

## Evaluation of Knowledge, Attitude and Practice about Self-medication Among Rural and Urban North Indian Population

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### ABSTRACT

**Background:** The practice of self-medication is very common in developing countries like India. Several problems have been reported to be associated with self-medication like wastage of resources, adverse drug reactions and antimicrobial resistance. Not many studies in past have explored the differences regarding the knowledge, attitude and practice of self-medication in rural and urban population of India. **Subjects and Methods:** The present study was a community based cross sectional study aimed to gather information about the self-medication practices, knowledge and attitude and its factors affecting self medication in the rural and urban population of Moradabad District, Uttar Pradesh from March 2014 to May 2014. Data for self medication were collected through a pre-designed and face validated from the studied population. All data were coded, entered and analyzed using the statistical package for Social sciences program version 20.0 (Chicago, IL, USA). **Results:** The response rate was 90.47%. The present study shows 100% study participants practiced self-medication. Majority of the participants are male (58.4%) and more than 63% belonged to rural area. Almost 60% respondents believed that OTC medications are safe. 75% participants believed chronic use of OTC drugs can cause ADRs. Majority of participants did not follow the recommendations while using these medicines. Participants belong to urban area was more aware of non-prescription drugs ( $p < 0.05$ ). NSAIDs are most commonly used medication among both urban and rural population respectively 67% and 37%. **Conclusion:** The prevalence of self-medication was high among rural population. The level of knowledge was more among urban population and NSAIDs were the highest consumed medicine among both rural and urban population. Population health awareness programs by pharmacists especially at retail pharmacy and continuing education are essential for controlling self-medication. Hence, there is a need to launch educational campaigns to bridge gap of knowledge especially in rural population. It is imperative that Government and other concerned organizations should promote rational self-medication and well-being in rural communities.

**Key words:** Self medication, OTC drugs, rural and urban India, knowledge and attitude, schedule H1.

### INTRODUCTION

Self-medication is defined as procure and consuming medications without the consult of healthcare professionals for prevention, diagnosis and treatment<sup>1</sup>. The history of self-medication practice is very old from global perspective, with significant influence in developing countries like India. Self-medication is generally called 'non-prescription' or 'over the counter'(OTC) medications and can be obtained without a physician prescription from the retail pharmacies and some from non-pharmacy retail outlets<sup>1</sup>. In India, few important causes for increase in self-medication are showing sympathy toward their ill relatives or friends, healthcare services not easily available specially in rural areas, poverty, unawareness, misbelieves, too much drug advertisements given by pharmaceutical companies, and easy access to medications from pharmacies because full time pharmacist is not

available, pharmacy run without pharmacists and common drugs can be attained from kirana shops (other than pharmacy)<sup>1</sup>. A patient with milder illness such as fever, cold/cough, diarrhea, indigestion or wound infection etc, may receive advice like a healthcare professional from their own friends, family members or some time from strangers regarding pharmaceuticals specially about scheduled medications like antibiotics, NSAIDs etc.<sup>2</sup>. In India, Schedule H (prescription drugs) and Schedule H 1 (antibiotics and other restricted medications) can be sold by a legally qualified registered pharmacist upon presentation of valid prescription as per Drug and Cosmetics Act of 1940<sup>3</sup>. A majority of the population when they fall ill not consult with the healthcare professionals especially in rural or small cities In India. However, they do consult directly to the pharmacy and/or retail drug store and can easily get medications for oneself

Table 1: Demographic information of participants

Variables	N (%)
Gender	
Male	222 (58.4)
Female	158 (41.5)
Age	
18-30	112(29.4)
31-40	131(34.4)
41-50	94 (24.7)
51-60	32 (8.4)
>60	11 (2.8)
Residence	
Urban	138 (36.4)
Rural	242 (63.6)

and for friend, family members or a neighbour<sup>4</sup>. In India, advertisement in media or in any other form regarding drugs and diseases are banned under Drug and Magic Remedies Act and Schedule J under drug and cosmetics act but pharmaceutical companies do advertise their products such as sexual products, baldness or prevent hair fall, cancer, heart diseases and others related to women health etc.<sup>5</sup>. Retail pharmacy owner also advertise or show their products especially antimicrobial and other prescription products to increase their sale<sup>1</sup>. Furthermore, for self medication or OTC medications, practices are promoted by World Health Organization (WHO) without physician consultation for useful and rapid relief of symptoms to decrease the load on common people health care related expenses specially in rural and remote areas where already developing countries facing shortage of trained health care professional<sup>6,7</sup>. The customers identify his/her own diseases or problem and take a specific drug to treat it. Non prescription (OTC) drugs or products give symptomatic relief for specific symptoms that do not need

always medical involvement<sup>7</sup>. In developed countries, OTC medications have been used widely to fight behavioural and psychological problems such as smoking. Their counselling regarding OTC medicines have positively influenced millions of people to reduce the risk of various types of diseases<sup>8</sup>. On the other hand, developing countries are concerned about irrational use of drugs specially the trained healthcare professionals. Additionally in developing countries including India, a wide range of medications are easily available without prescriptions and insufficient healthcare budget or health related services are provided by the state<sup>9</sup>. Even though all OTC products used for self-medication are already well-known for their safety and efficacy but their inappropriate use due to lack of information such as their adverse effects, interactions with other drugs or food have severe complications especially in the pediatrics, geriatrics and during pregnancy and lactation. There is always a risk of unpredictable interactions between OTC (active ingredient) product, other prescription drugs and other medications like alternative system of drugs that is practice by patients<sup>9</sup>. Previous literatures have reported that the prevalence of self medication antibiotics in rural India<sup>10</sup> is 37% and in urban India, 31.3%<sup>11</sup> Akram et al (2014) conducted a study at rural north Indian population and reported self medication practices to be 50%<sup>1</sup>. Overall very few studies focused on self medication practices in rural and urban area in north India. The present study aims to (1) look at the self medication practices among the urban and rural population at the study site population. (2) To study what are the factors associated with self medication among rural and urban population. (3) Identify the drug classes used for self medication and the common ailments for which self medication is sought. (4) To assess the

Table 2: Level of Awareness of participants about Non-prescription drugs

Statement	Response*		P value**		
	Agree	Disagree	Gender	Age	Residence
OTC medications are better option compared to obtaining prescription drugs	8.5	91.5	0.621	0.001	0.01
Consuming OTC drugs are safe	59.5	40.5	0.432	0.001	0.041
Non-prescription drugs may lose its effectiveness after chronic use	22.5	77.5	0.034	0.452	0.001
Continuous use of Non-prescription drugs may result in adverse effects	75	25	0.463	0.04	0.001
Continuous use of Non-prescription drugs may cause dependency	87	13	0.013	0.032	0.32
I take non-prescription drugs according to recommended dosage	14	86	0.073	0.045	0.014
I Follow recommended consumption duration of Non-prescription drugs	19.5	80.5	0.02	0.002	0.023
Follow the instruction on the label of Non-prescription drugs	32.5	67.5	0.061	0.004	0.001
Obtain the desired outcome from the usage of Non-prescription drugs	62.5	37.5	0.593	0.262	0.088
Non-prescription drugs could interfere with other prescribed medicine	25	75	0.182	0.076	0.21

\*Percentages of agree/strongly agree and disagree/strongly disagree were combined

\*\* P value derived from Chi-square test (p<0.05)

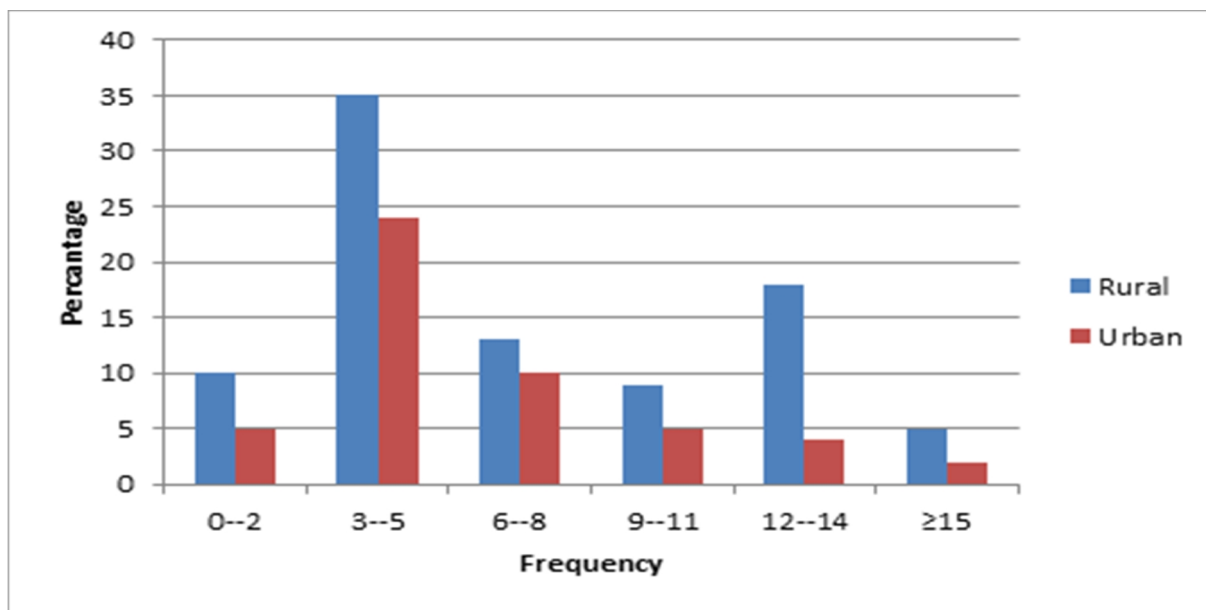


Figure 1: Frequency of using non-prescription medicines (per month)

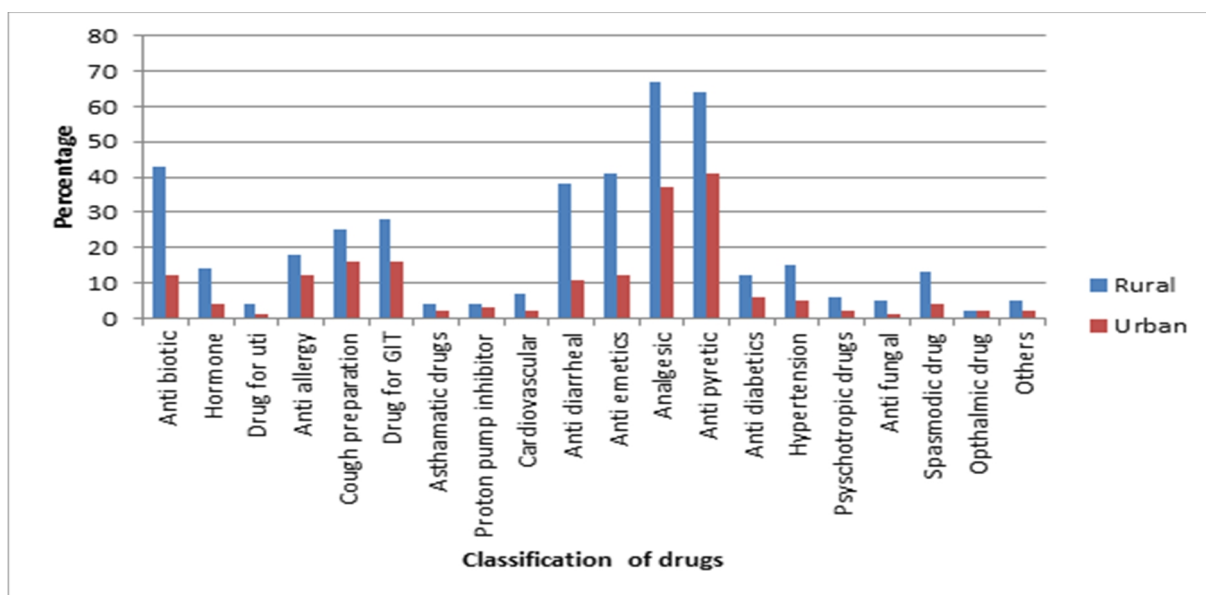


Figure 2: Consumption of different classes of drugs by participants.

association between socio-demographic factors & personal / family history of illness and knowledge, attitudes & practice of self medications drugs among the rural and urban population. The purpose of this study was to determine the extent and pattern of self medication among rural and urban population at Pakbara, Moradabad district north India.

**SUBJECTS AND METHODS**

A cross-sectional study was carried out at a Teerthanker Mahaveer College of Pharmacy (TMCOP), Teerthanker Mahaveer University (TMU) and nearby area of pakbara, district Moradabad, Uttar Pradesh, over a period of 3 months; from March to May 2014. The area is populated with rural community, however many of the workers from urban areas are residing in this region for the purpose of employment. The sample size was calculated on the basis of Raosoft<sup>12</sup> software in which the population size was kept

as 1000, power as 80%, response distribution as 50%, while confidence interval and margin of error was set at 95% and 5% respectively. The generated sample size (n=380) was adequately powered to estimate the process parameters. However, by assuming a drop rate of 10%, a total of 420 participants were selected for this study. Self-medication data were collected from the interview assisted questionnaire with the common people who practice self-medication including population living in pakbara and nearer villages. The data was collected by the Bachelor of pharmacy final year students. Data collectors were sufficiently trained for this job before they were asked to go into field for data collection. The inclusion criteria included all those who practice self-medication and willing to participate in the study. The questionnaire set was adopted some of previous studies and modified accordingly based on input from our study population<sup>1,10-13</sup>. After an initial draft of the questionnaire was designed,

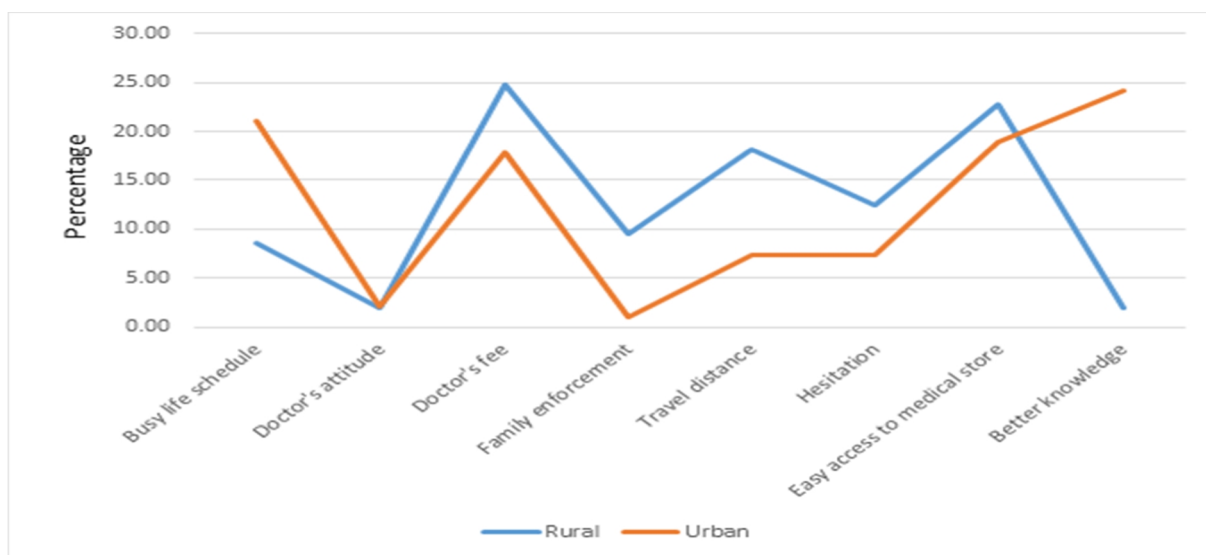


Figure 3: Factors contribution to self-medication

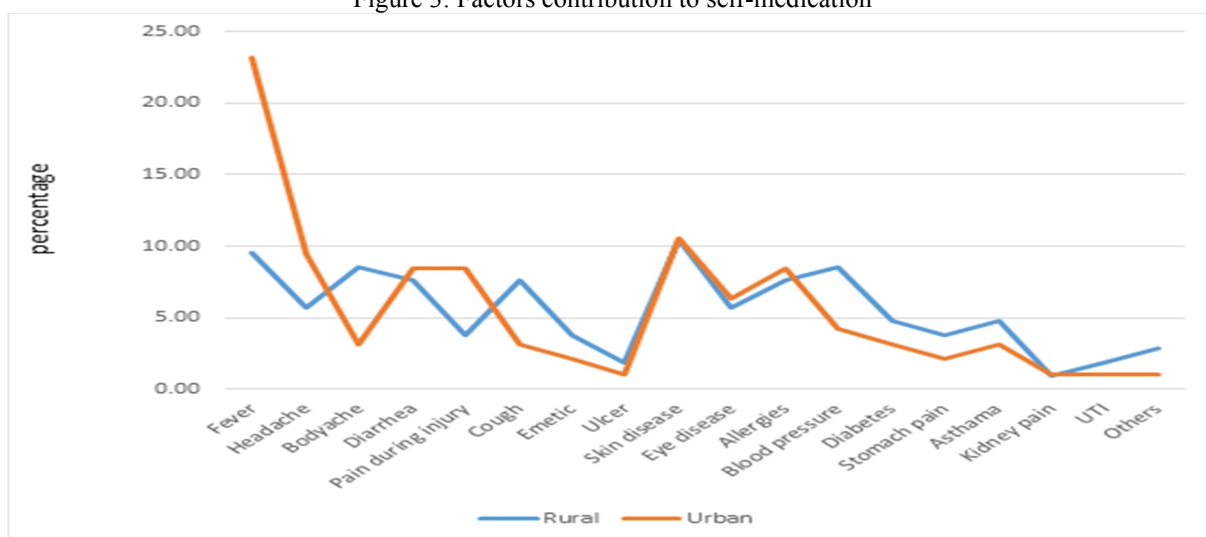


Figure 4: Common indication for self-medication.

it was validated in 2 steps. First, the study instrument was sent to experienced pharmacy academicians and community medicine department from India as well as foreign experts for their expert opinion about its simplicity, relativity and importance. Second, A pilot study was conducted by selecting a small sample of urban and rural population (n=10) who gave their opinion in making the questionnaire easier to follow and concise. Amendments suggested in both phases was considered and integrated into the questionnaire. After a sequence of discussion by the authors, the validity of the questionnaire was ascertained by the authors. This English version of the questionnaire was then translated and then back translated by using standard procedures for questionnaire translation<sup>14</sup> Reliability coefficient was calculated by using SPSS software (version20.0). A Cronbach's alpha value was found to be 0.80. The pilot study data was not included in the final analysis of the study. The questionnaire was divided into different sections. 3 questions was related to demographic details including age, residence and gender. 11 questions was related to their knowledge about self medication and 5 were about perception of participants

about self medications including how often customers practiced self medication, sources of drug information, what are the reasons for practicing self-medication and about self-medication practice. This study was approved by departmental research committee, TMCOP. Furthermore written informed consent was also taken from the participants prior to data collection. All data collected were entered into SPSS version20.0. Descriptive analysis and chi-squared tests were employed for statistical evaluation of results.

**RESULTS**

A total of 380 participants completed the questionnaire giving the response rate of 90.47%. The mean age of the participants was 28.28±4.02. Majority of the participants were male (58.4%, n=222) as compared to female counterparts (41.5%, n=158). Almost two third of the participants belonged to rural area (63.6%, n=242) while one third (36.4%, n=138) belonged to Urban area. The information is tabularized in Table1. Table 2 presents the information about the level of awareness of self-medication among the participants. The study instrument

evaluated the awareness of the respondents to rate the statements towards their level of agreement. This table also shows the association of participants' responses with demographic characteristics. All participants have reported of consuming non-prescription drug. Almost 60% of respondents believed that consuming non-prescriptions is safe. Age and residential status of participants were significantly associated with this response ( $p < 0.05$ ). However 75% of participants also believed that chronic use of these medicines may result in adverse drug reaction. Similarly, participants strongly agreed/agreed that long term use of these drugs may cause dependency. It was also noted that old age people agreed more to this statement as compared to young ones. This difference in result was also supported by statistical analysis ( $p < 0.05$ ). Interestingly, majority of participants did not follow the recommendations while using these medicines. As shown in the table, participants did not follow the guidelines regarding the dose, duration and instruction of non-prescription drugs (86%, 80.5% and 67.5% respectively). Difference of level of awareness was observed in terms of the age and the residential status of participants. It was observed that as level of awareness was decreasing with the increase in age. Likewise, participants belong to urban area was more aware of non-prescription drugs. The association of these statements was significantly associated with age and residential status ( $p < 0.05$ ). The study also explored the frequency of non-prescription drug used by the studied population. A clear difference was observed between use of the rural and urban population. The use of non-prescription drugs by rural population was constantly high in all the frequency classes. However, it was witnessed that maximum number of rural and urban population use non-prescription drug 3-5 times per month (35% and 24% respectively). This information is depicted in Fig 1. Furthermore, analgesics and antipyretics were the common drugs used by both urban and rural participants, though the use of these drugs by rural population (67% and 64% respectively) was much higher in relation to urban participants (37% and 41% respectively). Information about the use of other drugs is portrayed in Fig 2. It is also noteworthy to highlight the factors contributing towards using non-prescription by participants. Although both urban and rural participants considered doctor's fee as a main contributing factor (18% and 25% respectively), busy life schedule (21%) and better knowledge (24%) were factors associated with urbanization. (Fig 3). The study also highlighted common indications for which non-prescription drugs were consumed by the patients. The use of such drugs in fever was higher in urban population (23%) as compared to rural sample (9%). The use of non-prescription drugs was highest in skin diseases among rural respondents (10%). The usage of non-prescription drugs was lowest in ulcer and kidney pain among all the participants (1%). The complete information is illustrated in Fig 4.

## DISCUSSION

The response rate in this study was 90.47% which was comparatively high as compared to other studies

conducted previously on the same subject<sup>1,14</sup>. This study reported that consumption of non-prescription drug was 100% among participants. The prevalence of non-prescription drugs is high in view of other published studies<sup>3,16</sup>. This discrepancy in result could be due to socio-economic background of the participants. The other likely reason of this difference may be because of different methodologies adapted in these studies. This study has revealed that the awareness of participants regarding non-prescription drugs was low to moderate. Drugs were consumed by participants without following any recommendations about their doses and duration. These results are not in line with other study which also evaluated the level of awareness of in society<sup>17</sup>. The difference could be explained by a reason that the referenced study was conducted on urban population whose knowledge about the recommendations of drug could be higher as compared to urban population. This speculation is also by our result that shows that urban participants were more aware of non-prescription drugs. The results were not found to be in accordance with other studies when it was found that participants in this study were more aware of ADRs with continuous use of non-prescription drugs<sup>17</sup>. Another study showed that respondents were less aware of ADRs as compared to our study. This variation could be due to chronic use of non-prescription drugs by participants in this study which may exposed them to various kinds of side effects. Previous studies have reported high frequency of non-prescription drugs by the participants<sup>18,19</sup> this resembles with our result to great extent as this study also showed that both urban and rural population used non-prescription drugs 3-5 times per month. This result was however, not in accordance to another study conducted by Wazaify in 2005<sup>20</sup>. This deviation could be because of the accessibility of pharmacy as those with easy access have more probability of frequently using non-prescription drugs<sup>21</sup>. The result suggests that analgesics, antipyretics and antibiotics are the most common drugs used by participants without prescription. This result is in line with some other studies tagging analgesics as the most frequent use drug<sup>16,21</sup>. The reason of high usage of analgesics was explained by an American study which revealed that public perceive analgesics as safe, effective and with fewer side effects<sup>23</sup>. In recent years, the infrastructure of community has changed in India. Strategies are now being employed with better marketing of these pharmacies by locating them at easy access places. This change has prompted the urban population towards using non-prescription as in their busy life schedule it is very challenging to find some to consult doctor. At the same high inflation rate in India has also increased doctors' fee which have further deepened the problem of self-medication. The results of this study were also not to different as increased doctor fee, busy life schedule and easy access to was the major contributing factor towards the use of non-prescription drugs. However some other factors have been reported by researchers around the world including pharmacist recommendations<sup>24</sup> and high treatment cost<sup>1,25</sup>. The other important point that needs to highlight is the indication in which non-prescription drugs were used by

participants. Although majority of the urban population used non-prescription drugs mainly in fever and headache, it was noted that use of such drugs in chronic condition like blood pressure was also high in rural population. This is an alarming situation which needs to be looked after by the relevant authorities as this practice could lead to disastrous consequences. This result was also supported by other study which has also raised the same concerns regarding the use of non-prescription drugs in chronic diseases<sup>26,27</sup>. Since this study was focussed on a single village, the results may not be applicable to the whole district or state. Future studies will be directed to obtain sample from most villages of the district, and from all districts of the state to make the results more generalizable.

## CONCLUSION

The results show that level of awareness of non-prescription drug is significantly higher in urban population as compared to rural participants. Inverse relationship of awareness with the age was also observed. The use of non-prescription drugs was more frequent by rural population. Analgesics were the major drugs used by respondent in fever, though the use of other drugs was also apparent in chronic conditions by rural population. Hence, there is a need to launch educational campaigns to bridge this gap of knowledge especially in rural population.

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