

## **A crosssectional study on assessment of self-medication practice among professional and non professional subjects (CASPANS-WGL-1)**

Subash Vijaya Kumar<sup>1\*</sup>, Shilpa Sirumalla<sup>2</sup>, Hima Bindu Porika<sup>2</sup>

<sup>1</sup>Department of Pharmacy Practice, Vels University, School of Pharmaceutical Science, Pallavaram, Chennai, (INDIA)

<sup>2</sup>Department of Pharmacy Practice, Vaagdevi College of Pharmacy, MGM Hospital, Warangal, Andhrapradesh, (INDIA)

E-mail: Vijayvijay66@yahoo.co.in

### **ABSTRACT**

Now a days there has been increasing trend for self-medication among the Indian population. Craving for medicine and self-medication has been part of mankind from one generation to another. People generally hold the view that medicines should be used in the event of any sickness or discomfort during the life time. The main objective of present study assessment of self medication practices among medical and non medical profession. The study was conducted on a sample of randomly selected pharmacy and degree students of Kakatiya University; Jawaharlal Nehru Technological University, Andhra Pradesh; The age of the students ranged from 17 years to 60 years both sex were questioning. A semi structured questionnaire was prepared; data was collected over 12 months period using self administered questionnaire. The study period was conducted from August 2012 to August 2013. Data collected, interview the medicos and non medicos who agreed to participate in the study during interview enquiring about the personal data. A total of 1002 out of 1050 questionnaires were completed filled returned to the researcher, giving a response data of 95.4%. Characteristically average age for the respondents was 26 years old, and most responders were females (54.5%) of non medical professionals. The majorities reported to have health insurance living with in the area where a clinic or pharmacy is close, and were mostly free from chronic disease. Approximately 73.05% of the respondents reported that they do practice self medication. Self medication was practiced by 17.6% of medical, 79.5% of non medical and others were found to be of 2.79% of 45.6% male and 54.5% female suggesting that the practice of self medication, in general was independent of gender or type of profession. The most common class of medication used in self medication was anti pyretic and analgesics particularly paracetamol which was reported by 59.6% of the respondents. Reasons for self medication noted are wide advertisements of medicines in televisions, news papers, magazines results in selection of inappropriate drugs for disease condition leading to the misjudgement of the disease resulted in drug complications and mortality rate. © 2014 Trade Science Inc. - INDIA

### **KEYWORDS**

Age;  
Gender;  
Medication;  
Profession;  
Self-care.

## INTRODUCTION

Now a days there has been increasing trend for self-medication among the Indian population. Craving for medicine and self-medication has been part of mankind from one generation to another. People generally hold the view that medicines should be used in the event of any sickness or discomfort during the life time. The most common reason is to save money and time<sup>[2,3,5]</sup> lack of gravity to go and see a physician because they can take care of themselves or previous medical prescriptions for related symptoms. Generally medications are consumed by people for acute non specific diarrhea, common cold, cough, fever, pain, emesis etc. In case of younger age goes reason for self medication of insomnia, worry, depression to intoxication<sup>[21]</sup> while smokers may self treat negative effects like major depression with nicotine<sup>[8]</sup>. In developing country like India antibiotics are available without prescriptions and so its abuse can be seen.

Despite a growing research interest in self medication, little information has been available about its major determinants. Individual self care in illness is shaped in the social environment – a major determinant of the type and amount of health care services used<sup>[11]</sup>. The socio demographic determinants are age, gender, occupation, education, marital status, religion, race, income and culture. The socio medical factors may be related to the female reproductive role (pregnancy, breast feeding, and menstruation), psychiatric disturbance, medical states like asthma, migraine and so on the younger age group engaged in self medication than the older ones<sup>[4,6,7,9,12,13]</sup>. However, some studies revealed no association between age and self medication<sup>[2,3,14,15]</sup>. Women have above average knowledge about drugs and risks of self medication compared to men. They also had a much higher probability of using supplements, OTC tranquilizers and analgesics for self medication than men who on the other hand commonly use more stimulants<sup>[1,9,16,17]</sup>. Self medication with drugs to relieve depressive symptoms was far more likely in men than women<sup>[18]</sup>. Factors related to general health status and women's reproductive role influences gender differences in self medication<sup>[19]</sup>. During breastfeeding, self medication was dictated by the mother and her infant's disorder. In addition, women with pre-menstrual symptoms use caffeine as a form of

self medication to relieve the symptoms<sup>[20]</sup>.

However, some studies revealed no association between gender and self medication<sup>[2,14,15]</sup>. So effort has been made in our present study to access and determine the extent of self medication among medical and non medical professionals of Kakatiya University and Jawaharlal Nehru Technological University of Telangana region.

Secondary objective as follows:-

1. To identify the potential factors that could influence self medication practice.
2. To assess the common type of illness and identify the frequently used drugs and determine the self medication practice in the region.
3. To identify gender based distribution of self medication practice among the population.
4. To identify the adverse drug reaction among the study population of self medication practice.
5. To identify the self medication knowledge in medical and nonmedical profession.

## MATERIALS AND METHODS

### Study population method

Study was conducted on a sample of randomly selected pharmacy and degree students of Kakatiya University, Warangal, Andhra Pradesh; Jawaharlal Nehru Technological University, Hyderabad, Andhra Pradesh; age ranging from 17 to 60 years both male and female were questioning asking closed end question.

### Study tools

A self administrate questionnaire was used to collect data about 3 main items, self medication practicing, specific drug category used namely antibiotics, analgesics, vitamins, sedatives and herbals.

### Study Type

A cross sectional study survey was conducted during twelve months period (August-2012 to August 2013).

### Sample size and sampling

A sample of 1002 medical and non medical professional subjects were estimated using graph pad prism version 5, putting in to the consideration a confide role of 90% and sigma errors 0.05. The stratified sampling

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Figure 1



Figure 2

method was used to get the adequate number of students from each section and each study grade. The sample size was determined according to following assumptions.

As there was no previous study conducted in study area of the medical and non medical subject. A 50% of expected prevalence self medication and 2% of sample population was added to compensate for loss.

### Data collection method

A semi structured questionnaire was prepared, data was collected over 8 months period using self administered questionnaire. The study period was conducted from August 2012 to August 2013. Pharm. D fifth year students from Vaagdevi College of Pharmacy Kakatiya University Warangal, India & JNTU, were provided of a half a day training regarding data collection procedure. Training was conducted by research team attached to department of pharmacy practice, MGM hospital, Warangal. Respondents (Non medical professional were asked whether they had used antibiotics in health premises to help them remember which these were (Figure 1 & 2). Participants who confirmed antibiotic usage at home, and if they intended to use them personally or

for their children without a doctor's prescription. The data collected, interview the medicos and non medicos who agreed to participate in the study during interview enquiring about the personal data.

### The questionnaire contains four sections

#### First section

The demographic section was the first one and contained information regarding age, gender, type of school, academic level, and place of residence. In addition, participants were asked whether there was a health centre, a physician, or a pharmacy nearby, whether or not they have health insurance, and if they have practiced self-medication in general, and in the past month in particular.

Students who are enrolled at pharmacy, medicine, or nursing schools were designated as medical students, whereas all the rest were designated as non-medical students.

#### Second section

The second section of the questionnaire consisted of questions related to the types of medications that respondents have utilized in self-medication practices. Respondents were presented with a list of medications to choose from.

The list included; headache relievers, back-pain relievers, ulcer medications, medications for diarrhoea or constipation, herbal remedies (anise, chamomile, sage, cinnamon, cumin, and others), antibiotics, medications for allergy or congestion, topical treatments, sedatives, and others.

#### Third section

The third section of the questionnaire focused on the hypothetical ailments that respondents would self-treat. The list of ailments included bronchospasm, diarrhoea, skin rash, headache, cough, weight loss without dieting, sore throat, back-pain, indigestion, insomnia, fatigue, flu, dizziness, skin problems, toothache, and dysmenorrhoea. This question was also used to assess respondents' level of self-care orientation. Respondents who indicated that they would self-treat 5 or more conditions of the presented list were considered to have high self-care orientation while those who have selected less than five cases were considered to have low self-care orientation.

#### Fourth section

In the fourth section of the questionnaire, the respondents were asked to select and state the reason(s) for practicing self-medication. The list of reasons presented to the respondents were,

- 1) The ailments were simple and did not require professional medical intervention.
- 2) There was a previous experience with this type of ailment, lack of trust in the medical services.
- 3) To save money, others to be stated by the respondent.
- 4) The fourth part also contained questions regarding who recommended the self-treatment for the respondent. A list of choices was presented which included:
  - (i) Self-decision,
  - (ii) Family and friends,
  - (iii) Media,
  - (iv) Herbalist,
  - (v) Others.
- 5) The last section was designed to assess respondents' medication knowledge based on Isacson and Bingefors methodology. Respondents were presented with six questions that could be answered by 'YES', 'NO', OR 'I DO NOT KNOW'. Medication knowledge was determined by the number or correct answers to the above six questions. One point was given to each correct answer, one point was deducted for each wrong answer, and selecting 'I do not know' did not affect the total points. Respondents with a total of 1 and above were considered to have good medication knowledge, while those with a total of zero and below were considered to have poor medication knowledge. Respondents who have answered less than four questions were excluded. The questions asked were:
  - (i) Penicillin strengthens the immune system,
  - (ii) Nose may be blocked up if nasal decongestants were used for more than 10 days,
  - (iii) Some medications may be absorbed through the skin,
  - (iv) Whenever the instructions call for 1 tablet twice daily that means you should take one tablet every 8 hours,
  - (v) Acamol® and Febramol® (two locally-available brand names for paracetamol) contain the same active ingredient,
  - (vi) The red color on some cough preparations indicates that they may cause drowsiness.

All data were coded, entered, and analyzed using statistical software graph pad prism version 5. Descriptive results were expressed as frequency, percentage, and mean  $\pm$  S.D. *P*-values  $< 0.05$  were accepted as statistically significant. Pearson Chi-Square was used to test for significant correlation.

## RESULT

A total of 1002 out of 1050 questionnaires were completed filled returned to the researcher, giving a response data of 95.4%. Characteristically average age for the respondents was 26 years old. Most responders were females (54.5%) of non medical professionals. The majorities also reported to have health insur-

**TABLE 1 : Demographic characteristic of the study population**

Variable	Number of respondents & Percentage (%)
Age	
<20 years	198 (19.7)
>20 years	804 (80.2)
Gender	
Male	457 (45.6)
Female	545 (54.5)
Type of profession	
Medical	177 (17.6)
Non medical	797 (79.5)
Others	28 (2.79)
Self care	
Self care oriented	490 (48)
Non self care oriented	512 (51)
Medication knowledge	
Good	950 (94.8)
Poor	52 (5.18)
Availability of physician	859 (85.7)
Health insurance	306 (30.5)
Self medication	732 (73.05)

ance living with in the area where a clinic or pharmacy is close, and were mostly free from chronic disease. (TABLE 1)

Approximately 73.05% of the respondents reported that they do practice self medication. Self medication was practiced by 17.6% of medical, 79.5% of non medical and others were found to be of 2.79% of male (45.6%) and female (54.5%) suggesting that the practice of self medication, in general was independent of gender or type of profession. The most common class

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**TABLE 2 : Type of medication utilized in an individual among the study population**

Self medication used	Number of respondents & Percentage (%)	Mean $\pm$ SD	Confident interval	Significant
Antipyretics	648 (64.6)	1.086 $\pm$ 0.2920	1.064 – 1.109	S
Decongestants	343 (34.2)	1.190 $\pm$ 0.3925	1.148 – 1.23	S
Allergy	178 (17.7)	1.028 $\pm$ 0.1657	1.004 – 1.053	S
Diarrhea	109 (10.8)	1.046 $\pm$ 0.2102	1.00 – 1.08	S
Gastric pain	67 (6.6)	1.134 $\pm$ 0.3436	1.05 – 1.218	S
Antibiotics	126 (12.5)	1.46 $\pm$ 0.7232	1.3 – 1.596	S
Body pains	160 (15.9)	1.04 $\pm$ 0.2052	1.01 – 1.07	S
Medication for pain, Vitamins and Laxatives	290 (28.9)	1.228 $\pm$ 0.4362	1.177 – 1.278	S
Vomiting	35 (3.4)	1.029 $\pm$ 0.1690	0.97 – 1.08	S
Back pain	28 (2.7)	1 $\pm$ 0	1 – 1	NS
Traditional medicines	88 (8.7)	1.068 $\pm$ 0.3320	0.9978 – 1.139	S
Topical preparation	100 (9.9)	3.0 $\pm$ 0.0	3.0 – 3.0	NS

**TABLE 3 : Type of medication utilized in an individual among the study population**

Self medication used	Number of respondents & Percentage (%)	Mean $\pm$ SD	Confident interval	Significant
Antipyretics	648 (64.6)	1.086 $\pm$ 0.2920	1.064 – 1.109	S
Decongestants	343 (34.2)	1.190 $\pm$ 0.3925	1.148 – 1.23	S
Allergy	178 (17.7)	1.028 $\pm$ 0.1657	1.004 – 1.053	S
Diarrhea	109 (10.8)	1.046 $\pm$ 0.2102	1.00 – 1.08	S
Gastric pain	67 (6.6)	1.134 $\pm$ 0.3436	1.05 – 1.218	S
Antibiotics	126 (12.5)	1.46 $\pm$ 0.7232	1.3 – 1.596	S
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Vomiting	35 (3.4)	1.029 $\pm$ 0.1690	0.97 – 1.08	S
Back pain	28 (2.7)	1 $\pm$ 0	1 – 1	NS
Traditional medicines	88 (8.7)	1.068 $\pm$ 0.3320	0.9978 – 1.139	S
Topical preparation	100 (9.9)	3.0 $\pm$ 0.0	3.0 – 3.0	NS

of medication used in self medication was antipyretic and analgesics particularly paracetamol which was reported by 59.6% of the respondents. Other common types of medication reported by the respondents were decongestants, allergy medicines, diarrhoea medicines and pain relievers. (TABLE 2)

The average number of medication reported by self medication practitioners 2.476  $\pm$  1.834 in males and 2.725  $\pm$  1.964 in females (range from 1 to 12). The most common type of ailments for which the respondents reported to practice self medication were fever, cough & cold, and body pains. (TABLE 3)

### DISCUSSION

The pharmacy council of India regulations strongly advocates the proper use of indifferent sales of medication in different states of India. However, almost any

drugs available in the local market can be purchased as an over the counter medication. In India many patients directly purchase the medication from the community pharmacies, because they are easily accessible, fast and less expensive than going to the physician clinic cost. This is even more obvious in city/urban where people have busy schedule. In this study self medication was reported to be extensively practiced among the studied population. This could be impact by the higher level of education and self care orientation among the students since it has been found that self medication is more prevalent in those with higher education level. Prevalence of self medication among university students as they reported as 45% in 30, 88% in Croatia and 94% in Hongkong. A study under taken in 1995 in Pakistan determines that the prevalence rate of self medication was 51% and the recent survey calculated the prevalence of

TABLE 4 : Self medication practice in our study population

Drug classes that were self medicated	Variables	Number of respondents (N)	Percentage (%)
Fever	Males	256	25.5
	Females	341	34
	Medical	134	13.3
	Non medical	449	44.8
	Others	14	1.3
	Self care	349	34.8
	Non self care	248	24.7
	Good medication practice	557	55.5
	Poor medication practice	40	3.9
Cough and cold	Males	139	13.8
	Females	184	18.3
	Medical	78	7.7
	Non medical	234	23.3
	Others	11	1.0
	Self care	204	20.3
	Non self care	119	11.8
	Good medication practice	302	30.1
	Poor medication practice	21	2.0
Allergy	Males	59	5.8
	Females	110	10.9
	Medical	35	3.4
	Non medical	130	12.9
	Others	4	0.3
	Self care	119	11.8
	Non self care	50	4.9
	Good medication practice	154	15.3
	Poor medication practice	15	1.4
Gastric pain	Males	35	3.4
	Females	28	2.7
	Medical	10	0.9
	Non medical	49	4.8
	Others	4	0.3
	Self care	41	4.0
	Non self care	22	2.1
	Good medication practice	58	5.7
	Poor medication practice	5	0.4
Diarrhea	Males	43	4.2
	Females	57	5.6
	Medical	22	2.1
	Non medical	74	7.3
	Others	4	0.3
	Self care	59	5.8
	Non self care	41	4.0
	Good medication practice	91	9.0
	Poor medication practice	9	0.8
Vomiting	Males	14	1.3
	Females	17	1.6
	Medical	10	0.9
	Non medical	21	2.0
	Others	-	-
	Self care	22	2.1
	Non self care	9	0.8
	Good medication practice	31	3.0
	Poor medication practice	-	-
Body pains	Males	61	6.0
	Females	84	8.3
	Medical	25	2.4
	Non medical	107	10.6
	Others	13	1.2
	Self care	81	8.0
	Non self care	64	6.3
	Good medication practice	82	8.1
	Poor medication practice	10	0.9

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Drug classes that were self medicated	Variables	Number of respondents (N)	Percentage (%)
Back pain	Males	10	0.9
	Females	14	1.3
	Medical	8	0.7
	Non medical	10	0.9
	Others	6	0.5
	Self care	14	1.3
	Non self care	10	0.9
	Good medication practice	20	0.19
	Poor medication practice	4	0.3
Using of drugs like pain killers, vitamins & laxatives	Males	58	5.7
	Females	218	21.7
	Medical	76	7.5
	Non medical	186	18.5
	Others	14	1.3
	Self care	194	19.3
	Non self care	82	8.1
	Good medication practice	260	25.9
	Poor medication practice	16	1.5
Topical preparations	Males	26	2.5
	Females	68	6.7
	Medical	48	4.7
	Non medical	44	4.3
	Others	2	0.1
	Self care	52	5.1
	Non self care	42	4.1
	Good medication practice	86	8.5
	Poor medication practice	8	0.7
Traditional medicines	Males	27	2.6
	Females	52	5.1
	Medical	19	1.8
	Non medical	54	5.3
	Others	6	0.5
	Self care	44	4.4
	Non self care	35	3.4
	Good medication practice	74	7.3
	Poor medication practice	5	0.4

self medication among the university students in Karachi as 76%. The prevalence of self medication among university students from Islamabad was 41% is not so high as reported students from Warangal, India. However 45% prevalence rate is still signals the need for policy and regulatory intervention. Paracetamol and other type of NSAIDs were the most common type of analgesics used for self medication. These results are similar to other studies conducted in other countries. There may be two major problems regarding self medication with analgesics the first is the possible risk of Nephropathy and possible drug induced gastric ulceration. The second is over use of analgesics like paracetamol, aspirin or other NSAIDs especially when given in combination since they increase the risk of chronic toxicity among patients. Similar adverse results of self-medication with antibiotics have been reported in other countries. In India few antibiotics are sold without a prescription. The irrational use of antibiotics might

contribute to the development of new resistant bacterial strains in India. Unfortunately, the local pharmacy i.e. (Chain pharmacy, Community pharmacy) for promoting the sales of drugs for self benefits results in disturbed community health and wealth of India. There may be a two major problems with antibiotics, first is the possible results of cutaneous drug reactions and the second is over use of antibiotics like erythromycin, amoxicillin and cephalosporin may produce bacterial resistance.

Herbal remedies were also commonly used in self medication practice. This is similar reported in other developing countries. Herbal remedies are commonly utilized in Indian population were most of them experienced at an early childhood age. Herbal medicines are relatively safe, however many reports of adverse health effect and drug interactions are there in the literature.

In this study self medication was reported to be extensively practiced among literate population, this

could be explained in part by the higher level of education and self care orientation among the students. Since it has been found that self medication is more prevalent in those with higher education level. The average number of medication repeatedly consumed by self medication was 2.6005 1.899 per respondent. This is a relatively a high number compared with those reported elsewhere (drug utilization research group, Latin America (1997) Clinical pharmacy and therapeutics). The most common ailment for which self medication was sought were fever, decongestants, allergy medication, pain killers, vitamins, laxatives, antibiotics, diarrhoea medication, gastric pain medication, topical preparation, vomiting medication. Such ailments were also reported to be commonly self treated in other part of the world. Paracetamol and other type of NSAIDs were most common type of analgesics used for self medication this results are similar to other studies conducted in other countries (Drug utilization research group, Latin America (1997) Clinical pharmacy and therapeutics). There may be two major problems of self medication with analgesics. The first is the possible risk of nephropathy, and possible drug induced gastric ulceration. The second over use of analgesics like Paracetamol, Aspirin, and other NSAIDs especially when given in combination since they increase the risk of chronic toxicity among patients. Similar adverse results have been reported in other countries. In our study most of the respondents used Benadryl, Ascoril, and Cherry cuff for cough and cold is the most potent drug in the initial therapy is not safe. Second drug of choice is TusQ both are Schedule H drugs and the drug should be taken on prescriber advice. This study was similar to<sup>[22]</sup>. Amoxicillin, Ciprofloxacin, Erythromycin, Cefexime, Ampicillin were widely used self medication in Warangal. The high prevalence rate of penicillin and co-trimoxazole have reported in other study this findings contrast to our present study. In concordance with report of results from study, Sudan, Jordan and Greece. Amoxicillin was most commonly chosen antibiotic for self medication. The high prevalence of self medication was found within the adult respondents 80.2% and their children 20% could be explained by the number of factors including the nature of the Warangal community which comprise different inhabitant. The majority of Telugu, Tamil, Malayalam, Marti, Punjabi, Gujarati,

residency in the telangana region, India. These observations suggest that traditional, social, and cultural factors influence the self medication in the community. These findings similar to that of Abobakr, self medication with antibiotics by the community of Abu Dhabi Emirate, United Arab Emirates in 2009. Our results indicated that gender levels of self care orientation and medication knowledge were significant predictors of self medication practices. Female gender were extensively practiced self medication practice in other studies carried out in other part of the influence of gender on self medication practice was controversial. This result is similar to that of present study carried out in Warangal community. Herbal remedies relatively safe, However many reports of adverse health effects and drug interactions are there in the literature. In our present study herbal remedies utilized in Warangal population are very few and no adverse effect reported. Although the level of self care oriented did not significantly influence the self care practice it significantly affected the type of medication that respondents would purchase without medical consultation. Respondents with the high and poor medication knowledge have practiced self medication to the same extent. This was similar to the previously published results elsewhere. The reasons cited for self medication by respondents in this study were similar to those reported in other study. The most commonly reported reasons were simplicity of illness or previous experience. These reasons might not be strong to justify self medication respondents may not be adequately knowledgeable to justify the medication adverse effects and side effects of self medication they are consuming the medication in trial and errors method this could not be a better result for self care orientation.

## CONCLUSION

In this present study analgesic, decongestants, anti allergic medicines, antibiotics were the most commonly consumed through self medication among non medical professionals. Similar results were found by most of the researchers in other countries. However the strict regulations should be made to control the sales of prescribed medication through over the counter. Reasons for self medication noted are wide advertisements of medicines in televisions, news papers, magazines results in selec-



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tion of inappropriate drugs for disease condition leading to the misjudgement of the disease resulted in drug complications and mortality rate.

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