pathology.¹⁰ Major problems related to self-medication are wastage of resources, increased resistance of pathogens and health hazards such as adverse reaction and prolonged suffering. Antimicrobial resistance is a current problem world-wide particularly in developing countries where antibiotics are available without any prescription.^{3,11}

In India, it is very common to observe self-medication practice, which is emerging as a challenge to health care providers. Few studies were conducted at community level in rural India to assess the magnitude of self-medication practices. Studies of such nature will provide useful insight on the reasons for which patients resort to this practice and might help the policy makers and regulatory authorities to streamline the process of drug regulations, updating the list of essential medicines, and safety issues of over the counter drugs. With this background, the present study was undertaken to assess the prevalence and patterns of self-medication in rural population. This study also focused the attitude of people, who follow the practice of self-medication.

METHODS

Study setting and sample size

A cross-sectional study was conducted during February 2014–March 2014 in the rural health centre attached to a medical college at Kuppam, Chittoor District, Andhra Pradesh. The sample size was calculated to be 377, based on the prevalence of 81.5% in a study conducted in rural population in Maharashtra with a precision of 5%.⁸ After adding a nonresponse rate of 10%, minimum sample size required became 415. The town of Kuppam has a population of 21,963. Out of the ten villages attached to the rural health centre, three villages were selected to be included in the study which had similar population. Households within these three villages were selected by systematic random sampling.

Method of data collection

Data was collected by interview method using structured pretested questionnaire which was administered to the members of the households available at the time of the visit. Prior written informed consent was obtained from the study subjects. However, ethical committee approval was not obtained because the study was a descriptive one based on history of self-medication and conducted as a part of intern's training program in the rural health center field practice area attached to the medical institution. In case of children aged less than 14 years, information was collected from the parents. The data were collected by the trained interns and supervised by the investigators.

For the purpose of this study, self-medication was defined as the use of over the counter drugs or any allopathic drug for self-treatment, without prior consultation with a certified allopathic doctor with a minimum of MBBS degree.¹ The pretested questionnaire collected data on

- Sociodemographic variables- age, gender, education, occupation and income,
- Patterns of self-medication—frequency, sources, reasons, storage and
- Attitude about self-medication – perception of harmful effects of self-medication and whether likely to recommend this practice for one's own/others future. Responses in the attitude domain were coded in Likert scale form and the responses were strongly disagree, disagree, agree, and strongly agree. During analysis, strongly disagree and disagree were compiled under one group. The same process was followed for agree and strongly agree.

Data analysis

All data were coded, entered and analyzed using the statistical package for social sciences program version 17.0 (Chicago IL, USA). Descriptive data analysis was conducted and reported as frequencies and percentages.

Association between self-medication practice and other components was ascertained by Chi-square test or Fisher's exact test. A p value of <0.05 will be taken as statistically significant.

RESULTS

This study interviewed 458 people in 167 households. Out of 458 people interviewed, 220 (48.03%) were males and 238 (51.96%) were females. Nearly 40% of the study population belonged to 16 – 35 years age group (183

individuals). The literacy rate was found to be 66.8%, population employed was 48.7% and 68.1% were married. Majority of the respondents belong to Class IV socio economic status (Modified BG Prasad classification, updated to Jan 2014 using all India consumer price index). In this study, we found 237 individuals (51.75%) have ever used self-medication for any ailments. Table 1 shows the socio demographic variables and their association with self-medication. Gender, age and marital status were found to have a positive association with self medication in our study.

Table 1: Socio demographic variables and their association with self medication.

Socio demographic factors	Self-medication practice		X ² value	P value
	Yes (%)	No (%)		
Gender				
Male	144 (65.5)	76 (34.5)	31.86	<0.001
Female	93 (39.1)	145 (60.9)		
Age				
<15 years	18 (22.2)	63 (77.8)	47.48	<0.00001
16–35 years	89 (48.6)	94 (51.4)		
35–60 years	98 (65.8)	51 (34.2)		
>60 years	32 (71.1)	13 (28.9)		
Literacy status				
Illiterate	73 (48)	79 (52)	1.26	0.26
Literate	164 (53.6)	142 (46.4)		
Employment				
Employed	110 (49.3)	113 (50.7)	1.31	0.52
Unemployed	59 (52.2)	54 (47.8)		
Students	68 (55.7)	54 (44.3)		
Marital status				
Married	173 (55.4)	139 (44.6)	36.77	<0.00001
Single	23 (25.6)	67 (74.4)		
Widowed/separated/divorced	41 (73.2)	15 (26.8)		
Socioeconomic status				
Upper	6 (42.9)	8 (57.1)	7.73	0.1
Upper middle	28 (45.9)	33 (54.1)		
Lower middle	82 (52.9)	73 (47.1)		
Upper lower	106 (57)	80 (43)		
Lower	15 (35.7)	27 (64.3)		

Table 2 demonstrates the patterns and perceptions associated with self medication. Majority of the population (62%) were taking self medication only when there were similar complaints as in the past, while 3% indulged in regular self medication practice. When asked about the source, our population predominantly replied friends, family and neighbors (32%), print and electronic media (26%) and pharmacist (21%). Eighteen respondents obtained drugs by remembering the name of the drug. NSAIDs (32.7%), anti diabetic (5%) and anti hypertensive drugs (4%) were the common self reported medications used by participants.

The popular reasons for using self medication included simple/mild disease (27%), previous good experience (23%) and lack of time to visit hospital (20%). People

reported that for the illnesses which are mild if they go to health care provider apart from the direct expenditures they have to lose their one day wage/earnings. Around 87% of the population using self medication stored the left over medicines with the sole intention of reusing them in the future. Only 14% of the respondents had knowledge regarding the dose and duration, 7% about the side effects and 2% knew of the drug interactions of the various drugs that they were using as self medication, while 77% of the respondents had no knowledge at all. Respondents knowledge about the above parameters were extracted by asking direct questions or by indirectly enquiring about drug use in sub-therapeutic dosage for inadequate period or over use of drugs or use of drugs with a potential to aggravate the existing pathology or concomitant drug use with potential interactions.

Fever (48.1%), pain (myalgia [33.8%] and headache [26.6%]) and abdominal pain (22%) were the common complaints for which the participants used self

medication as indicated in Table 3. Wound treatment, dysmenorrhea and gastric problems were the next common complaints.

Table 2: Patterns and perception of self-medication.

Patterns and perception of self-medication	Categories	Total (%)
Frequency	Regularly	7 (3)
	Occasionally	83 (35)
	Only at times when there are similar complaints	147 (62)
Source	Friends, family, neighbors	76 (32)
	Media (print, electronic)	63 (26)
	Pharmacist	49 (21)
	Previous prescription	31 (13)
	Remembering the name of the drug	18 (8)
Reason	Simple/mild disease	63 (27)
	Previous good experience	54 (23)
	No time to visit clinic/hospital	46 (20)
	High treatment cost	31 (13)
	Self-reliance in knowing about the disease	22 (9)
	Lack of trust in doctors	8 (3)
	Lack of clinics/hospitals nearby	8 (3)
	Emergency	5 (2)
	Stored the left over medicine for reusing	206 (87)
Storage of medication	Never stored at home	31 (13)
Knowledge of medicines	Dose and duration	32 (14)
	Side effects	16 (7)
	Drug interactions	5 (2)
	No knowledge	184 (77)

Table 3: Common symptoms for which self medication was used.

Symptoms	Number (%)
Fever	114 (48.1)
Myalgia	80 (33.8)
Headache	63 (26.6)
Abdominal pain	52 (22)
Wound	47 (19.8)
Dysmenorrhea	44 (18.6)
Gastric problems	40 (16.9)
Cold and cough	21 (8.9)
Diarrhea	17 (7)
Diabetes	14 (5.9)
Blood pressure	11 (4.6)
Others (allergy, UTI, ear infection, eye infection, insomnia, skin disorder and hair problems)	32 (13.5)

Attitude toward self-medication

Within the population using self medication, 215 (90.7%) regard the concept of self medication to be harmless. When the respondents were asked, whether it is acceptable to use self medication when they had similar symptoms as the previous illness, 176 (74.3%) of them agreed with it. Around 10% of this study population

reported illnesses of chronic nature and these participants justified their practice by saying even if they go for repeated visits; their physician would continue the same. So, there is no harm in continuing the same drugs for longer period. When asked whether they would want to continue to use self medication in the future, 220 (92.8%) of them responded positively, while only 123 (51.9%) of

the respondents would like to recommend others to take up self medication.

DISCUSSION

The prevalence of self medication in this study conducted in villages of south India was reported to be 51.75%. This high prevalence is consistent with studies conducted in various parts of India like Uttar Pradesh (50%), Erode (62%) and Puducherry (71%) whereas another study conducted in Puducherry showed a low prevalence of 11.9%.^{2,12-14} A study in urban Delhi showed that prevalence of self-medication among those who had suffered some illness episode in the last 1 month was 31.3%.¹⁵ The different rates of self medication observed in various studies conducted all over India could be due to the fact that some of these studies have taken into account all type of drugs including homeopathy or other Indian system-related drugs. The nature of definitions used, recall period considered for definition, region selected and methodology adopted are some other factors which have affected the prevalence of self medication in different studies.

On a global front, a study from South Africa had shown very high prevalence of self-medication (93-98%). However, the definition used in this study was ever exposed to the practice of self-medication among women 16-65 years; the recall period quite similar to the one used in this study.¹⁶ Closer home, a recent study from Sri Lanka had reported 12.2% and 7.9% prevalence of self-medication to allopathic drugs from urban and rural area, respectively, before two weeks of interviews.¹⁷ Shankar PR et al reported a prevalence of 59% self medication in the past 6 months in Pokhara valley in Nepal.¹⁸ The prevalence of self-medication in previous studies conducted in different parts of the world have ranged from 12.7% to 95%.^{19,20} Since the characteristics of the study population and the health-care systems differ from country to country, it becomes difficult to compare the results.

Though the prevalence of self-medication tends to vary across studies, determinants and patterns of drug use are similar across studies. Our study reported a higher percentage of males practicing self medication than females. Many studies conducted in India and neighbouring countries like Sri Lanka and Nepal had opined the same.^{2,14,17,18,21} This could be due to the fact that males are generally employed and have a higher purchasing power, they tend to neglect mild illnesses and avoid loss of wages by spending time in hospitals. In other studies, the influence of gender on self-medication practice was inconclusive.^{12,18}

Highest proportion of subjects who practiced self-medication was aged between 35 and 60 years in this study which is similar to a study conducted in Uttar Pradesh among people attending community pharmacies² and in Puducherry.¹⁴ However, other studies conducted at

Erode, South India¹² where the highest prevalence of self-medication was among respondents aged 26-40 years, at Nepal where the highest prevalence of self-medication was among respondents aged 20-39 years and Hong Kong where the highest prevalence of self-medication was among respondents aged 15-49 years.^{7,18} This contrast may be due to different age classifications used across various studies. This study reported a higher percentage of people from the lower socioeconomic status using self medication, although this was not statistically significant, similar to studies conducted in China and Sri Lanka.^{17,22} This was contradictory in some studies.¹⁴ These differences are mainly due to inherent difficulties measuring the economic status. Moreover, low per capita income and poverty forces them to use self medication so that they can save their daily wages.

This study reports that friends, family and neighbors, print and electronic media and pharmacist were the common sources for practicing self medication. Similar results were obtained in studies conducted in Erode, South India Uttar Pradesh, rural north India and in Hong Kong.^{2,4,7,12} Selvaraj et al, report that, showing previous prescription or remembering the name of the drug from previous prescriptions were common modes of procuring drugs.¹⁴ Sharma et al, had reported variation in drug procurement method between low and high level of literacy. According to that study, people with low literacy had received drugs from pharmacist, whereas people from high literacy level had used previous prescription for the same.¹⁰ Study report by Deshpande and Tiwari also states every third customer coming to pharmacy is receiving drugs without prescription.²¹

Common reasons cited in this study for using self medication was simple nature of the disease, previous good experience and lack of time to visit hospitals. Many other studies report similar reasons for using self medication Ahmad A et al, in their study conducted in North India reported high treatment cost to be a major factor in practicing self medication, whereas only 13% of our respondents felt that treatment is expensive.^{2,4,12-14} Fever, myalgia, headache and abdominal pain were the most common conditions for which people have used self-medications in this study. These results were similar to other studies conducted in other countries.^{2,4,12,14} NSAIDs and medications used for managing chronic disease conditions such as BP, diabetes were common drugs procured by recall method by the respondents in our study. This trend was reported by other researchers as well.^{2,14} This is alarming since intake of medications for chronic disease conditions is prohibited without physician supervision

Majority of this study population practicing self medication had no knowledge (77%) regarding the dose, duration, adverse effects and interactions of the drugs they were consuming. The same pattern was observed by Ahmad et al, in Northern India.² Even in developed countries like United States, it has been seen that the

misuse of non-prescription drugs causes tens of thousands of unnecessary hospitalizations each year.²³ Majority of the respondents in our study had the intention to use self medication in future for themselves and about 50% would want to recommend for others; which was also reported in a study conducted in Puducherry, where a majority of the respondents wanted to recommend to others too.¹⁴ This attitude may indicate the dangerous trend of continuing the practice of self medications across generations.

The study is not without limitations. Its cross-sectional nature does not permit causal inferences. The data were based solely on self-report which increase the likelihood of recall bias. Recall period was ever used self medication, and since there was no fixed short duration, there could be memory bias in occasional users. Access to health care like distance to health facilities or pharmacies were not addressed in this study. This study was restricted to use of self-medication to allopathic drugs alone. We found that medications of other systems of medicine was very rampant in use which necessitates further research in respect to the nature of the disease used, adverse events and attitudes of people.

This is one of the few studies that look at the self-medication practiced by the people residing in villages in South India. There are fewer health-care facilities in rural areas compared to cities and hence there is a higher possibility that people perform self-medication. Also people residing in rural areas have a lower socioeconomic status compared to people residing in the city, which might explain the lack of funds for treatment in health clinics. Future research should focus on interventions to create awareness about self-medication among Indians with limited literacy. The social and economic importance associated with self-medication should be understood by health-care providers as well as consumers. A collaborative relationship between patients, pharmacists and physicians can affect responsible self-medication. Research should also look at how medication access can be improved for rural areas and how health-care professionals can improve awareness about the disadvantages of self-medication among the population.

CONCLUSION

This study reports a high prevalence of self medication, which may reflect the trends in the entire rural part of Andhra Pradesh and south India as well. What is of concern is that many of the literate adults practicing self medication believe that this practice is harmless, time saving and appropriate for mild/previous similar illness. Their strong intention to continue this practice in the future and recommend to others should be an alarming wake up call to all the doctors, health care providers, pharmacists and policy makers. Simplest method of creating awareness regarding self medication to the general public is through media such as newspaper, TV and recently internet. Regulation of pharmacies and law

enforcement may help in limiting the self-medication practices.

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