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Self-Medication Practices and Associated Factors in the General Population: A Cross-Sectional Study in Bangladesh

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Abstract

Introduction: *Self-medication is a common public health problem in Bangladesh, influenced by the easy availability of medicines and limited regulatory enforcement. Irrational drug use, especially antibiotics, poses serious health risks.* ***Objective:*** *To determine the prevalence of self-medication and identify associated factors among the general population of Bangladesh.* ***Materials and Methods:*** *A descriptive cross-sectional study was conducted from June to August 2025 among 450 adults in selected urban and rural areas. Data were collected using a structured questionnaire. Descriptive statistics and chi-square tests were performed using SPSS (v26), with a significance level of $p < 0.05$.* ***Results:*** *The prevalence of self-medication was 67.8%. Frequently used medicines included analgesics (48.3%), antibiotics (26.4%), antihistamines (22.7%) and gastrointestinal agents (18.2%). Major reasons for self-medication were previous experience with similar illness (42.1%), saving time (27.3%), and avoiding consultation fees (18.9%). Significant associations were found between self-medication and education level ($p=0.031$), monthly income ($p=0.017$), and easy access to drug stores ($p=0.009$).* ***Conclusion:*** *Self-medication is widely prevalent, with considerable misuse of antibiotics. Public health education, pharmacist-led counseling, and stronger regulatory measures are necessary to minimize inappropriate self-medication practices.*

Keywords: *Self-medication, Antibiotic misuse, Public health, Pharmacy practice, Bangladesh.*

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Introduction:

Self-medication involves the use of medicinal products by individuals to treat self-diagnosed symptoms without consulting a licensed physician. While appropriate self-care can reduce pressure on healthcare facilities, irrational self-medication is linked with antimicrobial resistance, adverse drug reactions, treatment failure, and masking of serious diseases[1,2]. Bangladesh faces high rates of self-medication due to free access to prescription medicines, economic constraints, shortage of healthcare providers, and the widespread presence of community drug shops. Studies have reported significant misuse of antibiotics, painkillers, and antihistamines by the general population[3]. Healthcare costs have risen sharply, while most developing countries continue to face shortages of medical facilities. In this context, self-medication (SM) has become a practical alternative for many people. At the individual level, SM can reduce or even eliminate the need for medical visits, lowering expenses, offering greater convenience, and giving individuals more control over their

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own health decisions. At the community level, it helps prevent the misuse of limited healthcare resources for minor ailments, decreases the financial burden on publicly funded health programs, eases pressure on overstretched health services, and expands access to low-cost care for residents of rural or hard-to-reach areas. For these reasons, SM can be a relatively safe substitute for professional care in certain circumstances[4]. Nevertheless, SM also presents notable risks for both individuals and communities. It may lead to harmful outcomes such as adverse drug reactions, misdiagnosis or delayed diagnosis, and prolonged illness. Bangladesh, like many other countries, has seen significant bacterial resistance due to the widespread and improper use of antimicrobials through self-medication. As a result, drug-resistant infections persist because antibiotics are taken incorrectly without medical oversight. Antimicrobial resistance is believed to contribute to up to 80% of infection-related deaths, which recently motivated a petition to the Bangladesh High Court requesting restrictions on drug sales without valid justification[5-9]. Given the continued rise of antimicrobial resistance and irrational drug use in the country, updated evidence is needed to guide interventions. This study aims to assess current self-medication practices and factors influencing such behaviors among Bangladeshi adults.

Materials and Methods:

A descriptive cross-sectional study was conducted between June and August 2025. Participants aged 18 years and above were selected from Dhaka, Gazipur, Narayanganj, and Chattogram. Healthcare professionals (excluding registered pharmacists) and critically ill patients were excluded. Sample Size: Using 50% expected prevalence, 5% margin of error, and 95% confidence level, a sample size of 384 was calculated. A total of 450 respondents were included to improve validity. Sampling Technique: Convenience sampling was applied while ensuring variability in demographic characteristics.

Data Collection Tool

A structured questionnaire was developed focusing on:

- Socio-demographic information
- Common illnesses and symptoms
- Types of medicines used
- Reasons for self-medication
- Sources of drug information
- Awareness of risks and adverse effects

Data Analysis: Data were processed using SPSS version 26. Descriptive statistics (frequency, percentage, mean) and chi-square tests were performed. A p-value < 0.05 was considered statistically significant.

Ethical Consideration: Ethical approval was obtained from an institutional review board. Informed consent was taken from each participant prior to data collection.

Results:

Socio-demographic Characteristics

Among 450 respondents, 54.2% were male and 45.8% female. The mean age was 32.6 ± 9.3 years. Urban participants constituted 63.1% of the sample, and 48.4% had college or university-level education.

Table I: Socio-demographic characteristics

Variable	Category / Value	Frequency (n)	Percentage (%)
Gender	Male	244	54.2%
	Female	206	45.8%
Age (years)	Mean ± SD	32.6 ± 9.3	—
Place of Residence	Urban	284	63.1%
	Rural	166	36.9%
Education Level	College/University and above	218	48.4%
	Below College Level	232	51.6%

Prevalence of Self-Medication: Among 450 respondents, 67.8% reported practicing self-medication in the past six months. Analgesics (48.3%), antibiotics (26.4%), and antihistamines (22.7%) were the most frequently used medicines, with 30.7% of antibiotic users taking them without proper indication. The main reasons for self-medication included previous similar illness (42.1%), saving time (27.3%), and avoiding consultation costs (18.9%). Pharmacy staff were the leading source of drug information (44.6%), followed by family or friends (25.3%). Significant associations with self-medication were found for education level ($p = 0.031$), monthly income ($p = 0.017$), and easy access to drug shops ($p = 0.009$), while gender showed no significant relationship ($p = 0.21$).

Table II: Prevalence and associated factors of self-medication

Category	Variable	Frequency (n)	Percentage (%)
Prevalence of Self Medication	Practiced self-medication	305	67.8%
Commonly Used Medicines	Analgesics	217	48.3%
	Antibiotics	119	26.4%
	Antihistamines	102	22.7%
	Gastrointestinal drugs	82	18.2%
	Cough & cold medicines	68	15.1%
	Vitamin supplements	53	11.8%
Inappropriate Antibiotic Use	Took antibiotics without proper indication	36*	30.7% of antibiotic users
Reasons for Self-Medication	Previous similar illness	189	42.1%
	Saving time	123	27.3%
	Avoiding consultation cost	85	18.9%
	Easy availability of medicines	53	11.7%
	Advice from family/friends	44	9.8%
Sources of Drug Information	Pharmacy staff	201	44.6%
	Family or friends	114	25.3%
	Internet/social media	71	15.7%
	Old prescriptions	62	13.8%
Factors Associated with Self Medication	Education level	—	p = 0.031*
	Monthly income	—	p = 0.017*
	Easy access to drug shops	—	p = 0.009*
	Gender	—	p = 0.21 (NS)

Discussion:

This study shows that self-medication is highly prevalent in Bangladesh, consistent with findings from previous local and regional studies. Analgesics and antibiotics were the most frequently used medications, which parallels patterns found in other developing countries[10]. The misuse of antibiotics highlights an urgent need for antimicrobial stewardship. The prominent role of community drug stores indicates that

improved pharmacist involvement and adherence to Good Pharmacy Practice (GPP) standards are essential[11]. Education level and income significantly influenced self-medication, suggesting that both perceived knowledge and cost considerations drive unsupervised medicine use. Increased public awareness campaigns are needed to educate communities about the consequences of improper medication use. The present study found a high prevalence of self-medication (SM), with 67.8% of respondents reporting SM in the past six months. This level is comparable to earlier studies in South Asia, where SM ranged between 60–70% in general community samples, reflecting a widespread reliance on non-prescribed medicines in low- and middle-income contexts (Khare et al., 2022)[12]. The socio-demographic profile of participants relatively young adults with a mean age of 32.6 years, predominantly urban, and nearly half with higher education suggests that SM is not confined to low-education or rural populations. Rather, the pattern indicates that individuals with greater exposure to information, higher mobility, and easier access to pharmacies may be more inclined toward autonomous health-seeking behaviors. Analgesics and antibiotics emerged as the most consumed medicine groups, consistent with evidence from Bangladesh and similar settings where pain, fever, and common infections drive self-initiated treatment (Biswas et al., 2021)[13]. The finding that over one-fourth of respondents used antibiotics, and nearly one-third did so without clear clinical indication, is particularly concerning. Unregulated antibiotic use is a well-documented driver of antimicrobial resistance (AMR), which is already a major public health threat in Bangladesh (Fatmi et al., 2023)[14]. The ease of purchasing antibiotics from community pharmacies—often without prescriptions—further accelerates inappropriate use, as reflected in our study where pharmacy staff were the primary source of drug information (44.6%). Motivations for SM in this study—previous similar illness, saving time, and avoiding consultation costs—align with prior research showing that perceived familiarity with symptoms and economic constraints strongly influence treatment choices (Sutradhar et al., 2021)[15]. These factors point to systemic weaknesses such as overcrowded healthcare facilities, insufficient primary care coverage, and lack of regulatory enforcement in pharmaceutical sales. Although gender was not associated with SM, education, income, and proximity to drug shops showed significant relationships, suggesting that accessibility and perceived self-efficacy in managing minor ailments shape SM practices more than demographic characteristics.

Overall, the study underscores both the functional and risky dimensions of SM. While SM may reduce pressure on healthcare systems for minor illnesses, the uncontrolled use of antibiotics, reliance on untrained pharmacy staff, and absence of proper medical oversight highlight urgent needs for awareness programs, stronger regulation, and improved access to qualified healthcare providers. Without these interventions, the potential benefits of SM may be overshadowed by the long-term public health consequences, particularly AMR.

Conclusion:

Self-medication is widely practiced in Bangladesh, with inappropriate use of antibiotics posing a significant public health threat. Strengthening regulatory enforcement, ensuring responsible dispensing practices, and enhancing the role of pharmacists in patient counseling are crucial for reducing irrational self-medication.

Recommendations:

1. Restrict over-the-counter sale of antibiotics and prescription-only drugs.
2. Implement community-level health education programs.
3. Strengthen pharmacist counseling in community pharmacies.
4. Promote Good Pharmacy Practice (GPP) nationwide.
5. Encourage further multi-centered research to assess long-term trends.

Conflict of Interest: None.

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