The Professional Medical Journal
www.theprofesional.com

DOI: 10.17957/TPMJ/17.3598

ORIGINAL PROF-3598

SELF-MEDICATION;
AMONG PRIVATE UNDERGRADUATE MEDICAL STUDENTS OF LAHORE

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Article received on:
23/08/2016
Accepted for publication:
07/11/2016
Received after proof reading:
18/01/2017

ABSTRACT… Background: The utilization of medication by individuals in an attempt to treat self-recognized symptoms themselves is termed self-medication. Medical students face obscurity when they seek health care for themselves. This study was conducted to assess the prevalence of self-medication among the private undergraduate medical students of a private medical college of Lahore to assess the students' attitudes regarding the practice of self-medication. **Study Design:** Cross sectional study. **Setting:** The participants were students of Shalamar Medical and Dental College, Lahore a Private Institute, in Lahore. **Period:** May to September 2015 (5 months). **Methods:** The sampling frame constituted of 600 eligible students. The sample size of 192 was calculated assuming 76% prevalence of self-medication practice with 5% relative precision and 95% confidence interval. Systematic random sampling was utilized to administer a modified, self-administered, structured questionnaire. Institutional review board (IRB) of Shalamar Institute of Health Sciences granted permission to carry out the research. The questionnaires were distributed to a sample of 200 subjects after a signed informed consent was obtained. The data entry and analyses were done in SPSS for Windows version 20.0. **Results:** The response rate was 100%. The average age of the participants (n= 200) was 21.7 ±1.5 years. Almost 83% (n= 159) of students admitted to practice self-medication with a different range of antibiotics. Convenience 62% (n= 124) was chosen to be the main reason of self-medication followed by cost saving 14% (n= 28) and lack of trust in prescribing physician 12% (n= 24). Fever 18% (n= 77), sore throat 19% (n= 81) and cough 18% (n= 79) were the main reasons for self-medication. Opinion of family members 30% (n= 60), personal previous experiences 25% (n= 49) and doctor's previous prescription 18% (n= 35) were major criterion for selection of antibiotic. Local community pharmacies were used as a source of obtaining antibiotics for self-administration by 72% (n =144). The relation between self-medication and type of antibiotic taken in consideration before use was highly significant, X^2 (1, n= 200) = 12.37, p<.001. The relation between local community pharmacies as a source of getting antibiotics for self-administration and self-medication was also highly significant, X^2 (1, n= 200) = 17.87, p<.001. **Conclusion:** Self Medication with antibiotics and analgesics is common among undergraduate medical students. Local community pharmacies play a critical role as a source of disbursement of antibiotics.

Key words: Self Medication, undergraduate medical students, antibiotics

Article Citation: Nagi MLF, Kazmi STH, Mehboob S, Basit SA, Ali S, Haider RH. Self-medication; among private undergraduate medical students of Lahore. Professional Med J 2017;24(1):144-149. **DOI:** 10.17957/TPMJ/17.3598

INTRODUCTION

Self-medication is the selection and utilization of medication by individuals in an attempt to treat self-recognized illnesses and symptoms themselves.[1,2,3] The concept also encompasses attaining medication without the advice of a physician for diagnosis or treatment.[1] Additionally, putting forward and utilizing old prescriptions to buy new medication again, utilizing leftover medication of relatives, and using leftover stored medicines are also considered self-medication.[2,4] Almost half of all medicines worldwide are overused irrationally[5] and half of all patients fail to take them in an approved manner.[5] The most common prescription medications dispensed without prescriptions are antibiotics and analgesics/antipyretics.[5] This has severe consequences like undesirable adverse reactions, drug resistance and even mortality.[5] The hazards associated with self-medication include

resistance of microorganisms against antibiotics, unsuccessful treatment outcomes, toxicity of drugs, economic implications, increased hospital stays and increase in morbidity rates.[6,7] It is linked with various aspects; lack of access to healthcare, accessibility of drugs over the counter without prescription, lack of regulatory control and extensive delays to medical care in hospitals.[4] Self Medication in the underdeveloped countries is linked with deficient health care services, unregulated and effortless availability of over the counter drugs like antibiotics and a raised prevalence of communicable diseases.[6] Self-medication has become a major public health problem due to a steady increase in financial, political, and cultural reasons.[7]

Almost half of the people who are involved in self-medication are young belonging to age group 25-31 years.[1] Besides, this phenomenon is frequent among practicing physicians as well.[7] Indians also observed that self-medication is significantly higher among undergraduate medical and paramedical students plus it advanced with rising medical knowledge.[8] Burdens of commitment, study and work make it difficult for medical students and healthcare professionals to seek health care.[9] Not much abundance of literature exists on the prevalence of self- medication among undergraduate medical students and their attitude towards the same.[8] The present study was conducted to assess the prevalence of self-medication among the private undergraduate medical students of Shalamar Medical and Dental College, Lahore to assess the students' perception and attitudes regarding the practice of self-medication.

MATERIALS AND METHODS

This cross sectional study was conducted during May to September 2015 (5 months). The participants were students of Shalamar Medical and Dental College, Lahore. Institutional review board (IRB) of Shalamar Institute of Health Sciences granted permission to carry out the research. The sampling frame constituted of 600 eligible students. The sample size of 192 was calculated assuming 76% prevalence of self-medication practice as evaluated by Zafar etal during February 2000 among two medical and two non-medical universities of Karachi.[10] The relative precision was assumed 5% with 95% confidence interval. Systematic random sampling technique was utilized to administer a modified, self-administered, structured questionnaire. Every fourth student (20 males and 20 females) was randomly selected from each of the five academic years using the attendance sheets. The first number from each class on attendance sheets was chosen randomly by lottery method and every third participant thereon was given the questionnaire. In case of noncompliance the next serial number in the attendance sheet was invited for participation. The confidentiality and anonymity of the subjects were preserved. The questionnaires were distributed to a sample of 200 subjects after a signed informed consent was obtained. The data entry and analyses were done in SPSS for Windows version 20.0. (SPSS, Inc., Chicago, IL, USA). Wherever mentioned the p value was considered significant at .05 levels.

RESULTS

The response rate was 100%. A total of 200 students were assessed regarding their practices, attitudes and perceptions about self-medication. The average age of the participants (n= 200) was 21.7 ±1.5 years during May 2015, till September 2015 (5 months), samples from Shalamar Medical and Dental College, Lahore. The sample size constituted of an anticipated 51% (n= 101) male students whereas, 49% (n= 99) female participants. A sizeable 36% (n=72) of students reported of having a family income above Pakistani Rupees 200,000, whereas, only 8% (n= 16) reported their family income below Pakistani Rupees 50,000. Almost 83% (n= 159) of students admitted to practice self-medication with a different range of antibiotics. among those who admitted to the practice of self-medication, most common types of self-medicated drugs included beta lactam group 43% (n= 68), flouroquinolones 22% (n= 34) and metronidazole 9% (n=15). A further 19% (n= 36), 33% (n= 63), and 21% (n= 40) students admitted to self-treat with antibiotics once, twice and thrice during the past year. A

noteworthy 9% (n= 17) and 11% (n= 21) also reported self-treatment with antibiotics for four or five times during past year. Convenience 62% (n= 124) was chosen to be the main reason of self-medication followed by cost saving 14% (n= 28) and lack of trust in prescribing physician 12% (n= 24) (Figure-1). Fever 18% (n= 77), sore throat 19% (n= 81) and cough 18% (n= 79) were the main reasons for self-medication (Figure-2). Opinion of family members 30% (n= 60), personal previous experiences 25% (n= 49) and doctor's previous prescription 18% (n= 35) were major criterion for selection of antibiotic (Figure-3). A hefty 22% (n= 43) further admitted to the use of taking sleeping pills.

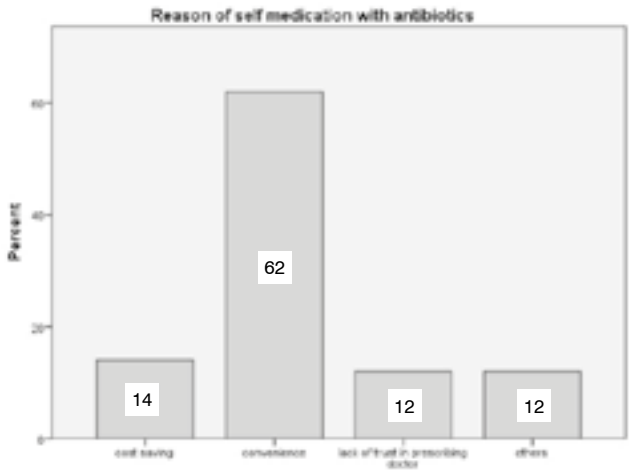


Figure-1. Reasons for self-treatment with Antibiotics

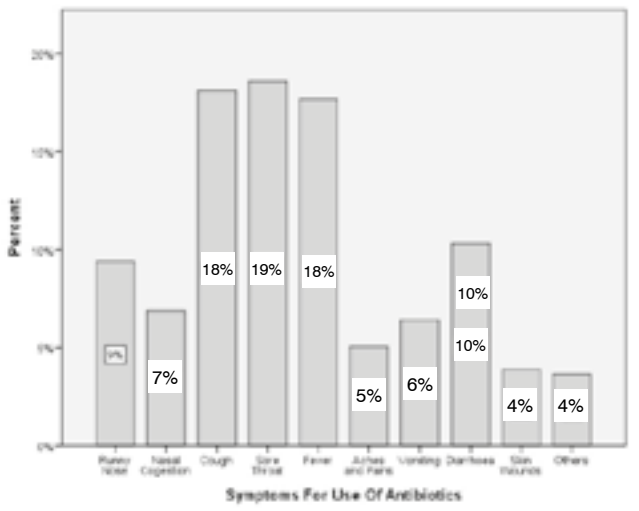


Figure-2. Symptoms for use of antibiotics

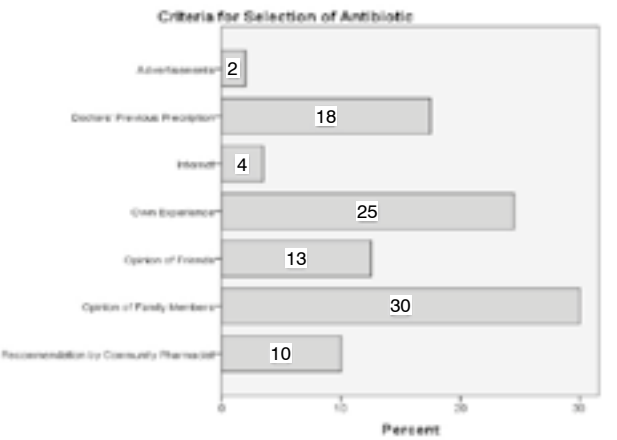


Figure-3. Criteria for Selection of Antibiotics

A chi-square test was executed to observe the relation between self-medication and type of antibiotic taken in consideration before use. The relation between these variables was highly significant, X^2 (1, n= 200) = 12.37, p<.001. Local community pharmacies were used as a source of obtaining antibiotics for self-administration by 72% (n =144). The relation between these variables i.e. local community pharmacies as a source of getting antibiotics for self-administration and self-medication was highly significant, X^2 (1, n= 200) = 17.87, p<.001. No significant relationship X^2 (1, n= 200) = 2.703, p= .100 was recognized between self-medication and use of leftover antibiotic from previous prescription. The relation between self-medication and drug abuse with sleeping pills was in addition, highly significant, X^2 (2, n= 200) = 6.78, p=.034. The chi-square test failed to establish any relationship with; self-medication and preferred brand of antibiotic X^2 (1, n= 200) = .041, p= .839, self-medication and reading indications for use X^2 (1, n= 200) = 2.935, p= .087 and self-medication with antibiotics and considering the adverse reactions before antibiotic use X^2 (1, n= 200) = .500, p= .480. The considerable correlations are shown in Table-I.

DISCUSSION

In comparison, the under developed countries have higher rates of self-medication as compared to developed countries.[2]

Views of undergraduate students about self-medication	Academic Profile		P value (p) X^2
	Basic Years' Student n (%)	Clinical Years' Student n (%)	
Do you treat yourself with antibiotics? (n=200)	54 (33)	111 (67)	<.001*
Leftover from previous prescription(n=200)	9 (60)	6 (40)	.10
Did you ever check the instructions leaflet that comes with the package of antibiotics before self-medication? (n=200)	64 (40)	98 (60)	.087
Switching antibiotics during course of self- treatment(n=200)	59 (46)	70 (54)	.02*
Are you confident to treat common infectious diseases with antibiotics successfully by yourself? (n=200)	25 (28)	63 (72)	.003*
Do you ever use any sleeping pills? (n=200)	23 (53)	20 (47)	.042*
Do you exercise daily? (n=200)	22 (54)	19 (46)	.045*

Table-I. Relationship of academic profile with antibiotic self-medication and related variables
*The Chi-square statistic is significant at .05 levels

Sixty (60%) to 70% of antibiotics in public health and private facilities respectively, in underdeveloped countries are used incorrectly.[5] In Kingdom of Saudi Arabia (KSA) high prevalence (75%) of self-medication by medical students and interns was revealed.[11] Nearly all students (97%) had self-medicated with antibiotics when evaluated in 2015 Saudi Arabia.[12] In Mangalore India, it was also observed that almost 40% of the participants reported to have self-medicated themselves with antibiotics.[8] In Serbia, self-medication was reported by almost 80% students.[9] The occurrence of self-medication in Karachi, Pakistan (2000) among university students was soaring, being approximately 78 % among medical and 83 % among non-medical students.[2] In comparison 83% (n= 159) of subjects from this study admitted to practice self-medication with antibiotics which corresponds quite well with other regions of country like Karachi (78%) but higher as compared to the neighboring Mangalore, India (40%).

Beta lactam group of antibiotics (60%) was the most common class of frequently self-medicated antibiotics in Mangalore, India.[8] The other common self-medicated drugs were analgesics (55%),vitamin supplements (46%) and antipyretics (42%) in Serbia.[9] In comparison, this study reveals that among those who admitted to the practice of self-medication, most common types of self-medicated antibiotics included Co Amoxiclav and Amoxicillin 43% (n= 68), flouroquinolones 22% (n= 34) and metronidzole 9% (n=15). Although implicated non-medical hospital staff Noor etal (2000) surveyed and identified Co Amoxiclav and Amoxicillin 59% (n=110) and flouroquinolones 22% (n= 43) as most prevalent self-medicated antibiotics[13], frequencies being similar to our undergraduate medical participants.

Among undergraduate medical students of KSA, most antibiotics were taken for upper respiratory tract symptoms including cough with yellow/green phlegm (62%).[12] The authors argue that fever (21%), sore throat (13%) and body aches (12%) were most common self-medicated symptoms in KSA. Noor etal (2000) argued sore throat 27% (n= 52) fever 14% (n=27) diarrhoea 14% (n= 28) and cough 10% (n= 19) were the common conditions for which self-medication was practiced among non-medical hospital workers of Holy Family Hospital and Benazir Bhutto Hospital. This study reveals that fever 18% (n= 77), sore throat 19% (n= 81) and cough 18% (n= 79) were the main motives for self-medication among undergraduate Pakistani medical students (Figure-2).

It was found in Bangladesh that drug use is influenced by the socio-demographic characteristics such as gender and age and some socio-cultural aspects, like attitudes about life and health, stress, and social bindings of the consumers.[2] economic factors and their implications like inability of the students to pay for the cost of hospital care was also a significant

reason of self-medication in Ghana.[6] This study similarly revealed convenience 62% (n= 124) as the main reason of self-medication followed by cost saving 14% (n= 28) and lack of trust in prescribing physician 12% (n= 24) (Figure-1). In India, the illness being too insignificant for consultation (71%) was thought by a few to be the reason of self-medication, followed by their confidence about the pharmacological knowledge (45%).[8] Lack of time and soaring consultation fees of consultants were also the reasons of self-medication.[1]

CONCLUSION

Self-Medication with antibiotics and analgesics is widespread among undergraduate medical students. Convenience was chosen to be the main reason of self-medication followed by cost saving and lack of trust in prescribing physician. Fever, sore throat and cough were the main reasons for self-medication. Opinion of family members, personal previous experiences and doctor's previous prescriptions were major criterion for selection of antibiotics. Local community pharmacies play a critical role as a source of disbursement of antibiotics. Awareness campaign to educate the student community on the pros and cons of self-medication to reduce the occurrence of self-medication practices among students is recommended.

REFERENCES

1. Humayun DS, Imran W, Naheed I, Javed N, Hussain M, Azhar M. **Analysis of Self Medication Practices; a Descriptive Cross Sectional Study.** Prof Med J [Internet]. 2016; 23(05):608–13. Available from: http://www.theprofesional.com/article/vol-23-no-05/prof-3239.pdf

2. Alam N, Saffoon N, Uddin R. **Self - medication among medical and pharmacy students in Bangladesh.** BMC Res Notes [Internet]. BioMed Central; 2015; 8(763):4–9. Available from: "http://dx.doi.org/10.1186/s13104-015-1737-0

3. **Guidelines for regulatory assessment of medicinal products for use in self-medication World Health** Organization 2000; Available from: http://apps.who.int/medicinedocs/pdf/s2218e/s2218e.pdf.

4. Alzahrani M, Alhindi T, Almutairi A, Aldajani M, Sami W. **Frequency of using non-prescribed medication in Majmaah city , Saudi Arabia — A cross sectional study.** J Pak Med Assoc. 2015;65(8):825-828.

5. Aashi MM, Alghanmi HA, Alhibshi RH, Alsaati BA, Aljohani NJ, Mm A, et al. **Short Communication Self-medication among medical student in King Abdul-Aziz University.** Int J Res Med Sci. 2016;4(3):942-946. doi:10.18203/2320-6012.ijrms20160547.

6. Donkor ES, Tetteh-Quarcoo PB, Nartey P, Agyeman IO. **Self-medication practices with antibiotics among tertiary level students in Accra, Ghana: A cross-sectional study.** Int J Environ Res Public Health. 2012; 9(10):3519–29.

7. Patil SB, Vardhamane SH, Patil B V., Santoshkumar J, Binjawadgi AS, Kanaki AR. **Self- medication practice and perceptions among undergraduate medical students: A cross-sectional study.** J Clin Diagnostic Res. 2014; 8(12):HC20–3.

8. Kumar N, Kanchan T, Unnikrishnan B, Rekha T, Mithra P, Kulkarni V, et al. **Perceptions and Practices of Self-Medication among Medical Students in Coastal South India.** PLoS One. 2013; 8(8):2–6.

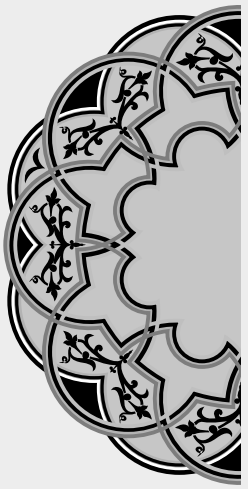
9. Lukovic JA, Miletic V, Pekmezovic T, Trajkovic G, Ratkovic N, Aleksic D, et al. **Self-medication practices and risk factors for self-medication among medical students in Belgrade, Serbia.** PLoS One. 2014; 9(12):1–14.

10. Zafar SN, Syed R, Waqar S, Zubairi AJ, Vaqar T, Shaikh M, et al. **Student ' s Corner Original Article Self-medication amongst University Students of Karachi: Prevalence , Knowledge and Attitudes.** J Pak Med Assoc. 2008 Apr;58(4):214-7.

11. Ibrahim NKR, Alamoudi BM, Baamer WO, Al-Raddadi RM. **Self-medication with analgesics among medical students and interns in King Abdulaziz University, Jeddah, Saudi Arabia.** Pakistan J Med Sci. 2014; 31(1):1–5.

12. Harakeh S, Almatrafi M, Ungapen H, Hammad R, Olayan F, Hakim R, et al. **Perceptions of medical students towards antibiotic prescribing for upper respiratory tract infections in Saudi Arabia.** BMJ Open Respir Infect. 2015; 2:e000078.

13. Noor A, Gull S, Manzoor S. **Use of Antimicrobials without Prescription. Journal of Rawalpindi Medical College.** 2014; 18(1):153–5.



"If you have to convince someone to stay with you, then they have already left."

Unknown

AUTHORSHIP AND CONTRIBUTION DECLARATION

Sr. #	Author-s Full Name	Contribution to the paper	Author=s Signature
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2	Dr. Syed Tehseen Haider Kazmi	Proof reading and Editing	
3	Dr. Sufyan Mehboob	Data collection	
4	Dr. Salman Abdul Basit	Data collection	
5	Dr. Sultan Ali	Data collection	
6	Dr. Rana Haroon Haider	Data collection	