

A SURVEY ON SELF-MEDICATION PRACTICES AMONG COLLEGE STUDENTS

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ABSTRACT

Self-medication has become a common practice among pharmacy students due to increased access to medications and basic pharmaceutical knowledge. The present study aimed to evaluate the prevalence, patterns, and awareness of self-medication practices among pharmacy students. A cross-sectional survey was conducted using a structured questionnaire to assess demographic characteristics, reasons for self-medication, commonly used drugs, sources of information, and level of awareness regarding safe medication practices. The findings revealed a very high prevalence of self-medication among participants, with most students reporting occasional or rare use, primarily for minor illnesses such as cold, cough, fever, and headache. Paracetamol was identified as the most commonly used medication, followed by pain relievers, cough syrups, antibiotics, and antacids. Pharmacies were found to be the main source of medicines, while additional sources included home medicine storage, family members, friends, and internet-based information. Convenience, mild illness, cost saving, and lack of time were identified as major factors influencing self-medication behaviour. Although many students demonstrated awareness regarding expiry dates and general safety, gaps were observed in areas such as correct dosage, adverse effects, and appropriate antibiotic use. The findings also indicated that better awareness was associated with more responsible self-medication practices. The study concludes that self-medication is widely practiced among pharmacy students, with moderate awareness and notable knowledge gaps. Educational interventions, improved awareness programs, and responsible medication practices are essential to promote safe self-medication and reduce potential health risks, including adverse drug reactions and antimicrobial resistance.

KEYWORDS: Self-medication; Pharmacy students; Prevalence; Awareness; Drug safety; Rational drug use; Antimicrobial resistance; Paracetamol; Survey study; Public health.

INTRODUCTION

BACKGROUND OF SELF-MEDICATION

Self-medication has become an increasingly important aspect of healthcare practices worldwide and is now widely recognized as a significant public health concern. The increasing burden on healthcare systems, rising treatment costs, and improved accessibility of medications have encouraged individuals to manage minor health conditions independently. The **World Health Organization (WHO)** defines self-medication as the selection and use of medicines by individuals to treat self-recognized symptoms or illnesses without consulting a healthcare professional.^[1]

Responsible self-medication may contribute to improved healthcare efficiency, reduced healthcare expenditure, and greater patient autonomy. However, irrational self-medication may lead to **misdiagnosis, adverse drug reactions, drug interactions, and antimicrobial resistance**, which represent serious public health challenges.

Self-medication is often considered a double-edged sword. While it allows individuals to manage minor illnesses quickly and conveniently, inappropriate use may lead to delayed diagnosis, masking of symptoms, and complications.

Therefore, understanding self-medication practices is essential for promoting rational drug use and ensuring patient safety.



Figure 1: Self- Care is a new approach to primary healthcare.

Self-Medication: Risks and Consequences

What is Self-Medication?
Using medications without consulting a healthcare professional.

Major Risks of Self-Medication

- Wrong Diagnosis
- Incorrect Dose
- Adverse Reactions
- Drug Interactions

Common Reasons

- ✓ Easy to Access
- ✓ Past Experience
- ✓ Saving Time
- ✓ Fear of Doctors
- ✓ Social Influence

Consequences

- Delayed Treatment
- Health Complications
- Antibiotic Resistance
- Organ Damage

High-Risk Groups

- Children
- Elderly
- Pregnant Women
- Women
- Chronic Illness

Safe Practices:

- ✓ Consult Your Doctor
- ✓ Follow Prescriptions
- ✓ Avoid Leftover Drugs
- ✓ Check Labels

Unsafe self-medication can lead to serious health risks. Seek professional medical advice.

#SelfMedication #PatientSafety #RationalDrugUse #AntibioticResistance #HealthcareAwareness #MedicationSafety

Figure 2: Self- Medication: Risk and consequences.

REASONS FOR SELF-MEDICATION	
It's considered cheaper	Previous experience with the symptoms or sickness
Minor symptoms or illness	Easy access to drugs
It saves time	Lack of access to proper healthcare

Figure 3: Reason for Self – Medication.

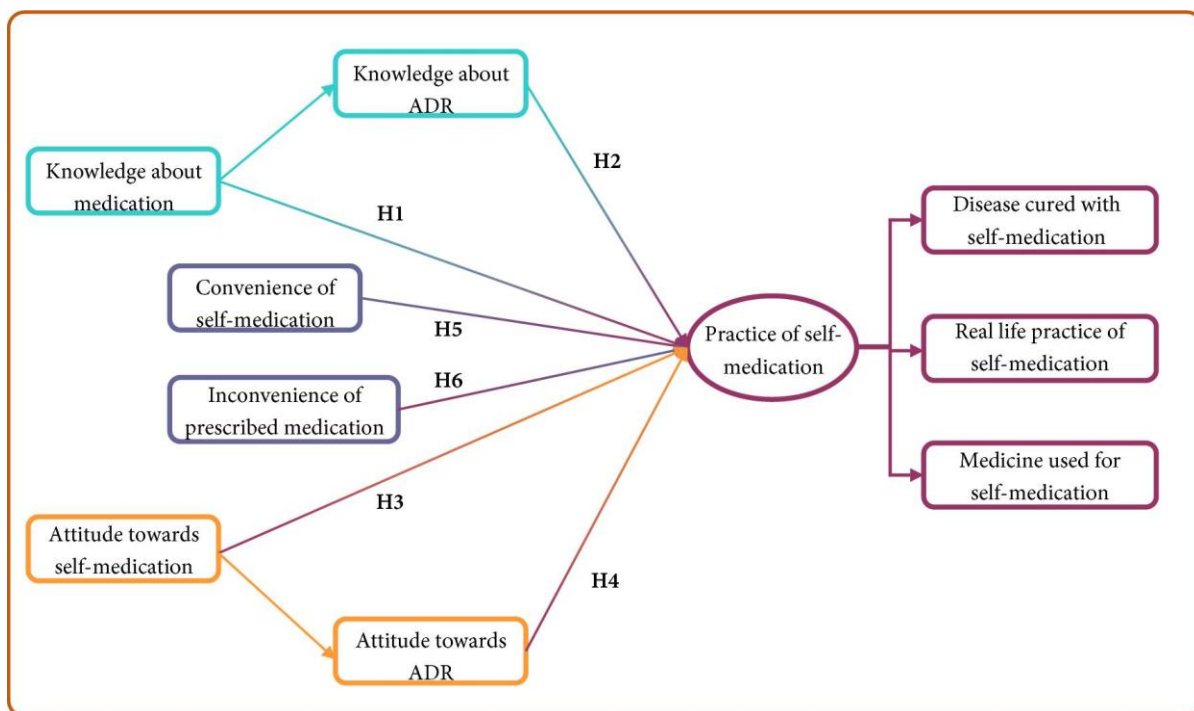


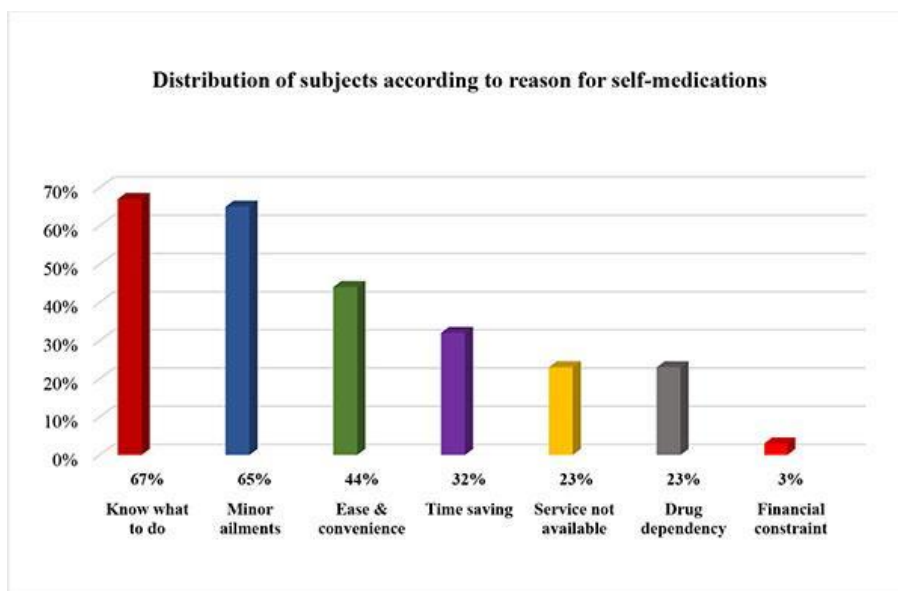
Figure 4: Example of Self – Medication.

SELF-MEDICATION AMONG COLLEGE STUDENTS

Self-medication is particularly common among college students, especially those enrolled in professional healthcare courses such as pharmacy, medicine, dentistry, and nursing.^[2] These students possess basic pharmacological knowledge, which may increase their confidence in self-diagnosing and managing minor illnesses. However, limited clinical experience and incomplete knowledge may lead to inappropriate medication practices.^[3]

Pharmacy students represent a unique population because they are both future healthcare providers and active consumers of medications. Their academic exposure, accessibility to medications, and familiarity with treatment guidelines often influence their self-medication behaviour. Therefore, evaluating self-medication practices among pharmacy students is essential for promoting rational drug use and safe medication practices.

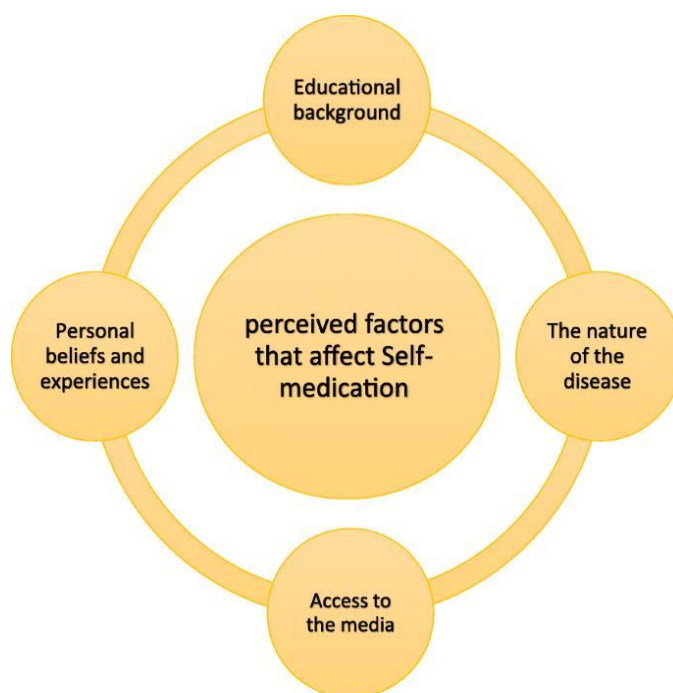




FACTORS INFLUENCING SELF-MEDICATION

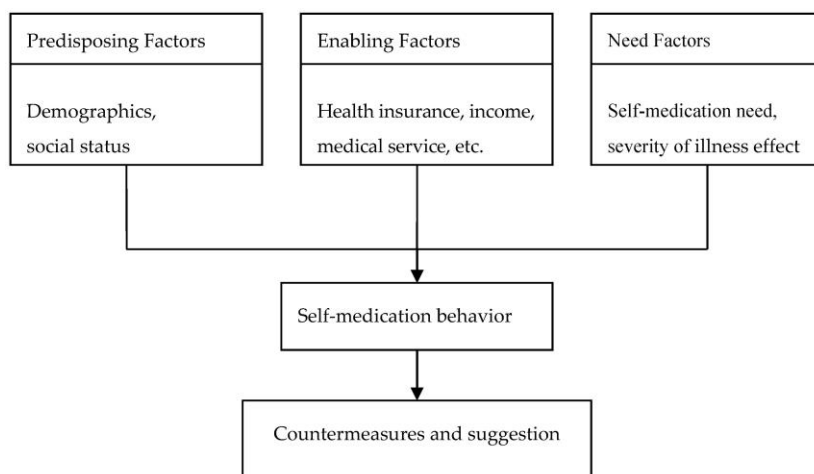
Several factors contribute to the increasing trend of self-medication among college students. The most common reason is the perception that illnesses such as headache, fever, cold, and gastrointestinal discomfort are minor and manageable without professional consultation.^[4] Students also rely on previous experience, peer advice, and family recommendations when selecting medications.

Other factors include lack of time, long waiting periods in healthcare facilities, and financial constraints. Easy availability of over-the-counter medications, leftover drugs, and online health information further encourage self-medication practices.^[5-7] Social media and digital health platforms also influence students' decisions regarding medication use.



SOURCES OF SELF- MEDICATION

- Families
- friends,
- Neighbors
- the pharmacist
- previous prescribed drug
- suggestions from an advertisement in newspapers
- popular magazines etc. are common sources of self-medications.



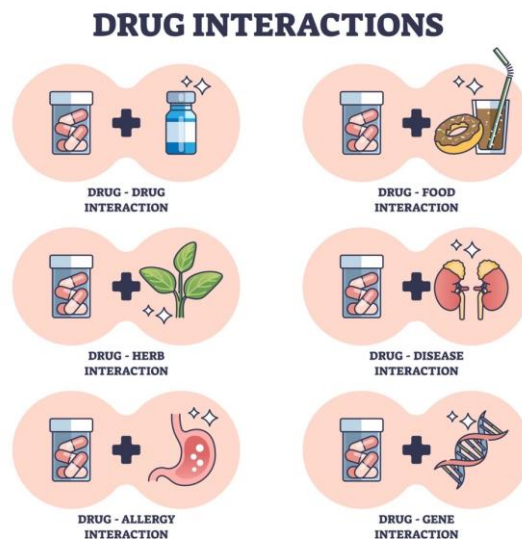
RISKS AND CONSEQUENCES OF SELF-MEDICATION

Although self-medication offers convenience, it may also lead to serious health risks. Incorrect self-diagnosis, inappropriate drug selection, and dosing errors are common concerns.^[8] Polypharmacy and unmonitored drug use increase the likelihood of adverse drug reactions and drug interactions.^[9]

Another major concern is antibiotic misuse, which contributes to antimicrobial resistance (AMR).^[10] Self-medication may also delay diagnosis of serious illnesses, increase healthcare costs, and lead to drug dependency and toxicity



Figure 5: Other consequences of self – medication on health.



GLOBAL AND INDIAN SCENARIO

Self-medication is particularly common in developing countries such as India due to easy availability of medications, limited healthcare access, and economic factors.^[11-13] Studies conducted in Nepal, Palestine, Pakistan, and Spain reported high prevalence rates among college students²,^[14-16] Similarly, studies in India reported widespread self-medication practices among students, especially involving analgesics, antipyretics, and antibiotics.^[17-19]

Gender differences and socioeconomic factors also influence self-medication behavior.^[20] Understanding these determinants is essential for developing effective educational and regulatory interventions.

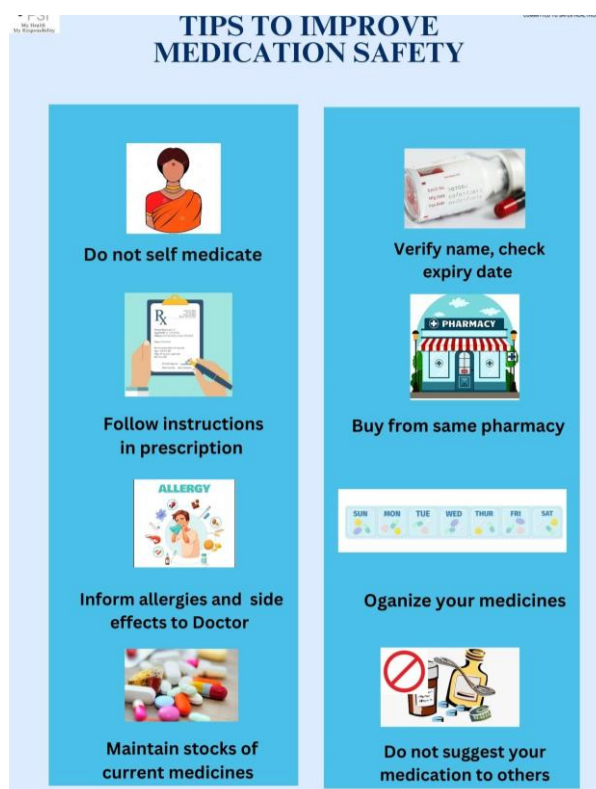


Figure 6: Tips to improve medication safety.

NEED FOR THE PRESENT STUDY

Evaluating self-medication practices among pharmacy students is essential for improving medication safety and promoting rational drug use. Educational interventions, awareness programs, and stricter regulations can help reduce inappropriate self-medication practices.^[21]

LITERATURE REVIEW

1. Self-medication has become an increasingly common practice worldwide and is recognized as a significant public health concern. The World Health Organization (WHO) defines self-medication as the use of medicinal products by individuals to treat self-recognized symptoms or illnesses without consulting a healthcare professional. According to WHO guidelines, medicines suitable for self-medication should meet **strict criteria related to safety, efficacy, and quality**, and their use should be supported by **clear labelling, patient education, and appropriate regulatory frameworks**. These guidelines emphasize that responsible self-medication can help reduce healthcare burdens and improve access to treatment for minor ailments; however, inappropriate self-medication may lead to **serious health risks, including adverse drug reactions, drug interactions, and antimicrobial resistance**. Therefore, WHO strongly recommends **public awareness initiatives and regulatory oversight** to promote rational drug use.

DOI/URL: <https://apps.who.int/iris/handle/10665/66154>

2. Shankar et al. (2002) conducted a study in Pokhara Valley, Western Nepal, to assess self-medication and non-doctor prescription practices. The study reported a **high prevalence of self-medication**, particularly for minor illnesses such as headache, fever, and common cold. The researchers found that individuals frequently used **over-the-counter medications, herbal remedies, and previously prescribed medicines**. The major factors influencing self-medication included **convenience, accessibility, financial constraints, and previous experience with medications**. The authors emphasized that **educational interventions and public awareness programs** are necessary to reduce inappropriate self-medication and encourage consultation with healthcare professionals.

DOI: <https://doi.org/10.1186/1471-2296-3-17>

3. Ruiz (2010) reviewed the potential risks associated with self-medication and highlighted several concerns, including **incorrect self-diagnosis, inappropriate drug selection, overdose, polypharmacy, and masking of serious diseases**. The study also emphasized that **irrational use of antibiotics through self-medication contributes significantly to antimicrobial resistance**, which has become a major global health threat. The author recommended **strengthening healthcare education, improving access to healthcare services, and implementing stricter regulatory policies** to reduce unsafe self-medication practices.

DOI: <https://pubmed.ncbi.nlm.nih.gov/20812903/>

4. Li et al. (2023) conducted a systematic review on non-prescription antibiotic dispensing practices across various countries. The findings revealed that **non-prescription antibiotic use is widespread**, particularly in low- and middle-income countries, where regulatory enforcement is often limited. Factors such as **lack of awareness, easy access to antibiotics, and inadequate pharmacist supervision** contributed to this problem. The study highlighted the urgent need for **stronger regulatory enforcement, pharmacist-led education programs, and public awareness campaigns** to combat antibiotic misuse and antimicrobial resistance.

DOI: [https://doi.org/10.1016/S1473-3099\(23\)00238-7](https://doi.org/10.1016/S1473-3099(23)00238-7)

5. Balamurugan and Ganesh (2011) investigated self-medication practices in coastal regions of South India and found that **a significant proportion of individuals practiced self-medication for minor ailments** such as headache, fever, cough, and gastrointestinal disturbances. The study identified **previous successful experience, convenience, affordability, and easy availability of medications** as major factors contributing to self-medication practices. The authors suggested **community awareness programs and healthcare education** to promote safe medication use and prevent potential complications.
URL: <https://www.bjmp.org/content/prevalence-and-pattern-self-medication-use-coastal-regions-south-india>
6. Kumar et al. (2022) evaluated community pharmacists' knowledge and dispensing practices regarding antibiotics in South India. The study found that although pharmacists were aware of **antimicrobial resistance and rational drug use**, antibiotics were still frequently dispensed without prescriptions due to **customer demand, competition, and inadequate regulatory enforcement**. The study recommended **continuous professional training, regulatory monitoring, and awareness programs** to improve dispensing practices.
DOI: <https://www.jrpp.net/article.asp?issn=2319-9644;year=2022;volume=11;issue=2;spage=51;epage=58;aulast=Kumar>
7. Banerjee and Bhadury (2012) studied self-medication practices among medical undergraduates in West Bengal and reported a **high prevalence of self-medication among students**. Most students used medications for minor ailments such as headache, fever, and cold. **Prior knowledge, peer influence, academic exposure, and perceived minor illness** were identified as major contributing factors. The authors recommended incorporating **rational drug use education and pharmacovigilance training** into medical curricula.
DOI: <https://www.jpgmonline.com/article.asp?issn=0022-3859;year=2012;volume=58;issue=2;spage=127;epage=131;aulast=Banerjee>
8. Nalini (2010) conducted a study among allopathic doctors in Karnataka and found that **self-medication was common even among healthcare professionals**. Time constraints, familiarity with medications, and convenience were major influencing factors. The study emphasized the importance of **awareness programs and professional guidelines** to reduce inappropriate self-medication practices among healthcare providers.
URL: <https://www.bjmp.org/content/self-medication-among-allopathic-medical-doctors-karnataka-india>
9. James et al. (2006) evaluated knowledge, attitudes, and practices related to self-medication among first-year medical students. The study reported that **many students practiced self-medication despite limited clinical knowledge**. The most common reasons included convenience and perceived minor illness. The authors recommended **early educational interventions and awareness programs** to promote safe medication practices among students.
DOI: <https://doi.org/10.1159/000092989>
10. Sawalha (2007) assessed self-medication practices among Palestinian university students and found **high prevalence among both medical and non-medical students**. **Analgesics and antipyretics** were the most commonly used medications. Accessibility, prior experience, and perception of minor illnesses were key influencing factors. The study highlighted the importance of **educational interventions and regulatory control**.
DOI: <https://doi.org/10.1016/j.sapharm.2006.04.004>

11. Zafar et al. (2008) conducted a study among university students in Karachi and found **high rates of self-medication**, particularly for headaches, fever, and respiratory infections. Easy accessibility of medications, peer influence, and previous experiences were major contributing factors. The study recommended **awareness campaigns and stricter regulatory enforcement**.
URL: <https://jpma.org.pk/article-details/1420>
12. Figueiras et al. (2000) examined sociodemographic factors influencing self-medication in Spain and found that **higher education levels and socioeconomic status** were associated with increased self-medication practices. The study suggested **targeted educational interventions** to promote rational drug use.
DOI: <https://doi.org/10.1023/A:1007642904108>
13. Klemenc-Ketis et al. (2010) analyzed gender differences in self-medication among Slovenian students. The study reported that **female students were more likely to practice self-medication**, especially for headache and menstrual-related pain. The authors recommended **gender-specific awareness strategies**.
URL: <https://www.zdravvestnik.si/clanek/79-1-395>
14. Abay and Amelo (2010) studied self-medication among health science students in Ethiopia and reported **high prevalence influenced by knowledge, accessibility, and peer behaviour**. The authors recommended **integrating rational drug use education into healthcare curricula**.
DOI: <https://doi.org/10.4103/0975-1483.66798>
15. Garofalo et al. (2015) evaluated self-medication among parents in Italy and found that **parents frequently self-medicated their children for minor illnesses**. Prior experience and convenience were major influencing factors. The study emphasized **parental education and awareness programs**.
DOI: <https://doi.org/10.1186/s12889-015-1715-8>
16. Basak and Sathyanarayana (2010) evaluated dispensing patterns in private pharmacies in Tamil Nadu and reported that **prescription-only medications were frequently dispensed without valid prescriptions**. The authors recommended **stricter regulatory policies and pharmacist training**.
DOI: <https://doi.org/10.4103/0250-474X.78522>
17. Ahmad et al. (2014) reported **high self-medication rates in rural Northern India**, primarily due to **limited healthcare access, financial constraints, and lack of awareness**. The study suggested **strengthening primary healthcare services and public awareness programs**. **DOI:** <https://doi.org/10.1111/ijpp.12156>
18. Kasulkar and Gupta (2015) reported frequent self-medication among medical students for minor ailments. **Easy access to medications and previous experience** were major influencing factors. The authors emphasized **targeted educational programs**.
URL: <https://www.ijpsonline.com/articles/selfmedication-practices-among-medical-students-of-a-private-institute.pdf>
19. Gyawali et al. (2015) reported **high self-medication prevalence among medical students**, with limited awareness regarding potential risks. The study recommended **educational interventions and rational drug use training**.
DOI: <https://doi.org/10.7860/JCDR/2015/15244.6924>

SUMMARY OF LITERATURE REVIEW

Overall, the reviewed studies indicate that **self-medication is highly prevalent across different populations, including students, healthcare professionals, and the general public**. Commonly used medications include **analgesics, antipyretics, antibiotics, and antihistamines**. Major contributing factors include **easy accessibility, convenience, prior knowledge, peer influence, economic factors, and healthcare accessibility issues**. However, inappropriate self-medication may result in **misdiagnosis, adverse drug reactions, drug interactions, delayed diagnosis, and antimicrobial resistance**. Therefore, most studies emphasize the importance of **educational interventions, regulatory enforcement, awareness campaigns, and healthcare professional involvement to promote safe and rational self-medication practices**.

AIM AND OBJECTIVES

AIM

To assess the prevalence, patterns, and factors influencing self-medication practices among college students, with a focus on understanding their knowledge, attitudes, and behaviours related to unsupervised drug use. The study also aims to identify common types of medications used, reasons for self-medication, and the potential health risks, including adverse drug reactions and antibiotic resistance.^[1,3-5]

OBJECTIVES

1. To determine the prevalence of self-medication among college students

The primary objective of this study is to measure how common self-medication is among undergraduate and postgraduate students enrolled in pharmacy, medical, and allied health programs. Understanding prevalence is crucial because it provides baseline information for public health strategies, educational planning, and policy-making. Self-medication prevalence can vary significantly depending on discipline, year of study, gender, and cultural background.^[1,2,14]

- Prevalence data will help identify high-risk groups who may require targeted interventions.^{2,14,18}
- Measuring prevalence also highlights patterns of use, such as occasional versus frequent self-medication, and helps assess potential public health risks from unsupervised drug use.³⁻⁵
- The study will categorize students according to demographic characteristics and academic discipline to determine variations in prevalence.

2. To investigate the underlying motivations for self-medication

Self-medication is influenced by a combination of psychological, social, economic, and academic factors.^[2,10,17]

- **Psychological factors:** Perception of mild illness, overconfidence in personal knowledge, fear of hospitals, and convenience have been cited as key motivators.^[3,7]
- **Social factors:** Peer influence, family advice, and cultural norms can encourage unsupervised drug use.^[8,15]
- **Academic factors:** Students with heavy workloads or clinical schedules may prefer self-medication to save time.^[10,12]
- **X Cost-saving motives,** especially among students with limited financial resources, contribute to self-medication.^[2,17]

3. To identify commonly used drug categories in self-medication

Understanding which medications are most frequently used helps assess risk for adverse reactions, drug interactions, and antimicrobial resistance.^[5,18-22]

- Analgesics and antipyretics are often the most commonly self-administered drugs.^[2,7]
- Antibiotics are particularly concerning because inappropriate use can accelerate antimicrobial resistance, a global public health issue.^[3-6]
- Other commonly used drugs include antihistamines, gastrointestinal agents, cold and flu remedies, and dietary supplements.^[5,18,22]

4. To assess awareness regarding the potential consequences of self-medication

A critical objective is to evaluate students' knowledge of the risks associated with self-medication, including:

- Adverse drug reactions (e.g., liver toxicity, allergic reactions).^[3-5]
- Drug interactions and contraindications.^[3,4,6]
- Long-term health impacts, particularly regarding antimicrobial resistance and treatment failure.^[4,6]

This objective will also assess whether pharmaceutical education affects risk perception, as studies show that pharmacy students may be more knowledgeable but still engage in self-medication.^[14-19]

5. To propose strategies that promote safer self-medication practices

The final objective focuses on translating findings into actionable recommendations:

- **Educational interventions:** Integrating modules on rational drug use and antimicrobial resistance into curricula.^[2,17]
- **Awareness campaigns:** Workshops, seminars, and social media campaigns targeting students.^[8-15]
- **Regulatory measures:** Encouraging enforcement of prescription requirements in pharmacies.^[2,18]
- **Community and pharmacist engagement:** Collaboration with pharmacists to provide counselling on drug use and safe alternatives.^[22]

METHODOLOGY

STUDY DESIGN

This study was conducted using a **cross-sectional descriptive survey design** to assess the **prevalence, patterns, motivations, and awareness of self-medication** among pharmacy students. A cross-sectional design is widely used in healthcare research because it allows **data to be collected at a single point in time**, enabling researchers to determine **prevalence, identify trends, and examine associations between variables simultaneously**.^[12-14] This design is particularly appropriate for studies involving student populations, where **behavioural patterns and knowledge levels vary across academic years and educational backgrounds**.

The descriptive nature of the study allowed for **comprehensive evaluation of both quantitative and qualitative aspects** of self-medication practices. **Quantitative data** included prevalence rates, frequency of self-medication, and commonly used medications, while **qualitative data** captured motivations, awareness levels, and attitudes toward self-medication.^[11-10] This combined approach provides a **broader understanding of self-medication behaviour** and helps identify **key determinants influencing students' decisions** to self-medicate. Additionally, this study design facilitates

the **generation of baseline data** that can be used for planning **educational interventions and promoting rational drug use** among pharmacy students.^[2,14,18]

STUDY POPULATION

The study population consisted of **pharmacy students enrolled in B. Pharm, D. Pharm, M. Pharm, and Pharm. D programs**. A **total of 707 students participated** in the study, representing **different academic levels and educational backgrounds**. Including students from multiple programs and academic years allowed for **comparison of knowledge and self-medication practices** among students at different stages of their professional training.

Pharmacy students were selected as the target population because they **possess fundamental knowledge of pharmacology, therapeutics, and drug dispensing practices**. Their academic exposure and clinical training may **influence their attitudes toward self-medication** and increase their **confidence in managing minor illnesses independently**.^[2,14,18] Furthermore, pharmacy students often have **easier access to medications**, which may contribute to **higher rates of self-medication**. Previous studies have reported that **healthcare students demonstrate higher prevalence of self-medication** compared to the general population.^[12,17]

The inclusion of **both male and female students** enabled assessment of **gender-based differences**, while representation across **different academic years** allowed evaluation of how **educational exposure influences behaviour**. This diverse population enhanced the **reliability and generalizability** of the findings.^[13]

INCLUSION CRITERIA

Students were included in the study if they:

- **Were enrolled in pharmacy programs** (B. Pharm, D. Pharm, M. Pharm, Pharm. D)
- **Were aged 18 years or above**
- **Provided informed consent voluntarily**
- **Were present during the data collection period**
- **Were willing to complete the questionnaire independently**

These criteria ensured that participants were **capable of providing reliable and informed responses** related to self-medication practices.^[2,12,14]

EXCLUSION CRITERIA

The following participants were excluded from the study:

- **Students not enrolled in pharmacy programs**
- **Students unwilling to participate**
- **Incomplete questionnaires**
- **Students under long-term supervised medication therapy**

These exclusion criteria helped **minimize bias and improve study validity**.^[2,17,18]

SAMPLE SIZE AND SAMPLING TECHNIQUE

A total of 707 pharmacy students participated in the study. A **convenience sampling technique** was used to recruit participants from various pharmacy programs and academic years. Convenience sampling is **commonly used in cross-sectional student-based surveys** due to **ease of access and feasibility**.^[11,10]

The **large sample size enhanced statistical power** and allowed meaningful comparisons across **gender, degree program, and academic year**. Additionally, a large sample size improves **generalizability and reduces sampling error**. Similar studies conducted among healthcare students have used **comparable sample sizes and sampling techniques**.^[2,14,18]

DATA COLLECTION TOOL

Data were collected using a **structured and pre-validated questionnaire** adapted from **previously published studies** assessing self-medication practices.^[2,13-5,8] The questionnaire consisted of **multiple sections** designed to capture demographic information, self-medication behaviour, awareness, and motivating factors.

The questionnaire included:

- **Demographic details** (gender, degree program, academic year)
- **Prevalence of self-medication**
- **Frequency of self-medication**
- **Common illnesses treated**
- **Drug categories used**
- **Sources of medicines**
- **Reasons for self-medication**
- **Awareness of side effects and risks**

Commonly used medications assessed included:

- **Analgesics**
- **Antipyretics**
- **Antibiotics**
- **Antihistamines**
- **Gastrointestinal drugs**
- **Supplements**

The questionnaire included **multiple-choice questions, Likert scale items, and yes/no responses**, ensuring **comprehensive data collection**.^[15,8,10]

DATA COLLECTION PROCEDURE

Data collection was conducted using **offline and online methods** to maximize participation. Participants were **informed about study objectives** prior to participation. **Informed consent was obtained** from all participants.

Participants were assured of:

- **Confidentiality**
- **Anonymity**
- **Voluntary participation**

The questionnaire was distributed to eligible participants, and **adequate time was provided** for completion. Completed questionnaires were **reviewed, collected, and compiled** for analysis. Data cleaning procedures were conducted to **remove incomplete responses**.

This systematic approach ensured:

- **Accuracy**
- **Reliability**
- **Consistency**

STUDY VARIABLES

Independent Variables

- Gender
- Degree program
- Academic year
- Residence type

Dependent Variables

- Self-medication practice
- Frequency of self-medication
- Drug categories used
- Awareness level
- Motivating factors

DATA ANALYSIS

Collected data were entered into **Microsoft Excel** and analyzed using **SPSS software**. **Descriptive statistics** such as **frequency, percentage, mean, and standard deviation** were used to summarize the data.

Inferential statistical tests including **Chi-square test** were used to assess **associations between demographic variables and self-medication practices**.^[13,2]

A **p-value < 0.05** was considered **statistically significant**. Qualitative responses were analyzed using **thematic analysis**.

ETHICAL CONSIDERATIONS

Participation in the study was **voluntary**, and **informed consent** was obtained from all participants. **Confidentiality and anonymity** were maintained throughout the study. No **personal identifiers** were collected.

The study followed **ethical guidelines for human research**.

OUTCOME MEASURES

Primary Outcomes

- Prevalence of self-medication
- Frequency of self-medication

- Commonly used medications
- Sources of medicines
- Motivating factors
- Awareness levels

Secondary Outcomes

- Association between demographic variables and self-medication practices

STUDY LIMITATIONS

- Self-reported data may introduce recall bias
- Cross-sectional design limits causal relationship
- Limited generalizability beyond selected institutions

EXPECTED OUTCOMES

The present study is expected to generate **quantitative evidence regarding the prevalence of self-medication among pharmacy students**, providing insight into the extent of self-medication practices within the study population.^[2,12] The study will also **identify key motivational factors driving self-medication behaviour**, including convenience, prior knowledge, accessibility of medicines, and perceived mildness of illness.^[2,17]

Additionally, the study aims to **catalogue commonly used medications** such as analgesics, antipyretics, antibiotics, antihistamines, and gastrointestinal drugs, along with **associated risks and potential adverse effects**.^[5,18] Another important outcome includes the **assessment of students' awareness regarding risks of self-medication**, including adverse drug reactions, incorrect dosage, drug interactions, and **antimicrobial resistance**.^[3,4,6]

Furthermore, the study is expected to **provide evidence-based recommendations** for promoting **safe self-medication practices**, improving **educational interventions**, and developing **awareness programs** aimed at encouraging rational drug use among pharmacy students.^[2,17,22] These findings may help **healthcare educators, policymakers, and institutions** implement targeted strategies to minimize unsafe self-medication practices.

RESULT

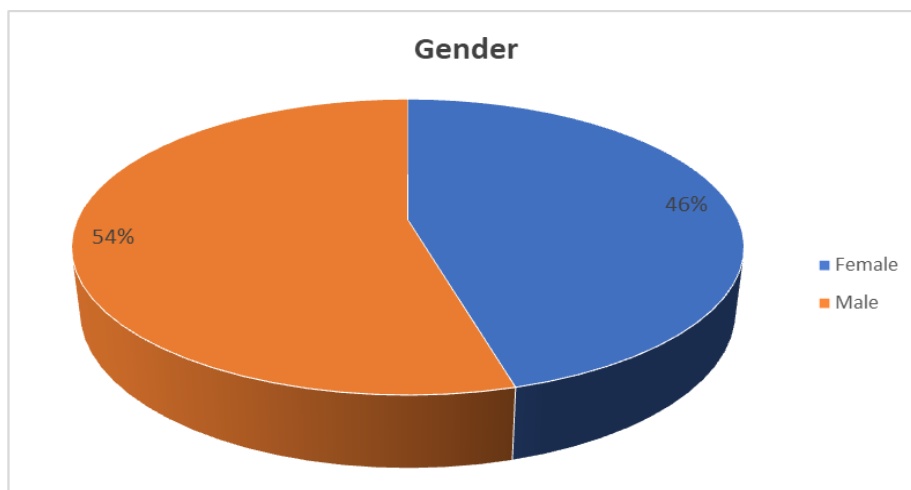
1. DEMOGRAPHIC CHARACTERISTICS OF PARTICIPANTS

1.1. GENDER DISTRIBUTION

A total of **707 pharmacy students** participated in the study. Among them, **male students constituted the majority (54.3%)**, while **female students accounted for 45.7%** (Table 1). This indicates **slightly higher participation of male students** in the study population, which is comparable with previous studies conducted among pharmacy students.^[1,3-5,8]

Table 1: Gender Distribution of Participants (n = 707).

Gender	Frequency	Percentage (%)
Female	323	45.7
Male	384	54.3
Total	707	100.0

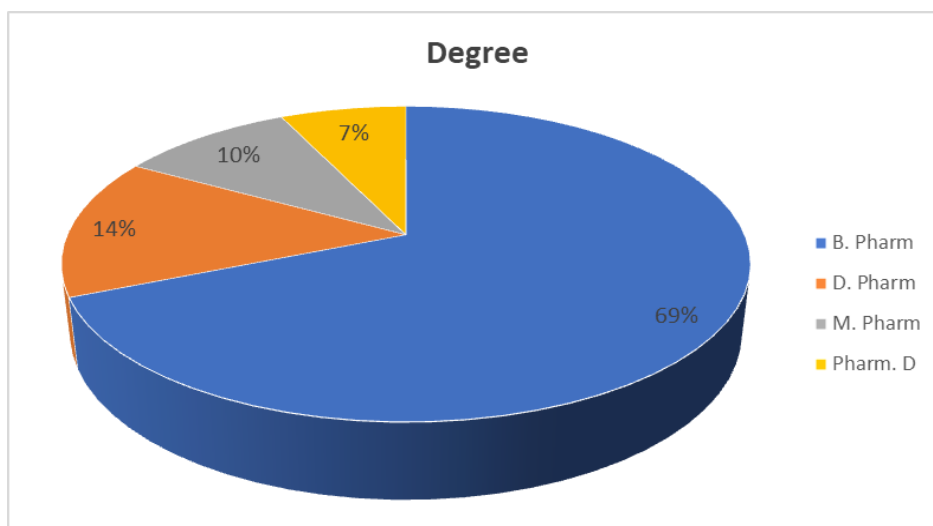


1.2. DISTRIBUTION BY DEGREE

The majority of participants were **B. Pharm students (68.7%)**, followed by **D. Pharm (14.4%)**, **M. Pharm (9.8%)**, and **Pharm. D (7.1%)** (Table 2). This reflects **greater representation from undergraduate pharmacy programs**, which is consistent with similar studies.^[1,3-5,8]

Table 2: Distribution of Participants by Degree.

Degree	Frequency	Percentage (%)
B. Pharm	486	68.7
D. Pharm	102	14.4
M. Pharm	69	9.8
Pharm. D	50	7.1
Total	707	100.0

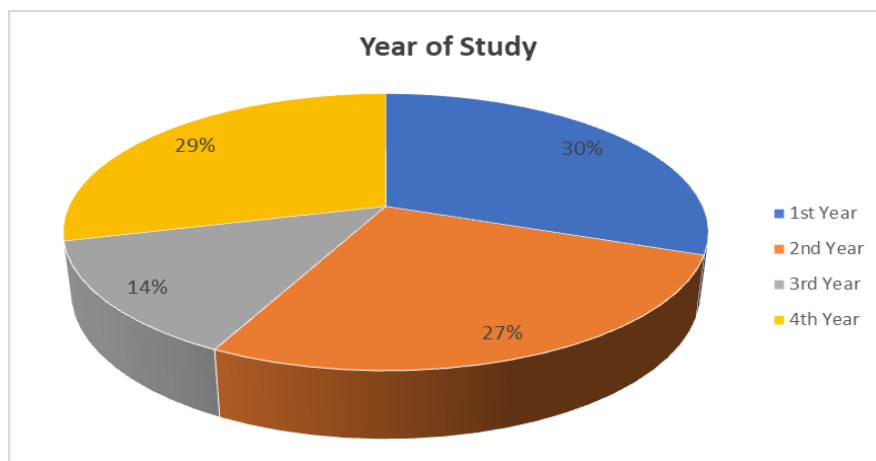


1.3. YEAR OF STUDY

Participants were distributed across all academic years. **First-year students represented the highest proportion (30.6%)**, followed by **fourth-year students (29.0%)**, **second-year students (26.9%)**, and **third-year students (13.6%)** (Table 3). This distribution enabled **comparative evaluation across academic levels**.^[1,3-5,8]

Table 3: Distribution of Participants by Year of Study.

Year of Study	Frequency	Percentage (%)
1st Year	216	30.6
2nd Year	190	26.9
3rd Year	96	13.6
4th Year	205	29.0
Total	707	100.0

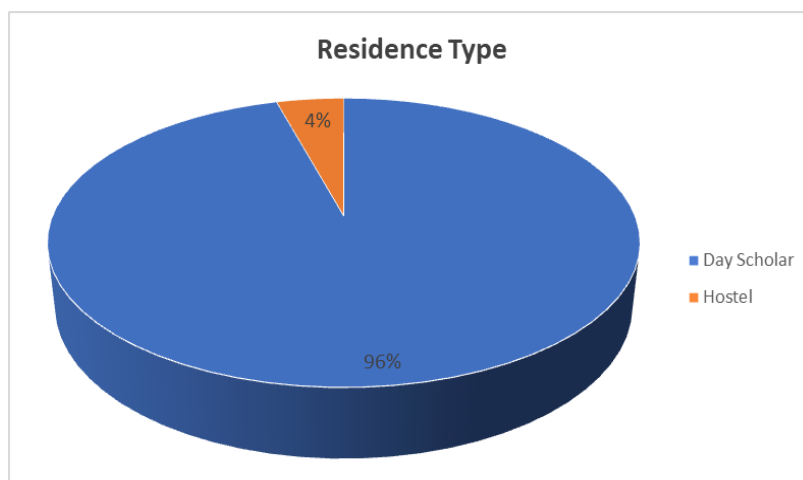


1.4. RESIDENCE TYPE

Most participants were **day scholars (95.6%)**, while only **4.4% were hostel residents** (Table 4). This indicates that **the majority of respondents lived off-campus.** ^[1,3-5,8]

Table 4: Residence Type of Participants.

Residence Type	Frequency	Percentage (%)
Day Scholar	676	95.6
Hostel	31	4.4
Total	707	100.0



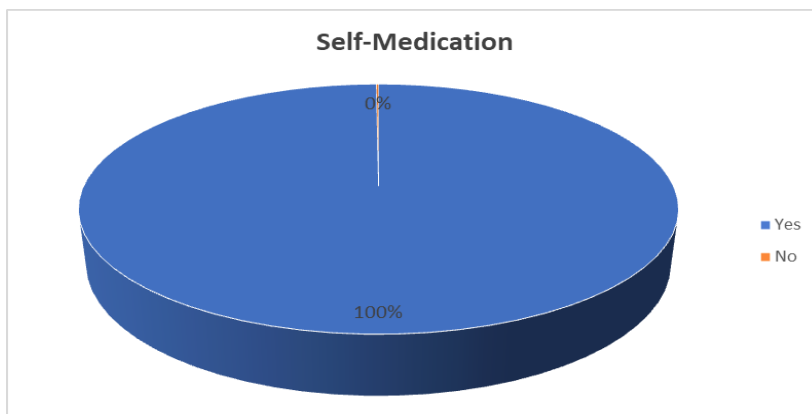
2. PREVALENCE OF SELF-MEDICATION

The present study revealed that **almost all participants (99.9%) reported practicing self-medication**, while **only 0.1% indicated that they did not engage in self-medication practices** (Table 5). This finding reflects an **exceptionally high prevalence of self-medication among pharmacy students**, which may be attributed to their

academic exposure to medications, perceived confidence in managing minor ailments, and easy availability of medicines.

Table 5: Practice of Self-Medication.

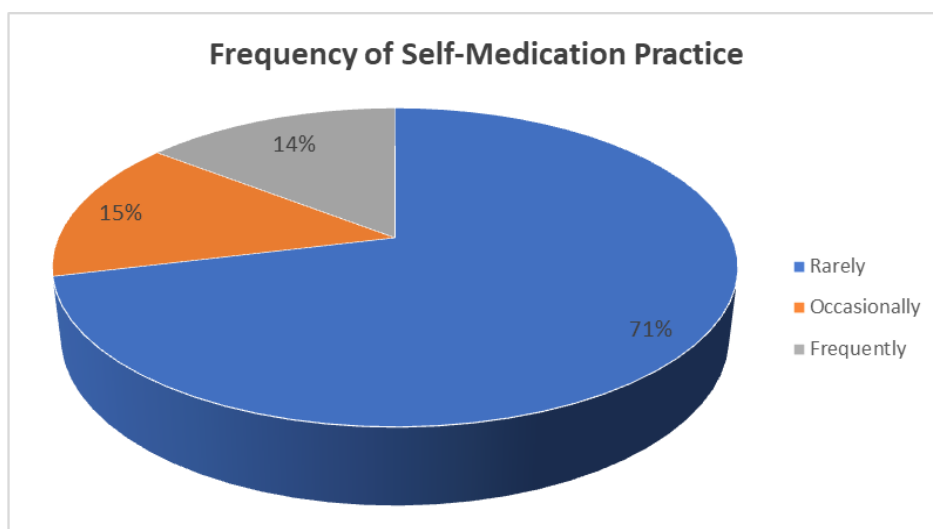
Self-Medication	Frequency	Percentage (%)
Yes	706	99.9
No	1	0.1
Total	707	100.0



With respect to frequency, **71.1% of students reported practicing self-medication rarely**, whereas **14.4% practiced occasionally** and **14.4% reported frequent self-medication** (Table 6). These results suggest that although self-medication is widely practiced, it is generally performed intermittently rather than on a regular basis, indicating a high prevalence but moderate frequency of use.

Table 6: Frequency of Self-Medication Practice.

Frequency	Number	Percentage (%)
Rarely	503	71.1
Occasionally	102	14.4
Frequently	102	14.4
Total	707	100.0



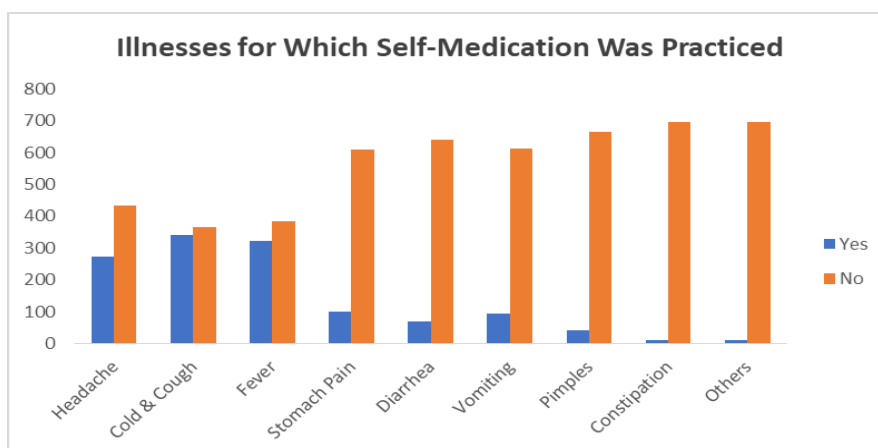
3. ILLNESSES LEADING TO SELF-MEDICATION

The study findings indicated that self-medication was most commonly practiced for **minor and self-limiting conditions**. The most frequently reported conditions were **cold and cough (48.2%)**, **fever (45.5%)**, and **headache (38.5%)**. These symptoms are often perceived as mild and manageable without professional medical consultation.

Other conditions reported by participants included **stomach pain (14.0%)**, **vomiting (13.4%)**, **diarrhoea (9.6%)**, **pimples (5.8%)**, and **constipation (1.7%)** (Table 7). These observations suggest that **students primarily relied on self-medication for common and non-serious health problems**, reflecting a tendency to manage minor illnesses independently.

Table 7: Illnesses for Which Self-Medication Was Practiced.

Illness	Yes n (%)	No n (%)
Headache	272 (38.5)	435 (61.5)
Cold & Cough	341 (48.2)	366 (51.8)
Fever	322 (45.5)	384 (54.3)
Stomach Pain	99 (14.0)	608 (86.0)
Diarrhoea	68 (9.6)	639 (90.4)
Vomiting	95 (13.4)	612 (86.6)
Pimples	41 (5.8)	666 (94.2)
Constipation	12 (1.7)	695 (98.3)
Others	12 (1.7)	695 (98.3)

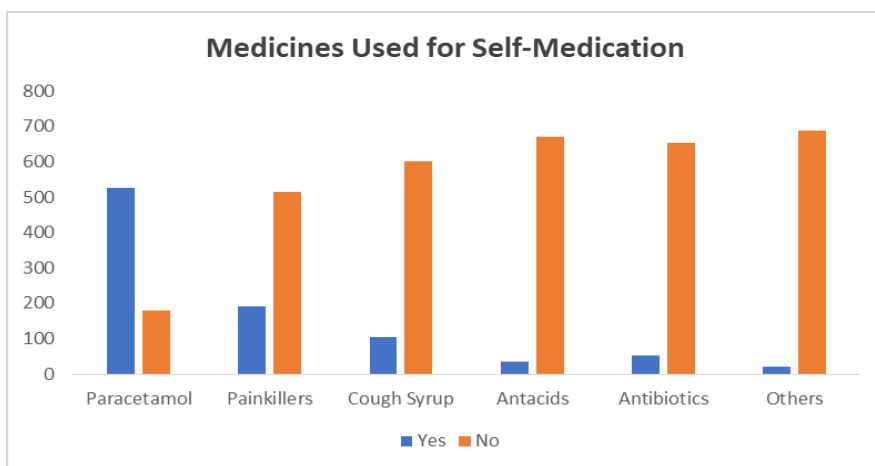


4. MEDICATIONS USED FOR SELF-MEDICATION

The analysis revealed that **paracetamol (74.5%)** was the most commonly used medication, followed by **painkillers (27.2%)**, **cough syrups (14.9%)**, **antibiotics (7.5%)**, and **antacids (5.1%)** (Table 8).

Table 8: Medicines Used for Self-Medication.

Medicine	Yes n (%)	No n (%)
Paracetamol	527 (74.5)	180 (25.5)
Painkillers	192 (27.2)	515 (72.8)
Cough Syrup	105 (14.9)	602 (85.1)
Antacids	36 (5.1)	671 (94.9)
Antibiotics	53 (7.5)	654 (92.5)
Others	20 (2.8)	687 (97.2)



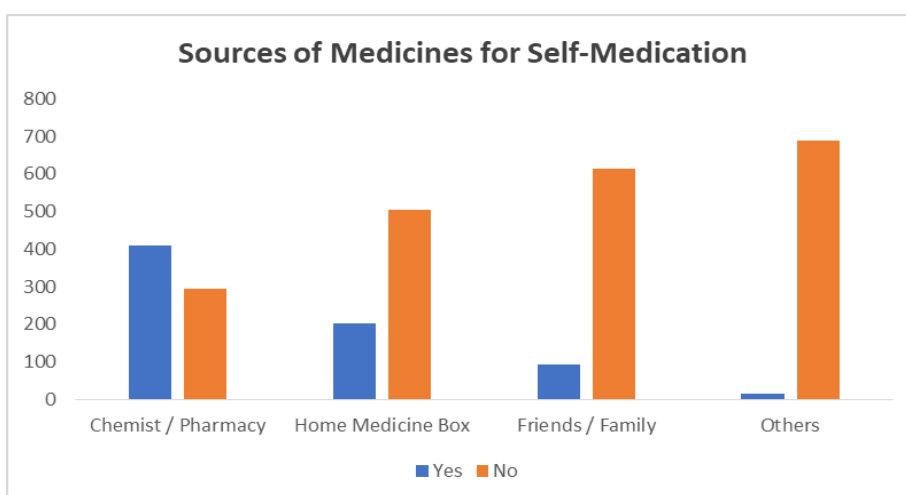
The unsupervised use of antibiotics (7.5%) is particularly concerning, as it may lead to antimicrobial resistance, adverse drug reactions, and inappropriate treatment outcomes. This finding highlights the potential risks associated with self-medication practices, even among pharmacy students with medical knowledge.

5. SOURCES OF MEDICINES

Pharmacies were identified as the primary source of medicines (58.1%), followed by home medicine storage (28.6%), friends and family members (13.2%), and other sources (2.4%) (Table 9).

Table 9: Sources of Medicines for Self-Medication.

Source	Yes n (%)	No n (%)
Chemist / Pharmacy	411 (58.1)	296 (41.9)
Home Medicine Box	202 (28.6)	505 (71.4)
Friends / Family	93 (13.2)	614 (86.8)
Others	17 (2.4)	690 (97.6)



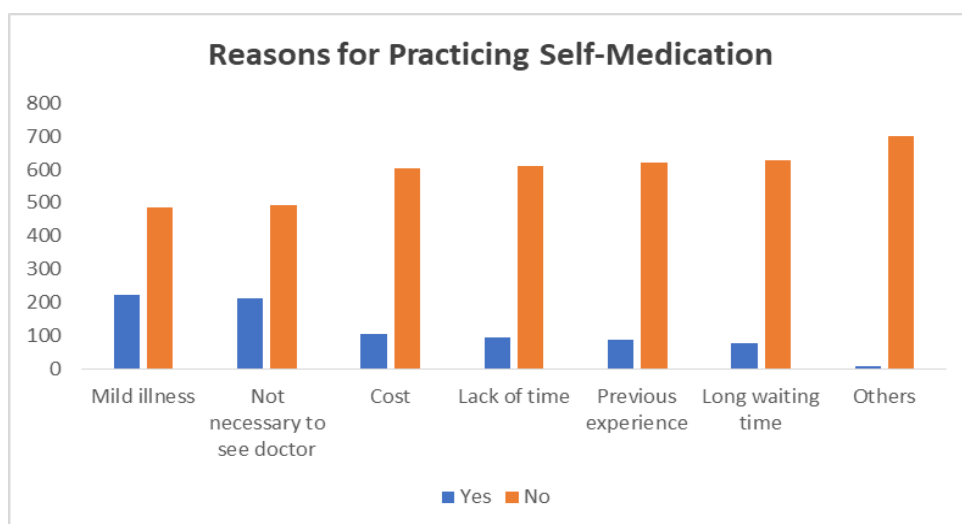
These results indicate that easy accessibility to medicines plays a significant role in encouraging self-medication practices. The availability of medications in households and pharmacies without strict regulation may further contribute to this behaviour.

6. REASONS FOR SELF-MEDICATION

Participants reported several reasons for practicing self-medication. The most common reason was **mild illness (31.4%)**, followed by **belief that visiting a doctor was unnecessary (30.1%)**. Additional reasons included **cost saving (14.7%)**, **lack of time (13.6%)**, **previous experience with similar illness (12.2%)**, and **long waiting time in healthcare facilities (11.0%)** (Table 10).

Table 10: Reasons for Practicing Self-Medication.

Reason	Yes n (%)	No n (%)
Mild illness	222 (31.4)	485 (68.6)
Not necessary to see doctor	213 (30.1)	494 (69.9)
Cost	104 (14.7)	603 (85.3)
Lack of time	96 (13.6)	611 (86.4)
Previous experience	86 (12.2)	621 (87.8)
Long waiting time	78 (11.0)	629 (89.0)
Others	8 (1.1)	699 (98.9)



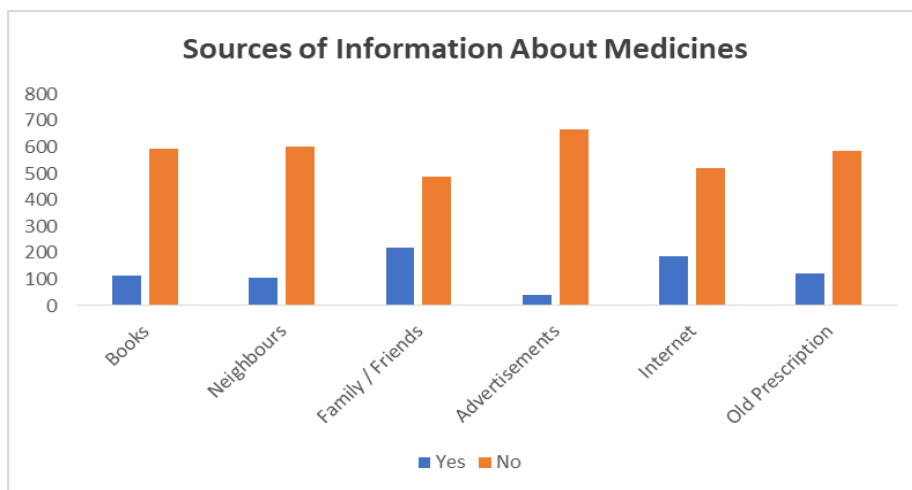
These findings suggest that **convenience, time constraints, and perceived minor illness were the primary motivating factors** influencing self-medication among pharmacy students.

7. SOURCES OF DRUG INFORMATION

The study found that **family and friends (31.1%) were the most common source of drug information**, followed by the **internet (26.4%)**, **old prescriptions (17.0%)**, **books (16.1%)**, **neighbours (14.7%)**, and **advertisements (5.5%)** (Table 11).

Table 11: Sources of Information About Medicines.

Information Source	Yes n (%)	No n (%)
Books	114 (16.1)	593 (83.9)
Neighbours	104 (14.7)	603 (85.3)
Family / Friends	220 (31.1)	487 (68.9)
Advertisements	39 (5.5)	668 (94.5)
Internet	187 (26.4)	520 (73.6)
Old Prescription	120 (17.0)	587 (83.0)



These findings indicate that **informal and non-professional sources significantly influenced students' decisions regarding medication use**, which may increase the risk of inappropriate drug selection and misuse.

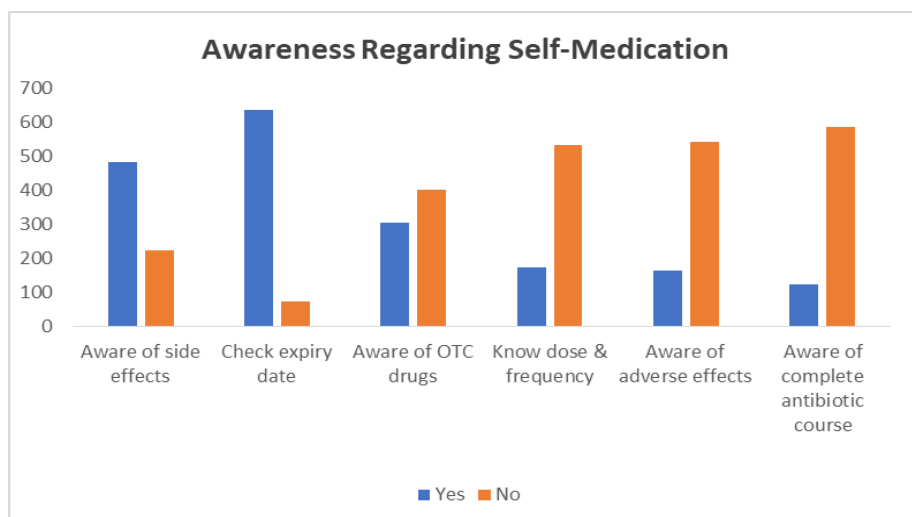
8. AWARENESS REGARDING SELF-MEDICATION

A large proportion of participants demonstrated awareness of certain safe medication practices. **Most students reported checking expiry dates (89.8%), and 68.3% were aware of potential side effects** associated with medications.

However, awareness was considerably lower regarding **correct dosage (24.6%), possible adverse effects (23.3%), and completion of antibiotic course (17.3%)** (Table 12). These findings suggest that **while general awareness was moderate, significant knowledge gaps still exist**, particularly concerning antibiotic use and dosage accuracy.

Table 12: Awareness Regarding Self-Medication.

Awareness Variable	Yes n (%)	No n (%)
Aware of side effects	483 (68.3)	224 (31.7)
Check expiry date	635 (89.8)	72 (10.2)
Aware of OTC drugs	305 (43.1)	402 (56.9)
Know dose & frequency	174 (24.6)	533 (75.4)
Aware of adverse effects	165 (23.3)	542 (76.7)
Aware of complete antibiotic course	122 (17.3)	585 (82.7)



9. ASSOCIATION ANALYSIS

9.1. NO SIGNIFICANT ASSOCIATIONS

The study found **no statistically significant association** between demographic variables and self-medication practices, including **gender** ($p = 0.275$), **degree** ($p = 0.929$), and **residence type** ($p = 0.830$) (Tables 13–16). This suggests that **self-medication behaviour was consistent across different demographic groups**.

Table 13: Association Between Gender and Practice of Self-Medication.

Gender	Taken Medicine Without Doctor – No n (%)	Taken Medicine Without Doctor – Yes n (%)	Total n (%)	χ^2 value	p-value
Female	1 (0.3)	322 (99.7)	323 (100.0)	1.191	0.275
Male	0 (0.0)	384 (100.0)	384 (100.0)		
Total	1 (0.1)	706 (99.9)	707 (100.0)		

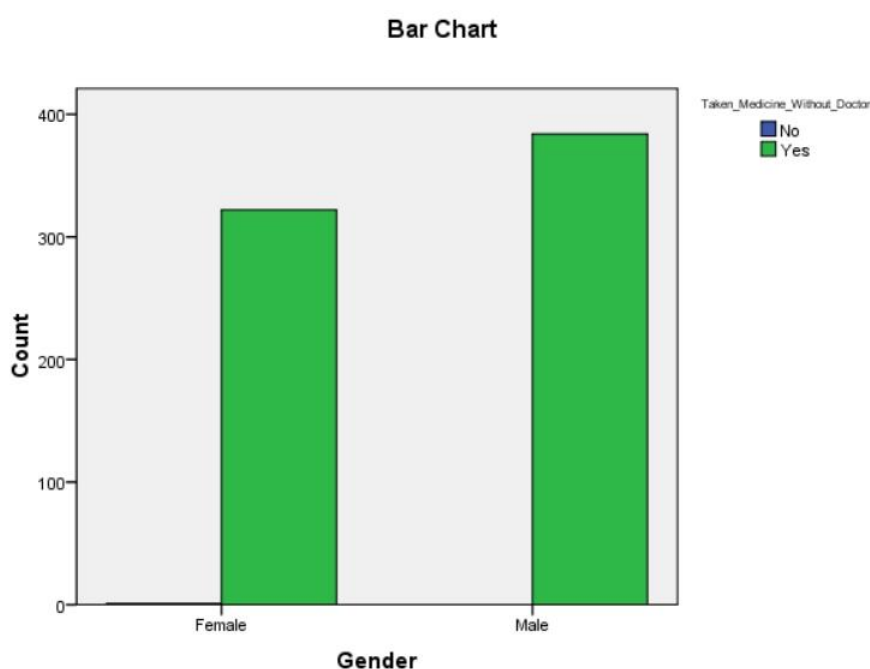


Table 13 depicts the association between gender and the practice of self-medication. Self-medication was reported by 99.7% of female participants and by all male participants (100%).

The chi-square analysis showed **no statistically significant association** between gender and self-medication practices ($\chi^2 = 1.191$, $p = 0.275$), indicating that gender did not influence the practice of self-medication among the study participants.

Table 14: Association Between Degree and Practice of Self-Medication.

Degree	Taken Medicine Without Doctor – No n (%)	Taken Medicine Without Doctor – Yes n (%)	Total n (%)	χ^2 value	p-value
B. Pharm	1 (0.2)	485 (99.8)	486 (100.0)	0.455	0.929
D. Pharm	0 (0.0)	102 (100.0)	102 (100.0)		
M. Pharm	0 (0.0)	69 (100.0)	69 (100.0)		
Pharm. D	0 (0.0)	50 (100.0)	50 (100.0)		
Total	1 (0.1)	706 (99.9)	707 (100.0)		

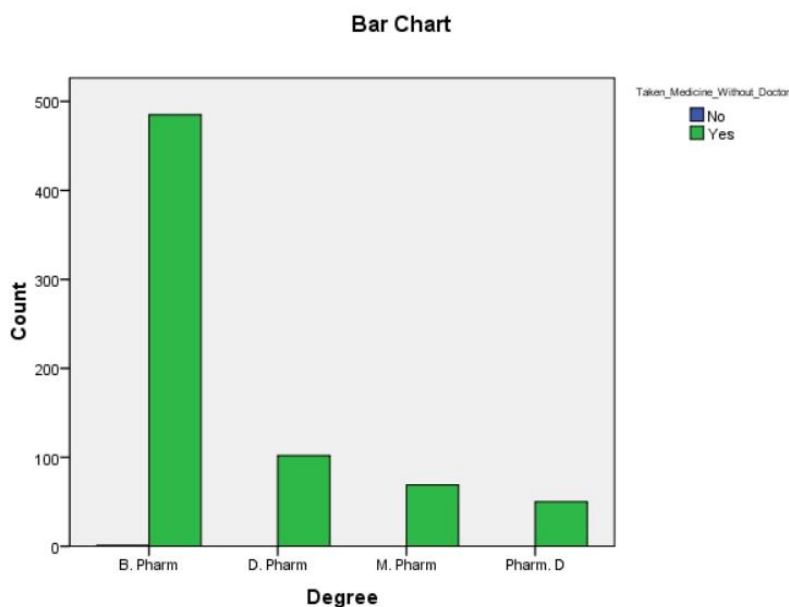


Table 14 illustrates the association between the degree of study and the practice of self-medication among the participants. Self-medication was highly prevalent across all degree programs, with 99.8% of B. Pharm students and 100% of D. Pharm, M. Pharm, and Pharm. D students reporting the practice of taking medicines without consulting a doctor.

The chi-square test showed **no statistically significant association** between degree of study and self-medication practices ($\chi^2 = 0.455$, $p = 0.929$). This indicates that the practice of self-medication was **independent of the type of pharmacy degree pursued**.

Table 15: Association Between Residence Type and Practice of Self-Medication.

Residence Type	Taken Medicine Without Doctor – No n (%)	Taken Medicine Without Doctor – Yes n (%)	Total n (%)	χ^2 value	p-value
Day Scholar	1 (0.1)	675 (99.9)	676 (100.0)	0.046	0.830
Hostel	0 (0.0)	31 (100.0)	31 (100.0)		
Total	1 (0.1)	706 (99.9)	707 (100.0)		

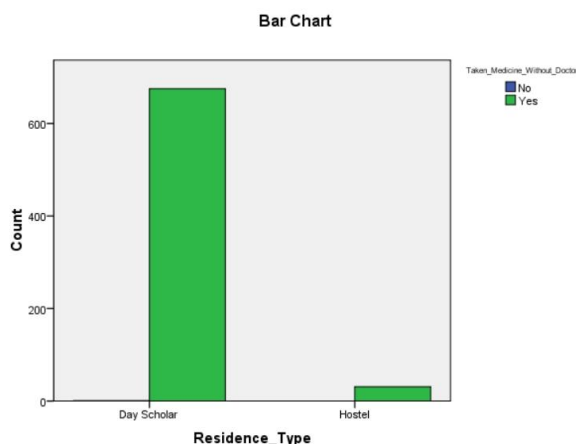


Table 15 shows the association between residence type and the practice of self-medication among the study participants. Self-medication was reported by **99.9% of day scholars** and **100% of hostel residents**, indicating a uniformly high prevalence regardless of living arrangement.

The chi-square analysis revealed **no statistically significant association** between residence type and self-medication practice ($\chi^2 = 0.046, p = 0.830$). This suggests that residence status (day scholar or hostel resident) did not influence the likelihood of practicing self-medication among the students.

Table 16: Association Between Gender and the Perception that It Is Not Necessary to See a Doctor.

Gender	Reason Not Necessary to See a Doctor – No n (%)	Reason Not Necessary to See a Doctor – Yes n (%)	Total n (%)	χ^2 value	p-value
Female	228 (70.6)	95 (29.4)	323 (100.0)	0.145	0.704
Male	266 (69.3)	118 (30.7)	384 (100.0)		
Total	494 (69.9)	213 (30.1)	707 (100.0)		

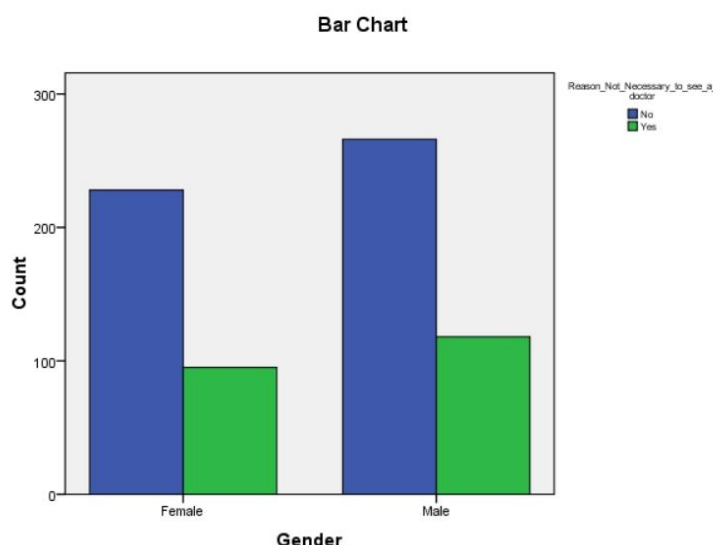


Table 16 depicts the association between gender and the belief that it is not necessary to consult a doctor before taking medication. Among female students, **29.4%** felt that seeing a doctor was unnecessary, while **30.7%** of male students shared the same perception. The proportions were comparable across both genders.

The chi-square test showed **no statistically significant association** between gender and this perception ($\chi^2 = 0.145, p = 0.704$). This finding suggests that attitudes toward avoiding medical consultation were **similar among male and female students**.

9.2. SIGNIFICANT ASSOCIATIONS

However, statistically significant associations were observed between several variables. Significant relationships were identified between **gender and lack of time** ($p < 0.001$), **gender and long waiting time** ($p < 0.001$), and **gender and mild illness** ($p < 0.001$). Additionally, **antacid use showed a significant association with awareness** ($p = 0.030$), and **awareness score was significantly associated with frequency of self-medication** ($p < 0.001$) (Tables 17 – 36).

Table 17: Association Between Gender and Lack of Time as a Reason for Self-Medication.

Gender	Reason – Lack of Time (No) n (%)	Reason – Lack of Time (Yes) n (%)	Total n (%)	χ^2 value	p-value
Female	298 (92.3)	25 (7.7)	323 (100.0)	17.275	<0.001
Male	313 (81.5)	71 (18.5)	384 (100.0)		
Total	611 (86.4)	96 (13.6)	707 (100.0)		

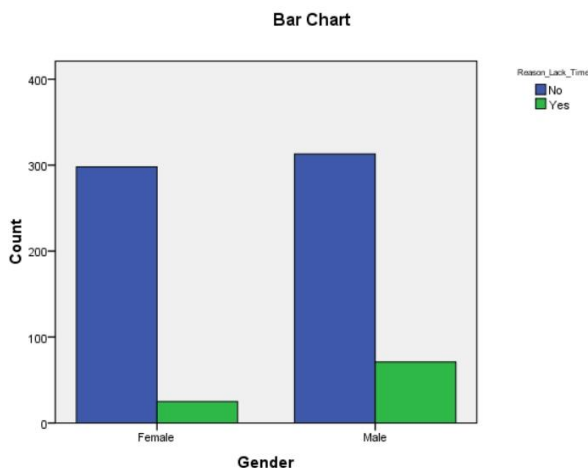


Table 17 presents the association between gender and lack of time as a reason for practicing self-medication. Among female students, only **7.7%** reported lack of time as a reason for self-medication, whereas a significantly higher proportion of male students (**18.5%**) cited lack of time.

The chi-square test revealed a **statistically significant association** between gender and lack of time as a motivating factor ($\chi^2 = 17.275, p < 0.001$). This indicates that **male students were significantly more likely than female students** to self-medicate due to time constraints.

Table 18: Association Between Gender and Cost as a Reason for Self-Medication.

Gender	Reason – Cost (No) n (%)	Reason – Cost (Yes) n (%)	Total n (%)	χ^2 value	p-value
Female	281 (87.0)	42 (13.0)	323 (100.0)	1.381	0.240
Male	322 (83.9)	62 (16.1)	384 (100.0)		
Total	603 (85.3)	104 (14.7)	707 (100.0)		

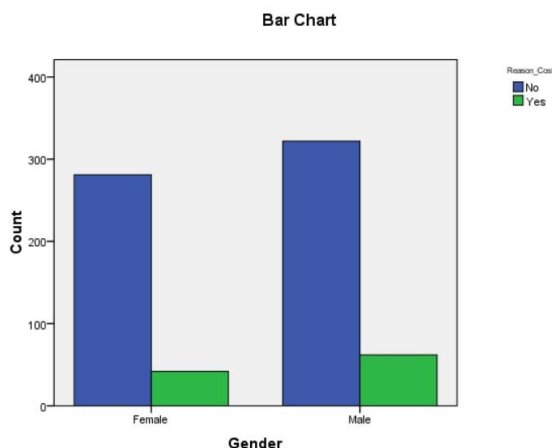


Table 18 shows the association between gender and cost as a motivating factor for self-medication. Among female students, **13.0%** reported cost as a reason for self-medication, while **16.1%** of male students cited cost as a factor.

The chi-square analysis indicated **no statistically significant association** between gender and cost-related reasons for self-medication ($\chi^2 = 1.381$, $p = 0.240$). This suggests that **financial considerations influenced both genders similarly** in their decision to self-medicate.

Table 19: Association Between Gender and Long Waiting Time as a Reason for Self-Medication.

Gender	Reason – Long Wait (No) n (%)	Reason – Long Wait (Yes) n (%)	Total n (%)	χ^2 value	p-value
Female	302 (93.5)	21 (6.5)	323 (100.0)	12.439	<0.001
Male	327 (85.2)	57 (14.8)	384 (100.0)		
Total	629 (89.0)	78 (11.0)	707 (100.0)		

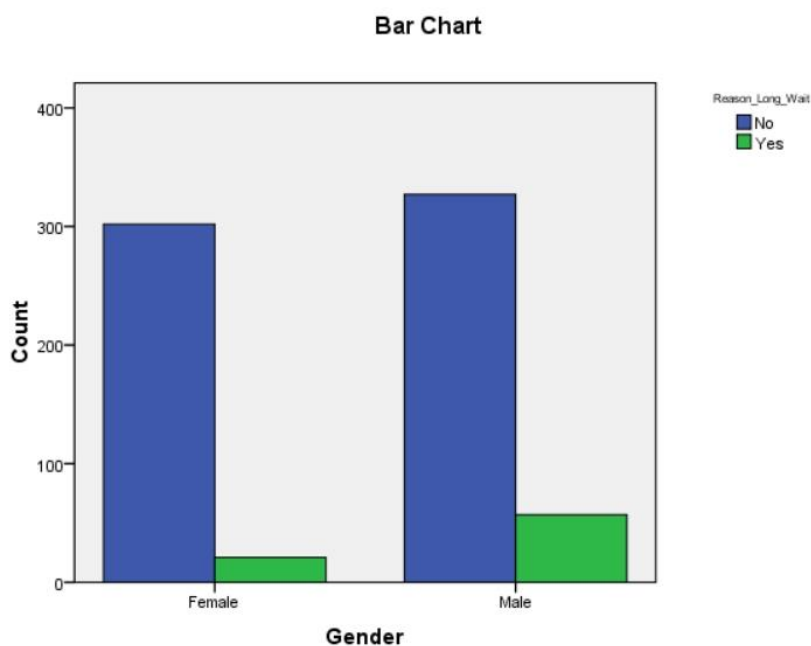


Table 19 depicts the association between gender and long waiting time as a reason for practicing self-medication. Only **6.5%** of female students cited long waiting times as a reason, compared to **14.8%** of male students.

The chi-square test revealed a **statistically significant association** between gender and long waiting time ($\chi^2 = 12.439$, $p < 0.001$). This indicates that **male students were significantly more likely than female students** to self-medicate due to long waiting times at healthcare facilities.

Table 20: Association Between Gender and Mild Illness as a Reason for Self-Medication.

Gender	Reason – Mild Illness (No) n (%)	Reason – Mild Illness (Yes) n (%)	Total n (%)	χ^2 value	p-value
Female	191 (59.1)	132 (40.9)	323 (100.0)	24.741	<0.001
Male	294 (76.6)	90 (23.4)	384 (100.0)		
Total	485 (68.6)	222 (31.4)	707 (100.0)		

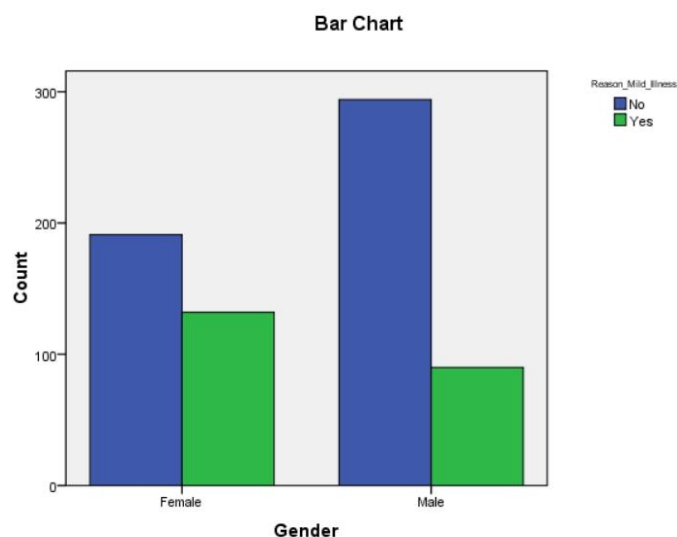


Table 20 demonstrates the association between gender and the perception of illness as mild as a reason for self-medication. A higher proportion of **female students (40.9%)** considered their illness mild enough to self-medicate compared to **male students (23.4%)**.

The chi-square test showed a **statistically significant association** between gender and mild illness as a motivating factor ($\chi^2 = 24.741, p < 0.001$). This suggests that **female students were significantly more likely than male students** to self-medicate when they perceived their illness as mild.

Table 21: Association Between Gender and Previous Experience as a Reason for Self-Medication.

Gender	Reason – Previous Experience (No) n (%)	Reason – Previous Experience (Yes) n (%)	Total n (%)	χ^2 value	p-value
Female	284 (87.9)	39 (12.1)	323 (100.0)	0.004	0.947
Male	337 (87.8)	47 (12.2)	384 (100.0)		
Total	621 (87.8)	86 (12.2)	707 (100.0)		

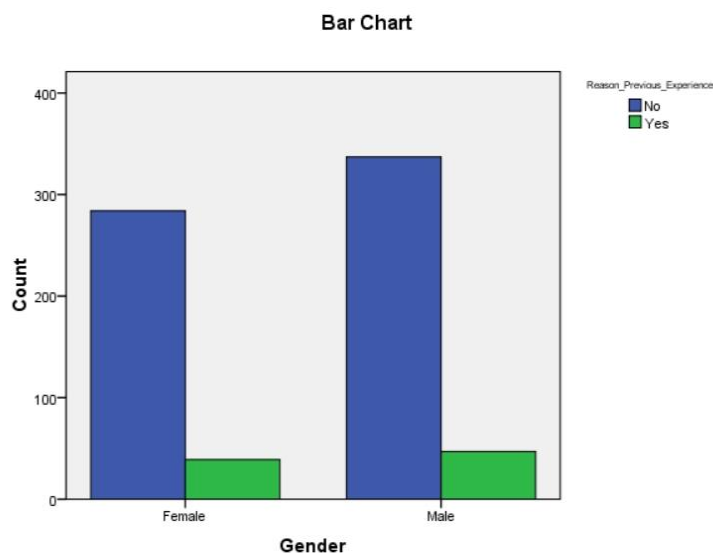


Table 21 shows the association between gender and previous experience as a reason for self-medication. Nearly identical proportions of female (12.1%) and male (12.2%) students reported relying on previous experience when self-medicating.

The chi-square test indicated **no statistically significant association** between gender and previous experience as a motivating factor ($\chi^2 = 0.004$, $p = 0.947$). This suggests that **prior experience influenced self-medication practices similarly among both genders**.

Table 22: Association Between Gender and Other Reasons for Self-Medication.

Gender	Reason – Others (No) n (%)	Reason – Others (Yes) n (%)	Total n (%)	χ^2 value	p-value
Female	319 (98.8)	4 (1.2)	323 (100.0)	0.061	0.805
Male	380 (99.0)	4 (1.0)	384 (100.0)		
Total	699 (98.9)	8 (1.1)	707 (100.0)		

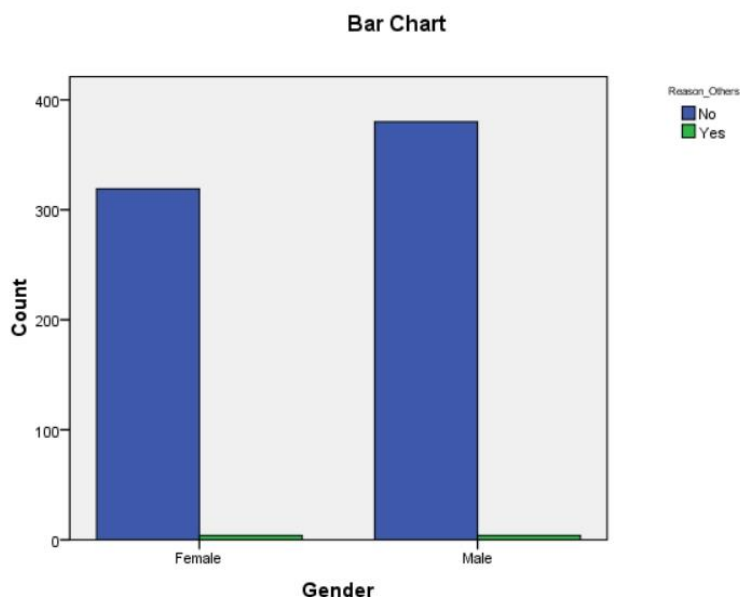


Table 22 presents the association between gender and other less commonly reported reasons for self-medication. Only **1.2% of female** and **1.0% of male** students cited other reasons for practicing self-medication.

The chi-square test revealed **no statistically significant association** between gender and other reasons for self-medication ($\chi^2 = 0.061$, $p = 0.805$). This indicates that **additional reasons beyond those listed were minimal and did not differ by gender**.

Table 23: Association Between Residence Type and the Perception that It Is Not Necessary to See a Doctor.

Residence Type	Reason – Not Necessary to See a Doctor (No) n (%)	Reason – Not Necessary to See a Doctor (Yes) n (%)	Total n (%)	χ^2 value	p-value
Day Scholar	471 (69.7)	205 (30.3)	676 (100.0)	0.288	0.592
Hostel	23 (74.2)	8 (25.8)	31 (100.0)		
Total	494 (69.9)	213 (30.1)	707 (100.0)		

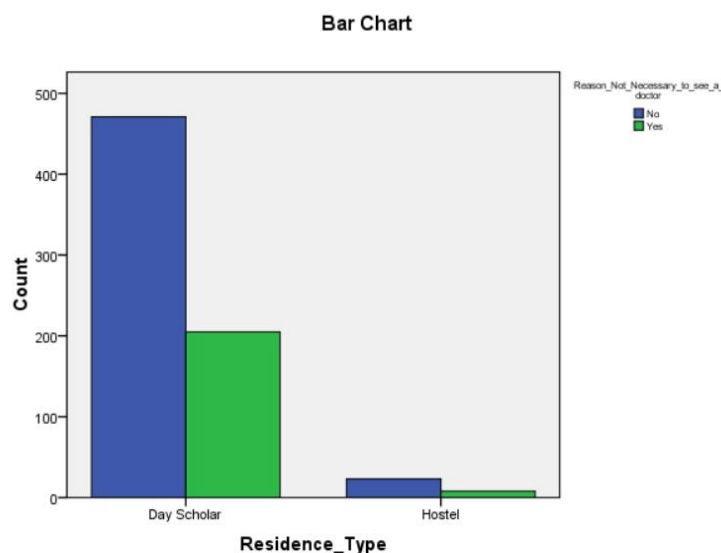


Table 23 depicts the association between residence type and the perception that it is not necessary to consult a doctor before taking medication. Among day scholars, **30.3%** believed that seeing a doctor was unnecessary, while **25.8%** of hostel residents shared this perception.

The chi-square test showed **no statistically significant association** between residence type and this belief ($\chi^2 = 0.288$, $p = 0.592$). This suggests that **students' residence status did not significantly influence their perception regarding the necessity of consulting a doctor.**

Table 24: Association Between Residence Type and Lack of Time as a Reason for Self-Medication.

Residence Type	Reason – Lack of Time (No) n (%)	Reason – Lack of Time (Yes) n (%)	Total n (%)	χ^2 value	p-value
Day Scholar	583 (86.2)	93 (13.8)	676 (100.0)	0.420	0.517
Hostel	28 (90.3)	3 (9.7)	31 (100.0)		
Total	611 (86.4)	96 (13.6)	707 (100.0)		

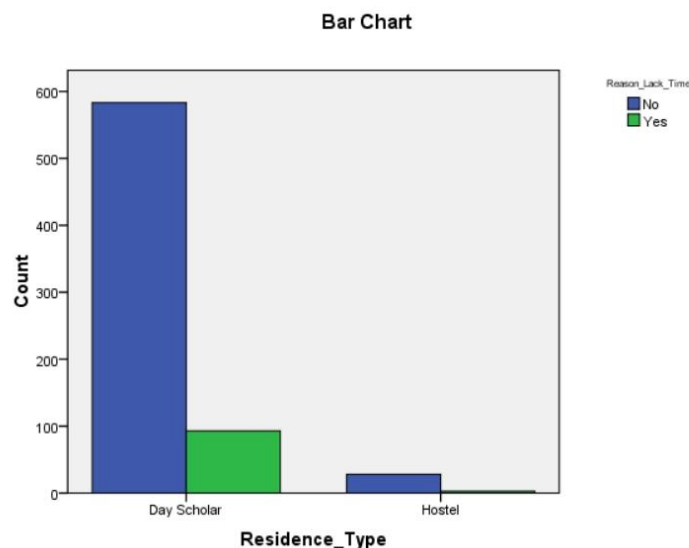


Table 24 shows the association between residence type and lack of time as a reason for practicing self-medication. Among day scholars, **13.8%** reported lack of time as a motivating factor, compared to **9.7%** of hostel residents.

The chi-square test indicated **no statistically significant association** between residence type and lack of time ($\chi^2 = 0.420, p = 0.517$). This finding suggests that **time constraints influenced self-medication practices similarly among day scholars and hostel residents.**

Table 25: Association Between Residence Type and Cost as a Reason for Self-Medication.

Residence Type	Reason – Cost (No) n (%)	Reason – Cost (Yes) n (%)	Total n (%)	χ^2 value	p-value
Day Scholar	575 (85.1)	101 (14.9)	676 (100.0)	0.655	0.419
Hostel	28 (90.3)	3 (9.7)	31 (100.0)		
Total	603 (85.3)	104 (14.7)	707 (100.0)		

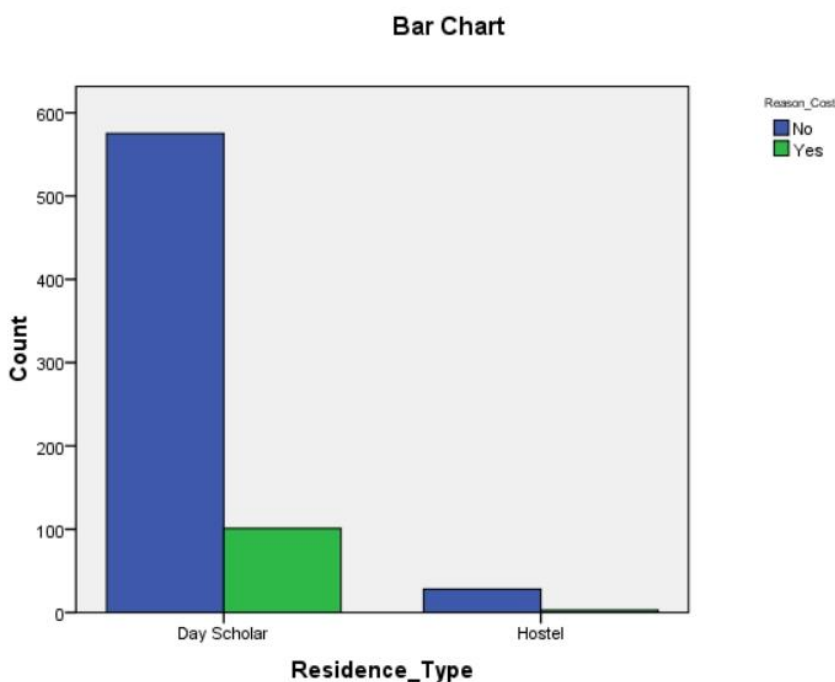


Table 25 illustrates the association between residence type and cost as a reason for self-medication. Among day scholars, **14.9%** cited cost as a motivating factor, whereas **9.7%** of hostel residents reported cost-related reasons.

The chi-square analysis revealed **no statistically significant association** between residence type and cost as a reason for self-medication ($\chi^2 = 0.655, p = 0.419$). This indicates that **financial considerations did not significantly differ based on students' residence type.**

Table 26: Association Between Residence Type and Long Waiting Time as a Reason for Self-Medication.

Residence Type	Reason – Long Wait (No) n (%)	Reason – Long Wait (Yes) n (%)	Total n (%)	χ^2 value	p-value
Day Scholar	600 (88.8)	76 (11.2)	676 (100.0)	0.693	0.405
Hostel	29 (93.5)	2 (6.5)	31 (100.0)		
Total	629 (89.0)	78 (11.0)	707 (100.0)		

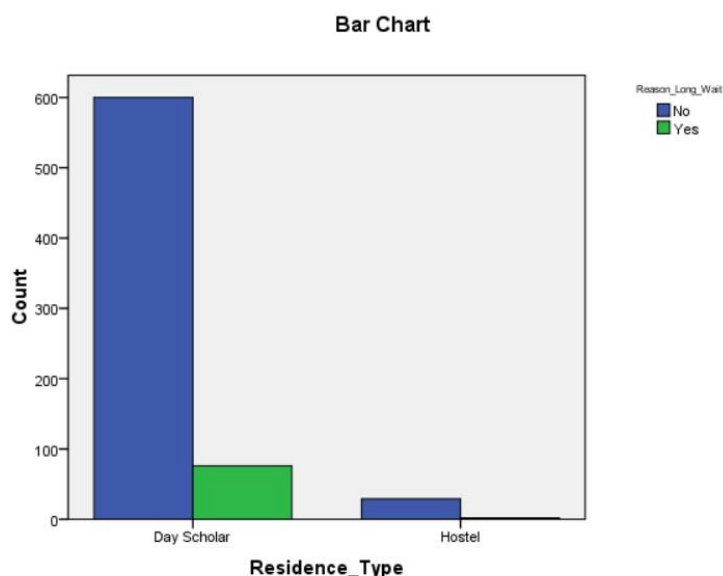


Table 26 depicts the association between residence type and long waiting time as a reason for self-medication. Among day scholars, **11.2%** reported long waiting time as a reason, compared to **6.5%** of hostel residents.

The chi-square test showed **no statistically significant association** between residence type and long waiting time ($\chi^2 = 0.693, p = 0.405$). This suggests that **perceived waiting time at healthcare facilities did not differ significantly between day scholars and hostel residents** in influencing self-medication practices.

Table 27: Association Between Residence Type and Mild Illness as a Reason for Self-Medication.

Residence Type	Reason – Mild Illness (No) n (%)	Reason – Mild Illness (Yes) n (%)	Total n (%)	χ^2 value	p-value
Day Scholar	467 (69.1)	209 (30.9)	676 (100.0)	1.671	0.196
Hostel	18 (58.1)	13 (41.9)	31 (100.0)		
Total	485 (68.6)	222 (31.4)	707 (100.0)		

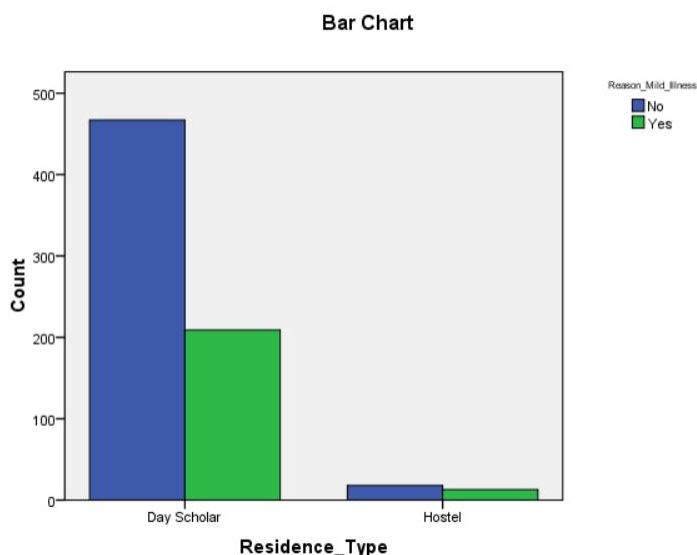


Table 27 shows the association between residence type and mild illness as a reason for self-medication. A higher proportion of hostel residents (**41.9%**) considered their illness mild enough to self-medicate compared to day scholars (**30.9%**).

However, the chi-square analysis demonstrated **no statistically significant association** between residence type and mild illness as a motivating factor ($\chi^2 = 1.671, p = 0.196$). This suggests that **perception of illness severity did not differ significantly based on residence type**.

Table 28: Association Between Residence Type and Previous Experience as a Reason for Self-Medication.

Residence Type	Reason – Previous Experience (No) n (%)	Reason – Previous Experience (Yes) n (%)	Total n (%)	χ^2 value	p-value
Day Scholar	593 (87.7)	83 (12.3)	676 (100.0)	0.188	0.665
Hostel	28 (90.3)	3 (9.7)	31 (100.0)		
Total	621 (87.8)	86 (12.2)	707 (100.0)		

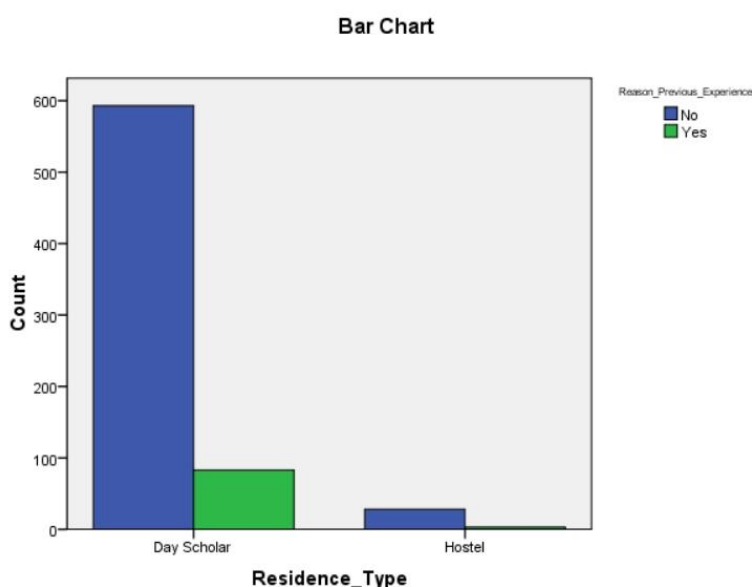


Table 28 illustrates the association between residence type and previous experience as a reason for self-medication. Among day scholars, **12.3%** relied on previous experience, while **9.7%** of hostel residents reported the same.

The chi-square test showed **no statistically significant association** between residence type and previous experience as a motivating factor ($\chi^2 = 0.188, p = 0.665$). This suggests that **prior experience influenced self-medication practices similarly among day scholars and hostel residents**.

Table 29: Association Between Residence Type and “Other” Reasons for Self-Medication.

Residence Type	Reason – Others (No) n (%)	Reason – Others (Yes) n (%)	Total n (%)	χ^2 value	p-value
Day Scholar	668 (98.8)	8 (1.2)	676 (100.0)	0.371	0.542
Hostel	31 (100.0)	0 (0.0)	31 (100.0)		
Total	699 (98.9)	8 (1.1)	707 (100.0)		

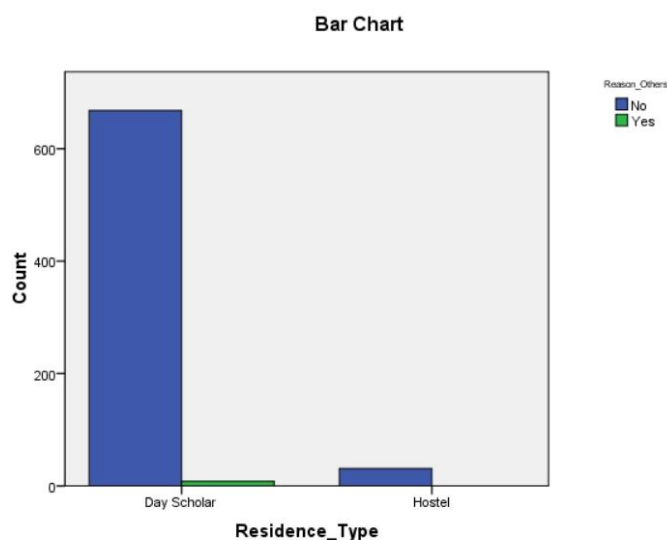


Table 29 shows the association between residence type and “other” reasons for self-medication. A very small proportion of day scholars (1.2%) reported other reasons, while **none of the hostel residents** cited this category.

The chi-square analysis revealed **no statistically significant association** between residence type and other reasons for self-medication ($\chi^2 = 0.371$, $p = 0.542$). This indicates that **residence type did not influence the likelihood of reporting miscellaneous reasons for self-medication.**

Table 30: Association Between Use of Paracetamol and Awareness About Completing the Full Course.

Use of Paracetamol	Aware – No n (%)	Aware – Yes n (%)	Total n (%)	χ^2 value	p-value
No	155 (86.1)	25 (13.9)	180 (100.0)	1.917	0.166
Yes	430 (81.6)	97 (18.4)	527 (100.0)		
Total	585 (82.7)	122 (17.3)	707 (100.0)		

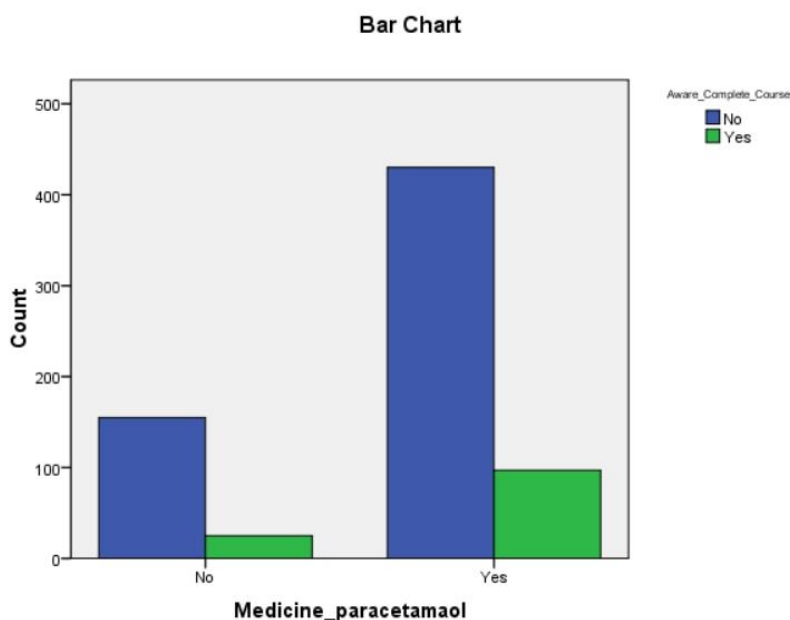


Table 30 depicts the association between the use of paracetamol and awareness regarding the completion of the full course of medication. Among participants who used paracetamol, **18.4%** were aware of the importance of completing the full course, compared to **13.9%** among those who did not use paracetamol.

The chi-square test showed **no statistically significant association** between paracetamol use and awareness of completing the full course ($\chi^2 = 1.917, p = 0.166$). This suggests that **use of paracetamol did not significantly influence participants' awareness regarding the necessity of completing the prescribed medication course.**

Table 31: Association Between Use of Painkillers and Awareness About Completing the Full Course.

Use of Painkillers	Aware – No n (%)	Aware – Yes n (%)	Total n (%)	χ^2 value	p-value
No	422 (81.9)	93 (18.1)	515 (100.0)	0.855	0.355
Yes	163 (84.9)	29 (15.1)	192 (100.0)		
Total	585 (82.7)	122 (17.3)	707 (100.0)		

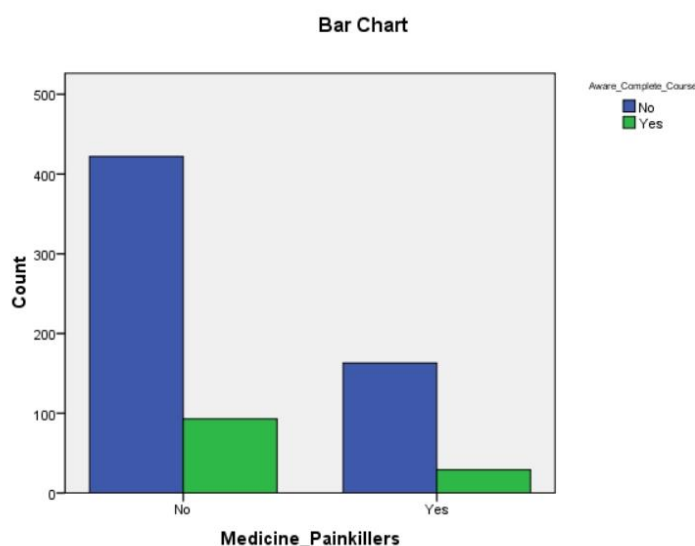


Table 31 illustrates the association between the use of painkillers and awareness regarding the completion of the full course of medication. Among participants who used painkillers, **15.1%** were aware of the importance of completing the full course, compared to **18.1%** among those who did not use painkillers.

The chi-square analysis revealed **no statistically significant association** between painkiller use and awareness of completing the medication course ($\chi^2 = 0.855, p = 0.355$). This indicates that **use of painkillers did not significantly influence awareness about completing the full course of medication** among the study participants.

Table 32: Association Between Use of Cough Syrup and Awareness About Completing the Full Course.

Use of Cough Syrup	Aware – No n (%)	Aware – Yes n (%)	Total n (%)	χ^2 value	p-value
No	502 (83.4)	100 (16.6)	602 (100.0)	1.180	0.277
Yes	83 (79.0)	22 (21.0)	105 (100.0)		
Total	585 (82.7)	122 (17.3)	707 (100.0)		

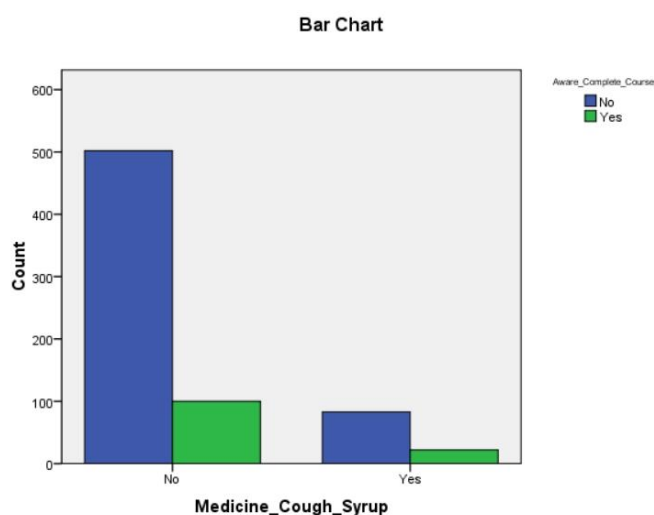


Table 32 presents the association between the use of cough syrup and awareness regarding the completion of the full course of medication. Among participants who used cough syrup, **21.0%** were aware of the importance of completing the full course, compared to **16.6%** among those who did not use cough syrup.

The chi-square test indicated **no statistically significant association** between cough syrup use and awareness about completing the medication course ($\chi^2 = 1.180$, $p = 0.277$). This suggests that **use of cough syrup did not significantly affect participants' awareness regarding completion of the full course.**

Table 33: Association Between Use of Antacids and Awareness About Completing the Full Course.

Use of Antacids	Aware – No n (%)	Aware – Yes n (%)	Total n (%)	χ^2 value	p-value
No	560 (83.5)	111 (16.5)	671 (100.0)	4.699	0.030*
Yes	25 (69.4)	11 (30.6)	36 (100.0)		
Total	585 (82.7)	122 (17.3)	707 (100.0)		

**Statistically significant at $p < 0.05$*

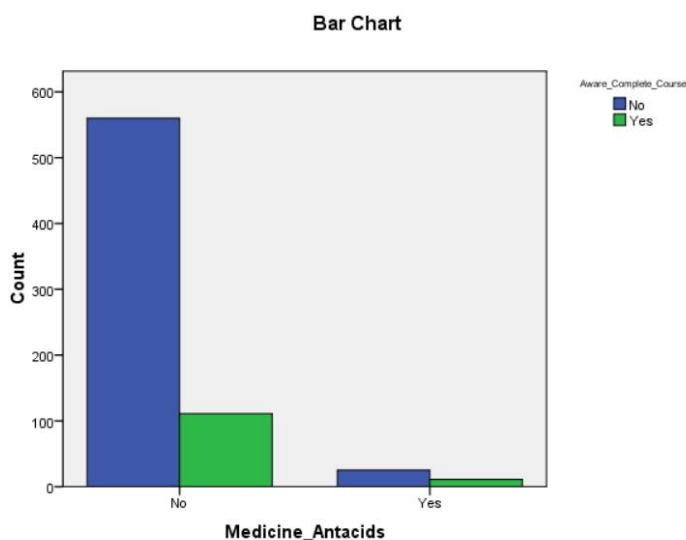


Table 33 shows the association between the use of antacids and awareness regarding completion of the full course of medication. Among students who used antacids, **30.6%** were aware of the importance of completing the full course, which is notably higher than **16.5%** among those who did not use antacids.

The chi-square test revealed a **statistically significant association** between antacid use and awareness about completing the full course ($\chi^2 = 4.699, p = 0.030$). This indicates that students who used antacids were **significantly more aware** of the need to complete the prescribed course of medication compared to non-users.

Table 34: Association Between Use of Antibiotics and Awareness About Completing the Full Course.

Use of Antibiotics	Aware – No n (%)	Aware – Yes n (%)	Total n (%)	χ^2 value	p-value
No	543 (83.0)	111 (17.0)	654 (100.0)	0.491	0.483
Yes	42 (79.2)	11 (20.8)	53 (100.0)		
Total	585 (82.7)	122 (17.3)	707 (100.0)		

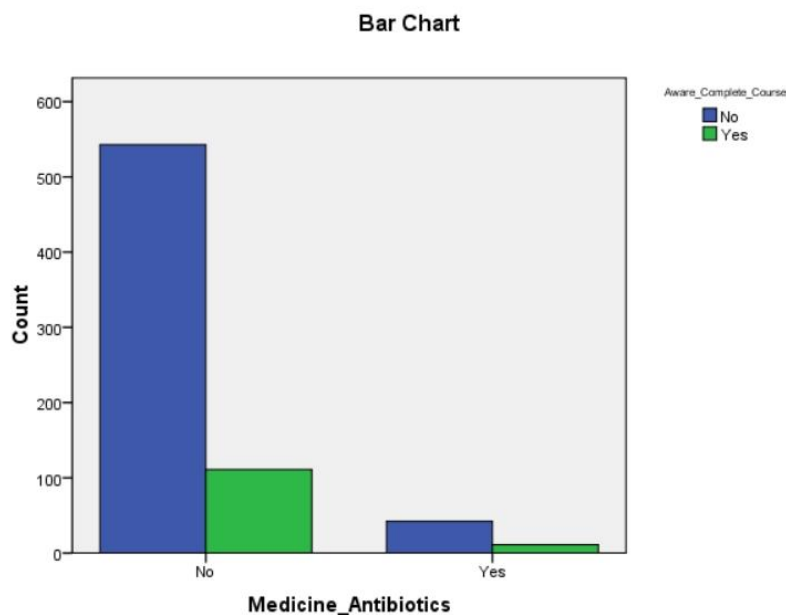


Table 34 illustrates the association between antibiotic use and awareness regarding completion of the full course of medication. Among students who reported using antibiotics, **20.8%** were aware of the importance of completing the full course, compared to **17.0%** among those who did not use antibiotics.

However, the chi-square test showed **no statistically significant association** between antibiotic use and awareness about completing the full course ($\chi^2 = 0.491, p = 0.483$). This indicates that **use of antibiotics was not significantly associated with better awareness** regarding completion of the prescribed medication course among the study participants.

Table 35: Association Between Use of Other Medicines and Awareness About Completing the Full Course.

Use of Other Medicines	Aware – No n (%)	Aware – Yes n (%)	Total n (%)	χ^2 value	p-value
No	571 (83.1)	116 (16.9)	687 (100.0)	11.746	0.068
Yes	14 (71.4)	4 (28.6)	18 (100.0)		
Total	585 (82.7)	122 (17.3)	707 (100.0)		

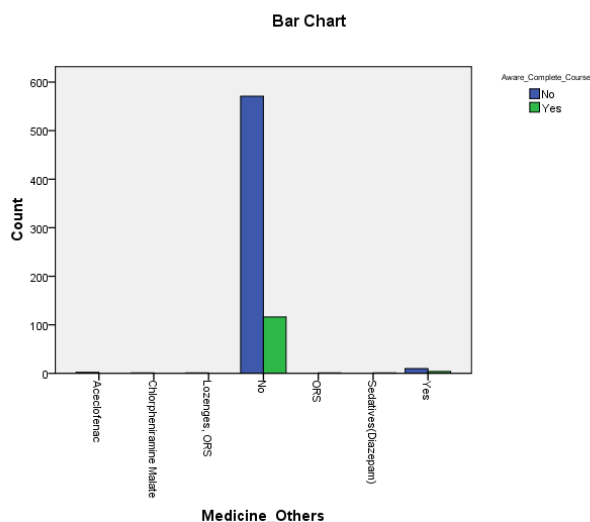


Table 35 depicts the association between the use of other medications (such as aceclofenac, chlorpheniramine maleate, ORS, lozenges, and sedatives) and awareness regarding completion of the full course of medication. Among students who reported using other medicines, **28.6%** were aware of the importance of completing the full course, compared to **16.9%** among those who did not use any other medicines.

The chi-square analysis showed **no statistically significant association** between the use of other medicines and awareness about completing the full course ($\chi^2 = 11.746$, $p = 0.068$). Although awareness appeared higher among users of other medicines, the difference did not reach statistical significance at the 5% level.

Table 36: Association Between Awareness Score and Frequency of Self-Medication.

Awareness Score	Frequently n (%)	Occasionally n (%)	Rarely n (%)	Total n (%)	χ^2 value	p-value
0-2	100 (15.2)	91 (13.8)	467 (71.0)	658 (100.0)	21.379	0.000*
4-5	2 (4.5)	7 (15.9)	35 (79.5)	44 (100.0)		
Above 5	0 (0.0)	4 (80.0)	1 (20.0)	5 (100.0)		
Total	102 (14.4)	102 (14.4)	503 (71.1)	707 (100.0)		

*Statistically significant at $p < 0.05$

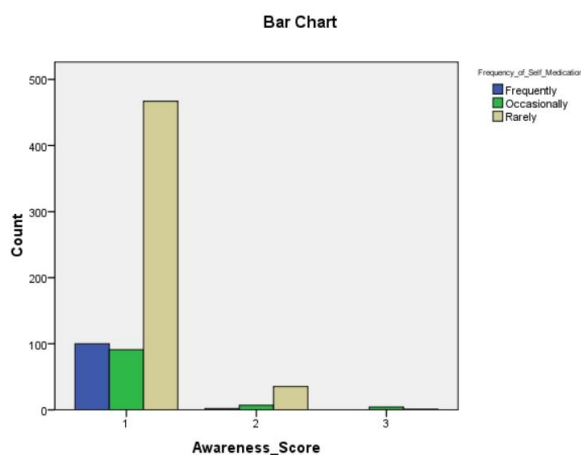


Table 36 demonstrates the association between awareness score and frequency of self-medication among the study participants. Students with **lower awareness scores (Score 0-2)** predominantly practiced self-medication **rarely (71.0%)**, while **15.2%** reported frequent self-medication. Among students with **moderate awareness (Score 4-5)**, the majority also self-medicated rarely (**79.5%**).

In contrast, students with the **highest awareness score (Score above 5)** showed a markedly different pattern, with **80.0%** reporting **occasional self-medication** and none reporting frequent self-medication.

The chi-square test revealed a **highly statistically significant association** between awareness score and frequency of self-medication ($\chi^2 = 21.379$, $p < 0.001$). This indicates that **awareness level significantly influences self-medication behaviour**, with higher awareness associated with more controlled and less frequent self-medication practices.

These findings indicate that **awareness levels and behavioural factors play an important role in influencing self-medication practices**.

10. OVERALL KEY FINDINGS

The major findings of this study include:

- *Extremely high prevalence of self-medication among pharmacy students (99.9%)*
- *Paracetamol identified as the most commonly used medication*
- *Cold, fever, and headache were the most frequent conditions for self-medication*
- *Pharmacies were the primary source of medicines*
- *Mild illness was the leading reason for self-medication*
- *Moderate awareness but poor knowledge regarding antibiotic use*
- *Awareness significantly influenced self-medication frequency*

DISCUSSION AND CONCLUSION

Discussion

The present study aimed to assess the **prevalence, patterns, and awareness of self-medication practices among pharmacy students**. The findings revealed that **self-medication was highly prevalent**, with **99.9% of participants reporting that they practiced self-medication**. This high prevalence may be attributed to **pharmacy students' academic exposure to medications, increased confidence in handling minor illnesses, and easy access to medicines**. Students with pharmaceutical knowledge may feel comfortable managing minor health conditions without consulting healthcare professionals, which could contribute to the widespread use of self-medication.

Although the prevalence of self-medication was high, the frequency of use varied among participants. The majority of students reported that they **rarely practiced self-medication (71.1%)**, while smaller proportions practiced occasionally or frequently. This indicates that **students generally resort to self-medication only when necessary**, particularly for mild health conditions. Such findings suggest that while self-medication is common, it is not routinely practiced by most students.

The study further identified that **cold and cough, fever, and headache were the most common conditions** leading to self-medication. These illnesses are generally considered minor and self-limiting, which may explain why students

preferred to manage them independently. Other conditions such as stomach pain, vomiting, diarrhoea, pimples, and constipation were reported less frequently. These findings suggest that **students primarily practiced self-medication for minor ailments**, which aligns with commonly observed patterns in similar populations.

Regarding medication use, **paracetamol was identified as the most commonly used drug**, followed by painkillers, cough syrups, antibiotics, and antacids. The **use of antibiotics without medical supervision remains a concern**, as inappropriate use can contribute to **antimicrobial resistance and adverse drug reactions**. Even though the percentage of antibiotic use was comparatively lower, this finding highlights the importance of **improving awareness regarding rational use of antibiotics**, particularly among pharmacy students.

The study also found that **pharmacies were the main source of medicines**, followed by home medicine storage and advice from friends or family members. This suggests that **easy availability of medications contributes significantly to self-medication practices**. Medicines stored at home may also encourage students to reuse medications without proper medical consultation.

Several reasons for self-medication were identified, including **mild illness, belief that visiting a doctor was unnecessary, cost saving, and lack of time**. These findings indicate that **convenience and accessibility are key factors influencing self-medication behaviour**. Students may prefer self-medication to avoid long waiting times and consultation expenses, especially for minor health issues.

The study also explored sources of drug information. **Family and friends, internet sources, and previous prescriptions were commonly used**, indicating reliance on informal information sources. This reliance may increase the risk of inappropriate drug use, as information obtained from non-professional sources may not always be accurate or reliable.

In terms of awareness, most students demonstrated **good practices such as checking expiry dates and awareness of side effects**. However, **limited awareness was observed regarding correct dosage, adverse effects, and completion of antibiotic courses**. These findings indicate that **although pharmacy students possess basic knowledge, gaps still exist in safe medication practices**.

The association analysis showed **no significant relationship between demographic variables and self-medication practices**, suggesting that self-medication behaviour was consistent across different groups. However, **significant associations were observed between awareness levels and frequency of self-medication**, indicating that students with better knowledge were more likely to practice responsible self-medication.

Overall, the findings highlight the **high prevalence of self-medication among pharmacy students**, along with **moderate awareness and notable knowledge gaps**, emphasizing the need for **educational interventions and awareness programs** to promote safe medication practices.

Conclusion

The present study concluded that **self-medication is widely practiced among pharmacy students**, with an **extremely high prevalence observed in the study population**. Minor illnesses such as **cold, fever, and headache were the most common reasons for self-medication**, and **paracetamol was the most frequently used medication**.

Pharmacies were identified as the **primary source of medicines**, and **mild illness, convenience, and cost saving were the major factors influencing self-medication practices**. Although students showed **moderate awareness regarding safe medication practices**, gaps were identified in areas such as **correct dosage, adverse effects, and rational antibiotic use**.

The findings also demonstrated that **awareness plays an important role in influencing self-medication behaviour**, highlighting the need for **educational initiatives and awareness programs** among pharmacy students. Improving knowledge about safe medication use can help reduce inappropriate practices and improve overall patient safety.

In conclusion, while self-medication may be beneficial for managing minor health conditions, **improper use can lead to potential health risks**, including adverse drug reactions and antimicrobial resistance. Therefore, **proper guidance, education, and responsible medication practices are essential to ensure safe self-medication among pharmacy students**.

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