



## A Study on Assessment of Self-Medication among Adult Population in Mysuru City

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Received: 08-05-2019; Revised: 25-06-2019; Accepted: 02-07-2019.

### ABSTRACT

Self-medicines are those medications that can be purchased from the pharmacy without the aid of a prescription. In India practically all medications can be purchased over the counter without prescriptions. This influences abuse of medications particularly antibiotics which causes antibiotic resistance. According to World Health Organization, self-medication is the selection and use of medicines by individuals to treat self-recognised illnesses or symptoms. Studies of this nature will help to assess the magnitude of self-medication practice and will provide useful insight on the reasons for which type of patients practice self-medication. Self-medication practice varies from one region to another region, which needs to be updated very often now and then to know how medications are utilised among adult population in according to clinical situation of individual. Therefore this research protocol was designed by research investigators to know how self-medications was practised among adult population in Mysore city. The main aim of the study was to assess practice about self-medications. This study was prospective observational study conducted in private community pharmacies over a period of nine months. Study participants were interviewed and demographic details such as age, gender, socioeconomic status etc. were documented and reasons for self-medication were assessed. Total number of study participants visited the pharmacies were 1216, among them 635 purchased drugs for self-medication. Out of 635, 529 study participants were enrolled during study. The prevalence of self-medication was found to be 43.50%. Among gender wise distribution male study participants were more [n=310 (56.90%)] and among age wise distribution, majority fall in 18-30 years of age group [n=183 (34.59%)]. Enrolled study participants with respect to socio economic status [n=232 (43.86%)] were belonged to upper middle class. The drugs commonly purchased were belonged to therapeutic class, analgesics and antipyretics [386 (46.78%)]. Pain was major among presenting symptoms [201 (28.07%)]. The most common reason opting for self-medications among study participants was quick resolving of symptoms [516 (18.47%)]. The prevalence rate of self-medication practice was found 43.50% and most commonly used self-medications were analgesics and antipyretics. The response rate of study participants was found 66.35%

**Keywords:** Self, Medication, Practice, Pharmacies.

### INTRODUCTION

Self-medicines are those medications that can be purchased from the pharmacy without the aid of a prescription. In India practically all medications can be purchased over the counter without prescriptions. This influences abuse of medications particularly antibiotics which causes antibiotic resistance. According to World Health Organization, self-medication is the selection and use of medicines by individuals to treat self-recognised illnesses or symptoms<sup>1, 2</sup>.

Self-medication concept is practiced globally, particularly in developing countries. Efficacious and safe practice of self-medication has an affirmative impression on individual and healthcare system. It provides the provision of individuals to self-treat some of minor ailments without consulting physician. Purchase of over the counter (OTC) drugs is the most common approach of self-medication.

According to WHO, it is proved that the OTC drugs are safe which is accountable only for few therapeutic class of medications and efficacious for self-treatment, but lack of knowledge about drug usage, their side-effects and possibilities of potential drug interactions between the active pharmaceutical ingredient (API) and prescription

medication which can be a serious problem, especially in the children and special population i.e. patients of geriatrics, pregnant women and lactating mothers if awareness is not created at the right time. Self-drug is broadly practiced in both developed and developing countries, but more frequent in the developing countries<sup>3,6</sup>.

Self-medication is an important public health problem and is practiced globally. With a reported prevalence of 21% in Lithuania. 19.8% in Romania. 15.2% in Spain. 21% in Portugal. 31% in Czech Republic, with a reported prevalence of 0.1% in northern and western Europe, 21% in Eastern Europe, 27% in USA<sup>5</sup>. In developing countries reported prevalence rates are much higher, with 79% in India. 84% in Pakistan. 78% in Saudi Arabia. 67% in Nigeria, in Sri Lanka (urban; 12.2%, rural; 7.9%)<sup>4,5</sup>.

Studies of this nature will help to assess the magnitude of self-medication practice and will provide useful insight on the reasons for which type of patients practice self-medication. Self-medication practice varies from one region to another region, which needs to be updated very often now and then to know how medications are utilised among adult population in according to clinical situation of individual. Therefore this research protocol was designed



by research investigators to know how self-medication was practised among adult population in Mysore city. Self-medication practice research can also reveal how self-medications are safely used by individuals and any medication related problems such as dosing, contraindications, drug interactions etc can be identified and proper safety measures can be taken in future in this regard.

## METHODOLOGY

This study was prospective observational study conducted over a period of nine months. Prior to commencement of study, ethical clearance was obtained from the Institutional Human Ethical Committee of JSS Academy of Higher Education & Research, Mysuru.

### Study criteria

#### Inclusion criteria:

- Study participants who are purchasing drugs without prescription.
- Study participants of any gender of age 18 to 60 years.
- Study participants coming under specialised population such as pregnancy and lactating mothers.

#### Exclusion criteria:

- Study participants who are not willing to participate.

### Development and validation of tools

During the initial phase of the study various tools were developed which were utilized for data collection. The suitable data collection form, informed consent form, reasons for practice self-medication checklist and questionnaire were developed and validated before utilizing in this study. These questionnaire were administered in order to understand the practice pattern of self-medications among study participants.

### Data analysis

#### Patient characteristics:

Descriptive data of enrolled study participants were grouped according to their age, gender, socio economic status, presence of comorbidities, presenting complaints, and number of medications purchased for their symptoms, and the respective percentage values were calculated.

#### Prevalence of self-medication:

Prevalence of self-medication practice in Mysuru city was calculated by applying the following equation.

$$\text{Prevalence of self-medication} =$$

$$\frac{\text{No. of study participants enrolled in this study for self medication}}{\text{Total No. of customers visited community pharmacy}} \times 100$$

## RESULTS

Total number of study participants visited the pharmacies were 1216, among them 635 purchased drugs for self-medication. The prevalence of self-medication was found

to be 43.50%. Out of 635, 529 study participants were enrolled during study hours. Among 529 study participants, 56.90% (301) were males, and 43.10% (228) were females (figure 1). Majority of respondents belonged to the age group of 18-30 years (34.59% [183]), followed by the age group of 31-40 years (31.76% [168]). The mean age of the study participants is 36.53±10.18 years. Among the enrolled study participants, 58.22% (308) study participants were non-smoker and non-alcoholic, 28.17% (149) study participants were smoker and non-alcoholic. And 13.61% (72) study participants consumed alcohol. Among 529 enrolled study participants, 43.86% (232) were belonged to upper middle class, followed by lower middle class having 28.54% (151). In this study, the upper socioeconomic trait having comparatively lesser percentage, i.e. 3.40% (18).

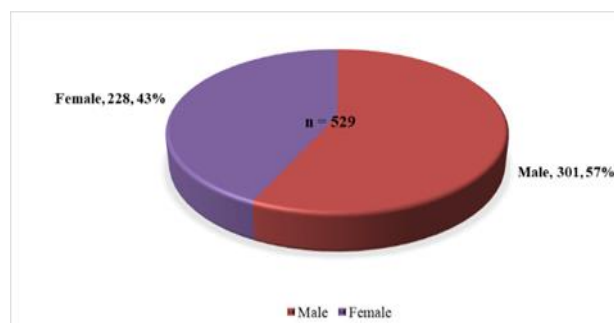


Figure 1: Demographic details

Among 529 study participants, the therapeutic drug classes were analgesics 46.78% (386), and 13.93% (115) medications used to self-treat gastrointestinal conditions were the most commonly purchased. Other classes of medications purchased were; 11.87% (98) antihistamines, antimicrobials were 7.03% (53). Analgesics / antipyretics were drug classes, most commonly purchased to practice self-medication, among that class, aceclofenac and paracetamol was about 20.48%, followed by nemeslide 11.15% and diclofenac 6.54% were purchased to self-treat symptoms.

The most common symptoms among study participants for practice of self-medication were, Pain (28.07% [201], comprises of joint pain, lower back pain, body pain), followed by gastro-intestinal problems (20.11% [144]) like abdominal pain, gastritis, diarrhoea, vomiting, and constipation. Other most common presenting complaints were, fever (15.92% [114]), cold and cough (15.08% [108]) for which study participants self-medicate. Illustrated in figure 2.

Out of 529, 10.58% (58) of study participants practice self-medication were type II diabetic, followed by study participants having hypertension of about 6.93% (38). Other comorbid conditions observed were type I diabetes, hyperlipidaemia, thyroid, and asthmatic conditions.

The primary reasons for self-medication as responded by the study participants were quick resolving of problems (18.47% [516]), easy purchase of medications from



pharmacies (16.46% [460]), signs and symptoms too trivial to be consulted (15.78% [441]), long waiting time to visit physicians (11.13% [311]). These reasons have an influential effect leading to opt for self-medication.

Out of 635, 529 enrolled study participants were asked to give suitable responses for self-administered questionnaire. This helps to estimate the understanding of self-medication practice. The questions with respective

responses, and response rate for each response illustrated in table 1.

For each questions, the response rate was 100%, among 529 enrolled study participants, 66.35% (351) were agreed to respond to the questionnaire. Therefore overall response rate from the study participants was estimated around 66.35%.

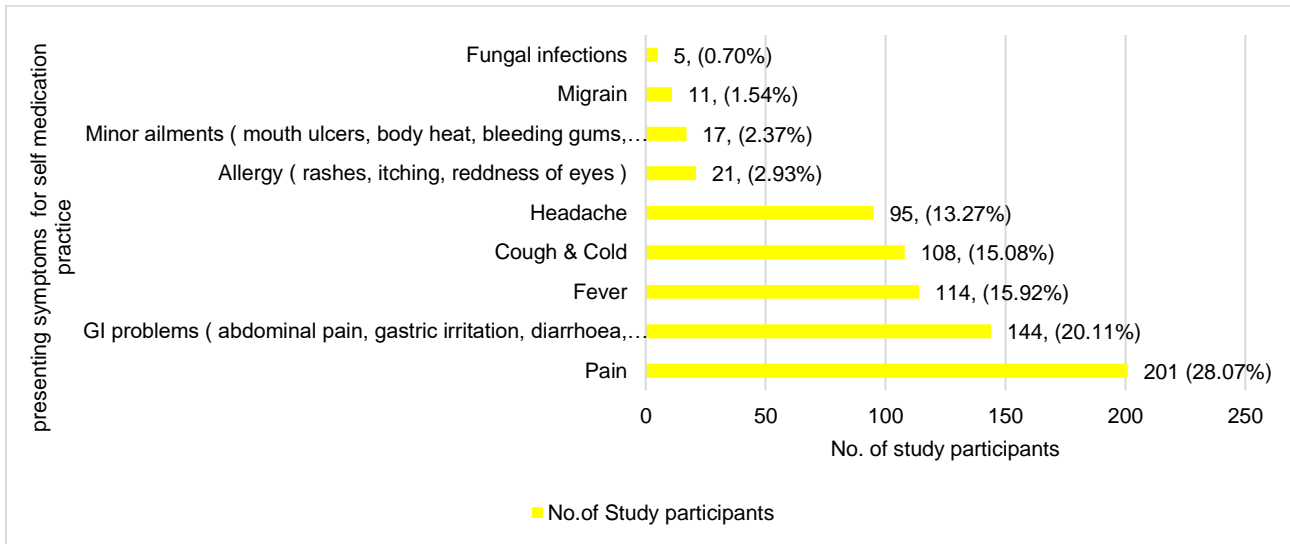


Figure 2: Presenting Symptoms among study participants for self-medication

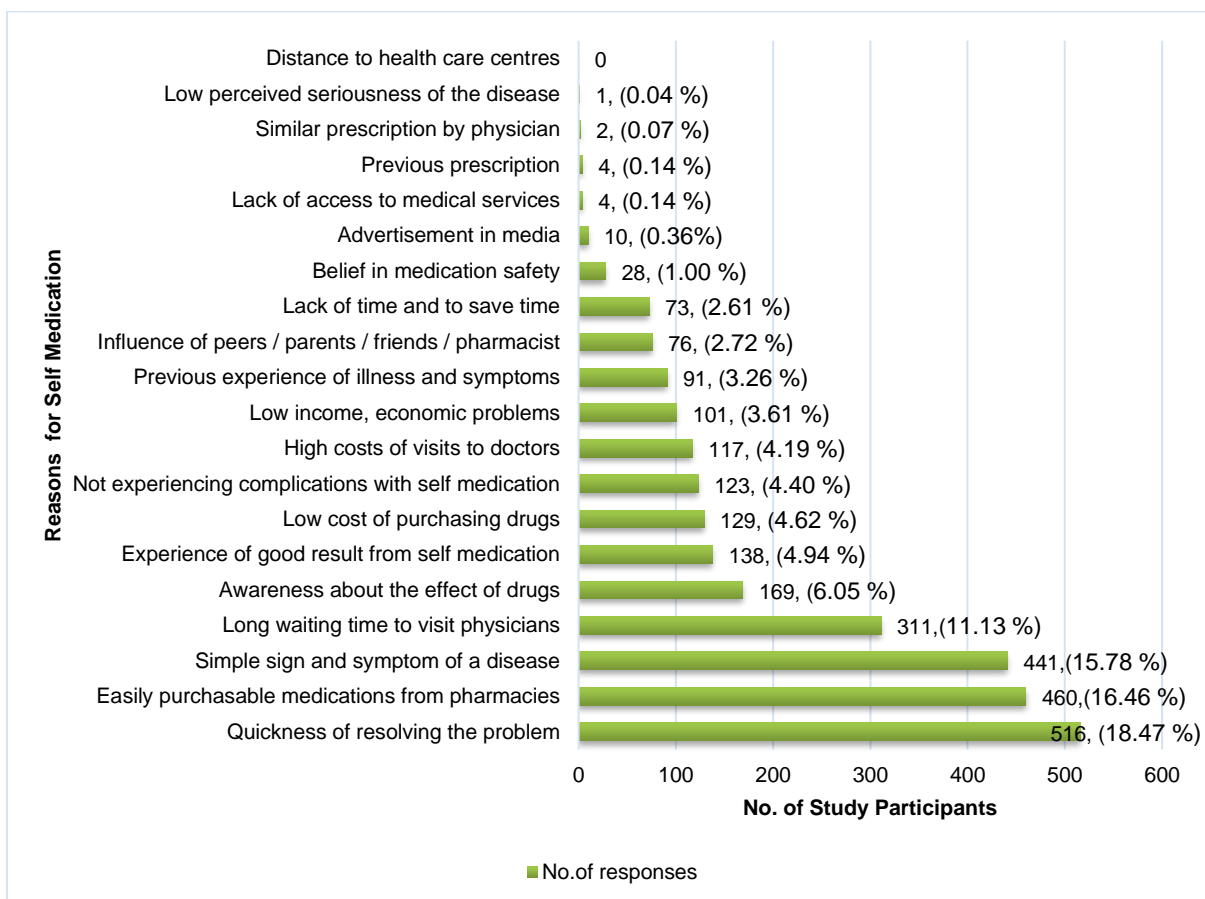


Figure 4: Reasons for Self-Medication Practice



**Table 1:** Questions assessing the understanding about the practice of Self Medication

S.No.	Questions	Options	Total response (response rate %)
1.	Do you take self-medication when you are ill?	Yes	351 (66.35)
		No	178 (33.65)
1a.	If yes, for what condition do you choose self-medication?	Headache	176 (15.90)
		Fever	269 (24.30)
		Pain	240 (21.68)
		Cold	136 (12.29)
		Cough	56 (5.06)
		Stomach ache	52 (4.70)
		Vomiting	25 (2.26)
		Loose motion	39 (3.52)
		Gastric problems	60 (5.42)
		Toothache	14 (1.26)
		Ear pain	7 (0.63)
		Eye infection	5 (0.45)
		Rashes / allergy	0 (0.00)
		Menstrual pain	26 (2.35)
		Insomnia	0 (0.00)
		Skin problems	2 (0.18)
1b.	Kindly choose from the following class of drugs for which you self-medicate?	Painkiller	277 (36.40)
		Antifever	269 (35.35)
		Cough /cold	84 (11.04)
		Vomiting	25 (3.29)
		Antacid	60 (7.88)
		Antiallergic	0 (0.00)
		Loose motion	39 (5.12)
		Eye / eardrop	3 (0.39)
		Antimicrobial	0 (0.00)
		Nose drops	0 (0.00)
		Multivitamins	4 (0.53)
		Ointment / lotion / creams	0 (0.00)
2.	Do you know the dose, and how many times you have to take your drug?	Yes	290 (88.69)
		No	34 (10.40)
		Don't know	3 (0.92)
3.	Have you ever experienced any side effects while practicing self-medication?	Yes	42 (12.24)
		No	206 (60.06)
		Don't know	95 (27.70)
4.	How many times did you take above chose drugs previously in the past for different illness?	2 – 5 times	226 (47.08)
		>5 times	254 (52.92)
5.	Kindly tick the appropriate reasons for the use of self-medication?	Minor illness	199 (16.09)
		Quick relief	324 (26.19)
		Lack of time to consult the doctor	40 (3.23)
		Costly fee for consultation and laboratory investigation	33 (2.67)
		Easy availability of medicine	322 (26.03)



		Avoid long waiting to consult at clinics and hospitals	276 (22.31)
		Medical science background	43 (3.48)
6.	Do you think frequent use of self-medication helped you to cure the illness?	Yes	312 (91.23)
		No	30 (8.77)
7.	Do you check for expiry date of the drugs before use?	Yes	327 (96.46)
		No	12 (3.54)
		Don't know	0 (0.00)
8.	What are the sources from where you have obtained information on self-medicating drugs?	Advice from the pharmacist	252 (38.39)
		Internet	139 (21.16)
		Advice from friends / seniors / parents	175 (26.64)
		Drug advertisements in tv / newspaper / magazines	33 (5.02)
		Academic knowledge	58 (8.83)
9.	How often do you take self-medication without consulting a physician?	Frequently (more than once in a week)	11 (3.18)
		Often (more than once in a month)	227 (65.61)
		Occasionally (once in 3-4 months)	107 (30.92)
		Rarely (once a year or less)	1 (0.29)
10.	What so you think self-medication practice is?	Good to practice	117 (49.58)
		Acceptable practice	98 (41.53)
		Not acceptable practice	21 (8.90)

## DISCUSSION

This research study was carried out in private community pharmacies located in Mysuru city where drugs were dispensed from with and without medical prescriptions by legally qualified registered pharmacist. The three private community pharmacies located in Kesare, followed by Bannimantap, and Rajendra nagar where qualified registered pharmacist had a standard operating procedure with respect to dispensing and sale of medications.

In this research study, self-medication practice prevalence rate was found to be of 43.50% among enrolled study participants. Research studies of similar nature were carried out in India<sup>3</sup> and Egypt<sup>15</sup> and the prevalence rate was found to be 40.5%<sup>3</sup> and 73%<sup>15</sup> respectively. In few other studies the figures are higher than our study as like a study conducted in Tumkur district of Karnataka, India depicting prevalence of 53.95%<sup>11</sup>. Similarly another study conducted in south India depicts high prevalence 92% among medical students and 59% in general public.<sup>13</sup> The prevalence of self-medication in previous studies conducted in different parts of the world have ranged 12.2 – 84%.<sup>4</sup> In India, the prevalence rate differ depending upon the domicile scenario.i.e. Urban and rural. The range of prevalence in rural areas is 18-93% in urban areas, this is high due to the percentage of educated individuals. Whereas the percent for rural areas range from 17-86% due to lack of availability of healthcare services, and socioeconomic constraint contribute to practice self-medication<sup>4</sup>. Although the characteristics of study participants and health care

systems may vary from one country to another, therefore results cannot be generalized.

The results from this study indicates that, majority of the study participants were males (56.90%), followed by females (43.10%), where similar findings were observed in Uttar Pradesh<sup>10</sup>, Tumkur district of karnataka<sup>11</sup>. Although there a few studies conducted in Egypt<sup>15</sup>, Iran<sup>14</sup>, and northeast Ethiopia<sup>13</sup> which have variation compared to the present study results, as those research finding reflects females were more than males.

The practice of self-medication was more prevalent among 18-30 years of age group. This finding differs among other studies carried out at Egypt, where highest proportion belongs to age group of 20-30 years<sup>15</sup>, where as in northeast Ethiopia the highest prevalence for self-medication was among respondents of 18-34 years of age group<sup>13</sup>, and Iran highest prevalence was among respondents of age 18-24 years age group.<sup>14</sup> In India, similar studies from Tumkur<sup>11</sup>, Uttar Pradesh<sup>10</sup> and South India<sup>9</sup>, depicts that the most prevalent age group was 20-30 years<sup>11</sup>, 31-45 years<sup>10</sup>, and 18-21 years<sup>9</sup>. Age group appeared to differ among different studies. Therefore, it can be concluded the practice of self-medication is mostly prevalent in younger adults to middle age.

The most common therapeutic class of medications were belong to analgesics / antipyretics (46.78%) followed by drugs used for treating gastro intestinal problems (13.93%), our research findings, have similar findings of previous





studies carried out in Tumkur district<sup>16</sup> and Ernakulum district<sup>12</sup>. The study conducted in Northeast Ethiopia,<sup>13</sup> having similarity of results with our research findings, stating major therapeutic classes for self-medication were analgesics / antipyretics and GI antisecretory agents. The major finding of our research study shows that aceclofenac and paracetamol were commonly purchased by the study participants. The second most commonly used therapeutic class of drugs were GI antisecretory for self-medication out of which famotidine was most commonly used followed by proton pump inhibitors i.e. pantoprazole. The present findings with respect to self-medication practice did not have a similarities with old research studies.

Study participants who purchased self-medication were due to joint pain, body pain, neck pain lower back pain, which was accountable for 28.07%, followed by GI problems (20.11%). Our research findings were similar with the research findings of Nagarajaiah et al<sup>7</sup> stating, the most common conditions were pain and gastric symptoms.

The common reasons leading to practice of self-medications among study participants were quick subsiding of symptoms (18.47%), easy purchase of medications from the pharmacies (16.46%) and symptoms too trivial to be consulted to physician. These findings were similar to the studies reflected by kesley Elsa et al<sup>12</sup> and Badiger et al<sup>9</sup>. The other reasons opting a self-medication practice in this research study were lack of time, long waiting hours for consultation, followed by economic constrains these findings were similar to the finding of study conducted by Pandya et al<sup>8</sup>.

## CONCLUSION

In this research study, the major key findings were prevalence of self-medication was found to be 43.50% and the response rate of study participants with regarding to self-medications was found to be 66.35%. The most common reasons for opting of self-medications were quick subsiding of symptoms, illness too trivial to be consulted, easy availability of medications,

lack of time and avoiding long waiting for consultations, economic constraints such as expensive clinical consultation fees and expensive prescriptions by clinician.

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Source of Support: Nil, Conflict of Interest: None.

