Original Research Article

A STUDY OF PREVALENCE AND ASSOCIATED FACTORS FOR SELF-MEDICATION AMONG MIDDLE AGED ADULTS: A COMMUNITY BASED CROSS-SECTIONAL STUDY

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ABSTRACT

Background: Self-medication provides individuals with a convenient method to address minor health issues without needing to visit a physician. Self-medication is a significant health concern in developing nations such as India. Despite the availability of healthcare services, many patients still opt for self-medication. The Objective of this study was to estimate the prevalence of self-medication and to identify the factors associated with self-medication practices in a rural field practice area.

Materials and Methods: This community based cross sectional study was conducted in the rural field practice area under the Department of Community Medicine of Swami Ramanand Teerth Rural Government Medical College, Ambajogai, Maharashtra for a period of six months. A total of 347 individuals aged 30-45 years, were interviewed using a pretested, semi-structured questionnaire to collect the data. The data will be analysed using statistical software.

Results: The Prevalence of self-medication among middle-aged adults in rural field practice area was found to be 58.2%, Studies often show that males may self-medicate more frequently than females, particularly for pain relief. Rural areas often have limited access to healthcare facilities and professionals, leading to higher rates of self-medication.

Conclusion: The trend of Self-medication practices in India is rising. Understanding these trends can help reform public health strategies, targeting education and resources to promote safe self-medication practices.

Keywords: Self-Medication, Middle Aged Adults.

INTRODUCTION

According to World Health Organisation (WHO), Self-Medication is "the selection and use of medicines by individuals to treat self-recognized illnesses or symptoms."[1] The WHO recognizes the potential benefits and importance of self-care, but also emphasizes the need for informed decision-making, proper guidance from healthcare professionals, and awareness of potential risks. It includes over-the-counter (OTC) drugs, conventional medicine, herbal medicine or even use of any drugs without legitimate prescription. Using OTC drugs can be considered responsible, but over-use can also lead to adverse effects. William Osler (1849-1919) Canadian Physician stated that "A desire to take medicine is perhaps the greatest feature which distinguishes man from animals", this desire causes a person to self-medicate with no knowledge of its toxicity, if overused.

Self-medication is a growing global public health concern that poses serious risks to consumers. It can result in incorrect diagnoses, mask underlying health issues, contribute to antimicrobial resistance, lead to

drug dependence and abuse, and cause severe adverse effects from excessive dosages and drug interactions.[2] Due to large population and vast area, in India, lack of accessible health services, lack to time constraints, financial difficulties, budgetary restrictions, desire to self-care, concern towards family members in disease, redundant advertisement and availability may be responsible for rise in self-medication practices. In contrast, the practice of self-medication without medical advice reduces the burden on health-care service centres, which are already down on staff, and inaccessible in rural and remote hilly areas.[3] Therefore, Self-Medication can be considered as a double-edged sword, has both advantages and disadvantages.

Around the world, self-medication is widely spread in developed nations like United States, Canada, Greece and European countries. The prevalence of self-medication in these developed Nations varies from 31% to 88%.[4,5] Community based studies of self-medication in developing countries is in the range of 12.7% to 95%.[6,7] In India, A Systematic Literature Review and Meta-Analysis conducted by Rashid et. al. (2020) shows the prevalence of self-medication as 53.57%.[8] Various other studies conducted North and South regions of India shows difference in prevalence of 72.9% and 11.9% respectively.[9,10]

Being the large state with high rural population, a few studies were conducted to determine the prevalence of self-medication in Maharashtra, no studies were done in central rural districts. With this context and background, the current Cross-sectional study was conducted to find out Prevalence, socio-demographic profile, factors, reasons, symptoms and its association with self-medication in a rural field practice area of central Maharashtra. The aims and objectives of the present study are as follows:

1. To estimate the prevalence of self-medication
2. To determine the factors linked to self-medication practices in a rural field practice area.

MATERIALS AND METHODS

Study Design and Setting: The present community based cross sectional study was conducted in the rural field practice area of a tertiary health care centre located in central part of Maharashtra from July 2024 to January 2025.

Study population: Middle aged adults of age 30 – 45 years, who were residents of rural field practice area of tertiary health care centre who were willing to participate in the study were taken as respondents. Doctors, pharmacists, and other healthcare workers with knowledge of medications and adults aged below 30 years and above 45 years were excluded. Individuals who were not capable of providing relevant information due to any mental illness were excluded.

Operational definition: For the purpose of the study, 'Self-Medication' was defined as the use of any allopathic medication or skipping/stopping of already prescribed drugs without prior consultation with a certified doctor with a minimum of M.B.B.S degree. We have considered a grace period of last 3 months for the purpose of self-medication.

Sample size: Sample size was calculated using the formula $(4p(1-p))/d^2$, where p is prevalence and d is relative precision. Based on a study conducted by Keshari et al,[11] (2014) the prevalence of Self-Medication was taken to be 69% and relative precision of 5%, minimum sample size was calculated to be 342.

Sampling technique: A house-to-house survey was conducted in the rural field practice area; the first house was selected randomly by spinning the pen. Subsequently, every alternate house was approached for eligible participants. One participant was taken from each household was taken into consideration. In cases where the eligible study participant was not available, that household was skipped, and the next alternate house was approached.

Study instruments: A face-to-face interview was conducted to collect data using a semi-structed questionnaire. A recall period of 3 months was taken into consideration. A thorough review of literature was done to develop the questionnaire which consists of two sections; Section – A contains questions on Socio-demographic profile of participants and Section – B contains questions related to Self-Medication (like reasons, symptoms for Self-Medication, sources). After data collection, health education sessions focusing on strategies to reduce self-medication practices were provided for each family.

Study Variables: The dependent variable was practice of Self-Medication and independent variables were age groups, gender, religion, marital status, type of family, education, occupation, socio-economic status (SES).

Data Analysis: After data collection and entry was done in Microsoft Excel 2021 and descriptive analysis was done in Jamovi software 2.6.44.0. Descriptive statistics are represented with mean, standard deviation, frequency and percentages. The chi-square test was applied to find the association between the variables. A p-value of less than 0.05 was considered as statistically significant.

Research Ethics: The ethical approval for this research was approved by the Institutional Ethical Committee (IEC/21/03/2024).

RESULTS

A total of 347/600 families residing in the rural field practice area participated in this cross-sectional study of self-medication. The total response rate was 58%. The prevalence among respondents was found to be 58.2% (202) [Figure1].
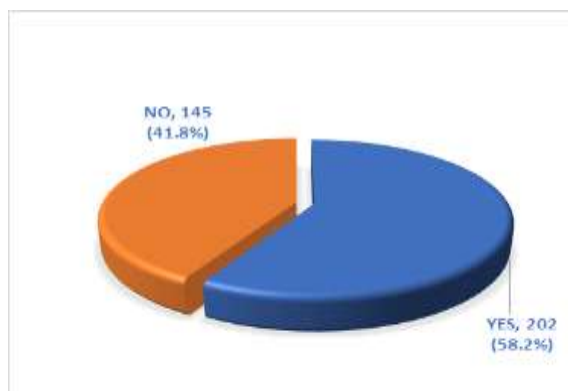
Graph 1: Prevalence of self medication.

1. Socio-Demographic Variables:

Table 1 shows the socio-demographic variables of the study respondents and its association with self-medication. In the age group of 30–35 years, 71.9% practiced self-medication, followed by 63.9% in the 36–40 age group, and 40.3% in the 41–45 age group. Among all the participants 59.2% (135) were males predominantly practicing self-medication than females 56.3% (67). Regarding religion, 264 participants belong to Hindu (76.1%) followed by Muslims 64 (18.4%) then Buddhist 19 (5.5%), The prevalence is highest in Buddhist 73.7% followed by Hindu 58.7% and Muslim 51.6%. Though the maximum number of respondents were married 323 (93.1%), the prevalence of self-medication among never married 66.7% (16) is more than married 57.6% (186). Most of the participants belonging to Three generation family has practiced self-medication 79.5%, subsequently 56.6% is nuclear

family and then 54.5% Joint family. The Lowest prevalence of self-medication is seen in participants with education qualification as Post Graduation of 37.5% (9) while highest is 70.9% (39) in High school. Respondents who were having business as occupation has highest prevalence of 73%, followed by the unemployed 62.2%. The lowest rate was observed among farmers/labourers 53.6%. The maximum number of participants belonged to Class V of Socio-Economic Status, which also had the highest prevalence rate of self-medication 63.8% followed by 61.7% in class III, and lowest prevalence is observed in class IV 53.5%.

2. Self-Medication and its Association:

A p-value of < 0.05 was considered as statistically significant. As seen in [Table 1], A statistically significant association was observed between age group and self-medication ($\lambda 2=28.4$, $p<0.0001$), with higher prevalence noted in 30-35 years. Type of family showed a significant association ($\lambda 2=8.31$, $p=0.016$) with highest prevalence of self-medication reported among individuals belonging to three generation family. Significant association was found with education ($\lambda 2=19.26$, $p=0.002$) of the participant and self-medication where those with high school and graduation reported higher self-medication compared to those with postgraduate or primary school. No statistically significant association was found with gender ($\lambda 2=0.272$, $p=0.602$), religion ($\lambda 2=3.06$, $p=0.217$), marital status ($\lambda 2=0.757$, $p=0.384$), occupation ($\lambda 2=5.15$, $p=0.16$), socio-economic status ($\lambda 2=3.20$, $p=0.525$) of the participants of the study and self-medication.

Table 1: Socio-Demographic Variables and its Association with self-medication

Variables		n	(%)	Self-Medication		λ2	p-value
				Yes (%)	No (%)		
Age group (in years)	30-35	135	38.9	97 (71.9)	38 (28.1)	28.4	<0.0001*
	36-40	83	23.9	53 (63.9)	30 (36.1)		
	41-45	129	37.2	52 (40.3)	77 (59.7)		
Gender	Male	228	65.7	135 (59.2)	93 (40.8)	0.272	0.602
	Female	119	34.3	67 (56.3)	52 (43.7)		
Religion	Hindu	264	76.1	155 (58.7)	109 (41.3)	3.06	0.217
	Muslim	64	18.4	33 (51.6)	31 (48.4)		
	Buddhist	19	5.5	14 (73.7)	5 (26.3)		
Marital status	Married	323	93.1	186 (57.6)	137 (42.4)	0.757	0.384
	Never Married	24	6.9	16 (66.7)	8 (33.3)		
Type of Family	Joint Family	156	45	85 (54.5)	71 (45.5)	8.31	0.016*
	Nuclear Family	152	43.8	86 (56.6)	66 (43.4)		
	Three generation Family	39	11.2	31 (79.5)	8 (20.5)		
Education	Post Graduation	24	6.9	9 (37.5)	15 (62.5)	19.26	0.002*
	Graduation	114	32.9	78 (68.4)	36 (31.6)		
	High School	55	15.9	39 (70.9)	16 (29.1)		
	Secondary School	52	15	27 (51.9)	25 (48.1)		
	Primary School	74	21.3	33 (44.6)	41 (55.4)		
	Illiterate	28	8.1	16 (57.1)	12 (42.9)		
Occupation	Business	37	10.7	27 (73)	10 (27)	5.15	0.16
	farmer/ Labourer	138	39.8	74 (53.6)	64 (46.4)		
	Govt./Pvt. Employee	98	28.2	55 (56.1)	43 (43.9)		
	Unemployed	74	21.3	46 (62.2)	28 (37.8)		
Socio - Economic Status	Class - I	13	3.7	7 (53.8)	6 (46.2)	3.202	0.525
	Class - II	70	20.2	38 (54.3)	32 (45.7)		
	Class - III	47	13.5	29 (61.7)	18 38.3)		
	Class - IV	101	29.1	54 (53.5)	47 (46.5)		
	Class - V	116	33.4	74 (63.8)	42 (36.2)		

*P was tested by Chi square test. A p-value <0.05 was taken as statistically Significant.

3. Sources of Self-Medication:

The major source through which the participants learned the use of self-medication was from Pharmacist 150 (74.2%), and other main reasons were family members 96 (47.5%), then from past prescription 84 (41.5%), least with the Advertisement/internet 46 (22.7%). Details can be seen in [Figure 1].
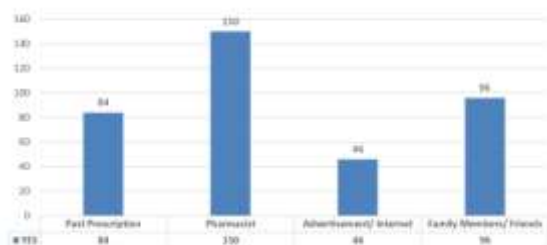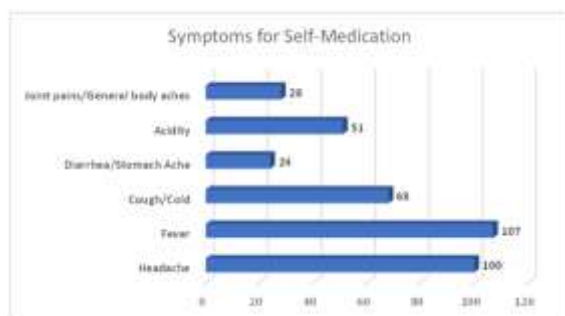

Figure 1: Sources of Self-Medication

4. Symptoms for Self-Medication:

As shown in the [Figure 2], self-medication was quoted to be most frequently used in case of Fever 107 (52.9%), and headache 100 (49.5%), followed by cough/cold 68 (33.6%), Acidity 51 (25.2%), diarrhoea/stomach ache 24 (11.8%).

5. Reasons of Self-Medication:

The most common reason quoted by the respondents for practice of self-medication as shown in the [Figure 3], were Time saving 106 (52.4%), Symptoms were minor, not serious 94 (46.5%), cheap 72 (35.6%), followed by suggestions from friends & family 51 (25.2%), after relieving symptoms 35 (17.3%), Influence of ads/internet/mass media 21 (10.3%), Embarrassed of discussing symptoms 13 (6.4%) being the least common reason to for self-medication.
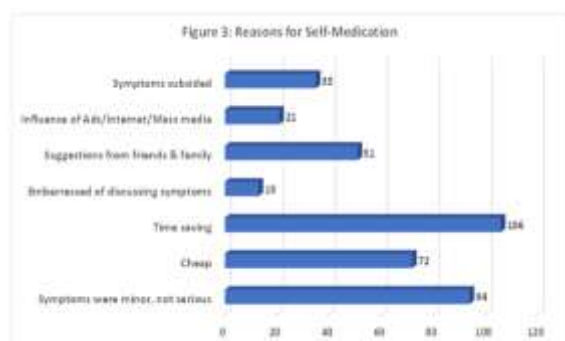

DISCUSSION

The prevalence of our cross-sectional study conducted in rural field practice area was found to be 58.2% (202 out of 347). The similar study conducted in rural field practice area Thiruvallur district conducted by Varadarajan et al. (2017) shows similar prevalence of 60% (108/180) with same recall period and similar definition of self-medication.[12] A study by Marak et al. (2016), carried out study among rural population of Meghalaya, found the prevalence to be 55%, high prevalence might be due to not well-developed roads and transport, public health infrastructure.[13] But, in comparison to our study which was conducted in a rural area of Maharashtra, shows higher prevalence than Marak study though the road connectivity and public health infrastructure is moderately developed. Likewise, Kumar C et al. (2018), found 51.75% prevalence in self-medication in rural area of south India.[3]

A contradictory study conducted by Saharan et al. (2015) in Mumbai, Maharashtra which reported the prevalence of self-Medication as 85% which is higher than the present study.[14] A possible explanation for this might be that Saharan study did not have a particular recall period for self-medication, as our study has a recall period of 3 months and self-medication was not defined.

Another study conducted in rural (Tala, Raigad) area of Maharashtra by Limaye et al. (2018) found prevalence to be 7.7% which was very low when compared to our study.[15] As mentioned by Limaye, Recent inspections by the Food and Drug Administration, India in the rural area of Raigad, Maharashtra might have acted as a deterrent to pharmacy shops (main source) in that region. While in our study, most of the participants are farmer/labourers (39.8%), visiting pharmacist (150/202) for self-medication primarily to save time (106/202) might be due to the fear of losing daily wages.

In this study, the prevalence was found to be similar among males and females (59% and 56% respectively), which is incongruent in previous studies. For instance, Kumar C reported that males practice self-medication twice as females, while studies by Marak (2016) and Varadarajan (2017) studies show higher prevalence among males.

The highest practice of self-medication was found among participants with High school education (70.9%) and followed by graduates (68.4%). Health seeking behaviour of an individual may be improved by education which encourages in self-medication practice. A study conducted by Ramana et al. (2020) also found high prevalence of 71% among students of medical profession.[16]

The most common reason for self-medication among middle aged adults found in this study is time saving and minor symptoms. This might be due to majority of the participants are farmers or labourers, they tended to practice self-medication primarily to avoid

losing working hours and income. Familiar reason reported as time saving in the study conducted by Rathod et al. (2023) as time saving.[17] Consulting a health professional for minor symptoms often time-consuming and financial burden to the individual resulting in the practice of self-medication.

This study indicates that fever, headache, cough/cold are the major symptoms for self-medication. Previous studies of Rathod P et al., Namboothiri GN et al., Savani et al. also reported that fever, headache, cough/cold to be the most common symptoms for participants to treat themselves.[17-19] Due to common and usually mild nature of headaches, many individuals perceive medical consultation as unnecessary, making them to self-treat this condition without professional advice.

Present study found that pharmacy (74.2%) is the main source for the participants who practice self-medication. Majority of adults are daily workers, as mentioned above time constraints and loss of wages might be the reason for self-medication without proper prescription or any medical advice. Similar observations were found in previous studies Pandey A et al. (2023), Varadarajan et al. (2017), Johnbasha A et al. (2022).[9,12,20] The second most common source was found to be Family/friends (47.5%) as in Kumar CA and Marak study highlights the major sources for self-medication is through friends and family members. As previously stated, the majority of the participants practicing self-medication belonging to three generation family (79.5%). It is likely that elder family members influence this behaviour by offering suggestions or recommending medications on their previous prescriptions for minor health ailments. It is also described earlier that a statistical significant association was found between the type of family and self-medication practices (p-value=0.016).

CONCLUSION

The study reveals that being in moderately developed rural area of Maharashtra with good connectivity was associated with likelihood of consuming medications without prescription or medical advice. Self-medication was also seen to be based on gender, type of family, education occupation and socio-economic status of the study participants. Even the higher education and higher class of families did not prevent the practice of self-medication. Pharmacy was the main source of self-medication in this study, availability of over-the-counter drugs and ease to access the pharmacy might be an advantage. Subjects of the present study practiced self-medication for minor ailments such as fever, headache, cough/cold, acidity and body pains. Even for these minor ailments, this practice might be risky and lead to adverse effects. These adverse effects could be more serious in case of antibiotics causes development of antibiotic resistance which poses significant risk to both individual and public health. As a part of intervention, health education, emphasizing the adverse effects and strategies to reduce its practice. This educational component aimed to raise the awareness and promote responsible self-medication within the community. Health education and Self-medication is a complex issue, requires intense and in-depth research. We hope that our study findings might help in further research, the policy makers, planners, health professionals to understand and regulate the measures on the over-the-counter drugs.

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