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SELF-MEDICATION PRACTICES AMONG UNIVERSITY STUDENTS IN GILGIT-BALTISTAN: A CASE STUDY

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Abstract
Self-medication is an important public health issue around the world and is common among university students. Limited academic research is available in Pakistan in general and Gilgit-Baltistan in particular on self-medication practices among university students. This study examined the self-medication practices prevalent among university students in a mountainous university in the region of Gilgit-Baltistan, Pakistan. The study objective was to examine the prevalence of self-medication among the university students and factors that led to the self-medication practices among students in a mountainous university in Gilgit-Baltistan, Pakistan. A cross sectional survey was conducted and data was randomly collected form 181 students in the chosen university across the academic disciplines. Results show majority of the students are practicing self-medication. Major factors that led to self-medication practice are low income level, lack of access to health facilities, unavailability of health professionals, easy availability of medication, peer-influence, family environment and previous experience of self-medication. The study concludes that self-medication is prevalent among university students in Gilgit-Baltistan. Health literacy and public awareness campaigns and sensitization efforts by university and public health professionals could be effective strategies in educating the students and general public toward the adverse effects of self-medication. Future studies should take into consideration the prevalence of self-medication among the students of schools and colleges in the larger region of Gilgit and Baltistan.

INTRODUCTION

Self-medication remains a serious public health concern, particularly among the younger generation worldwide. Throughout human history, many families and local communities have relied on their own health care practices to manage their well-being and that of their families. This practice, known as **self-care**, refers to actions taken by individuals to maintain health, prevent illness, and treat ailments, both for themselves and those close to them. A specific form of self-care is **self-medication**, defined as obtaining and using medicines for diagnosis, treatment, or management of health conditions without a doctor's

prescription. Historically, people have treated themselves, seeking solutions to health problems without consulting medical professionals. In today's world, this practice has become even more common, as many individuals prefer self-treatment over visiting health care providers. Medicines used for self-medication are generally known as **over-the-counter (OTC) drugs.** Self-medication is prevalent globally (Fenech, 2017). For example, a study in the United States found that OTC medications are used in approximately 60% of self-treatment cases. The reasons and the factors that led to the self-medication are myriad and may differ from culture to culture. Self-medication is frequently practiced in both wealthy and developing nations. Most economically developed nations treat their own illnesses by self-medicating.

Many students use medications in developing nations like Pakistan without any medical supervision, therefore this may be quite helpful for individuals who cannot afford the cost of clinical care. While ethical self-medication that is limited to over-the-counter (OTC) medications may create large net benefit flows to economies by reducing travel and consultation time as well as the direct cost of treatment, it may also have other drawbacks (Domingues *et al.*, 2017). However, the excessive dependence on self-medication often leads to substantial health risks, such as bad reactions and prolonged suffering, as well as resource waste and increased pathogen resistance. Antibiotics are frequently available without a prescription in underdeveloped nations, where the problem of antimicrobial resistance is particularly acute (Pagane, 2007).

Self-medication among young generation particularly among university students in Pakistan is a major public health issue. Various studies have found that self-medication is highly prevalent among university students in major cities of Pakistan (Ali *et al.*, 2023; Limaye *et al.*, 2017; Zafar *et al.* 2008; Khaliq, Ikrum and Afzal, 2024). However, in the extant literature, the focus has been on self-medication practices among university students in the cities. There is scarcity of academic literature about the self-medication practices among the university students in the rural context. This study thus aims to fulfill this lacuna in the academic literature. Taking a mountainous university in Gilgit-Baltistan as a case point, it examines the prevalence of self-medication practices and the factors that led to this practice among the university students in a mountainous university of Gilgit-Baltistan, Pakistan.

Methodology

To carry out this research and for the collection of data, the survey method has been utilized. Survey research is a widely used method in quantitative research. The population of the survey was the students from the selected mountainous university in Giglit-Baltistan, Northern Pakistan. Self-administered questionnaire was used as a tool for data collection. A sample of 250 students (N=250) was approached randomly for data collection and to fill the questionnaire. Out of 250, 181 participants completed the questionnaire.

Research design:

This study is classified as quantitative research since it uses a questionnaire to attempt to quantify the prevalence of self-medication among a mountainous university in Gilgit-Baltistan, Norther Pakistan. It is designed to be a cross-sectional and quantitative study to identify or categories the self-medication practices among the students of the chosen university. Based on the similar earlier research, the questionnaire was designed in English and self-administered. Any confusion in the wording in the questionnaire was addressed during the face to face and self-administered process of data collection.

Sampling technique:

Simple random sampling, which is a component of the sampling technique in which each sample has an equal chance of being chosen, was applied to conduct the study. A sample selected at random is intended to provide a fair reflection of the entire population.

Data gathering tools

Data from study participants was gathered using a standardized, self-administered questionnaire that was drawn from the earlier studies and related mainly from the study of Albusalih *et al.* (2017). It was created in a way that includes all the necessary factors to achieve the study's goals. It consists of several

questions, divided into two sections, that assess respondents' socio demographic traits and use of self-medication, as well as the factors/ causes that led the respondents to self-medication.

Data analysis:
For the data analysis, SPSS version 23 was utilized. Data exploration was the initial stage before analysis to see the overall structure of the data.

Results and Findings:
The current study data was collected through random sampling with a sample size of 181 collected from the university students in a mountainous university of Gilgit-Baltitan, Norther Pakistan. The sample was drawn from all academic disciplines of the university and included both graduate and undergraduate students having both male and female participants.

Table 1: Demographic variables.

Demography	Category	Frequency	Percentage
Gender	Male	68	37.6
	Female	113	62.4
	Total	181	100
Age	18-20 years	53	29.3
	21-25 years	118	65.2
	26-30 years	10	5.5
	Total	181	100
Marital Status	Single	88	48.6
	Married	82	45.3
	Domestic partnership	5	2.8
	Divorced	1	6
	Widowed	5	2.8
	Total	181	100
Division/Districts	Gilgit	176	97.2
	Baltistan	3	1.7
	Diamer	2	1.1
	Total	181	100

The demographic information as shown in the Table 1 depicts that majority of the study participants were females. This survey discloses that 37.6% of the participants were male, the 62.4%. were females. Most of the participants were unmarried (88, 48.6%). With respect to the age group, majority (62.5%) of the participants were between 21-25. Further the majority of the participants were from undergraduate program (96.1%). The reaming participants were MS and PhD program students. Further, the dominant majority of the participants were from Gilgit district (97.2%) and the least majority of the students was from Diamer district (1.1%).

Table 2: Descriptive statistics on medication types and their usage with percentage

Medication type	Frequency (f)	Percentage (%)
Paracetamol	49	27.1
Brufen	18	9.9
Panadol	62	34.3
Ponstan	24	13.3
Calpol	14	7.7
Amoxil	9	5
Others	5	2.8
	181	100

The results of Table 2 above presents that the 27.1% of respondents are utilizing paracetamol during illnesses while 9.9% of respondents are using Buprofen during the time of diseases. On the other hand, 34.3 % of respondents are utilizing Panadol while Ponistan was used by 13.3% of respondent and Calpol was utilized by 7.7% of respondent. 5.0% of respondents are utilizing Amoxil and 2.8% of respondents are utilizing another drug such as Vitamin capsules for the betterment of health.

Table 3: Reasons as mentioned by respondents for usage of various medicines for self-medication

Statement	When	Frequency (f)	%
I use the self-prescribed medicines	when had flu	105	58
	without symptoms	17	9.4
	regularly use	26	14.4
	other reasons	33	1.2
Total		181	100

On asking the question what were the reasons/ factors that led the participants to self-medication, 21% were of the view that low-income led to self-medication which also prevents them to consult health professionals. Due to heavy expenses they can't afford to consult with health care professionals for the treatment of minor diseases (see Table 3 above). And 28.2% said that the unavailability of the health professionals led them toward this self-medication behavior. Further, majority (42%) accounted said previous experience/ habits led them to practice self-medication. On asking the information resources about self- medication, 26.5% of students are practicing self-medication on their own willing or the results describes that the students are preferring self-medication because of their own personal interest.

Furthermore, majority of the respondents (35.9%) cited family as a major source of information about self-medication. On asking the places from where the respondents get the self-prescribed medicianes,41% said they buy from shops/ supermarket. More over 41.4% of students are availing the medicine from their nearby shops are markets because most of students have not access to the pharmacies because of long distance from homes and they prefer to buy medicine from nearby shops or supermarkets. While 14.4% of students are using medicine that is accessible at home or relatives or they get from friends while 19.3% of students are using the medicine that are left over medicine that their family or friends used previously for same illness.

Table 4: Factors that led to self-medication, information resources, places of buying, anti-biotic information

Statements	Category	Frequency	Percentage
What are the factors that are influencing you to practice self-medication?	Low income	38	21
	Peer influence	16	8.8
	Previous experience	76	42
	Unavailability of health care professional	51	28.2
What are the information sources for self-medication?	Self-decision	48	26.5
	Family	65	35.9
	Friends	13	7.2
	Health professionals	46	25.4
	Advertisements	9	5
From where do you avail the drugs?	Drug outlets	43	28.2
	Shops / Supermarkets	73	41.4
	Relatives/ Friends	26	14.4
	Left over medicine from previous medicine	35	19.3
What are antibiotics used for?	Bacterial and Viral infection	85	47
	Don't Know	24	13.3
	Other	2	1.1
Do you know what antibiotics are?	Yes	62	34.3
	No	119	65
		181	100

The study also explore whether or not the participants have knowledge or information about the antibiotics that they use to cure their illness or diseases, 24.3% of students were of the view that antibiotics are used to cure the diseases related to bacterial infection while 14.4% of students understand that antibiotics are used for treatment of viral infections and 47.0% of students are saying that antibiotics are used for both bacterial and viral infections and 13.3% of student have no knowledge about the antibiotics while 1.1% of students are saying that the antibiotics are used for some other reasons.

Table 5 Relationship between Gender of students and practice of self-medication

Drugs	Category	Paracetamol	Burofen	Panadol	Ponistan	Calpol	Amoxil	Another drug	χ^2
Gender	Male	19(28.00)*	11(28.00)	21(31.00)	5(7.35)	8(11.76)	4(6.00)	0(0)	12.988*
	Female	30(44.11)	7(10.29)	41(60.29)	19(28.00)	6(9.00)	5(7.35)	5(7.35)	12.988*

* denotes percentages, p>,0.001

About the gender and self-medication practices, as shown in Table 5 above, that 28% males and 44.11% females were using Paracetamol, likewise, 31% of male and 60.29% used Panadol. Likewise,7.35% male and 28% females used Ponistan as self-prescribed medicine. However, when looked at gender wise, there was not significant difference between male and female self-medication practice in the using the medicine types.

Discussion

Self-medication is a common practice among the young generation and poses serious threats to public health. This study examined the self-medication practices among the university students in Gilgit-Baltistan, Pakistan. The findings reveal that self-medication is a highly prevalent among the university students in the region. Both male and female students are involved in the self –medication practice. Various factors led the students to the practice of self-medication including the low income level, lack of availability of health professional, uneasy aces to health facilities and ongoing practice of self-medication in the family. Majority of the respondents (42%) attributed the ongoing practice or experience they had had since long as factor that led to the continuity of the self-medication practices among the students. Regarding the information resource on self-medication, 35.9% said, family and family members as a major sources knowing and getting information about self-medication. As excepted, 41.4% mentioned that they buy self-prescribed medicines from shops or general stores. These findings are in congruent with many existing findings in the extant literature on self-medication practices. The results of this study support the study findings of Khalid, Ikrum and Afzal (2024) where these researchers have found that majority of the university students were self-medicating.

The findings also support the study findings conducted in Saudi Arabia where the results have shown that majority of the public is engaged in the practice of self-medication (Alsaad *et al.*, 2022). Furthermore, the findings of the current study also reinforce the study on self-medication practices amongst the university students in Karachi where in Zafar *et al* (2008) have noted that the pre-valence of self-medication among the students was 76%. Likewise, the findings of the current study are also in agreement with the study findings of self-medication practices among university students in Karachi with 66% of self-medication prevalence (Limaye *et al.*, 2017). Similar findings were reported about practices of self-medication among students in Lahore where the self-medication practice was found to be as prevalent as 98.6% (Ali *et al.*, 2023).

The study findings are also in agreement with the findings of similar studies at global level. Alves, Precioso and Becona (2021) on the knowledge, attitudes and self-medication among the university students in Portugal have noted that self-medication

prevalence was over 54.3% with poor knowledge about the self-medicating practice. The findings of the current study also support the findings of Alshammari *et al.*, (2021) with the 98.2% prevalence of self-medication among university students in Hail, Saudui Arabia. The findings are also in congruent with the earlier findings of Abuhamadah and Naser (2024) on self-medication practices among the general public in Jordan. Despite the small sample size, the study is first of its kind that deals with the self-medication practices among the students in a mountain university of Gilgit-Baltistan, Pakistan. Future, research can be conducted by selecting a larger sample size than the current one and the scope of the study can be extended to examine the prevalence of self-medication practices among the students of college and other higher education institutions in Gilgit-Baltistan, Pakistan.

Conclusion

Self-medication is a serious public health concern among the youth. Although self-medication could be essential in maintaining a good quality of life, however, its excessive prevalence among youngsters can have serious health implications. Awareness and sensitization among the young generation about the adverse effects of the self-medication practices is important. Efforts must be exercised to ensure safer practices of self-medication. Overcoming the factors including the lack of access to health professionals and public health services is must to reduce the self-medication practices among the young generation. Further, the internet and advances in technology has made easy to access to medication information. However, identifying reliable and valid information on self-medication could be a challenge for the public. It is recommended that health literacy must be introduced as basic and compulsory course at the university level in order to create awareness among the students and better equip them to reduce their reliance on self-medication practice. Enhancing health literacy skills among the university students could be an effective strategy to enable them to identifying reliable and valid information about self-medication. Arranging public health campaigns, seminars and workshops by the health professionals about adverse effects of self-medication could be yet another effective public health strategy to reduce the self-medication practice among the general public in Gilgit-Baltistan.

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