

Original Research Article

SELF-MEDICATION PRACTICES' PREVALENCE AND RELATED CHARACTERISTICS IN URBAN BAREILLY: A CROSS SECTIONAL STUDY

Gauri Sarswat¹, Medhavi Agarwal², Rashmi Katy³

¹Assistant Professor, Department of Community Medicine RMCH Bareilly, India.

²Professor, Department of Community medicine VAMC Banthra Shahjanpur Uttar Pradesh, India.

³Professor & Head, Department of Community Medicine RMCH Bareilly, India.

Received : 06/01/2025
Received in revised form : 23/02/2025
Accepted : 09/03/2025

Corresponding Author:

Dr. Gauri Sarswat,
Professor, Department of Community
medicine VAMC Banthra Shahjanpur,
Uttar Pradesh, India.
Email: sarswatgauri87@gmail.com

DOI: 10.70034/ijmedph.2025.1.266

Source of Support: Nil,
Conflict of Interest: None declared

Int J Med Pub Health
2025; 15 (1); 1419-1424

ABSTRACT

Background: Self-medication is a prevalent practice worldwide, contributing to improper medication use, delayed diagnosis, and antimicrobial resistance. This study aims to assess the prevalence, patterns, and influencing factors of self-medication in urban Bareilly, India.

Materials and Methods: A community-based cross-sectional study was conducted in the urban service area of Rohilkhand Medical College and Hospital. A total of 389 households were surveyed using systematic random sampling, with one adult participant per household. Data were collected through face-to-face interviews using a structured questionnaire.

Results: The prevalence of self-medication was 80% among respondents. The practice was most common among individuals aged 18–25 years and those with higher education levels. The primary reasons cited were the perception that ailments were minor (77%) and ease of access to medications. The most common sources of medication information were family and friends (44%), followed by pharmacists (33%). Headaches (70.4%) and fever (66.56%) were the most frequent symptoms treated. Analgesics and antipyretics were the most commonly used drugs (59%). Additionally, 12% of self-medicating participants reported experiencing adverse effects.

Conclusion: Self-medication is highly prevalent in urban Bareilly, posing significant public health concerns. While it provides quick relief for minor ailments, it increases the risk of inappropriate drug use and adverse reactions. Regulatory oversight, public awareness, and health education campaigns are necessary to promote safer medication practices.

Keywords: Self-medication, prevalence, urban health, medication misuse, public health, Bareilly, India.

INTRODUCTION

Self medication as a prevalent issue that contributes to improper medication usage and defines Self medication as the choice and use of medications by individuals to treat self-recognized illnesses or symptoms.^[1] The prevalence of self-medication varies worldwide, making it a significant public health concern. One of the major causes of the emergence of antibiotic resistance in India is the high prevalence of self-medication there.^[2] Self-medication without medical supervision raises the risk of delayed diagnosis, incorrect, ineffective, or excessive treatments, infection resistance, increased

morbidity, and missing diagnoses.^[3] Self-medication is becoming more and more common, and there are many reasons for this, including the need for self-care, empathy for ailing family members, lack of access to healthcare and drug availability, lack of time and money, ignorance, false beliefs, and the availability of drugs outside of pharmacies.^[4]

It is common for people in both developed and developing nations to self-medicate. The WHO lists Self medication as a prevalent issue that contributes to improper medication usage and defines Self medication as the choice and use of medications by individuals to treat self-recognized illnesses or symptoms. It also encompasses the application of a

broad spectrum of complementary and alternative medicine (CAM), including home remedies, nutritional supplements, herbal medicines (herbs or herbal preparations), and traditional items.^[5]

Prescription items are those that need a prescription from a doctor (Rx products). Medications for Self medication are sometimes referred to be "non-prescription" or "over the counter" (OTC), and pharmacies sell them without a doctor's prescription. Supermarkets and other retail establishments typically carry over-the-counter (OTC) products in western countries.^[6]

According to several studies, self-medication might cause a delay in seeking medical attention, which can lead to a paradoxical financial loss because it takes longer to diagnose underlying issues and provide the right therapy. Additionally, self-medication can result in drug interactions that could have been avoided if the patient had visited a licensed doctor.

Practices involving self-medication cannot be completely deemed detrimental. Patients still rely on self-medication for mild symptoms in the majority of hill, tribal, and other remote locations where there is a severe lack of human health workers.

Despite the increasing prevalence of self-medication in India, there is limited research at the community level to assess its extent and impact. Conducting such studies is crucial in understanding the motivations behind self-medication and identifying potential regulatory measures to improve drug safety. Addressing this issue can help policymakers streamline drug regulations, update the list of essential medicines, and implement strategies to mitigate the risks associated with self-medication.

In light of these concerns, the present study conducted in the urban service area of Rohilkhand Medical College and Hospital, Bareilly, to determine the prevalence of self-medication for allopathic pharmaceuticals and explore its association with various sociodemographic factors.

Aim & Objectives

Aim: To determine the prevalence, pattern, and causes of self-medication.

Objectives

1. To determine how common self-medication is among the people living in the urban service area of Rohilkhand Medical College;
2. To pinpoint the variables linked to self-medication behaviors.

MATERIALS AND METHODS

This community based cross-sectional study was conducted in field practice area of Urban health training centre, Rohilkhand medical college and hospital

Study population

The study participants were those who are above the age of eighteen and in their homes when the house-to-house survey conducted. Each household was

only allowed having one participant in the study; if there will multiple people over the age of 18 living there at the time of the survey, the oldest person questioned.

Sample size -Considering the prevalence of self-medication practices to be 60% as per the study conducted by Rathod et al.,^[1] the minimum estimated sample size was calculated to be 389 using the formula $4p(1-p)/d^2$, where p is prevalence and d is precision with a desired confidence limit of 95% and relative precision of 5%.

Sampling technique: Probability proportional to size sampling was used to find the total number of subjects to be cover in each of the areas. Households within these areas were selected by systematic random sampling.

Data collection: Face-to-face interviews were used to gather data. A pretested, predesigned questionnaire with questions in a vernacular language (Hindi or English) served as the data gathering tool. There were two sections in the questionnaire. Part A of the questionnaire asked questions about participants' sociodemographic details, including age, place of residence, religion, marital status, level of education, type of family, and socioeconomic status. A modified version of B.G. Prasad's scale was used to measure socioeconomic status. Part B included questions related to self medication.

Inclusion and Exclusion criteria

The oldest adult in the home Included in the study and who was taken part and over the age of 18.

Those having medical knowledge, such as doctors, pharmacists, and other healthcare professionals, were not included.

RESULTS

Prevalence of self medication- A total of 389 households were surveyed in the urban field practice area, with one participant interviewed from each family. The respondents ranged in age from 18 to 80 years, with a mean age of 41 years. The prevalence of self-medication in the surveyed population was 80% (311 individuals) (Figure 1).

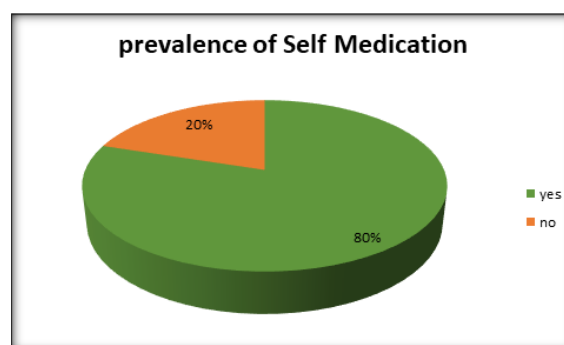


Figure 1: Prevalence of self medication

Socio-demographic characteristics on self medication

Factors Influencing Self-Medication

Table 1 indicates that the prevalence of self-medication was highest among individuals aged 18–25 years. There was a statistically significant association between self-medication and both age group and education level. However, while self-

medication was more common among male participants, the difference was not statistically significant. Additionally, the practice of self-medication was similar in nuclear and joint families within the urban population. Self-medication was slightly more prevalent among individuals from socioeconomic classes up to Class III.

Table 1: Sociodemographic characteristics on self-medication use (n=389)

Variable	category	all subject	Practicing self medication				P-value
			Yes(311)		No(78)		
			Number	Percentage	Number	Percentage	
age group(years)	18-24	52	34	65%	18	35%	0.018*
	25-64	318	261	82%	57	18%	
	>64	19	16	84%	3	16%	
sex	male	242	197	81.4%	45	18.6%	.357
	female	147	114	76%	33	22.45%	
Education	below high school	65	59	91%	6	9%	0.017*
	high school & above	324	252	78%	72	22%	
Occupation	employed	27	25	93%	2	7%	0.089
	unemployed & housewife	362	286	79%	76	21%	
type of family	nuclear	261	210	81%	51	19%	0.719
	joint	128	101	79%	27	21%	
**socioeconomic status	class I to III	323	255	79%	68	21%	0.275
	Class IV to V	66	56	85%	10	15%	

* Significant p-value

** Socioeconomic status was calculated using a modified B.G. Prasad's scale

Factors related to self medication

Out of the 311 participants who practiced self-medication, the most common source of knowledge was friends or family, accounting for 44%, followed by pharmacists (33%) and the internet (9%). [Figure 2]

The primary reason for self-medication, as reported by 77% of participants, was the perception that their ailments were minor [Figure 3]. The most frequently reported symptoms leading to self-medication included headaches (70.4%), fever (66.56%), cold and cough (35.37%), and stomach pain (24.11%). [Figure 4]

Regarding the types of medications used, antipyretics and analgesics were the most widely used (59%), followed by previously prescribed medications (18%) and antibiotics (11%) [Figure 5]. Additionally, 12% of participants who had self-medicated in the past three months reported experiencing adverse effects due to the medications they had taken [Figure 6]

The pie chart (figure 7) illustrates the distribution of beliefs regarding self-medication among participants. Out of the total respondents, 56.0% (174 individuals) reported that they do not believe in self-medication, while 44.0% (136 individuals) indicated that they do and among the total participants, 25% reported that they would recommend self-medication to others. (Figure 8)

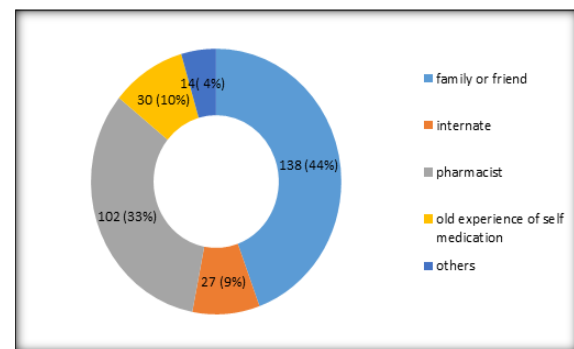


Figure 2: Source of information of self medication [N=311]

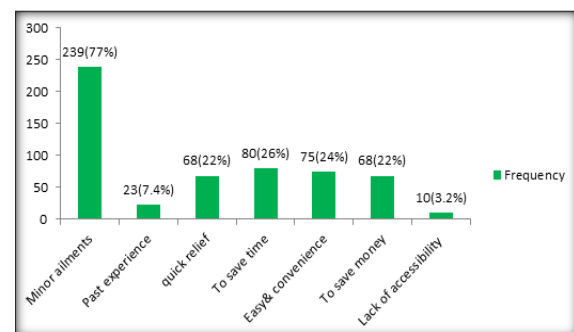
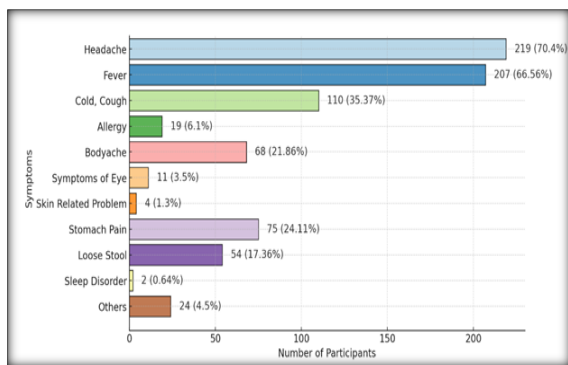


Figure 3: Reasons for using self-medication [N=311]
Multiple responses**



Multiple responses** (Other symptoms - dysmenorrhoea, toothache, chest pain)
Figure 4: List of symptoms treated by self-medication practices [N=311]

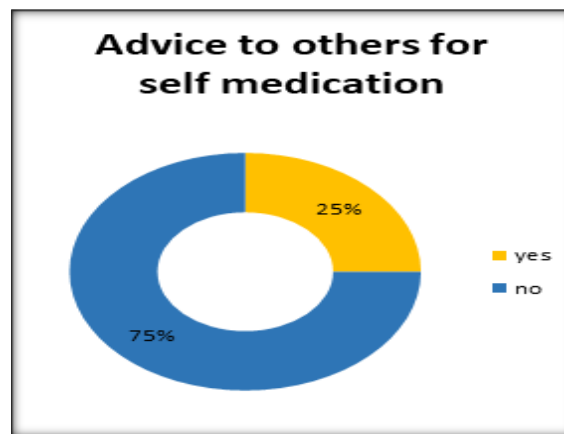
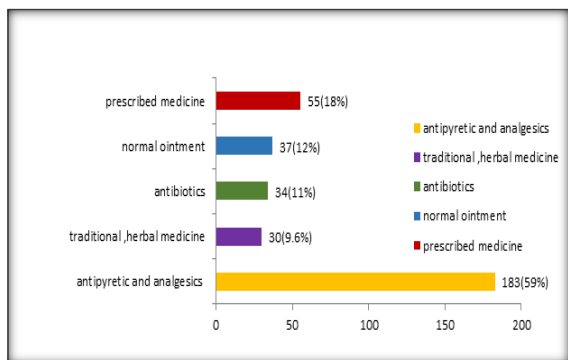


Figure 8: Advice to others for self medication



Multiple responses**
Figure 5 Types of drugs use for self medication [N=311]

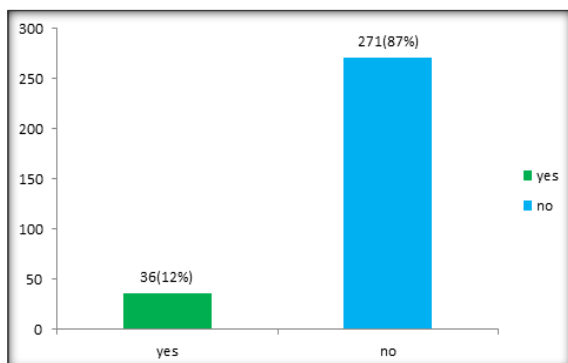


Figure 6: Prevalence of adverse effect after self medication

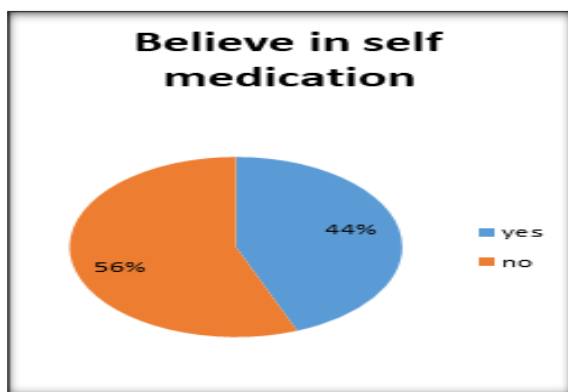


Figure 7: Believe in self medication

DISCUSSIONS

Self-medication is a crucial aspect of healthcare, defined by the WHO as the selection and use of medications by individuals to treat self-diagnosed conditions. It is often seen as a solution to limited healthcare access and rising medical costs.

This study found that self-medication prevalence in urban Bareilly was 80%, aligning with findings from Shamsudeen S et al.[11] and Sharma et al. (2023), who reported rates of 65% in the same region.[12] Similar trends were observed in Delhi (74%) by Gupta et al. (2021).[13] and in a study by Rathod et al. (2023),[1] which reported 60%. In contrast, Jain S et al. (2018) found a lower prevalence (42.7%) in urban slum areas.[3]

Factors Influencing Self-Medication

- **Age & Education:** Younger adults (18-24) were more likely to self-medicate, consistent with studies by Kumar V et al.^[13] and Alghanim S et al.^[14] Higher education levels also correlated with increased self-medication, as noted by Machado-Alba JE et al.^[15] and Awad A et al.^[16]
- **Employment & Socioeconomic Status:** Unemployed individuals self-medicated more frequently, though no significant statistical link was found with financial status. Choudhary et al. (2022) highlighted affordability concerns as a key factor.^[17]
- **Sources & Common Medications:** Family, friends, and pharmacists were the primary sources of drug information, in line with studies by Jawarkar A et al.^[18] and Sarahroodi S et al.^[19] Headaches and fever were the most common ailments treated with self-medication, typically using analgesics and antipyretics, as also reported by Limaye D et al. [20] and Selvaraj K et al.^[21]
- **Believe in self medication and advice to others –** In this study, 44% of participants believed that self-medication is safe, and 25% stated that they would advise others to self-medicate. In comparison, a study by Rashid et al. (2014) found that 66.6% of self-medicating individuals considered self-medication safe, while 73.8%

reported that they would recommend it to others.^[7]

CONCLUSION

These findings emphasize the widespread nature of self-medication and its influencing factors, highlighting the need for awareness and regulation.

Conclusion This study highlights the widespread practice of self-medication in Bareilly, Uttar Pradesh, with a prevalence of 80%, posing a significant public health challenge. While common, self-medication carries risks that necessitate structured interventions to promote safer healthcare practices. Addressing the socio-cultural and economic drivers of this behavior is crucial for effective policy implementation.

Findings indicate that younger individuals are more likely to self-medicate, and higher education levels, rather than preventing the practice, appear to contribute to it. Most individuals relied on family, friends, and pharmacists for medication access. To curb the unregulated sale of pharmaceuticals, strict oversight, routine inspections, and regulatory audits are essential. Further research is needed to develop targeted educational programs and improve health outcomes.

These findings emphasize the widespread nature of self-medication and its influencing factors, highlighting the need for awareness and regulation.

Conclusion This study highlights the widespread practice of self-medication in Bareilly, Uttar Pradesh, with a prevalence of 80%, posing a significant public health challenge. While common, self-medication carries risks that necessitate structured interventions to promote safer healthcare practices. Addressing the socio-cultural and economic drivers of this behavior is crucial for effective policy implementation.

Findings indicate that younger individuals are more likely to self-medicate, and higher education levels, rather than preventing the practice, appear to contribute to it. Most individuals relied on family, friends, and pharmacists for medication access. To curb the unregulated sale of pharmaceuticals, strict oversight, routine inspections, and regulatory audits are essential. Further research is needed to develop targeted educational programs and improve health outcomes.

Limitations: Only adopted communities participating in family adoption programs were included for this study. Only adopted communities participating in family adoption programs were included for this study.

Acknowledgment-This study would not have been feasible without the assistance of the community medicine department field workers at RMCH Medical College, for which we are grateful.

Conflict of Interest -None declared.

Funding: The study was not supported by any grants and funds

REFERENCES

1. World Health Organization. Guidelines for the Regulatory Assessment of Medicinal Products for Use in Self-medication. (2000). Available online at: <https://apps.who.int/iris/handle/10665/66154> (accessed January 05, 2023).
2. Rathod P et al. Prevalence, Pattern, and Reasons for Self-Medication: A Community-Based Cross-Sectional Study From Central India. *Cureus* 2023 Jan 18;15(1):e33917.
3. Jain, S., Thakur A., Peepre, K., Kaushal, S., & Kasar, P. Prevalence of self-medication practices among the residents of urban slums located near govt. medical college, Jabalpur. *International Journal Of Community Medicine And Public Health* 2018; 5(2): 811–17. <https://doi.org/10.18203/2394-6040.ijcmph20180274>
4. Bennadi D. Self-medication: A current challenge. *J Basic Clin Pharm.* 2013 Dec;5(1):19-23. doi: 10.4103/0976-0105.128253. PMID: 24808684; PMCID: PMC4012703.
5. Ahmad A, Patel I, Mohanta G, Balkrishnan R. Evaluation of self medication practices in rural area of town sahaswan at northern India. *Ann Med Health Sci Res.* 2014 Jul;4(Suppl 2):S73-8. doi: 10.4103/2141-9248.138012. PMID: 25184092; PMCID: PMC4145522.
6. Limaye D, Limaye V, Fortwengel G, Krause G: Self-medication practices in urban and rural areas of western India: a cross sectional study. *Int J Community Med Public Health* 2018; 5:2672-85.
7. Rashid M, Chhabra M, Kashyap A, Undela K, Gudi SK. Prevalence and predictors of self-medication practices in India: a systematic literature review and meta-analysis. *Current clinical pharmacology* 2020 Aug 1;15(2):90-101.
8. Al Rasheed A, Yagoub U, Alkhashan H, Abdelhay O, Alawwad A, Al Aboud A, Al Battal S. Prevalence and Predictors of Self-Medication with Antibiotics in Al Wazarat Health Center, Riyadh City, KSA. *BioMed research international.* 2016;2016(1):3916874.
9. Saha A, Marma KKS, Rashid A, Tarannum N, Das S, Chowdhury T, et al. Risk factors associated with self-medication among the indigenous communities of Chittagong Hill Tracts, Bangladesh. *PLoS ONE* 2022 ;17(6): e0269622. <https://doi.org/10.1371/journal.pone.0269622>
10. Marak A, Borah M, Bhattacharyya H, Talukdar K. A cross sectional study on self-medication practices among the rural population of Meghalaya. *International J Med Sci Public Health* 2016;5(6):1134-8.
11. Shamsudeen, Shaik Mohamed; Priya, R. Shanmugal; Sujatha, Govindarajan2; Muruganandhan, J.2.; Manikandan, K.3. Self-medication with antibiotics: A knowledge, attitude, and practice appraisal of 610 dental patients in Chennai, India, from 2016 to 2017. *Journal of Education and Health Promotion* 7(1):p 66, | DOI: 10.4103/jehp.jehp_143_17
12. Trisha SM, Ahmed SB, Uddin MF, Tabassum TT, Gupta M, Samiha M, Moulee ST, Al Sakir DI, Podder V, Agarwala RK, Agarwala N. Prevalence, knowledge, causes, and practices of self-medication during the COVID-19 pandemic in Bangladesh: a cross-sectional survey. *Cureus.* 2024 Jan 10;16(1).
13. Kumar N, Kanchan T, Unnikrishnan B, Rekha T, Mithra P, Kulkarni V, Papanna MK, Holla R, Uppal S. Perceptions and practices of self-medication among medical students in coastal South India. *PloS one.* 2013 Aug 28;8(8):e72247.
14. Alghanim SA. Self-medication practice among patients in a public health care system. *East Mediterr Health J.* 2011 May 1;17(5):409-16.
15. Machado-Alba JE, Echeverri-Cataño LF, Londoño-Builes MJ, Moreno-Gutiérrez PA, Ochoa-Orozco SA, Ruiz-Villa JO. Social, cultural and economic factors associated with self-medication. *Biomédica.* 2014 Dec;34(4):580-8.
16. Awad AI, Eltayeb IB, Capps PA. Self-medication practices in Khartoum state, Sudan. *European journal of clinical pharmacology.* 2006 Apr;62:317-24.

17. Chaudhry B, Azhar S, Jamshed S, Ahmed J, Khan LU, Saeed Z, Madléna M, Gajdács M, Rasheed A. Factors associated with self-medication during the COVID-19 pandemic: a cross-sectional study in Pakistan. *Tropical medicine and infectious disease*. 2022 Nov;7(11):330.
18. Jawarkar AK, Wasnik VR, Anuradha K. Self medication practices amongst elderly population in an urban health center of Amravati District of Maharashtra, India. *Journal of the Indian Academy of Geriatrics*. 2017 Jul 1;13(3):118-23.
19. Sarahroodi S, Maleki-Jamshid A, Sawalha AF, Mikaili P, Safaeian L. Pattern of self-medication with analgesics among Iranian University students in central Iran. *Journal of Family and Community Medicine*. 2012 May 1;19(2):125-9.
20. Limaye D, Limaye V, Krause G, Fortwengel G. A systematic review of the literature on survey questionnaires to assess self-medication practices. *International Journal of Community Medicine and Public Health*. 2017;2017(4(8)):2620-31.
21. Selvaraj K, Kumar SG, Ramalingam A. Prevalence of self-medication practices and its associated factors in Urban Puducherry, India. *Perspectives in clinical research*. 2014 Jan 1;5(1):32-6.