

The practice of self-medication among Pakistani university students

Mamoona Mushtaq¹, Saleem Gul¹ and Fauzia Naz²

¹Govt. MAO College, Lahore, Pakistan

²Govt. College Township, Lahore, Pakistan

Abstract: Self-medication refers to the selection and use of medicines without prescription by an individuals' personal responsibility as a cure of self-identified disease. Although its rationale, type and extent may differ from culture to culture, it is globally prevalent practice. In Pakistan no research is available on the use of self-medication among university students. The existing study was conducted to investigate the frequency and percentages of branded medicines used by university students, reasons and rationale behind self-medication. It was a survey research design and descriptive statistics were collected regarding the use of self-medication. Hence, a sample of 300 students was employed between the age range of 16-25 years ($M = 20.23$, $SD = 2.76$). The respondents filled a questionnaire regarding socio-economic and demographic variables, use of self-medication, and medication knowledge. Information was obtained on the conditions treated with medication, the medications used, and attitude towards self-medication. Results indicated mostly used type of self-medication was allopathic ($f = 230$, 77%). Headache was found to be more frequently prevalent disease. Most frequently used medicine was Disprin ($M = 49.68$, $SD = 15.14$) as a cure of headaches and other body pains. Financial problems ($f = 90$, 30%) left over drugs ($f = 46$, 15%) and easy accessibility ($f = 38$, 12.7%) were found to be the strongest factors in using self-medication. Moreover significant differences appeared in the use of type of medicines between boys and girls. The study concluded that self-medication is widely used practice among university students in Pakistan.

Keywords: Self-medication, practice, pain, headache, students.

INTRODUCTION

Medication use is an important health indicator. Awareness regarding the self-medication assists to determine the prevalence of conditions affecting specific population, and gives details about therapies used as a treatment (Dukes, 1993). With this background, self-medication is a serious problem, which may impede diagnosis and treatment of any disease caused by resistant microorganisms (Wajngarten, 2001). Self-medication may be strongly related with side effects and affect adherence to treatment (Katzung, 2005).

Self-medication is the selection and use of medicines by people to deal with self-recognized symptoms and disease (WHO, 1998). Self-medication is also defined as acquiring and intake of medicines without checkup by a professional regarding diagnosis, dosage and duration of the treatment. It is a broad concept encompassing lifestyle, socio-economic variables, environmental factors, confidence upon self-mediation, hygiene and accessibility of medicines (Al Khaja *et al.*, 2006; WHO, 1998). Self-medication does not essentially indicate the consumption of medicines but also intake of homeopathic medicines and herbs etc. (Shankar *et al.*, 2002).

Self-medication is a serious issue related to the health of the individuals in connection with enhanced resistance of pathogens, consumption of resources and health hazards like protracted suffering. According to Pagane *et al.*

(2007) major problems related to self-medication is wastage of resources, increased resistance of Pathogens, and generally entails serious health hazards such as adverse reaction and protracted suffering. Globally, antimicrobial resistance is a risk especially in developing countries where antibiotics are easily available without an authentic prescription (Pagane *et al.*, 2007). A great risk in the self-medication is the likely interaction between these medicines with other licit or illicit chemicals. Due to patient's body type, this interaction may cause serious damage to the physique of the individuals such as respiratory alterations, cardiac arrest or even patient's premature death (Arria & Du Pont, 2010).

Globally, there has been a growing concern over the use of self-medication for the last two decades. The episodes of illness treated by self-medication take place mostly in economically deprived countries (Geissler *et al.*, 2000).

Major reason behind this practice is to avoid high expenses in case of visiting the hospital, hence self-medication becomes a priority for healthcare service (Sarhroodi *et al.*, 2010). It is noteworthy, that negligible medical regulation has resulted in the increase of counter fee drugs which are greatly demanded for treating highly prevalent diseases (Aljinovia-Vucic *et al.*, 2005).

Moreover, minor illness, similarity with previous illness, prior experience of treating the same disease, financial constraints and non-availability of healthcare professionals are major factors in the use of self-

*Corresponding author: e-mail: mamoonaushtaq@gmail.com

medication. The highly used medicines are antimicrobials (Aljinoviæ-Vuciæ *et al.*, 2005; Almasdy and Sharrif, 2011). It is documented that many factors are involved in self-medication such as family background, education, no law enforcement on selling of medicines without prescription and social values (Verma *et al.*, 2010). Similarly, effective and quality medical intervention remains unfulfilled due to bad hospital services, poverty, illiteracy and service fees (Aljinoviæ-Vuciæ *et al.*, 2005). Therefore, the practice of quacks is on rise and unhygienic health care is common among developing countries.

Self-medication is on the rise in Pakistan but only a few researches have been conducted on the practice of self-medication. Thus the present study was conducted to investigate the prevalence of self-medication among university students. This research was aimed (1) to explore the frequency and percentage of self-medication in university students, (2) to explore the difference in the mean scores of type of disease and in the use of self-medication between university boys and girls (3) and to calculate the frequency and percentages of factors leading to self-medication.

MATERIALS AND METHODS

A comprehensive questionnaire was structured by the researchers to obtain information about the demographic information like age, gender, semester, and information regarding self-medication, i. e. type of used self-medication and its source, mostly used medicines during the last 4 months, type of disease for which medicine was used, reason for the use of self-medication and finally the perception of students about the use of self-medication. Initially, a pilot study was conducted to a small sample of 25 students to evaluate the reliability of the scale. After the reliability analysis, some of the items were altered and some were deleted. Informed consent was obtained before the administration of the questionnaire. Participants were informed about the nature and purpose of the study. Only those students were included in the sample who had been taking self-medication for the last 6 months. Before that prior permission of the institution was obtained for data collection. Average time taken by students to complete the questionnaire was 15 minutes. The purchase of medicines from a pharmacy without prescription was considered as self-medication.

Sample

The existing study was conducted to investigate the types and frequencies of branded medicines practiced by university students and to explore the reasons and rationale behind self-medication. Hence, a sample of 300 students (boys = 150, girls = 150) was employed between the age group of 16-25 years (M=20.23, SD=2.76). They were the students of 7th and 8th semester non-medical students. Inclusion criterion was to take the students who have been using self-medication for the last 6 months and

secondly those who were willing to participate in the study.

Procedure

Official permission was obtained from administrative officials of two public sector universities for data collection from different departments. Before administration of demographic information form participants were told about the purpose of study. A consent form and demographic information form were administered to all research participants.

RESULTS

Descriptive statistics was carried out to calculate the preliminary profile of the participants in the form of frequencies and percentages. Independent samples t test was run to examine differences in the use of self-medication on type of medicine between university boys and girls.

Table 1: Mostly used type of treatment by the university students (N = 300)

Medicine Type	f	%	α
Allopathic	230	77	.76
Homeopathic	45	15	.82
Hikmat	20	7	.67
Chutkely (home made medicines)	5	2	.81

Note; f = frequencies; % = percentages; α = reliability coefficient

The table 1 indicates that relatively more number of students 230 (77%) use allopathic type of medicines and the least used type of medicines is chutkely as 5 (2%) students reported to use homemade medicines. The alpha reliability coefficients (.76, .82, .67, .81, respectively) indicate that all items measuring medicine types were sufficiently reliable.

Results in table 2 indicate that relatively more number of participants suffer from headaches 60 (20%) and fevers 47(15.7%). table 2 also depicts a large number of students suffer from cough, cold, flu 55 (18.3%) and throat infection 30 (10%). Moreover, diarrhea 30 (10) and throat infection 30 (10) were found more in the students. 29(9.7%) of the student were reported to suffer from abdominal pain, 16 (5.3%) from constipation, 14 (4.7%) from allergy, 11 (3.7%) from sleep problems and 7 (2.3%) reported to use self-medication due to skin diseases.

Independent samples t test was run for the analysis of difference between boys and girls on the type of medicine used by them. table 3 indicates gender differences in terms of the use of different medicines as self-medication. Mean scores of Disprine, Brufen, Actifed cold, and antibiotics, Paracetamoles, NSAIDs and Iodex are highly significant in girls as compared to boys. Boys use more

Table 2: Frequency distribution of type of disease experienced and self-medication by university students (N = 300)

Type of disease	Total		Boys (n = 150)		Girls (n =150)	
	<i>frequency</i>	%	<i>f</i>	%	<i>f</i>	%
Fever	47	15.7	26	17	21	14
Headache	60	20	37	24.7	23	15.3
Diarrhea	30	10	10	6.7	20	13.3
Cough, cold, flu	55	18.3	29	19.3	26	17
Throat infection	30	10	16	10.7	14	9.3
Skin diseases	7	2.3	3	2	4	2.7
Constipation	16	5.3	10	6.7	6	4
Abdominal Pain	29	9.7	2	1	19	12
Sleep problems	11	3.7	4	2.7	7	4.7
Allergy	14	4.7	7	4.7	7	4.7

Table 3: Frequency distribution of type of self-medication used by university students (N = 300)

Drug	Boys (n = 150)		Girls (n = 150)		t	Cohen's d	LL	UL
	M	SD	M	SD				
Disprine	21.14	7.64	28.04	7.71	-7.77***	1.09	-8.63	-5.14
Ibuprofen	12.44	4.75	21.75	4.59	-17.27***	1.99	-10.37	-8.25
Actifed D cold	3.93	1.64	11.96	5.06	-18.35***	.34	-8.83	-7.12
Strepsils	18.10	4.87	5.52	5.02	22.00***	2.54	11.45	13.75
Antibiotics	5.52	2.03	12.13	2.34	-27.23***	3.15	-7.40	-6.40
Paracetamoles	6.92	2.08	13.40	3.28	-20.59***	2.22	-7.09	-5.85
NSAIDs	2.40	2.63	8.82	2.02	-23.60***	2.73	-6.94	-5.87
Vicks	2.50	.92	7.87	.89	-55.45***	4.93	-6.02	-5.61
Lexotanil	1.73	.72	7.37	1.50	-41.43***	1.91	-4.89	-5.72
Iodex	1.64	.72	7.32	1.55	-40.51***	3.70	-5.95	-5.40

Note. t = t values, Cohen'd = values of Cohen's d, CI = confidence interval; LL = Lower Limit; UL = Upper Limit

Table 4: Factors leading to self-medication among university students (N = 300)

factors	frequency	percentage %	factors	frequency	percentage %
Financial problems	90	30	Trust on medicines	19	6.3
Lack of time	30	10	Easy availability	38	12.7
Prior experience	22	7.3	Quick relief	20	6.7
Mildness of disease	35	11.7	Left over drug	46	15.3

Strepsils than girls. The values of Cohen's d indicate that disprine, Ibuprofen, Actifed cold, antibiotics, Paracetamoles, Ansaid, lexotanil and Iodex have a larger effect on girls as compared to boys. Use of Srepsils has greater effect on boys with respect to girls.

Table 4 shows that financial problem was found to be more prevalent 90 (30%) cause of self-medication among university students. Among the other reasons given for practicing self- medication, 46 (15.3%) student sued the left-over drugs, whereas 38 (12.7%) respondents use self-medication due to easy availability. About 35 students (11.7%) felt that mildness of disease was the main reason of their self-medication practice and 30 (10%) students reported that lack of time was main factor behind their self-medication practice. As far as prior experience is concerned 22 (7.3%) study participants attributed this practice to this cause and 20 (6.7 %) used self-medication

due to quick relief and 19 (6.3%) reported to have trust on medicines.

DISCUSSION

Self-medication denotes the use of various medicines that have not been prescribed by a medical specialist (Albarrán and Zapata, 2008). In many developing countries, people mostly use not only non-prescribed medicine but also the medicine without any supervision (Bruden, 1988). The findings of the existing study demonstrate that people mostly rely on allopathic medicines as a mode of cure for self-medication, as current research indicated that 230 (77%) students use allopathic medicines.

In the present study girls were found to be using more self-medication as compared to boys. This may be

explained in the Pakistani cultural context where women are dependent upon men for financial assistance and conveyance to reach to the clinic. Disprine was found to more frequently and greatly use by university students in the existing study. This might be explained that headache is considered a minor illness to be personally treated. The experience of headache is so intensive that the individual wants to cure it as soon as possible. Similarly, Disprine is a cheap and over the counter medicine therefore the students with frequent headache experience tend to always keep it with them. Paracetamoles were found to be the second most frequently used medicine as a cure of headache and fever among the university students. University students face academic stress and career anxiety, which brings about physical ailment in the form of tension headache (Kumaraswamy, 2013). An extremely enlightening finding from the existing study was the prevalence of lower abdominal pains in majority of the female respondents and the use of NSAIDs as the treatment. The frequency and percentage of the use of Ansaids comes next to the Paracetamoles. Students also reported the use of Lexotanil to cure their sleep problems due to academic stress and career anxiety. As far as morbidities which prompted the university students to practice self-medication, the most frequently reported diseases in the last three-month period were headache, fever and throat infection followed by influenza and cough (Zafar *et al.*, 2008). In the existing study headaches and fevers were the most commonly reported among university students, substantiates by (Abula and Worku, 2001). Headache is a major disease which is caused by stress. Students face multifarious stresses during studies and suffer from tension headaches (Kumaraswamy, 2013). The study demonstrates the degree to which people perceive their health-related problems and knowledge about where to go to get relief. An interesting datum is that NSAIDs, Disprine and Paracetamoles were reported as most commonly used drugs in the current study and is also supported by researchers (Verhagen, 2010). Similarly antibiotics were also reported to be used by university students as a cure of throat and chest infection.

In the present study, many factors were found to be involved in the use of self-medication among university students. Financial constraints and prior experience of taking medicines were two major reasons for self-medication as reported by the respondents. Health practitioners especially consultant specialists charge heavy fee which is usually inaccessible to the general masses. Moreover, these consultants charge their full fee upon every visit, even after a span of two days. Many a times people prefer to go to quacks rather visiting the consultant doctors because they cannot pay their consultation fee. Sometimes people linger on their visiting to doctor and their health condition gets deteriorated. Majority of the respondents reported lack of time and

prior experience as the most significant cause of self-medication also corroborated by (Abay & Amelo 2010). This phenomenon may be explained that once the individual's experience towards self-medication is successful then it becomes precedence for further use. In a recent prospective study, financial inaccessibility and mildness of disease were documented as main factors of self-medication (Abula & Worku, 2001).

Limitations

The existing study has certain limitations which need to be addressed. Initially, because the sample was employed from specific universities and a limited geographic area, it cannot be generalized up to the entire society. Furthermore, chronic diseases, which are more often associated with self-medication, were not assessed.

CONCLUSION

Disprine, Paracetamoles and NSAIDs were the drugs most commonly employed self-medicines. These medicines were used as treatment of tension headaches, fevers and body pains. Prior experience and non-seriousness of the illness were the most common reasons for self-medication. The consequences and irrational practice of self-medication among university students need major concerns of the relevant authorities.

REFERENCES

- Abula T and Worku A (2001). Self medication in three towns of North West Ethiopia. *Ethiop J. Health Dev.*, **15**: 25-30.
- Al Khaja KAJ, Handu SS, James H, Ootom S and Sequeira RP (2006). Evaluation of the knowledge, attitude and practice of self-medication among first-year medical students. *Med. prin. practice.*, **15**: 270-275.
- Albarrán KF and Zapata LV (2008). Analysis and quantification of self-medication patterns of customers in community pharmacies in southern Chile. *Pharm World Sci.*, **30**: 863-868.
- Aljinoviæ-Vuciæ V, Trkulja V and Lackoviæ Z (2005). Content of home pharmacies and self-medication practices in households of pharmacy and medical students in Zagreb, Croatia: Findings in 2001 with a reference to 1977. *Croat Med. J.*, **46**: 74-80.
- Almasy D and Sharrif A (2011). Self-medication practice with nonprescription medication among university students: A review of the literature. *Arch Pharmacol. Pract.*, **2**: 95-100.
- Arria AM and Du Pont RL (2010). Nonmedical prescription stimulant use among college students: Why we need to do something and what we need to do. *J. Addict Dis.*, **29**(4): 417-426.
- Bruden P (1988). World drug situation. Geneva: WHO.

- Dukes MN (1993). Drug utilization studies. WHO Regional Publications, Copenhagen, Denmark.
- Geissler PW, Nokes K, Prince RJ, Achieng RO, Aagaard-Hansen J and Ouma JH (2000). Children and medicines: Self-treatment of common illnesses among Luo schoolchildren in western Kenya. *Soc. Sci. Med.*, **50**: 1771-1783.
- Katzung BG (2005). *Farmacologia: Básica e clínica*. Guanabara Koogan, Rio de Janeiro, Brazil
- Kumaraswamy N (2013). Academic stress, anxiety and depression among college students: A brief review. *Inter. Rev. Social. Sci. Humanities.*, **5**: 135-143.
- Pagane JA, Ross S, Yaw J and Polsky D (2007). Self-medication and health insurance coverage in Mexico. *Health Policy*, **75**: 170-177.
- Abay SM and Amelo W (2010). Assessment of self-medication practices among medical, pharmacy and health science students in Gondar University, Ethiopia. *J Young Pharm.*, **2**(3): 306-310.
- Sarhroodi S, Arzi A, Swalha AF and Ashtranezhad A (2010). Antibiotic self-medication among southern Iranian university students. *Int. J. Pharmacol.*, **6**: 48-52.
- Shankar PR, Partha P and Shenoy N (2002). Self-medication and non-doctor prescription practices in Pokhara valley, Western Nepal: A questionnaire-based study. *BMC. Fam. Pract.*, **3**: 17-21.
- Verma RK, Mohan L and Pandey M (2010). Evaluation of self medication among professional students in North India: Proper statutory drug control must be implemented. *Asian J. Pharm. Clin. Res.*, **3**: 60-64.
- Wajngarten M (2010). Editorial. *Rev. Assoc. Med. Bras.*, **47**(4): 269-295.
- World Health Organization (1998). The Role of pharmacist in Health Care System. Web page: <http://www.apps.who.int/medicinedocs/en/d/Jwhozip32e>
- Zafar SN, Reema S, Sana W, Akbar JZ, Talha V and Mahrine S et al (2008). Self medication amongst university students of Karachi: Prevalence, knowledge and attitudes. *J. Pak. Med. Assoc.*, **58**: 214-217.