

## ORIGINAL ARTICLE

**Frequency of Self Medication Among Health Science Students in Foundation University Medical College, Islamabad, Pakistan**

Sana Kiran Tahir\*, Nosheen Zaidi, Mahnoor Shabbir, Sarah Eman, Azqa Batool, Muhammad Hammad Qureshi, Muhammad Daoud Tariq

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**ABSTRACT**

**Objective:** This study aimed to assess the level of knowledge and practices of self-medication among health science students. The research sought to identify factors influencing self-medication practices, including demographics, program of study, and access to medical facilities.

**Study Design:** Descriptive cross-sectional study design.

**Place and Duration of Study:** The study was carried out at Foundation University Medical College, Islamabad, Pakistan including the Departments of MBBS, BDS, Nursing, and DPT over six months, from February 2023 to July 2023.

**Methods:** A descriptive cross-sectional study design was employed, involving students from a private university in Islamabad, including those in MBBS, BDS, Nursing, and DPT programs. The study was conducted over six months, from February to July 2023, using a non-probability convenience sampling technique. A validated questionnaire was utilized for data collection, pre-tested for clarity and relevance, and translated from Arabic to English. Data analysis was performed using SPSS version 23.0, involving descriptive and inferential statistics to elucidate self-medication trends and associations.

**Results:** Among the participants, 60.9% engaged in self-medication within the past six months. The most used medications were pain relievers (61.9%), antibiotics (39.1%), and cough syrups (35.8%). Motivations for self-medication included perceiving the illness as non-serious (47%), saving time (46.4%), and relying on past experiences (36.4%). Access to personal knowledge (52.3%) and understanding the importance of prescribed medicines (54.3%) were prevalent among the participants.

**Conclusion:** The study concluded that a significant number of medical students practiced self-medication, primarily motivated by underestimating the severity of illnesses. Over-the-counter painkillers and antibiotics, despite requiring a physician's prescription, were the most commonly self-prescribed medications among the study population.

**Keywords:** *Antibiotics, Healthcare Utilization, Self-Medication.*

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**Introduction**

Self-medication, defined as the administration of treatment without a prescription from a healthcare provider or physician, encompasses a broad spectrum of practices, including pharmacological and behavioral interventions. This term includes not only drug use but also lifestyle modifications, self-care, and disease prevention and management. The World Health Organization (WHO) recommends

appropriate self-medication to alleviate the burden on medical services, especially for minor disorders, utilizing minimal resources, and aiding in the treatment and prevention of diseases not requiring medical consultation.<sup>1</sup>

Students often opt for self-medication due to the accessibility and convenience of over-the-counter drugs, choosing this route instead of scheduling appointments with healthcare physicians. When done correctly, self-medication can be more effective, alleviate severe pain, reduce healthcare expenditures, and minimize medical visits. However, incorrect self-medication, lacking reliable medical knowledge, poses serious health risks, including prolonged illness, worsening symptoms, and negative drug reactions, leading to potential harm to individuals' health and the waste of resources.<sup>2</sup>

Research indicates high rates of irrational drug use and self-medication in countries such as India (87%), Brazil (86%), and Egypt (55%), with Iran exhibiting a notable rate of self-medication at 83.3%.<sup>3</sup> Health science students, owing to easy access to medications, proximity to pharmacies, prior knowledge of medicine, and diagnostic skills, are predisposed to self-medication. The demanding nature of health science education, coupled with academic pressures, may contribute to increased stress and health issues, prompting students to turn to self-medication instead of seeking professional medical treatment for quick and easy remedies.<sup>4</sup>

A study in Saudi Arabia found that the most common causes of self-medication were headache (45%), menstrual pain (23%), and fever (14%). The primary reason cited for self-medication was a lack of time to consult a doctor (68%).<sup>5</sup> Additionally, self-medication poses risks such as incorrect dosage, improper administration, prolonged use, improper storage, the risk of dependency, and an increased prevalence of pathogenic resistance to drugs.<sup>6</sup>

The primary aim of this study is to assess the knowledge, practice, and awareness of self-medication among undergraduate medical students at Foundation University Medical College, Islamabad, Pakistan.

### Objective

1. To determine the frequency of self-medication among health science students (MBBS,

BDS, Nursing, and DPT) at Foundation University Medical College (FUMC).

2. To identify the most commonly self-medicated drugs and their associated symptoms among health science students at FUMC.

3. To explore the reasons and factors influencing health science students to engage in self-medication practices.

### Methods

The study was carried out at Foundation University Medical College, Islamabad, Pakistan including the Departments of MBBS, BDS, Nursing, and DPT over six months, from February 2023 to July 2023 after taking approval from the Ethical Committee Board of the institute held on 5<sup>th</sup> March 2023 vide letter no: FF/FUMC/215-302/Phy/23. A sample size of 308 was calculated using Rao software. Non-probability convenience sampling.

**Inclusion Criteria:** Students enrolled in any health science program at FUIC, including MBBS, BDS, DPT, and Nursing.

**Exclusion Criteria:** Students currently taking prescription medication or undergoing treatment under the supervision of a trained medical professional were excluded from the study.

**Data Collection Procedure:** A validated questionnaire from a previous study was translated from Arabic to English, and a pilot study was conducted to check for any ambiguity.

**Data Analysis Procedure:** All data were analyzed using SPSS v 23.0. Descriptive statistics, including frequencies and percentages, were used to describe the number of students engaging in self-medication, the symptoms experienced, and the most common reasons for choosing self-medication.

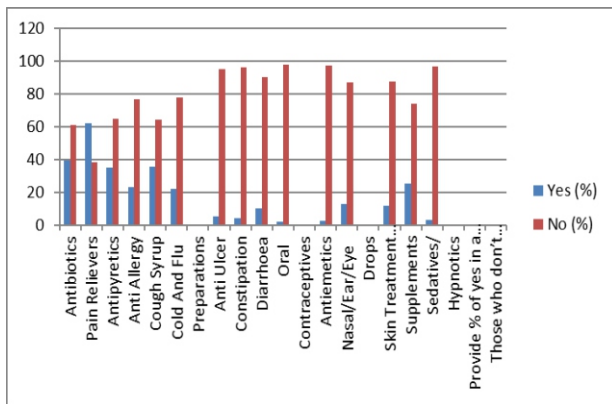
### Results

In the surveyed population, 80 individuals identified as male, constituting approximately 26.5% of the total sample, while 222 individuals identified as female, making up the remaining 73.5%. The age distribution revealed that 98 individuals (32.5%) fell within the 18 to 20 years bracket, 187 individuals (61.9%) were aged between 21 and 23 years, 15 individuals (5%) were in the 24 to 26 years range, and only 2 individuals (0.7%) were aged 27 and above.

Concerning academic programs, 90 students (29.8%) were enrolled in DPT, 28 students (9.3%) in BSN, 141 students (46.7%) in MBBS, and 43 students (14.2%) in BDS.

The data on self-medication practices over the past 6 months revealed that 118 respondents (38.1%) reported no instances of self-medication during this period. Among those who practiced self-medication, 72 individuals (23.8%) did so twice, 35 individuals (11.6%) reported three instances, 26 individuals (8.6%) reported four instances, 15 respondents (5%) reported five instances, and 36 individuals (11.9%) indicated self-medicating six times or more.

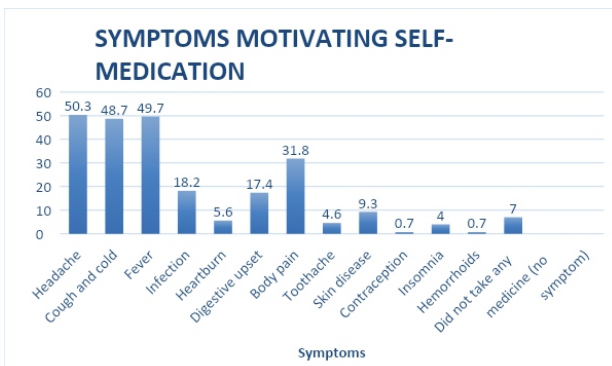
A chi-square analysis was performed to assess the



**Fig.1: Percentages of various medications taken by respondents in past 6 months**

**Discussion**

The findings of our study indicate a prevalent practice of self-medication among medical students at Foundation University, Islamabad. The majority of participants reported engaging in self-medication at least once in the past six months, with some

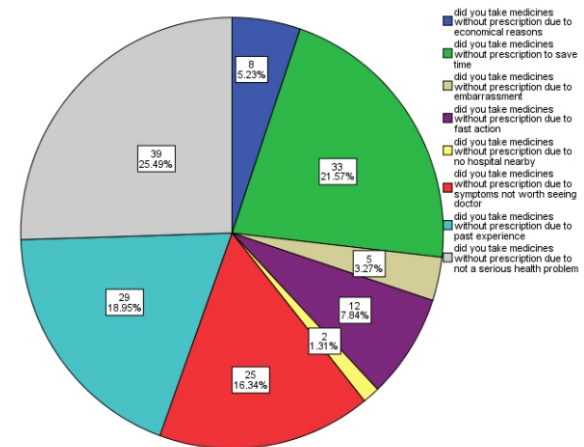


**Fig.3: Displays the frequency of symptoms that act as motivators for self-medication**

association between the department and the frequency of unprescribed medication taken within the past 6 months. The calculated *p*-value of 0.004 indicates statistical significance, suggesting a relationship between the department and the frequency of self-medication.

**Note:** Percentages and counts may not add up to 100% or the total sample size due to rounding.

The Figure.1 above illustrates the percentages of different medications, including antibiotics, anti-allergy drugs, anti-ulcer medications, antiemetics, etc., used by individuals participating in the study over the last 6 months.



**Fig.2: Reasons cited by respondents for using self-medication without a subscription prescription**

acknowledging up to five instances during this period. Although the frequency was comparatively lower than reported in other major cities like Lahore, the trend was notable. Notably, disciplines such as MBBS exhibited a higher participation rate, while BSN recorded the lowest. Distribution and sample size discrepancies among disciplines suggest a correlation with the number of enrolled students in each discipline.<sup>7</sup>

A study conducted among physical therapy students in private universities in Karachi revealed a significantly higher percentage of self-medication, underscoring the urgency of intervention to address the escalating health and economic burden in our country.<sup>8</sup> Similar patterns were observed in dental colleges in Nepal, attributing self-medication practices to factors such as the perception of symptoms as non-serious, time constraints,

economic considerations, and the lack of nearby medical facilities.<sup>9-13</sup>

While Pakistan witnessed a general increase in self-medication among university students, international studies indicated a lower prevalence in the developed world, emphasizing the role of up-to-date knowledge and awareness in mitigating such practices. Exceptions noted in studies from Belgrade, Serbia, and Ethiopia highlight the importance of awareness campaigns, particularly those led by senior healthcare professionals at universities.<sup>14</sup>

Females predominated among respondents, with the most prevalent age group falling within 21-23 years. This could be attributed to the higher enrollment of female respondents in each discipline.<sup>2,5,7,8,11</sup>

Among the self-medicated drugs, painkillers were the most sought after, followed by antibiotics, cough syrups, and antipyretics. A study among nursing students at Jazan University in KSA reported a similar trend, focusing on analgesics, aligning with our findings attributed to poor drug regulatory policies (Reference 5). Discrepancies in drug preferences were noted in a study conducted in Umm ul Qura and al Baha universities in KSA, emphasizing the need for region-specific interventions.<sup>+2</sup>

Reasons for self-medication included not considering the condition as serious, time-saving motives, past experiences, and economic considerations. This resonates with findings from dental colleges in Nepal, highlighting the lack of knowledge on disease progression and potential serious consequences due to misdiagnosis and incorrect treatment.<sup>13</sup>

Contrary to expectations, mass media was reported as the second least-used source of information, and knowledge from companions ranked the lowest. This contrasts with a study among medical students in Pakistan, where online resources were the predominant means of procuring medication.<sup>15-16</sup>

Despite a majority being aware of the importance of prescribed medicine and potential side effects, the prevalent practice of self-medication among well-educated urban individuals is concerning. This emphasizes the role of convenience over education in the broader population, as indicated by another study highlighting high prevalence rates in both rural

and urban areas.<sup>17,18</sup>

Self-medication, while potentially reducing the overall healthcare burden for minor illnesses, poses risks such as antibiotic resistance and risky behaviors leading to complications. Therefore, effective educational interventions on responsible drug usage are imperative. Stricter implementation of regulations by the Drug Regulatory Authority Pakistan (DRAP) is necessary to counter the rise in irrational over-the-counter drug use.

### Conclusion

The study concluded that a significant number of medical students practiced self-medication, primarily motivated by underestimating the severity of illnesses. Over-the-counter painkillers and antibiotics, despite requiring a physician's prescription, were the most commonly self-prescribed medications among the study population.

### Limitations

Several limitations impact the generalizability and robustness of this study. The sampling method introduced bias, as the study was confined to departments within a single institute in one city of Pakistan. As a result, the findings may not accurately represent the prevalence of self-medication among health science students across the entire country. The use of convenient, non-randomized sampling further diminishes the generalizability of the data. The cross-sectional design restricts the exploration of temporal relationships and causality. Misclassification of medication use is a potential concern, as students may underreport self-medication due to fear of judgment or stigma. Additionally, the study lacks control for various variables that could influence self-medication behavior, including access to healthcare, socioeconomic status, and health beliefs.

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**Authors Contribution**

**SKT:** Idea conception, study designing, data collection, data analysis, results and interpretation, manuscript writing, and proofreading

**NZ:** Idea conception, study designing, manuscript writing, and proofreading

**MS:** Data collection, data analysis, results and interpretation, manuscript writing, and proofreading

**SE:** Data collection, data analysis, results and interpretation, manuscript writing, and proofreading

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**MDT:** Data analysis, results and interpretation, manuscript writing, and proofreading

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