

Knowledge, Attitude and Practice Toward Self-Medication Among Pharmacy Students at Dhaka International University, Bangladesh: A Cross-Sectional Survey

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ABSTRACT

Background: Self-medication may support appropriate self-care but can also cause medication errors, adverse effects, delayed diagnosis, and inappropriate antibiotic use. Pharmacy students are future medicine-use advisers, making their knowledge, attitudes, and practices important to assess. **Objective:** To evaluate and assess the knowledge-related responses, attitudes, and self-reported practices in the pharmacy department students of Dhaka International University about self-medication. **Methods:** A cross-sectional descriptive online survey used a structured Google Forms questionnaire with demographic, knowledge, attitude, and practice sections from February 2026 to September 2026. The results from 303 respondents were summarized using frequencies and percentages. **Results:** Male respondents numbered 194 (64.0%), and 236 (77.9%) reported completing pharmacology. A total of 246 (81.2%) reported self-medicating for a common cold. Most identified bacterial infections as the target of antibiotics (279/303, 92.1%). However, 58 (19.1%) selected taking antihypertensives only when symptoms appear. Agreement that self-medication is safe for healthcare students was 67.0%, while 93.4% supported additional risk training and stricter control of nonprescription antibiotic sales. Potentially unsafe practices included independently changing doses (17.8%), sharing medicines (15.2%), and stopping antibiotics early (11.2%). **Conclusion:** The results suggest a need for practical education and seminars on safe self-care, medicine dosing, antimicrobial stewardship, and referral to increase the professionalism as pharmacy graduate.

Keywords: self-medication; pharmacy students; knowledge; attitude; practice; antimicrobial stewardship.

I. INTRODUCTION

Self-medication is the directly selection of medication to self-assess symptoms without the supervision of a consultant, sharing medicine with others, used those medicine which are not used for many time stored in home etc. It can be part of self-care when medicines are appropriate and used according to reliable instructions, but inappropriate use may create adverse effects, medication failure, financial lost and delayed in the actual diseases diagnosis. So the WHO recommend that two minimize the self-medication to reduce the self-risk, resistance of medicine especially antibiotic and reduce the drug abuse [1,2,3]. Self-medication tendency is the most common phenomena in the university student then the other people. A systematic meta-analysis and review paper showed that 70.1% university students were more prevalence [4]. Antibiotic self-medication is a distinct concern: in low and middle income countries showed that the prevalence rate 46.0% [5]. These estimates provide context but are not directly comparable with a single question about self-medication for the common cold. The medical and pharmacy students in Bangladesh was reported self-medication survey [6,7]. Previous studies have found that the incidence of self-medication among medical students varies, with reports of 94% in Hong Kong, 88% in Croatia, and 54% in Turkey [8].

The pharmacy students are an especially relevant group because they study pharmacology, therapeutics, and pharmaceutical care, yet academic exposure alone may not ensure safe personal medicine use. Antibiotic misuse and overuse create a major public health threat worldwide through by antimicrobial resistance [9,10].

The knowledge, attitude, and practice (KAP) approach can describe factual responses, beliefs, and reported behaviors as separate domains. This study therefore aimed to describe selected knowledge-related responses, attitudes, and self-reported practices concerning self-medication among the pharmacy students at Dhaka International University, Bangladesh.

II. METHODOLOGY

Study Design

A cross-sectional descriptive online survey was conducted through email, WhatsApp and messenger among pharmacy students at Dhaka International University, Dhaka, Bangladesh.

Questionnaire and Variables

The Google Forms questionnaire contained four sections: (A) demographics and education (age, gender, academic level, pharmacology-course completion, family member in healthcare, and monthly family income); (B) medicine-safety knowledge items concerning common cold, paracetamol, antihypertensives, antibiotics, antacids, chest pain, and drug combinations; (C) participant attitude statements rated on a the Likert scale format and (D) practice were evaluated by five yes/no items about dose changes, antibiotic discontinuation, multiple medicines, medicine sharing, and reuse of old prescriptions. The questionnaire is added in the Annexure I.

Inclusion Criteria

- ✓ Undergraduate and graduate student of pharmacy department of Dhaka international university
- ✓ Students who were willing to participate in the study
- ✓ Students who provided the required response through the Google Form.

Exclusion Criteria

- ✓ Non pharmacy department students
- ✓ Other university students.

Participants and Data Collection Criteria

The supplied summary contained 303 responses and participation was described in the form introduction as voluntary and confidential. The survey study needed the time from starting February 2026 and end at September 2026.

Proposal	Literature Review	Survey Form Make	Data Collection	Data Analysis and Report Writing
February 2026	March 2026	April 2026	May – August 2026	September 2026

Statistical Analysis

The aggregate counts were represented by frequencies and percentages, using the number of responses for each item as the denominator.

III. RESULTS

Demographic and Educational Profile

Among 303 respondents, 194 (64.0%) were male and 109 (36.0%) female. The largest age group was older than 24 years (177, 58.4%). Graduates accounted for 178 (58.7%), and 236 (77.9%) reported completing pharmacology. A total of 124 (40.9%) reported a family member working in healthcare. The reported income categories were middle-income, 182 (60.1%); lower-income, 67 (22.1%); and upper-income, 54 (17.8%).

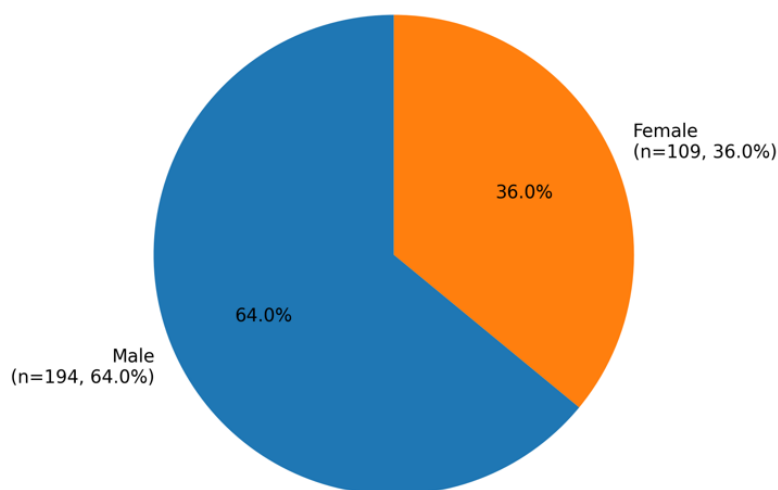


Figure 1. Gender distribution of respondents (N = 303)

Knowledge Related Responses

Self-medication for a common cold was reported by 246 respondents (81.2%). For mild body ache, 244 (80.5%) selected paracetamol. A total of 279 (92.1%) identified bacterial infections as the target of antibiotics, and 264 (87.1%) answered that stopping an antibiotic course halfway could cause harm.

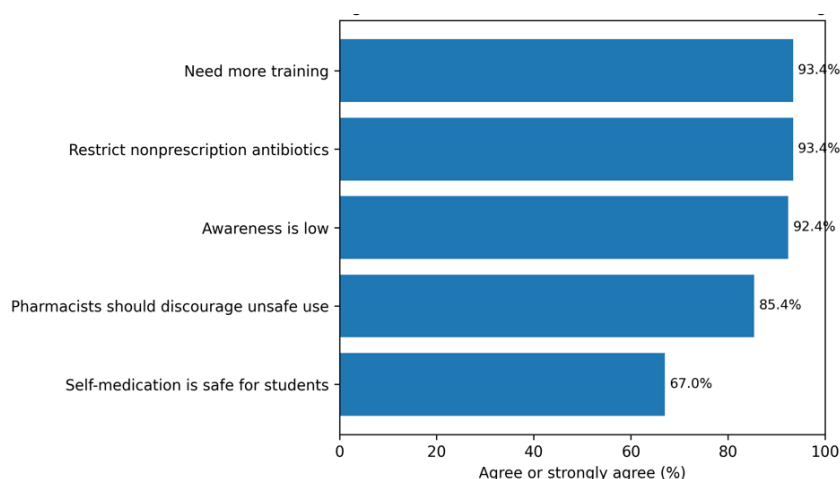


Figure 2. Agreement with selected attitude statements. Combined 'agree' and 'strongly agree' responses.

For antihypertensive medicines, 245 (80.9%) selected daily use as prescribed, whereas 58 (19.1%) selected use only when symptoms appear. A total of 265 (87.5%) recognized potential harm from combining medicines, and 230 (75.9%) selected hospital care for sudden chest pain. Forty-two of 302 respondents (13.9%) reported taking antibiotics immediately when fever starts.

Attitudes and Practices

Agreement that self-medication was safe for healthcare students was reported by 203 respondents (67.0%). Support for stricter control of prescriptionless antibiotic sales and for additional training on self-medication risks was 283 (93.4%) for each item. A total of 280 (92.4%) perceived awareness about the risk of self-medication in Bangladesh to be low; 258 of 302 (85.4%) supported a role for retail pharmacists in discouraging self-medication. Regarding practices, 54 (17.8%) changed doses independently, 34 (11.2%) stopped antibiotics before finishing the course, 30 (9.9%) used multiple medicines without a prescription, 46 (15.2%) shared self-medicated medicines, and 35 (11.6%) reused old prescriptions.

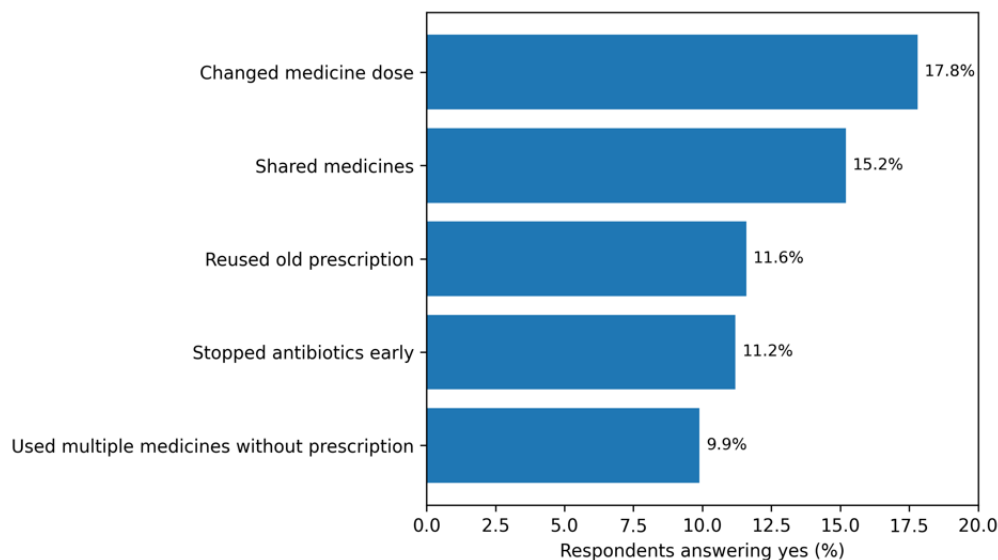


Figure 3. Self-reported potentially unsafe medication practices

IV. DISCUSSION

This survey found that self-medication for a common cold was common in the participating group (81.2%). Most respondents selected bacterial infections as the target of antibiotics, but 13.9% reported taking antibiotics immediately when fever starts. Fever alone does not establish a bacterial infection; antibiotic decisions should follow appropriate clinical assessment. Antibiotic misuse and overuse accelerate antimicrobial resistance [11]. Likewise, 19.1% selected symptom-triggered rather than prescribed daily antihypertensive use, indicating a potential misunderstanding of chronic treatment.

The coexistence of favorable attitudes toward self-medication safety (67.0%) and strong support for additional training (93.4%) may indicate that respondents view some forms of self-care as acceptable while recognizing a need for more guidance. WHO guidance supports evidence-based self-care but stresses appropriate information and links to health services when needed [12]. The educational objective should therefore be to distinguish suitable self-care from unsupervised use of medicines.

Independent dose changes (17.8%) and medicine sharing (15.2%) were the most frequently reported potentially unsafe practices. These behaviors can expose users to dosing errors, contraindications, interactions, and inappropriate treatment. Pharmacists can help through counseling, medication review, antimicrobial stewardship, and referral for red-flag symptoms. However, the study measured attitudes and self-reported behaviors rather than observed counseling or dispensing practice. Curriculum activities could include case-based learning on analgesic dosing, antibiotic stewardship, chronic-disease medicine adherence, interactions, and urgent symptoms [13,14].

V. CONCLUSION

Among 303 pharmacy students surveyed, responses were favorable on several medicine-safety items and support for antibiotic regulation and additional training was high. Nevertheless, some participants reported independent dose changes, medicine sharing, early antibiotic discontinuation, and other potentially unsafe practices. Pharmacy education should emphasize responsible self-care, antimicrobial stewardship, safe dosing, medication interactions, and referral. Further research should use a validated instrument, complete ethics documentation, and respondent-level data.

Conflicts of Interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Author Contributions Statement

Literature review, Data collection, by Sadia Akter, Methodology, Data Analysis and paper writing by Ali Mohamod Wasaf Hasan, Md Abu Sayeed and all are supervised by Rana Ahmed.

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ANNEXURE I

Knowledge, Attitude and Practice Toward Self-Medication Among Pharmacy Students

This survey aims to assess the knowledge, attitude, and practice regarding self-medication among pharmacy students at Dhaka International University. Your participation is voluntary, and all information provided will be kept confidential and used solely for academic research purposes.

Section A: Demographic Information

Age

- ☐ <18
- ☐ 18-20
- ☐ 21-22
- ☐ 23-24
- ☐ >24

Gender

- ☐ Male
- ☐ Female

Academic level

- ☐ 1st year
- ☐ 2nd year
- ☐ 3rd year
- ☐ 4th year
- ☐ Graduate

Have you completed Pharmacology course?

- ☐ Yes
- ☐ No

Family member working in healthcare?

- ☐ Yes
- ☐ No

Monthly family income

- ☐ 20000(Lower class)
- ☐ 50000-100000(Middle class)
- ☐ Above 200000 (Upper class)

Section B: Knowledge and Practices Regarding Self Medication

Do you self-medicate for a common cold?

- ☐ Yes
- ☐ No

What is your first step for mild body ache?

- ☐ Consult a doctor
- ☐ Take Paracetamol

What is the safe daily limit for Paracetamol (500mg)?

- ☐ Up to 8 tablets
- ☐ Up to 12 tablets

When should Antihypertensive medicine be taken?

- ☐ Daily as prescribed
- ☐ Only when symptoms appear

What do Antibiotics treat?

- ☐ Bacterial infections
- ☐ Viral infections

Does stopping an Antibiotic course halfway cause harm?

- ☐ Yes
- ☐ No

Are antacid tablets and liquid suspensions taken in the same

- ☐ True
- ☐ False

What is the immediate action for sudden chest pain?

- ☐ Give home medication

- Hospitalization

Can taking different medicines together be harmful?

- True
- False

Do you take Antibiotics immediately when a fever starts?

- Yes
- No

Section C: Attitude Toward Self-Medication

Question	Strongly disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly agree (5)
Self-medication is safe for healthcare students.					
Government must strictly ban prescriptionless antibiotic sales.					
Self-medication awareness is low in Bangladesh.					
Retail pharmacists should discourage self-medication.					
Pharmacy students need more self-medication risk training.					

Section D : Practices

Do you change the medicine dose on your own?

- Yes
- No

Do you stop Antibiotics before finishing the course?

- Yes
- No

Do you take multiple medicines without a prescription?

- Yes
- No

Do you share your self-medicated drugs with others?

- Yes
- No

Do you reuse old prescriptions for new illness?

- Yes
- No