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## Investigating the understanding, beliefs, and behaviors regarding over-the-counter (OTC) medications among rural communities: An analysis using cross-sectional research

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### Abstract

**Aim:** The research aimed to assess the knowledge, attitudes, and behaviors concerning over-the-counter (OTC) medications in rural areas, while also identifying common reasons for their usage.

**Materials and Methods:** Conducted in Hazijonj & Sharasti, Chandpur, Bangladesh, from October 2023 to January 2024, the four-month cross-sectional study employed a pre-validated questionnaire to collect data. This questionnaire, aligned with previous research, aimed to understand OTC drug usage patterns, reasons behind their use, and commonly used self-medication drugs.

**Results:** Among 400 participants indicated a high awareness (91%) of OTC drugs, primarily driven by affordability (93%). Analgesics and antipyretics were the most frequently self-medicated drugs (100% prevalence), followed by antacids (90%). Pain and fever were the main reasons for OTC drug use, with headache, cough, and cold also prevalent. Regarding self-medication practices, a significant portion occasionally read product labels (36%), while a smaller percentage always checked expiry dates (31%). Most participants (91%) consumed OTC drugs when feeling unwell, and a majority (74%) consulted pharmacists before usage.

**Conclusion:** The study underscores the widespread use of OTC drugs in rural communities due to their easy accessibility. However, it also highlights a lack of awareness regarding potential side effects, emphasizing the need to educate rural populations about the risks associated with self-medication and the importance of pharmacist consultation.

**Keywords:** OTC drugs, rural population, rural area, self-medication

### Introduction

Globally, self-medication, a practice with roots tracing back in time, profoundly impacts developing nations like Bangladesh. Defined by the World Health Organization as using non-prescription or leftover medications to address self-identified health issues, self-medication encompasses various practices like purchasing without prescriptions, sharing drugs, or reusing past prescriptions. This aspect of self-care serves as a vital public health tool within healthcare systems, encompassing non-drug treatments, social support during illness, and basic first aid.

This accessibility fosters drug abuse and misuse, compounded by limited community understanding of medicine safety, leading to health risks, antibiotic resistance, and increased poverty. Over-the-Counter (OTC) medications, available without a doctor's prescription, and responsible self-medication with prescription drugs provide cost-effective alternatives, especially for those unable to afford formal treatments. Properly executed, self-medication can reduce doctor visits and raise public health awareness. Yet, misuse can result in adverse effects, drug interactions, unnecessary expenses, and delays in accurate diagnosis and treatment.

Presently, there's a growing trend toward individual responsibility in health management, with people seeking reliable information from experts to make informed treatment choices. Pharmacists play a crucial role in guiding and providing information on accessible self-medication options, while the internet, if used responsibly, serves as a valuable resource for health-related information aiding in self-care.

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Self-medication behaviours vary across countries, influenced by different motivations and the availability of resources. To mitigate health hazards linked to improper self-treatment, it's crucial to grasp the rural community's awareness, beliefs, and behaviours regarding non-prescription medications. Achieving this involves creating suitable educational, regulatory, and administrative strategies. This study aimed to collect data on self-medication habits within rural areas, given the lack of existing information on this topic.

- The present research aimed to assess what the rural population knows, how they feel, and what they typically do regarding over-the-counter drugs.
- Identifying common health issues for which individuals frequently use over-the-counter medications.
- Enumerating the main categories of medicines that they commonly use without a prescription.
- Providing a condensed overview of the frequency of adverse effects caused by over-the-counter medications.

### Methods

The research was a cross-sectional investigation conducted for six months from July 2023 to December 2023 in Hazigonj & Shahrasti, Chandpur, and Chittagong, Bangladesh.

Individuals aged between 15 and 69 residing in the Hazigonj & Shahrasti Village area were chosen as the participants for the study.

After thoroughly examining existing literature, an English questionnaire was devised, later translated into Bengali for local comprehension. The survey sections on sociodemographic data and self-medication patterns were split into two parts. Data collection took place in Hazigonj village, spanning six months. Prior to gathering any data, the research's objectives were explained, and written consent was obtained. Various details such as age, gender, education, occupation, income, self-medication habits, and reasons behind usage, common issues, and information sources were gathered. Each participant provided information through a questionnaire, followed by the distribution of a booklet containing information on risks, self-medication awareness, and potential adverse effects. Participants who were unable to read or had visual impairments received assistance in completing the questionnaire by having it read aloud to them. The information gathered was inputted into an Excel file and underwent suitable statistical examination.

### Results

Observations revealed diverse motivations for the use of over-the-counter (OTC) medications. A significant 75% of individuals opt for OTC drugs primarily because of their affordability, while 62% cite the convenience of easy accessibility. Additionally, 40% of users consider these medications safe and well-tolerated. Interestingly, only a minor 2% of study participants reported time-saving as a factor influencing their choice of OTC drugs (table-1).

**Table 1:** Reasons for taking OTC drugs

| Sr. | Name                  | Percentage |
|-----|-----------------------|------------|
| 1.  | Low cost              | 75         |
| 2.  | Easy accessibility    | 62         |
| 3.  | Safe & well-tolerated | 40         |
| 4.  | Time saving           | 2          |

Pain and elevated body temperature were the primary reasons cited for utilizing over-the-counter (OTC) medications. Following these, headaches ranked as the second and third most prevalent reasons. Coughs and colds were also frequently reported, accounting for 80% and 76% of cases, respectively. Additional reasons prompting self-medication encompassed vomiting and stomach discomfort, constituting 4%, alongside constipation at 3%. Less frequently encountered issues such as skin conditions, indigestion, and minor cuts accounted for 2% of the reported instances (table-2).

**Table 2:** Indications for using OTC drugs

| Sr. | Name         | Percentage |
|-----|--------------|------------|
| 1.  | Pain         | 100        |
| 2.  | Fever        | 100        |
| 3.  | Headaches    | 80         |
| 4.  | Cough        | 76         |
| 5.  | Cold         | 76         |
| 6.  | Vomiting     | 4          |
| 7.  | Stomach pain | 4          |
| 8.  | Constipation | 3          |
| 9.  | Skin problem | 2          |
| 10. | Indigestion  | 2          |
| 11. | Minor cuts   | 2          |

Analgesics and antipyretics were the two main drugs selected by the majority of participants (totalling 100%) for self-medication. Antacids, which 90% of the respondents self-administered, trailed closely behind. A significant 60% used over-the-counter anti-inflammatory medicines. Further 59%, revealed utilising vitamins and over-the-counter cough and cold treatments for self-medication, and 47% reported using antibiotics without a prescription. Significant 28% used over-the-counter topical. Of the individuals, 25% used nasal drops or sprays among other self-administered drugs, and 15% used antiemetic and ophthalmic treatments (table-3).

**Table 3:** Types of drugs used for self-medication among rural population

| Sr. | Name               | Percentage |
|-----|--------------------|------------|
| 1.  | Analgesics         | 100        |
| 2.  | Antipyretics       | 100        |
| 3.  | Antacids           | 90         |
| 4.  | Anti-inflammatory  | 60         |
| 5.  | Cough and cold     | 59         |
| 6.  | Vitamins           | 59         |
| 7.  | Antibiotics        | 47         |
| 8.  | Topical            | 30         |
| 9.  | Nasal drops /spray | 25         |
| 10. | Anti-emetic        | 15         |
| 11. | Ophthalmic         | 15         |

The study delved into the practices and attitudes toward self-medication. The majority of participants, approximately 36%, sometimes glanced at the product label instructions, while a substantial 30% admitted to never doing so. Regarding checking the drug's expiry date before usage, 39% consistently checked, but surprisingly, 30% never bothered to verify it. The primary reason behind using over-the-counter (OTC) drugs, as agreed upon by 91% of respondents, was when they felt unwell. In contrast, a mere 9% mentioned resorting to OTC drugs for minor or manageable symptoms. Strikingly, an overwhelming 94%

never exceeded the recommended dosage, whereas a small 6% acknowledged doing so. When OTC drugs exhibited alterations in appearance, such as changes in shape, color, or odor, 61% of participants promptly discarded them. Additionally, a significant 74% consulted pharmacists before using OTC medications, while a minority of 26% sought advice from doctors. Surprisingly, despite acknowledging the potential harm associated with OTC drug misuse (as mentioned by 69% of respondents), a majority continued their usage. An intriguing finding was

that, according to the survey, 100% of the participants claimed they had not experienced any side effects from OTC drugs. Overall, the study highlighted a range of practices in self-medication, showcasing a mix of responsible behaviors such as adhering to dosage instructions and consulting pharmacists, along with some concerning tendencies like neglecting product label information and relying primarily on personal judgment for usage (table-4).

**Table 4:** Attitude and Practices among rural population regarding self-medication of OTC drugs

| Sr. | Name  | Percentage                         |    |
|-----|---|------------------------------------|----|
| 1.  | Read the instructions on drugs label before use       | Occasionally                       | 36 |
|     |   | Always                             | 34 |
|     |   | Never                              | 30 |
| 2.  | Check the expiry date before use                      | Occasionally                       | 39 |
|     |   | Always                             | 31 |
|     |   | Never                              | 30 |
| 3.  | When you consume OTC drugs                            | Whenever I feel sick               | 91 |
|     |   | When symptoms are minor/manageable | 9  |
| 4.  | Ever take OTC drugs more than recommended dose        | No                                 | 94 |
|     |   | Yes                                | 6  |
| 5.  | When OTC drugs show change in shape, colour and odour | Immediately discard the drugs      | 61 |
|     |   | Continue use till it expires       | 39 |
| 6.  | Consultant before using OTC drugs                     | Pharmacist                         | 74 |
|     |   | Doctor                             | 26 |

## Discussion

In rural communities, over-the-counter (OTC) drugs are frequently used due to limited access to healthcare facilities. However, this reliance often leads to misuse or underutilization of these medications, largely because of a lack of proper knowledge and education. Misconceptions about OTC drugs, including misunderstandings about dosage, side effects, and potential interactions with other medications, contribute to ineffective treatment and health risks. Cultural beliefs and a preference for traditional remedies further deter the appropriate use of these medications.

This misuse is especially evident with pain relievers like opioids and NSAIDs, which are sometimes overused for chronic pain without proper guidance, leading to dependency and organ damage. Additionally, medications like antihistamines and cough syrups are abused for their sedative effects due to a lack of awareness and self-medication practices without professional advice.

To combat this issue, targeted education programs and community health initiatives are necessary to empower rural populations with accurate information about the safe and appropriate usage of OTC medications. By promoting understanding and providing accessible resources, these efforts aim to enhance healthcare access and outcomes in rural areas.

The prevalence of OTC drug use varies based on regional healthcare accessibility, socio-economic factors, and cultural practices. In these areas, OTC medications become the go-to solution for minor ailments like colds, allergies, pain relief, and digestive issues. Analgesics, antihistamines, and gastrointestinal medications are among the most commonly utilized OTC drugs, serving as immediate remedies for everyday health concerns in the absence of adequate healthcare access.

Ultimately, addressing the misuse and enhancing the proper utilization of OTC drugs in rural communities requires

targeted education, increased access to healthcare resources, and a focus on promoting safe healthcare practices.

## Conclusion

This study, conducted across a specific time frame, revealed a prevalent use of over-the-counter (OTC) medications among rural communities, largely due to the easy accessibility of these drugs. A noteworthy observation was the lack of awareness among a considerable portion of the population regarding the potential side effects of the medications they both consume and recommend to others. This lack of knowledge raises concerns about the health risks associated with OTC drug usage within rural areas. To address this issue, there's a crucial need to educate the rural population about the adverse effects linked to OTC medications. By increasing awareness, it's possible to mitigate the unforeseen and negative consequences stemming from the uninformed use of these drugs among rural communities. Preventative measures are necessary to safeguard the well-being of individuals and prevent any potential harm caused by the indiscriminate use of OTC medications in these areas.

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## Disclosure of Conflict of Interest

No conflict of interest.

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