

Understanding the Utilization and Behaviors Surrounding Over-the-Counter (OTC) Medications in Rural Communities

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ABSTRACT:

Background: The primary objective of this research was to evaluate the understanding, viewpoints, and behaviors of over-the-counter (OTC) medication usage within rural communities. Additionally, we sought to identify the most common reasons for using OTC drugs in these areas. **Methods:** A cross-sectional investigation spanning six months was conducted, employing a self-administered questionnaire that had been pre-validated. This questionnaire was designed by drawing upon prior research to gather data concerning the following: the utilization patterns of over-the-counter (OTC) medications, the motives and circumstances behind OTC drug usage, and a comprehensive list of commonly self-administered drugs. **Results:** Out of the 140 participants in the study, a significant 69% demonstrated awareness of over-the-counter (OTC) drugs. On average, they engaged in self-medication with OTC drugs approximately seven times in the past year. The primary motivation for their OTC drug use was cost-effectiveness, with a striking 93% of individuals citing affordability as the leading factor. Among the OTC drugs, analgesics and antipyretics stood out as the most commonly self-administered class, with 100% of participants using them, followed closely by antacids at 81%. Pain and fever emerged as the most prevalent reasons for OTC drug use, with headaches as the second most common indication, and coughs and colds as the third. **Conclusion:** The results of this cross-sectional study reveal that the utilization of over-the-counter (OTC) drugs is highly prevalent within rural communities, largely due to the ready accessibility of these medications. However, a substantial proportion of individuals lack awareness regarding the potential side effects of the medications they self-administer and recommend to others. Consequently, there is a pressing need to raise awareness among rural populations about the adverse effects of OTC drugs in order to avert unforeseen consequences.

Keywords: Over the counter drugs, Self medication, OTC drugs, Practices, Rural population.

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INTRODUCTION

The practice of self-medication is deeply rooted on a global scale, with significant influence, especially in developing countries¹. Self-medication is commonly defined as the use of medicinal products by individuals to address self-identified health issues, symptoms, or even the continued use of a medication originally prescribed by a healthcare professional, a practice observed widely in countries like India. According to the World Health Organization (WHO, 2000), the concept of self-medication encompasses several aspects, including obtaining medications without a valid prescription, using old prescriptions to obtain medicines, sharing medicines with relatives or members of one's social network, and utilizing leftover medications stored at home². Self-medication plays a crucial role in self-care through medication, and it can be considered the primary healthcare resource for the general population. This encompasses self-medication, non-therapeutic self-treatment, social support during illness, and everyday first aid, as defined by the World Health Organization (WHO, 2000)³. In countries like India, the shortcomings in the pharmaceutical regulatory system contribute to the oversupply and easy accessibility of a wide range of drugs, even those with limited

evidence of their safe and effective use. Another significant factor contributing to the misuse and overuse of drugs in India is the presence of a disadvantaged population with low levels of literacy. This misuse and overuse not only lead to poor health outcomes and the development of antibiotic resistance but also endanger the well-being of the entire community⁴. These self-medication drugs are often referred to as Non-Prescription Drugs or Over-the-Counter (OTC) Drugs and are readily available at pharmacies without the need for a valid doctor's prescription. Self-medication without a valid prescription is rarely considered "responsible" self-medication, which distinguishes it from the practice of purchasing and using prescription medications without a valid doctor's prescription⁵. Self-medication can provide a cost-effective alternative to clinical services for those who cannot afford high consultation fees. When used correctly, self-medication can reduce the burden on healthcare professionals and enhance health awareness among the general population. However, when self-medication is misused, it has the potential to lead to misdiagnosis, inappropriate treatment, and can result in toxicity, adverse effects, drug interactions, and unnecessary expenses⁶. As the socio-economic status of individuals

improves, more people are inclined to take personal responsibility for their health and seek accurate information from reliable professional sources to make informed and timely decisions regarding their well-being. Pharmacists play a pivotal role in offering valuable assistance, providing sound advice, and imparting information about the availability of medications for self-medication. Furthermore, the internet has become a crucial resource for obtaining information on health-related matters, offering significant support to individuals in managing their self-care. It's important to note that the nature and extent of self-medication, as well as the motivations behind its practice, can vary significantly from one geographical region to another. Therefore, there is a critical need to understand the knowledge, attitudes, and behaviors related to over-the-counter (OTC) medicines among rural populations.⁷ This knowledge can inform the development of appropriate educational, regulatory, and administrative measures aimed at mitigating the public health risks stemming from improper self-medication practices. Currently, there is a lack of data regarding the current status of self-medication practices among rural populations. The objective of the present study is to generate this data, shedding light on the prevailing practices and facilitating evidence-based interventions to enhance healthcare outcomes in rural areas.

MATERIALS AND METHODS

This cross-sectional study spanned a period of six months and utilized a self-administered, pre-validated questionnaire. The questionnaire was developed based on previous research and underwent a two-step validation process. First, it was reviewed by

experienced pharmacy academicians, and second, a pilot study involving 20 participants was conducted to gather feedback from the target population. The questionnaire aimed to collect information related to the utilization of over-the-counter (OTC) drugs, the motivations and indications for OTC drug use, and a list of commonly used self-medication drugs. The investigators were present to provide assistance to the respondents if needed. Additionally, any medical terminology that was not understood by the study participants was explained to ensure clarity.⁸

Data collected from 140 individuals from rural areas were entered into an Excel spreadsheet and analyzed using appropriate statistical methods. Participants who were below 18 years of age and those who declined to participate after being briefed about the study and providing their written consent were excluded from the study.

RESULTS

Among the 140 study participants, a significant 96 individuals (69%) were aware of over-the-counter (OTC) drugs. On average, they practiced self-medication with OTC drugs approximately seven times in the past year. Notably, a majority of 93% cited affordability as the primary reason for their OTC drug use, while none reported time-saving as a motive. In terms of indications for using OTC drugs, pain and fever were the most frequently reported, with headaches as the second most common indication. Cough and cold symptoms were also highly prevalent, with a frequency of 100%. Other indications for self-medication included vomiting and stomach pain (4%), constipation (3%), as well as minor issues like skin problems, indigestion, and minor cuts (1%).

Table 1: Indications for using OTC drugs

| | |
|----------------|----------|
| Pain | 140(100) |
| Fever | 140(100) |
| Headache | 134(96) |
| Cough and cold | 78(56) |
| Vomiting | 6(4) |
| Stomach pain | 6(4) |
| Constipation | 4(3) |
| Skin problem | 2(1) |
| Indigestion | 2(1) |
| Minor cuts | 2(1) |

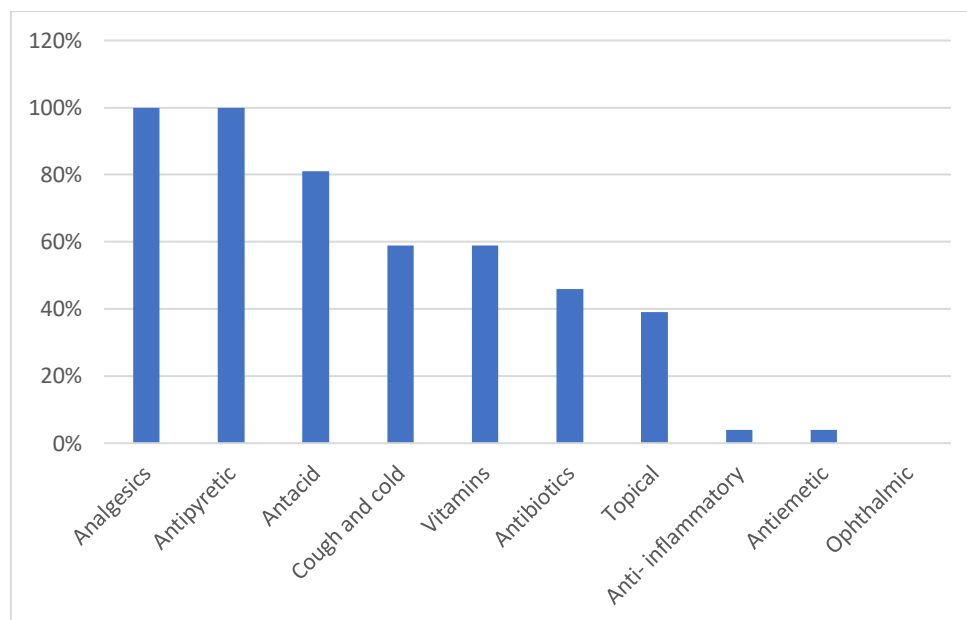
The majority of participants engaged in self-medication primarily with analgesics and antipyretics (100%), indicating these medications were widely used for pain and fever management. Following closely were antacids, with 81% of participants using them for digestive issues. Additionally, a significant portion of participants, 59%, reported self-medicating with vitamins and cough/cold preparations,

highlighting the use of these products for overall health and managing common respiratory symptoms. A notable percentage, 46%, also self-medicated with antibiotics, which warrants attention as the use of antibiotics without proper medical guidance can contribute to antibiotic resistance and other health risks.

Table 2: Types of drugs used for self-medication among rural population

| | |
|-------------|-------|
| Analgesics | 100 % |
| Antipyretic | 100 % |

| | |
|-------------------|------|
| Antacid | 81 % |
| Cough and cold | 59 % |
| Vitamins | 59 % |
| Antibiotics | 46 % |
| Topical | 39 % |
| Anti-inflammatory | 4 % |
| Antiemetic | 4 % |
| Ophthalmic | 0 % |



While considering the attitude and practices of self-medication it was found that a majority of study participants occasionally 50(36%) read the instructions given on the product label and over 42(30%) of them never reads the instructions that are given on the product label. In case of checking the expiry date of the drug before use 54(39%) always check the expiry date before using the drug and 42(30%) of participants never checks the expiry date⁹. The main reason for consuming the OTC drugs majority of participants 128(91%) agreed was whenever they feel sick and only handful 12(9%) of them said that they consume OTC drugs when symptoms are minor/manageable. Surprisingly a large number of participants over 132(94%) not ever takes OTC drugs more than therecommended dose only a minor number 4(6%) agreed that they takes OTC drugs more than the recommended dose.

DISCUSSION

We would like to express our gratitude for the active participation of the study participants. In surveys where self-administered questionnaires are employed, the quality of the results heavily relies on the responses provided by the participants¹⁰. A high response rate ensures that the findings closely reflect the behavior and mental state of the population under study. This study has revealed that the practice of self-medication with over-the-counter (OTC) drugs is highly prevalent among the rural population. Out of

the 70 individuals who responded to our questionnaire, a remarkable 98.56% reported using one or more OTC drugs in the past year. These findings align with the results of a study conducted by Verma et al¹¹. in North India in 2010. Furthermore, our study identified the primary reasons for self-medication, with cost-effectiveness, easy accessibility, safety, and tolerability being the most commonly cited factors, at 93%, 54%, and 31%, respectively. These findings are in line with previous international studies conducted by Abay & Amelo (2010), Belachew Gutema et al. (2011), Kumar et al. (2013), and Yu et al. (2014). Regarding the types of drugs self-medicated by the majority of the population, antipyretics and analgesics emerged as the most common, a pattern consistent with earlier research conducted in India, Egypt, and Ethiopia. Similarly, the most prevalent indication for self-medication with OTC drugs in our study was the management of pain and fever, mirroring the findings of Kayalvizhi & Senapathi's study in the Tamil Nadu population in 2010¹². In our study, it was observed that cough and cold medications, along with vitamins, were more commonly consumed than antibiotics by the respondents. The percentage of OTC drug consumption was relatively higher in our results compared to other studies conducted in India. The use of antibiotics for self-medication was found to be similar, if not higher, compared to trends in other developing countries. This notable increase in

antibiotic use for self-medication is a cause for concern as it can contribute to antibiotic resistance, a major public health issue.

Assessing the attitudes and practices of OTC drug self-medication, it was evident that a very low percentage of the population reads the instructions printed on the product label, falling below 50%. About one-third of users admitted to never reading the instructions¹³. Similarly, there was limited interest in checking the expiry date of the drug. Only 39% of people always checked the expiry date before using the drug, and 30% of participants did not bother to verify the expiry date. This lack of awareness about dosages and expiry dates can unknowingly put individuals at risk of drug overuse, which can have harmful consequences. The study also aimed to understand the primary reasons for OTC drug consumption. It was found that the majority of participants resorted to OTC self-medication whenever they felt sick, while less than 10% used it for minor and manageable symptoms. This highlights the concerning trend of using drugs unnecessarily in the majority of cases.

Additionally, 61% of respondents reported a habit of immediately discarding a drug as soon as they noticed a change in its shape, color, or odor, which can lead to unnecessary waste and possibly deprive them of effective medication. The high prevalence of self-medication with over-the-counter (OTC) drugs can be attributed to several factors. Firstly, pharmacists are more readily available compared to doctors, making it convenient for individuals to seek medication advice and purchase OTC drugs. Secondly, the cost associated with visiting a doctor, including consultation fees, may deter some individuals, leading them to opt for self-medication¹⁴. Thirdly, the low doctor-patient ratio, as outlined by the World Health Organization in 2007, contributes to the limited accessibility of healthcare professionals, making self-medication a more practical option. Surprisingly, the current study revealed 100% satisfaction with no reported side effects in response to the question, "Have you experienced any side effects from the use of OTC drugs?" This may be attributed to the safe use and proper storage of drugs by the population, as well as their preference for OTC drugs with a lower likelihood of adverse effects. Self-medication, including the use of OTC drugs, is an increasingly important aspect of healthcare. The World Health Organization recognizes self-medication as part of self-care, which helps alleviate the burden on the healthcare system. To support safe self-medication, the World Health Organization provides guidelines for the regulatory assessment of medicinal products intended for self-medication. The current trend is to expand the list of OTC medicines and increase the availability of controlled drugs, which grants individuals more freedom and choice in making informed treatment decisions.

CONCLUSION

This cross-sectional study has revealed that the use of over-the-counter (OTC) drugs is widespread among the rural population, primarily due to the easy availability of these medications. However, a significant portion of individuals is unaware of the potential side effects of the medicines they self-administer and recommend to others. Therefore, it is crucial to raise awareness about the adverse effects of OTC drugs within the rural population to prevent undesirable consequences. By providing education and information on safe OTC drug usage, we can promote better healthcare practices and outcomes in these communities.

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