

Original Research Article

## Self-Medication Practices: An unrealised threat in the country- Community Based Survey from a rural area of Puducherry, South India

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### Abstract

**Background:** Self-medication is the use of non-prescription medicines by people on their own initiative. Pharmacists have a key role to play in providing them with assistance, advice and information about medicines. **Objectives:** To find the prevalence of self-medication among rural people in Puducherry; to compare the self-medication practices between Non Communicable Diseases (NCD) and other diseases; to evaluate the role of the pharmacist in self-medication. **Methods:** A cross sectional study conducted in Bahour village from August to November 2014. A semi-structured questionnaire was administered to 112 people after taking informed consent. Chi-square test was used to assess the significance and  $p < 0.05$  considered as statistically significant. **Results:** The overall prevalence of self-medication was 57.7%. Among self-medication practices, NCD accounts for 23.2% and most common conditions were Diabetes and Hypertension. Myalgia and fever were common in other disease. Commonly purchased NCD drugs were Metformin and Atenolol whereas in other disease Paracetamol and cough syrups were purchased. Significant differences were found in terms of awareness on drug type, frequency of intake and opinion on self-medication between NCD and other diseases ( $p < 0.05$ ). Most common reason stated for practicing self-medication was convenience and lack of time. The role of the pharmacist as a drug provider was more noticeable before obtaining the drug. More than 90% of the participants obtain information about doses, duration of treatments from the pharmacist, however only 30.7% meet pharmacist during adverse-effects. **Conclusion:** The prevalence and contribution of the pharmacist in self-medication practices is high. Though the practice of self-medication is alarming, improved awareness about the role of pharmacist as a drug consultant/Councillor for cautious use of medicines and periodic health check-ups would increase the treatment compliance of NCD.

**Keywords:** NCD, Pharmacist, Self-medication

### Introduction:

World Health Organization (WHO) defines Self-medication as “the use of drugs to treat self-identified symptoms, or use of prescribed drug continuously or intermittently for chronic or recurrent diseases without periodic consultation with health care provider.<sup>1</sup> It may also consist of use of herbs and traditional medicines; Apart from this, use of old prescription and reuse of old prescription drugs also included in self-medication practices”.<sup>1</sup>

Compared with the developed countries, self medication was widely prevalent in developing countries. In India self-medication became an important public health issue, it is an important concern which delays the universal access to health care.<sup>2</sup> Various studies reported

that major issues in delaying health care seeking was due to self-medication which also results in paradoxical heavy economic loss. Majority of the people practice self-medication for non-communicable diseases due to their time and economic constraints. Also studies stated that unchecked use of antibiotics as self-medication likely to cause decreased drug effectiveness of the drug, worsening clinical conditions and to the extreme it causes severe drug resistance in the community and hence, there needs to be a proper control on these practices.<sup>3-5</sup>

Growing pharmaceuticals is also important challenges in regulating self-medication. Introduction of new drugs in the market also one of the contributing factor for self-medications. Increasing self-medication practices has many drivers which includes unchecked

sales, economic and time constraints, influence of family and friends, consumer attitudes and media campaigns.<sup>6</sup> Another important challenge faced in recent decade is growing empowerment which results in increased literacy status and greater access to information along with increased interest with personal health care results in increased demand for self-medication.

In general self-medication plays an important role in minor illness and chronic illness; also pharmacist plays a vital role in treating both minor and chronic illness. In past two decades pharmacist role has been changing from supplier of medicine and medicinal products to effective member involved in provision of healthcare to the community members. Pharmacist has greater responsibility towards the community and customers in providing proper health care and also providing them with assistance, advice and information about medicines.

In India only fewer studies were conducted to assess the self-medication practices at community level and assessed pharmacist role in self medication. These kinds of studies will provide useful information and detailed reasons about self-medication practices and this information might help the policy makers and drug authority to regulate the drug distribution process, streamline the list of essential medicines and its safety issues for over the counter use. With this background, the present study was conducted to compare self-medication practices between non-communicable diseases and other diseases in rural Puducherry. This study also focused to evaluate public perception on role of the pharmacist in self-medication practices.

**Aims and Objectives:** To compare the self-medication practices between Non Communicable Diseases (NCDs) and other diseases & To evaluate public perception on role of the pharmacist in self-medication practices.

## Methodology

**Type of study:** It was a community based Cross-Sectional study conducted during August 2014- November 2014

**Study area & Population:** The study was conducted in Bahour village, Bahour commune, Puducherry (South India). This village is situated 24 kms away from Pondicherry and agriculture being its major occupation. The total households in this village are 7570.<sup>7</sup>

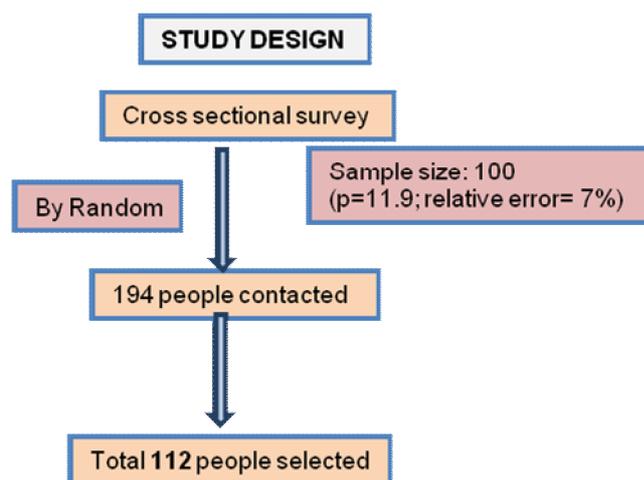
### Inclusion criteria:

1. People practices self-medication for common ailments atleast for one time in past one year
2. Adults more than 18 yrs of age
3. Willing to participate

### Sample size and Sampling procedure:

Sample size was calculated by using the following formula,  $n = (z\alpha)^2 pq/l^2$ , with 7% absolute error and 95%

confidence. Considering the prevalence of self medication in Puducherry is 11.9%.<sup>8</sup> Sample size was calculated to be around 100 (including 10% non-response rate). Simple random sampling was done to select houses in the village. Adults more than 18 years of age from the village were selected. One adult male member (preferably head of the household) of each randomly selected house was interviewed. If the house was locked or no member is fulfilling the inclusion criteria in the house, again random selection was done.



**Data collection Procedure:** After obtaining informed consent from the participant in a local language, data were collected by trained ANMs using pre-designed and pre-tested proforma. House to house survey was conducted by the interviewer. Information's regarding the participant's socio-demographic characteristics; personal history and treatment history were obtained. Questionnaire containing items for assessing the practices and determinants of self medication and the role of pharmacist in self-medication were also surveyed.

**Data management and statistical analysis:** The data was analyzed using Statistical Package for the Social Sciences software for Windows (SPSS Inc., Chicago, Illinois, USA) version 17.0. Percentages, Ratios and Chi-square test were applied to assess the self medication practices among study subjects. p value < 0.05 was considered as statistically significant. Subject confidentiality was maintained during and after information collection. Informed oral consent obtained before start of the study. After collecting information, health education regarding adverse effects of self-medication was given to the participants.

## Results

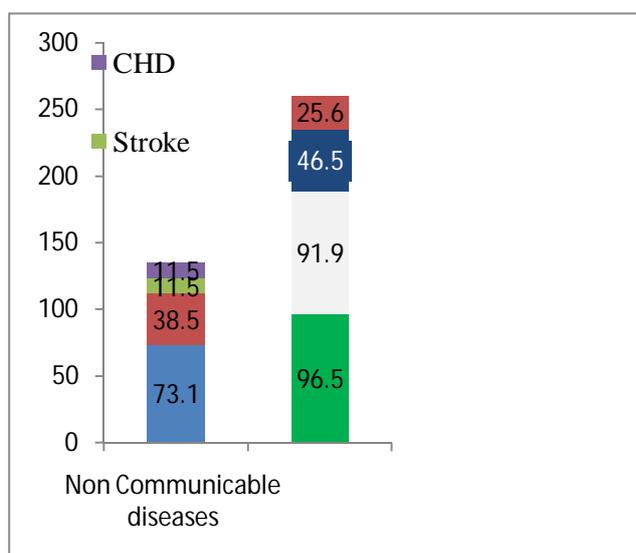
Total 194 participants conducted for the survey, 112 participants were practising self medication and participated in the study.

**Table 1: Socio-demographic characteristics of the study participant (n=112)**

Characteristics		Frequency	Percentage
Gender	Male	59	52.7
	Female	53	47.3
Age in years	<30	25	22.3
	30-40	23	20.5
	40-50	21	18.8
	>50	43	38.4
Employment status	Employed	31	27.7
	Unemployed	44	39.3
	Students	5	4.5
	Labour	32	28.6
Literacy status	Literate	94	83.9
	Illiterate	18	16.1
Religion	Hindu	101	90.2
	Christian	7	6.2
	Muslim	4	3.6
Socio-economic status	I	10	8.9
	II	29	25.9
	III	29	25.9
	IV	39	34.8
	V	5	4.5

Table 1 shows the socio-demographic characteristics of the study. Gender wise distributions of study participants were nearly equal. One third of the study participants belonged to the age group more than 50 years. Unemployment was most prevailed among study participants. Three fourth of the subjects were literate. Around 95% of them were belongs to above poverty line.

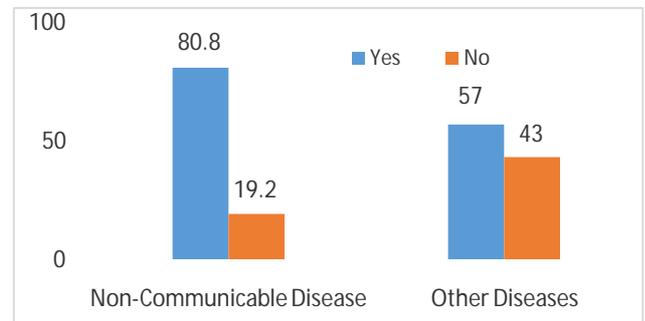
**Figure 1: Comparison of common conditions for practicing self medication among NCD (n=26) and other diseases (n=86) \***



\*Multiple responses

Diabetes and Hypertension were being the common conditions for practicing self medication among NCDs. Headache, Myalgia and Fever were being common among other diseases. (figure 1)

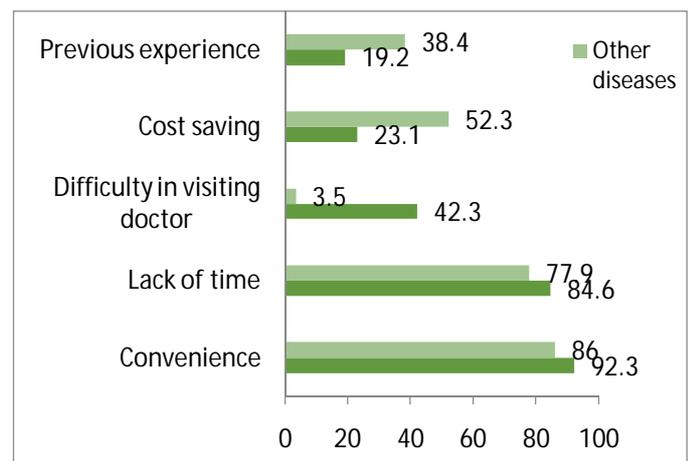
**Figure 2: Awareness on self-medication drugs among NCD and other diseases**



It was evident in the present study that awareness on self-medication was high among those who use drugs for NCDs (80.8%) than other diseases (57%). (Figure 2)

On a multiple responses question regarding commonly used self-medication drugs for NCDs were Metformin (38.5%) followed by Atenalol (15.4%) and Amlodipine (11.5%) respectively. Similarly for other diseases, Antipyretics (87%) were commonly used followed by pain killers (85%) and antibiotics (65%) respectively.

**Figure 3: Reasons for self-medication practices among the study participants.**



\*multiple response

Convenience and lack of time are the common reason reported by both the groups. Around 42.3% of the participants who practised self-medication for NCDs reported difficulty in visiting doctor whereas only 3.5% in other diseases group reported difficulty in visiting doctor as a major reason. (figure 3)

Table 2: Attitudes and practice regarding the self-medication drugs

Characteristics		NCD (n=26)	Other diseases (n=86)	Frequency (n=112)	p-value
Source of self-medication drug	Using Previous prescriptions	17 (65.4)	15 (17.5)	32 (28.6)	4.81
	Community pharmacies	6 (23.1)	42 (48.8)	48 (42.8)	0.028
	Leftover from previous prescription	3 (11.5)	29 (33.7)	32 (28.6)	
Request for drugs at medicine shop	Brand & type of Drug	17 (65.4)	23 (26.7)	40 (35.7)	16.99
	Indications for use	6 (23.1)	59 (68.6)	65 (58)	0.0002
	Price of Drug	3 (11.5)	4 (4.7)	7 (6.3)	
Ever checked the instructions in the drug package	Yes, always	18 (69.2)	31(36)	49 (43.8)	9.1
	Yes, sometimes	5 (19.2)	29 (33.7)	34 (30.3)	0.01
	Never	3 (11.6)	26 (30.3)	29 (25.9)	
Level of understanding of instructions in the drug package	Fully understood	9 (34.6)	16 (18.6)	25 (22.3)	11.98
	Partly understood	11 (42.4)	17 (19.8)	28 (25)	0.007
	Did not understand at all	3 (11.5)	27 (31.4)	30 (26.8)	
	Never read instruction	3 (11.5)	26 (30.2)	29 (25.9)	
Ever checked the expiry date of the drug	Yes, always	19 (73.1)	17 (19.8)	36 (32.1)	30.57
	Yes, sometimes	5 (19.2)	13 (15.1)	18 (16.1)	0
	Never	2 (7.7)	56 (65.1)	58 (51.8)	
Ever switched off to another drug during course of self-treatment	Yes, always	1 (3.8)	22 (25.6)	23 (20.5)	13.49
	Yes, sometimes	1 (3.8)	19 (22.1)	20 (17.9)	0.001
	Never	24 (92.4)	45 (52.3)	69 (61.6)	
Adverse reaction during self-medication	Yes	1(3.8)	12 (14)	13 (11.6)	1.98
	No	25 (96.2)	74 (86)	99 (88.4)	0.158

Table 3: Association of self-medication practices among NCD and other disease

Characteristics		NCD n (26) n (%)	Other diseases n(86) n (%)		Total n(112)	Chi square p-value
Education status	Literate	18 (69.2)	76 (88.4)	94 (83.9)	5.42	
	Illiterate	8 (30.8)	10 (11.6)	18 (16.1)	0.019	
Employment status	Employed	19 (73.1)	44 (51.2)	63 (56.2)	3.89	
	Unemployed	7 (26.9)	42 (48.8)	49 (43.8)	0.048	
Socio economic status	I	5 (19.2)	5 (5.8)	10 (8.9)	8.59	
	II	9 (34.6)	20 (23.3)	29 (25.9)	0.072	
	III	4 (15.4)	25 (29.1)	29 (25.9)		
	IV	6 (23.1)	33 (38.4)	39 (34.8)		
	V	2 (7.7)	3 (3.4)	5 (4.5)		
Awareness on drug type	Yes	21 (80.8)	49 (57)	70 (62.5)	4.82	
	No	5 (19.2)	37 (43)	42 (37.5)	0.028	
Frequency of self-medication intake	<5 times	1 (3.8)	10 (11.6)	11 (9.8)	30.07	
	5 to 10 times	9 (34.6)	67 (77.9)	76 (67.9)	<0.000	
	>10 times	16 (61.5)	9 (10.5)	25 (22.3)		
Opinion on self-medication	Good	2 (7.7)	13 (15.1)	15 (13.4)	6.52	
	Acceptable	18 (69.2)	35 (40.7)	53 (47.3)	0.038	
	Not Acceptable	6 (23.1)	38 (44.2)	59 (52.7)		

**Table 4: Public perception on role of pharmacist(n=112)**

<i>Characteristics</i>		<i>Total n (%)</i>
Do you ask pharmacist about the choice of drug?	Yes	102 (91.1)
	No	10 (8.9)
Do you ask pharmacist about the recommended dose of drug?	Yes	106 (94.6)
	No	6 (5.4)
Do you Consult pharmacist about duration of drug intake?	Yes	108 (96.4)
	No	4 (3.6)
Do you report the incidence of drug adverse effect to pharmacist?	Yes	82 (73.2)
	No	30 (26.8)
Do you Consult pharmacist when prior drug does not work?	Yes	97 (86.6)
	No	15 (13.4)
Do your pharmacists identifies and resolves your problems?	Yes	88 (78.6)
	No	24 (21.4)
Do you see your pharmacist consistently ensures that you are receiving safe and effective medicines?	Yes	75 (67)
	No	37 (33)
Do you see that your pharmacist collaboratively works with other health care providers to ensure you to achieve positive health?	Yes	77 (68.8)
	No	35 (31.2)
Do you see your pharmacists provide services like adherence to medication and health screening advice?	Yes	87 (77.7)
	No	25 (22.3)

The common source for self medication was community pharmacist though 33.7% of the participants in other diseases groups reported they took medicine from the leftovers of previous prescriptions. Around 65% of the NCD group participants requested drug in the pharmacist with the drug brand name and type of drug whereas in other groups mostly they requested with the indication for use (68.6%). Regarding levels of understanding of instructions in the drug packages, only 11.5% in NCD groups did not understand the instruction, in contrary around 30% of the other disease groups did not understand the instruction with significant differences. There were significant differences found between NCD and other disease in terms of attitudes and knowledge regarding the self-medication drugs. (Table 2)The common reason stated for discontinuation of former drugs among other diseases group was former drug did not work (48.8%). Only 2.4% participants in NCD group reported due to higher cost. Around 39% of them stopped taking the drug and 33% of them consulted doctor for adverse reactions.

Table 3 shows the factors associated with self medication practices among NCD and other diseases groups. Participants education status, employment status , awareness on drug types, frequency of medication intake and opinion on self medication shows significant association with NCD group than other diseases with  $p < 0.05$ .

Majority of the participants reported that pharmacist plays a major role in providing health care. More than 90% of them reported that they would ask their pharmacist for choice of drug, recommended dose and duration of drug intake. Around 80% of them reported pharmacists provide services like adherence to medication and health screening advices. (table 4).

**Discussion:**

The present study was done in Bahour village in Puducherry. The principal focus of the current study was to assess the prevalence of self-medication practices and to compare the self medication practices between non-communicable diseases and other diseases. Also this study aims to find public perception on role of pharmacist in self-medication practices.

In the current study area, study participants were equal in gender and no sex difference observed and one third of them belong to more than 50 years of age. Though more than 80% of them were literate, around 39.3 % of them were unemployed in the study group. More than 50% of the self-medication practices were observed in middle class people. This may be due to low purchasing power, high cost of medicine and inaccessibility to health care in the rural areas.

Prevalence of self-medication practices was 57.7% in the current study area which was lower than the study conducted by Balamurugan et al<sup>9</sup> in coastal area of Pondicherry. In contrast study conducted by kalaiselvi et al<sup>8</sup> in Pondicherry reported 11% as self medication prevalence. High prevalence of self-medication in the study area may be due to high literacy level or uncontrolled check of drug sale. Also neglecting nature of mild illness among the participants leads to self-medication practice. Hence needs to have proper check and monitoring on drug sale in the study area.

In the present study, diabetes and hypertension were being common conditions for practising self-medication among non-communicable groups whereas headache, Myalgia and fever were common in other diseases group. Among different self-medication, common drugs purchased were antipyretics, pain killers, antibiotics in other group and in NCDs group Metformin and Atenalol were purchased. Our study findings were similar to the studies conducted in rural Pune, Western Nepal and Nagpur.<sup>10-12</sup> Regarding awareness on self-medication drugs non-communicable disease group people were more

aware of their drugs when compared to the other diseases group. The common reason stated for practising self-medication for non-communicable diseases were convenience, lack of time and difficulty in visiting doctor more frequently. This finding stresses the fact that, participants with chronic illness were commonly practicing self-medication due to difficulty in accessing health care. This finding agrees with other studies in the medical literature.<sup>13,14</sup>

In the present study common source for self medication was previous prescriptions, community pharmacist followed by leftovers of previous prescriptions. This finding was concordant with other studies conducted in India.<sup>10, 12, 15</sup> This shows that inaccessibility to health centre and non- availability of doctors on time in rural area might tempted people to use old prescriptions. Around two third of the NCD group participants requested drug in the pharmacist with the drug brand name and type of drug whereas in other groups mostly they requested with the indication for use. Regarding levels of understanding of instructions in the drug packages, only fewer participants in NCD groups did not understand the instruction, in contrary around more than one third of the other disease groups did not understand the instruction with significant differences. The factors that associated with self-medication practices in non-communicable disease group were education status, employment status, awareness on drug types, frequency of medication intake and opinion on self medication.

Pharmacists can play a vital role in self medications by providing the information of warning symptoms needing urgent medical aids and about the adverse effects.<sup>16,17</sup> In the present study majority of the participants reported that pharmacist plays a major role in providing health care. participants opined that pharmacist is the one who collaboratively works with other health care providers to ensure patients to achieve positive health and also he ensures that patient are receiving safe and effective medicines.

The limitations of this study were it restricts the use of self-medication to allopathic drugs alone. This study does not compare with those who do not take self-medication to find the possible factors. Recall bias was common as the study participants recalls the self-medication practices for past year so the study was limited to observe the pattern of drug usage in last episode of self medication.

#### Conclusions:

The prevalence of self medication in the study area was high though it is very serious and yet highly ignored in our country. Easy availability of drugs, low cost to purchase medicine and lack of time were the most detrimental cause for self medication. Though participants from NCD group were more aware of their conditions and have more knowledge on drugs, they are the one practising self-medication due to lack of time and

feasibility to purchase the drug with old prescription. Government should ensure people to have access to adequate health care services in rural areas. Regular follow-up should be made to all patients with chronic diseases for their drug adherence and check-ups.

Contribution of the pharmacist in self-medication practices is high. Though the practice of self-medication is alarming, improved awareness about the role of pharmacist as a drug consultant/Councillor for cautious use of medicines and periodic health check-ups would increase the treatment compliance of NCD and other disease groups.

**Conflict of interest: Nil**

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