# Navigating Health Information Online; Self-Medication Practices and Digital Platform Use among Urban Adults in Central India: A Mixed Method Study

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***Abstract*—Introduction: Self-medication is a major public health issue in India, with high prevalence among urban adults. Use of digital platforms for health information has further exacerbated this trend. This study aimed to investigate the prevalence, reasons and associated factors of self-medication among urban adults in Central India, with special focus on the use of digital platforms.**

**Methodology: A mixed-method study was conducted among 370 urban adults in Central India. A predesigned, pretested proforma was used to collect quantitative data and in-depth interviews were conducted with 18 participants who used digital platforms for self-medication**

**Results: The prevalence of self-medication was found to be 57.03%. Sociodemographic factors such as age ≤ 38 years, nuclear family, educated ≥ High school and higher socioeconomic class were significantly associated with self-medication. The most common sources of information for self-medication were pharmacies (42.18%) and digital platforms (18.00%). Antipyretics, analgesics and antibiotics were the most commonly used medications. The qualitative data revealed themes such as perceived convenience and accessibility, information seeking and decision-making processes, empowerment and autonomy, systemic factors and psychological and emotional factors.**

**Conclusion: The study highlights the need for targeted interventions to promote responsible medication use and reduce the risks associated with self-medication. Strengthening regulatory frameworks and improving the quality of healthcare services can also help reduce the prevalence of self-medication.**

***Index Terms*—Self-Medication, Digital Platforms, mixed-method study**

## I. INTRODUCTION

Self-medication has been one of the major public health issues in countries where populations are diverse, such as India. Self-medication refers to the use of a drug without consulting a doctor, generally for minor ailments or as a time-saving measure. The World Health Organization defines self-medication as "use of pharmaceutical or medicinal products by the consumer to treat self-recognized disorders or symptoms, the intermittent or continued use of a medication previously prescribed by a physician for chronic or recurring disease or symptom, or the use of medication recommended by lay sources or health workers not entitled to prescribe medicine."[22] The problem of self-medication is felt across the world. Based on recent research for 2024-2025, the prevalence of self-medication in India is high, likely around 60-65%, with various socio-economic and accessibility factors driving this trend.

Self-medication is a cheaper and time-saving alternative to those who cannot afford clinical service for some reason or the other. Adults are increasingly using digital media for health information. This trend driven by easy access to health information and a desire for quick relief. They consult search engines (google), health websites, social media (Facebook, WhatsApp, Instagram, You Tube), Mobile health apps and online pharmacies[19]. This trend carries serious

risks like misdiagnosis, incorrect dosages, adverse drug reactions and antibiotic resistance. Relying on online information can also delay proper medical care and even lead to addiction. All these factors ultimately increase the burden of morbidity and cost of health care seeking. This understandably results in increasing numbers of treatment failures. Therefore, a critical approach is essential to avoid the dangers of uninformed self-medication.

With this background, the present study was conducted to find out the prevalence, reasons and associated factors of self-medication with special reference to use of digital platforms.

## II. AIM & OBJECTIVES

1. To estimate the prevalence of self- medication among urban adults of central India
2. To explore reasons and associated factors of self-medication among study participants
3. To study various aspects for use of digital platforms for self- medication

## III. MATERIALS AND METHODS

The present community-based Explanatory Mixed Method study was conducted in an urban field practice area of a tertiary health care centre in Central India from January 2025 to January 2026.

All individual of ≥18 years of age were enrolled for the study. Doctors, pharmacists, and other healthcare workers with knowledge of medications, and those who were seriously ill or with psychological illness were excluded.

Sample size: Considering the prevalence of self-medication practices to be 60% as per the study conducted by Rathod P et al. (2023)[3], the estimated sample size was calculated to be 370 using the Cochren's formula with absolute precision of 5% & at 95% CI.

Sampling technique: A simple random sampling was used for selection of households for quantitative data. All individual of ≥18 years of age present in the household at the time of the house-to-house survey, were interviewed using the face-to-face interview. A predesigned, pretested proforma in a vernacular language (Hindi or Marathi) was used for quantitative data.

The proforma consisted of two sections (Part A & B). Questions seeking information on participants' sociodemographic characteristics, such as age, residence, religion, marital status, education, type of family, and socioeconomic status constituted part A. Socioeconomic status was assessed by using Modified Kuppuswamy scale, 2024[5,6]. Part B comprised questions dealing with self-medication practices during the last three months, including frequency and patterns of self-medication, types of medicines used, reasons for the same.

For the qualitative data, in-depth interview was conducted for them who gave reason as using digital media platform for self-medication and were willing to talk freely till the point of saturation achieved.

The study obtained clearance from the Institutional Ethics Committee. Informed consent of participants was taken and confidentiality was maintained throughout the study.

Operational definition[5]:

Self-Medication was considered to be present if, a study subject took any allopathic medication (which require doctor's prescription as per Government rule) without consultation of a doctor or used an expired prescription for even one instance in the last three month to procure them and use. Medicines that do not require a prescription from a registered medical practitioner to be used, as per government rule (i.e. OTC drugs), were not considered as self-medication for the study.

Statistical analysis: Data was entered in MS Excel window version 11 and analysed by using Open-Epi Software. Descriptive statistics, quantitative variables were measured as Mean, Standard Deviation, Range. Bar chart & pie chart were used to summarise baseline characteristics of the study participants. Association between two categorical variables were analysed by using Chi-square ($X^2$) test; p value < 0.05 was considered to be statistically significant, Odds Ratio was calculated. Manual content analysis was done.

Themes in Qualitative Analysis of Self-Medication via Digital Platforms in Adults:

1. Perceived Convenience and Accessibility
2. Information Seeking and Decision-Making Processes
3. Empowerment and Autonomy
4. Systemic Factors and Healthcare Accessibility

5. Ethical Considerations and Privacy
6. Psychological and Emotional Factors

## IV. RESULTS

Total 370 participants were enrolled in the study among which 212 (57.30%) were females. Maximum were in the age group of 28-38 years 85 (22.97 %) followed by 48- 58 years 63 (22.70%). The Mean age is 40.78 years & SD is ± 14.12. Maximum 183 (49.46%) were from nuclear family, 210 (56.76%) were Hindu, 269 (72.70%) were married and 186 (50.26%) were educated upto high school, 90 (24.32%) were from class III.

Table 1: Sociodemographic characteristics of the study participants (n= 370)

| Variables | | No | % |
|---|---|---|---|
| Age (completed years) | 18-28 | 91 | 24.59 |
| | 28-38 | 85 | 22.97 |
| | 38-48 | 70 | 18.92 |
| | 48-58 | 63 | 17.03 |
| | ≥ 58 | 61 | 16.49 |
| Gender | Male | 158 | 42.70 |
| | Female | 212 | 57.30 |
| Religion | Hindu | 210 | 56.76 |
| | Muslim | 101 | 27.30 |
| | Sikh | 54 | 14.59 |
| | Others | 05 | 01.35 |
| Marital status | Married | 269 | 72.70 |
| | Unmarried | 65 | 17.57 |
| | Widow/ widower | 36 | 09.73 |
| Type of family | Nuclear | 183 | 49.46 |
| | Joint | 138 | 37.30 |
| | Three generation | 49 | 13.24 |
| Educational status | Illiterate | 57 | 15.41 |
| | Primary | 46 | 12.43 |
| | Middle School | 81 | 21.90 |
| | ≥ High school | 186 | 50.26 |
| Socio-economic class (Modified Kuppuswamy socioeconomic scale, 2024) | Upper (I) | 56 | 15.14 |
| | Upper Middle (II) | 62 | 16.76 |
| | Lower Middle (III) | 90 | 24.32 |
| | Upper Lower (IV) | 83 | 22.43 |
| | Lower (V) | 79 | 21.35 |

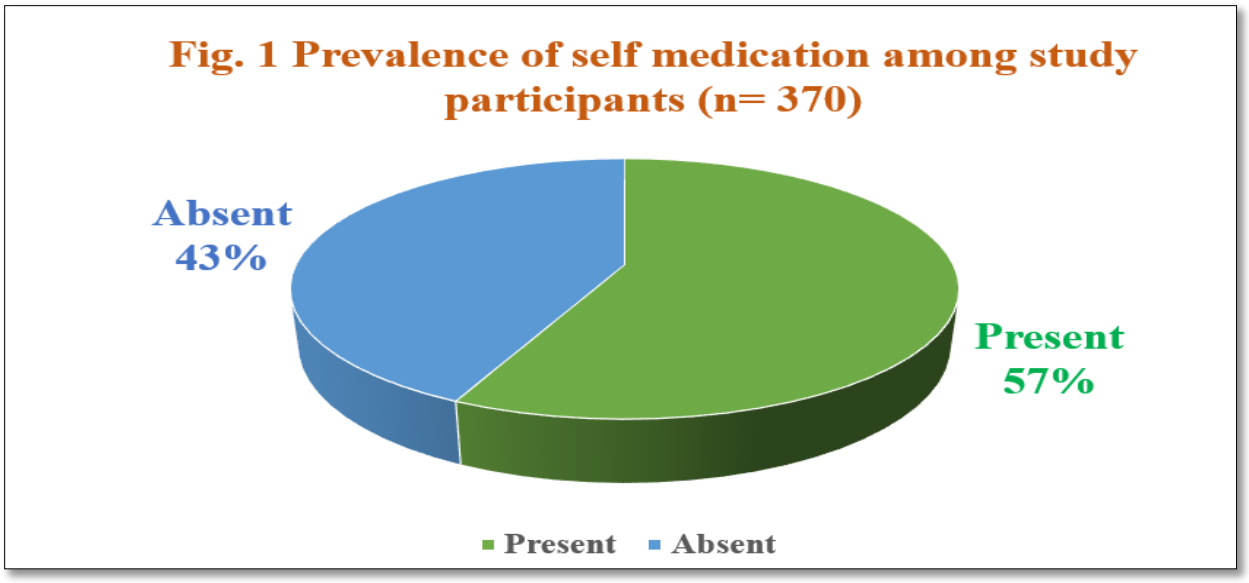
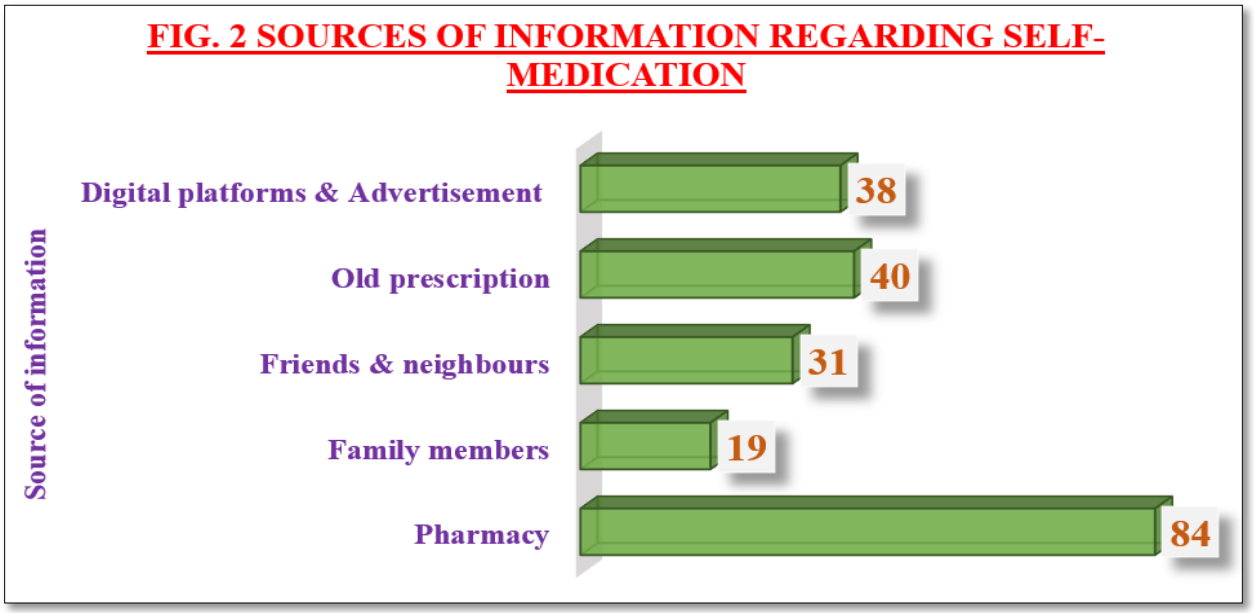



Table 2: Details of participants practicing self-medication (n=211)

| Variables | | No | % |
|---|---|---|---|
| Source of information | Pharmacy | 89 | 42.18 |
| | Family members | 53 | 25.11 |
| | Friends & neighbours | 41 | 19.43 |
| | Old prescription | 77 | 36.49 |
| | Digital platforms & Advertisement | 38 | 18.00 |
| Type of drugs | Antipyretics | 103 | 48.81 |
| | Analgesics | 87 | 41.23 |
| | Antibiotics | 141 | 66.82 |
| | Antihistaminic | 79 | 37.44 |
| | Antacid | 62 | 29.38 |
| | Multivitamins/ Multimineral | 125 | 59.24 |
| Reasons for self-medication | Previous experience | 63 | 29.86 |
| | Advice from pharmacist | 85 | 40.28 |
| | Easy availability | 100 | 47.39 |
| | Distance from health facility | 41 | 19.43 |
| | Saves time | 120 | 56.87 |
| | High doctor's fees | 71 | 33.65 |
| | Advices from family members/ friends | 39 | 18.48 |
| | Advertisements via Digital platforms | 38 | 18.00 |
| | Urgency of situation | 23 | 10.90 |
| | Thinking problem is not severe | 63 | 29.86 |

| | | | |
|---|---|---|---|
| Source of procurement of the medicine (s) used | Pharmacy Without prescription | 167 | 79.15 |
| | Using old prescription | 77 | 36.49 |
| | Provided by family members/ friends | 41 | 19.43 |




Prevalence of self- medication among urban adults was found to be 57.03% (211/370) (Fig. 1) Sociodemographic factors such as age ≤ 38 years (OR= 2.08), nuclear family (OR= 0.19), educated ≥ High school (OR= 4.60) & high socioeconomic class (OR= 2.18) were found to be statistically significant (Table 3).

Table 3: Association of self-medication practice with socio-demographic variables (n= 370)

| Variables | | Self- medication | | OR | 95% CI | P |
|---|---|---|---|---|---|---|
| | | Present | Absent | | | |
| Age (completed years) | ≤ 38 years | 119 | 61 | 2.08 | 1.366, 3.162 | 0.0008 |
| | > 38 years | 92 | 98 | | | |
| Gender | Male | 98 | 60 | 1.43 | 0.9407, 2.177 | 0.1163 |
| | Female | 113 | 99 | | | |
| Type of family | Joint/ Three Generation | 142 | 45 | 5.21 | 3.327, 8.17 | <0.0001 |
| | Nuclear | 69 | 114 | | | |
| Educational status | ≥ High school | 139 | 47 | 4.6 | 2.952, 7.171 | <0.0001 |
| | < High school | 72 | 112 | | | |
| Socio-economic class | I, II, III | 132 | 69 | 2.18 | 1.433, 3.316 | 0.0003 |
| | IV, V | 79 | 90 | | | |

For qualitative data, in-depth interviews of 18 participants were conducted.

| Table 4: Content analysis for use of digital platforms for self- medication | | |
|---|---|---|
| Themes | Categories | Codes (Number of respondents) |
| 1. Perceived Convenience and Accessibility | Ease of Access to Information | 1. Immediate availability (Google, social media, health apps) (10)<br>2. Quickly look up symptoms, potential remedies and drug information without visit (8) |
| | Time and Cost Savings | 1. Avoiding doctor's appointments (11)<br>2. No long waiting times (7)<br>3. No consultation fees (12) |
| | 24/7 Availability | Available at any time, day or night (15) |
| 2. Information Seeking and Decision-Making Processes | Reliability and Trustworthy | Personal testimonials on social media (6) |
| | *Dr. Google Syndrome and Self-Diagnosis | process of comparing symptoms, cross-referencing information, and arriving at a conclusion (5) |
| | Influence of Peers and Social Networks | Advice, recommendations, and shared experiences from friends, family, or online groups with their past successful experiences (10) |
| 3. Empowerment and Autonomy | Feeling Empowered and Proactive | 1. Feeling of control of their health (3)<br>2. Sense of self-efficacy (2) |
| 4. Systemic Factors and Healthcare Accessibility | Dissatisfaction with Traditional Healthcare | 1. Long wait times (12)<br>2. High costs of consultation (13)<br>3. Perceived rushed appointments (11)<br>4. Not availability of medications at health care centres (7)<br>5. Feeling of not being heard by healthcare professionals (10) |
| | Regulatory Loopholes and Oversight | Purchasing medications online without proper prescriptions (13) |
| 5. Ethical Considerations and Privacy | Data Privacy and Security | Non- sharing with other people (5) |
| | Commercial Influences and Advertising | Impact of online advertisements and influencer (16) |
| 6. Psychological and Emotional Factors | Anxiety and Urgency | The anxiety associated with waiting for a doctor's appointment (3) |
| | Self-Consciousness or Embarrassment | Discussion with a healthcare professional (2) |
| | Sense of Control | Quickly address a health issue can provide a sense of control and reduce feelings of helplessness (7) |

*Dr. Google syndrome," also known as cyberchondria, refers to the anxiety and distress caused by excessive online health searches, particularly for symptoms and potential illnesses. It's characterized by a tendency to jump to worst-case scenarios based on online information, leading to heightened health anxiety and sometimes even hypochondria.

## V. DISCUSSION

Total 370 participants were enrolled in the study among which 212 (57.30%) were females. Maximum were in the age group of 28-38 years 85 (22.97 %) the Mean age is 40.78 years & SD is ± 14.12. Maximum 183 (49.46%) were from nuclear family, 210 (56.76%)

were Hindu, 269 (72.70%) were married and 186 (50.26%) were educated upto high school, 90 (24.32%) were from class III, similar findings were seen in studies conducted by Amrita S (2025)[1], Chavhan G (2025)[2], Chavhan (2023)[5] and Shastri A (2023)[6].

The findings of our study reveal a concerning prevalence of self-medication practices among urban adults, consistent with previous research conducted in various regions of India. The high rates of self-medication observed in our study are in line with those reported in studies from Telangana (73%), Rajasthan (73.8%), and Delhi (92.8%)[14,16,16,18]. These findings suggest that self-medication is a widespread issue in India, with varying proportions across different states.

The reasons behind self-medication practices in our study population are multifaceted. Similar to previous studies, past experience with a specific medication was a significant factor influencing self-medication behaviour. For instance, a study from Karnataka reported that 32.1% of participants self-medicated based on previous good experiences with a particular medicine, while a study from Delhi found this proportion to be 46.5%[18,20]. Additionally, our study highlights that the cost & time saving, easy availability, previous experience, perception of illness severity plays a crucial role in self-medication decisions.

The study highlights the high prevalence of self-medication with a significant proportion of participants using digital platforms to inform their self-medication decisions. The findings suggest that self-medication is a complex issue influenced by various factors, including sociodemographic characteristics, perceived convenience and accessibility, information seeking and decision-making processes, empowerment and autonomy, systemic factors, and psychological and emotional factors.

The types of medications used in self-medication practices in our study are consistent with those reported in previous research. Antipyretics, analgesics, and antibiotics were the most commonly used medications, which is concerning given the potential risks associated with their misuse[19]. The overuse and misuse of antibiotics, in particular, contribute to the growing problem of antibiotic resistance, which has significant implications for public health.

Our study's findings underscore the need for targeted interventions to address the issue of self-medication in India. These interventions should focus on raising awareness about the risks associated with self-medication, promoting responsible medication use and strengthening regulatory frameworks to ensure the safe sale and use of medications.

## VI. CONCLUSION & RECOMMENDATIONS

The study used a mixed-method approach, combining quantitative and qualitative data to investigate self-medication practices among urban adults in Central India. A total of 370 participants were surveyed using a pre-designed questionnaire, and in-depth interviews were conducted with 18 participants who used digital platforms for self-medication.

The quantitative study found that the prevalence of self-medication was 57.03%. Sociodemographic factors such as age, education, and socioeconomic class were significantly associated with self-medication practices. The most common sources of information for self-medication were pharmacies and digital platforms.

The qualitative study revealed several themes, including perceived convenience and accessibility, information seeking and decision-making processes, empowerment and autonomy, and systemic factors. Participants reported using digital platforms to quickly access health information and avoid doctor's appointments. They also felt empowered and in control of their health by self-medicating. However, some participants reported dissatisfaction with traditional healthcare services and regulatory loopholes.

The study's findings highlight the need for targeted interventions to promote responsible medication use and reduce the risks associated with self-medication. Based on the study's results, it is recommended that policymakers and healthcare professionals prioritize educating the public about the potential risks and benefits of self-medication.

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