

## AWARENESS TOWARDS THE COMBINATION OF OTC AND SELF-MEDICATION AMONG THE URBAN POPULATION, CHIDAMBARAM, TAMILNADU

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### **Abstract:**

The aim of this paper is to assess the awareness about the combination of OTC and self-medication among the urban population, Chidambaram, Tamilnadu. The study was conducted for a period of twelve months from October 2014, with the sample size of 125 households by using random sampling techniques and pretested semi-structured questionnaire as the study tool. Socio demographic variables, including, age, gender, education, occupation and SES of the person were considered as explanatory variables. The association between explanatory and outcome variables was tested by Chi-square test were employed to establish the association of socio-demographic profile and drug users. The level of significance was set at  $<0.05$ . IBM SPSS statistics, version 21 and Microsoft Excel were used for statistical analysis. This study revealed that OTC/SM combination usage was high in winter 9.20% and rainy season 5.90%. OTC/SM combination commonly used was inji (Ginger) (32.5%), thuduvilai (purple fried pea eggplant) (30%) and pudhina (mint leaves) (12.5%). A cough and cold are the most common symptoms for which OTC/SM combination was used by study population. 76.9% of the OTC/SM users took these combinations for two days only. The majority of the users consumed drugs within a day, season wise no variation seen. All three season  $>50\%$  of them gave advice to others to consume this combination of drugs. As age increases the over the counter drugs consumption also increases and is statistically significant. Married person was consuming more over the counter drugs than the unmarried. A statistically significant association was found between educational status and OTC usage. Usage was found to be high among middle and high school completed and graduates. Employed participants were consuming more over the counter drugs than their counterparts, but is not statistically significant ( $p$  value-0.077). As the socio-economic status increases, the usage of over the counter drugs also increases, which shows statistically significant association  $p$ -value  $<0.05$ .

**Keywords:** Socioeconomic status, Over the counter (OTC), self- medication, Employment status **Introduction:**

Medication usage refers to the act of consuming medicines for prevention, diagnosis or treatment of diseases. Consumption of correct medication should be monitored by health-care personnel and patients. Any harmful symptoms should be reported back to the health-care personnel, who can further diagnose and prescribe the needed drugs to alleviate the unwanted symptoms.<sup>1</sup> Self-medication is an age old practice and it is defined as obtaining and consuming

drugs without the advice of a physician<sup>2</sup> or otherwise the use of drugs to treat self-diagnosed disorders or symptoms, or the intermittent or continued use of a prescribed drug for a chronic or recurrent disease or symptoms. Over the counter (OTC) drugs is a form of self-medication. The buyer diagnoses his/her own illness and buys a specific drug to treat it. OTC products provide symptom relief for conditions that do not always require medical intervention. Self-medication has been used very widely to combat behavioral and psychological problems such as smoking.<sup>3</sup> A large number of people in India do not consult health-care personnel, 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 and thus procure the medicine from a neighbor. At times, there is a possibility of nothing untoward happening upon following such advice, but it can still be quite dangerous.<sup>4</sup> Some of the reasons for growth in self-medication are the urge of self-care feeling of sympathy toward family members in sickness, lack of health services, poverty, ignorance, misbelieves, extensive advertisement of drugs and availability of drugs in establishments other than pharmacies.<sup>5</sup> 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.<sup>6</sup> As very few studies have been conducted in our community regarding usage of self-medication, the present study was planned to find out OTC drugs usage, self-medication practices and pattern during different climatic conditions and also to study the various socio-demographic and environmental factors, which affect the self-medication and over the counter drug usage among the urban populations, Chidambaram.

#### **Methods and study pattern:**

This study is a longitudinal community-based study carried out in the urban field practice area, Chidambaram with the population of 12, 525. The study was conducted for a period of twelve months from October 2014, with the sample size of 125 households by using random sampling techniques and pretested semi-structured questionnaire as the study tool. The present study was conducted to find out the magnitude, pattern of over the counter (OTC) drugs in acute illness among urban population Chidambaram

#### **Sample size:**

A review of international studies revealed a prevalence range of OTC drugs from 12.7% - 95%. Studies in India indicated a prevalence range of 37% and 31.3% in rural and urban areas respectively. Because of wide range, the prevalence of OTC consumption was assessed by a pilot study among Chidambaram population. The pilot study with 50 respondents from 50 households was conducted, the prevalence of over the counter drugs and self-medication was 68%. Hence study with 8.0% absolute permissible error and 95% confidence level.

Sample size

$$* n = z^2 \cdot p(1-p) / d^2 n = 130.6$$

Total number of houses in our field practice area is 2850; with correction factor for finite population, with formula

$$F = 1 / (1 + n/N) \text{ population}$$

Final sample sizes of households were 125.

**\*Sampling Technique and selection criteria:**

A Random sampling technique was followed. The field practice areas in urban Chidambaram, households were selected using the simple random technique.

In the first stage, the field practice areas have 5 areas and 5 streets each, total 23 streets were included in the study. In the second stage, from these 23 streets, 125 households were selected using lottery method. In the third stage, the sample of households was selected using simple random sampling with a random start. All age group and willingness to participate with acute illness within a month were included in the study. A family member working in the health profession, the family was not included. Peoples with chronic illness were not included.

**Study:**

A Semi-structured questionnaire using interview method as well as checking for drugs (or) empty packs. The first part was aimed at collecting general information like name of the primary respondent, address, mobile number, socio-demographic profile such as age, sex, education, occupation, income, marital status, socio-economic status assessment using Modified Kuppuswamy Scale 2012. In the second part, awareness about the over the counter drugs and its usage and frequency of taking the over the counter drugs data's were collected. In the third part, over the counter drugs usage like consumption of over the counter drugs for the past one month, taken for self or others in the family, frequency of consumption, complaint, initiation of over the counter drugs within how many days, source of information, name of the drug consumption, for other family members detail over the counter drugs taken by, frequency, complaint, over the counter drug advice given by, drugs detail and duration within the family, how did study objects/family procured over the counter drugs, symptoms relieved, if any expert opinion has been taken, how many days after, details of side effects if any occurred after the consumption of the over the counter drugs, regarding the advice obtained to consume over the counter drug, if the advice is got, details of the person from whom the advice has been got, the details about the discontinuation of drugs, whether the same drugs has been reused and how often over the counter drug provided cure/ relief. .

**Statistical analysis:**

The data on various socio-demographic variables, knowledge, and attitude of the primary respondents was presented. Initially, descriptive analysis of 125 primary respondents' characteristics and their knowledge regarding OTC was done. Descriptive analysis of all the 487 participant characteristics was done in the second step. Frequency and percentages were used for categorical variables; mean and standard deviation were used for quantitative data. The history of OTC drug intake of the all the family members in all the three seasons was recorded. The

intake, type of medication, symptoms relief and adverse events etc were documented for each episode of OTC intake. The drug intake and its pattern were compared across various seasons, using cross tabulation.

To analyze the factors, influencing the use of OTC, Intake of OTC medication in last one month in any of the season was considered as the primary outcome parameter. Sociodemographic variables, including, age, gender, education, occupation and SES of the person were considered as explanatory variables. The association between explanatory and outcome variables was tested by Chi-square test were employed to establish the association of socio-demographic profile and drug users. The level of significance was set at  $<0.05$ . IBM SPSS statistics, version 21 and Microsoft Excel were used for statistical analysis. Prior permission was obtained from the ethical committee of the institution for conducting the study.

### **Results:**

The results for the study Distribution of season wise usage pattern of OTC/SM was shown in table 1, Distribution of Home remedies usage pattern along with OTC in the table-2, Usage pattern of Home remedies and OTC for various complaints in the table-3, Distribution of frequency usage pattern of OTC/SM in the table 4, Distribution of season wise usage pattern of OTC/SM in the table- 5, Distribution users of OTC/SM advice to others in the table-6, Association of Age and drug use in the study group in the table-7, Association of Gender, Marital status, Education and drug use in the study group in table-8, Association of Occupation and

Socioeconomic Status with drug use in the study group in the table 9,

### **Discussion:**

Overall prevalence of over the counter (OTC) drugs was found to be 62.8 %, with season wise prevalence showing following results during winter 51.5 %, during summer 50.5 %, and during rainy season 51.3%. Among these regular users were about 306 (39.2%), whereas occasional users were 181(23.4%)<sup>(7, 8, 9, 10)</sup>.

In Barabanki and Jammu city of India, previous studies have shown that most of the cases procured medications using a doctor's prescription 72.6 %.<sup>(11, 12)</sup>

We found that 90% regular and 87% occasional users of self-medication reported relief in symptoms. Several studies have showed that improper use of OTC drugs like sharing within the family, led to serious complications in children, old age individuals and pregnant women<sup>(13, 14)</sup>. The level of education also influences OTC practice.<sup>(15)</sup>

Season wise variation in the initiation of drug, duration of treatment, a source of information, procurement, complaints, drug, and reason was observed in over the counter (OTC) drugs consumption. Similarly, there is a variation in self-medication consumption, remedies used, but no variation in frequency of consumption, duration of use. The combination of OTC/Self-medication consumption are very minimal and not much variation was seen during

different climatic condition. Season wise difference in the OTC usage & SM was not compared with any other studies due to lack of such studies.

**Conclusion:**

OTC and Self-medication can facilitate access to medicines and reduce health care costs. But more specific studies are needed to evaluate the impact and role of self-medication in the diversity of settings of different health care sectors. The combined efforts of industry and regulators must meet the expectations of consumers by providing products which are safe, effective, good value for money accompanied by complete and relevant information. High ethical standards should be applied to the provision of information, promotional practices, and advertising. The content and quality of such information and its mode of communication remains a key element in educating consumers in responsible self-medication.

**Limitations of the study**

Interview regarding the over the counter drug/self-medication usages in their family were based on the capacity to recall.

Participants of the study population must have consumed drug without intimating the primary participant when they were away from home and this must have resulted in under-reporting affecting the internal validity of the study.

**Conflict of Interest:**

The authors declare that there is no conflict of interest.

**Acknowledgement****References.**

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**Tables:**

**Table 1: Distribution of season wise usage pattern of OTC/SM**

Parameter	OTC/SM	
	Yes	No
Winter (n=251)	23	228
	(9.20%)	(90.80%)
Summer(n=246)	4	242
	(1.60%)	(98.40%)
Rainy season(n=237)	14	223
	(5.90%)	(94.10%)

OTC/SM combination usage was high in winter 9.20% and rainy season 5.90%.

**Table 2: Distribution of Home remedies usage pattern along with OTC**

Parameter	Frequency	Percentage
Inji (Ginger)	26	32.5%

Sukku (Dried Ginger)	2	2.5%
Thudhuvalai (Purple fried pea eggplant)	24	30.0%
Sundakkai (Turkey berry)	2	2.5%
Mudakatthan (Balloon plant)	4	5.0%
Arugampul (Bermuda grass)	3	3.8%
Pudhina (Mint leaves)	10	12.5%
Nilavambhu (Andrographis)	3	3.8%
Milagu (Tailed pepper)	4	5.0%
Karpuravalli (Indian mint)	2	2.5%

\* Multiple responses

OTC/SM combination commonly used was inji (32.5%), thuduvalai (30%) and pudhina (12.5%).

**Table 3: Usage pattern of Home remedies and OTC for various complaints**

Parameter	Frequency	Percentage
Cough & cold	27	65.9%
Fever	6	14.6%
Dyspepsia	2	4.9%
Myalgia	6	14.6%

\*Multiple responses



A cough and cold are the most common symptoms for which OTC/SM combination was used by study population.

**Table 4: Distribution of frequency usage pattern of OTC/SM**

Parameter	Frequency	Percentage
One day	5	12.8%
Two days	30	76.9%
4 days	4	10.3%

\*Multiple responses

76.9% of the OTC/SM users took these combinations for two days

Parameter	Times/Day			
	one time	two time	3time	Not taken
Winter (n=251)	17(6.8%)	4(1.6%)	2(0.8%)	228(90.8%)
Summer(n=246)	4(1.6%)	0(0.0%)	0(0.0%)	242(98.4%)
Rainy season(n=237)	10(4.2%)	4(1.7%)	0(0.0%)	223(94.1%)

The majority of the users consumed drugs within a day, season wise no variation seen

**6: Distribution users of OTC/SM advice to others**

Parameter	ADVISED
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	Yes	No	Drugs not taken
Winter (n=251)	11(4.4%)	42(16.7%)	198(78.9%)
Summer(n=246)	3(1.2%)	2(0.8%)	241(98.0%)
Rainy season(n=237)	12(5.1%)	2(0.8%)	223(94.1%)

All three season >50% of them gave advice to others to consume this combination of drugs.

**Table 7: Association of Age and drug use in the study group**

Parameter	Drugs used		Chi-square Value	p-Value
	Yes	No		
0 - 10years	25 (35.2%)	46 (64.8%)	37.000	<0.001
11 – 20years	45 (57.0%)	34 (43.0%)		
21 – 30 years	48 (61.5%)	30 (38.5%)		
31 – 40 years	56 (72.7%)	21 (27.3%)		
41 – 50 years	76 (68.5%)	35 (31.5%)		
51 – 60 years	21 (77.8%)	6 (22.2%)		
61 – 70 years	35 (79.5%)	9 (20.5%)		

**X<sup>2</sup> - 37.000**

**P – VALUE <0.001**

As age increases the over the counter drugs consumption also increases and is statistically Significant.

**Table 8:****Association of Gender, Marital status, Education and drug use in the study group**

Parameter	Drugs used		Chi-square Value	p-Value
	Yes	No		
<b>II. Gender</b>				
Male	159 (62.8%)	94 (37.2%)	.000	.995
Female	147 (62.8%)	87 (37.2%)		
<b>III. Marital status</b>				
Married	210 (72.7%)	79 (27.3%)	29.416	<0.001
Not married	96 (48.5%)	102 (51.5%)		
<b>IV. Education</b>				
PG and professionals	29 (42.0%)	40 (58.0%)	27.419	<0.001
Graduate & above	91 (62.3%)	55 (37.7%)		
High school, middle school	135 (75.4%)	44 (24.6%)		
Primary school & illiterate	51 (54.8%)	42 (45.2%)		

\*under 5 years of children are included in illiterate

Married person was consuming more over the counter drugs than the unmarried. A statistically significant association was found between educational status and OTC usage. Usage was found to be high among middle and high school completed and graduates.

**Table 9:****Association of Occupation and Socioeconomic Status with drug use in the study group**

Parameter	Drugs used		Chi-square Value	p-Value
	Yes	No		
<b>IV. Occupation</b>				

Employed	164(36.1%)	290(63.9%)	3.121	.077
Unemployed	17(51.5%)	16(49.5%)		
<b>VI. Socioeconomic status</b>				
1	230 (59.6%)	156 (40.4%)	16.452	<0.01
2	54 (81.8%)	12 (18.2%)		
3	19 (73.1%)	7 (26.9%)		
4	3 (33.3%)	6 (66.7%)		

\*under five years children are included in unemployed

Employed participants were consuming more over the counter drugs than their counterparts, but is not statistically significant (p value-0.077).

As the socio-economic status increases, the usage of over the counter drugs also increases, which shows statistically significant association p-value <0.05.