

# Assessment of Self Medication in Female University Students of Pharmacy and Medicine-A Prevalence Study

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## ABSTRACT

**Objectives:** To evaluate the tendency, incidence, relevant awareness, attitude and practice of self-medication in female students of pharmacy and medicine.

**Background:** Self medication is a common trait in those students who are studying medicine, pharmacy or other health sciences. Socio economic features, lifestyle status and awareness about the indications of the medicine are direct factors that affect the practice of self medication.

**Study Design:** Observational Comparative Study.

**Place and duration of study:** The study was conducted in three universities of Karachi, two institutes of pharmacy education and one institute of medical sciences from January 2011 to September 2011.

**Participants and methods:** A self-developed, pre-validated questionnaire containing open-ended and close-ended items was used for data collection. 460 female students (age 20-25) enrolled for study after informed consent and knowledge of the study purpose, filled in the questionnaire anonymously.

**Results:** The study based on 460 student shows that self-medication prevails for the OTC medicines (76.27%) and Prescription Only medicines (51.30%). The use of minerals and vitamins by self medication is 54.5%. The most common reason for self medication shown in 306 count is "previous knowledge of drug use".

**Conclusion:** The students of medical and pharmacy practice self medication to varying degree for both the OTC and Prescription Only medications. The easy access to medications promotes such practice, where as large expense of proper health care plays a pivotal role. This tendency with peril signifies the role of an effective and well regulated pharmaceutical care system with its essential components.

**Key Words:** Self medication, Prescription Only medicines, OTC medicines, Pharmacy Students, Pharmaceutical care system

## INTRODUCTION

Self-medication is the selection and use of medicines by individuals to treat self-diagnosed diseases or conditions. It may be regarded as an important domain of healthcare. The practice of self medication is by which an individual or the ones responsible for that person, employ various means to chose and acquire one or more medications without proper medical evaluation and consultation, deciding for themselves how to use that drug for alleviation of certain symptoms or the probable cure of the disease."Self-medication involves sharing drugs with other members of the family and social group, using leftovers from previous prescriptions or disrespecting the medical prescription either by prolonging or interrupting the dosage and the administration period prescribed." <sup>1</sup> Studies have stated that, the practice of self medication moves patients towards greater independence in making decisions about management of minor illnesses, thereby promoting empowerment. However, it is associated with risks such as misdiagnosis, exceeding the appropriate dose, protracted use, drug, food & disease interactions and polypharmacy.

There can be prevalence of both irresponsible and responsible practice of self medication with different outcomes."Responsible self medication is the practice whereby individuals treat their ailments and conditions with medicines which are approved and available without prescription, and which are safe and effective when used as directed. Responsible self-medication requires that medicines used are of proven safety, quality and efficacy and medicines used are those indicated for conditions that are self-recognizable and for some chronic or recurrent conditions (following initial medical diagnosis). In all cases, these medicines should be specifically designed for the purpose, and will require appropriate dose and dosage forms."<sup>3</sup>

"The prevalence of self-medication among university students has been reported as 45% in Turkey, 88% in Croatia and 94% in Hong Kong. The prevalence rate of self-medication in Pakistan in 1995 was 51% and a past survey calculated the prevalence of self medication among university students in Karachi as 76%"<sup>4</sup> Another study based on university students have shown that they commonly perceive self medication to be time-saving, economical, convenient and provides quick relief in common illnesses however their knowledge about

appropriate self-medication is poor ,nevertheless the practice of self-medication was reported common and often inappropriate.<sup>5</sup>

It is usually noticed that students studying medicine and pharmacy are more implicated in the practice of self medication possessing various attitudes toward it. A review of self medication among medical students have shown that the students believed that it was appropriate to self-treat both acute and chronic conditions and that informal care paths were common within the medical profession. A concise review of several studies have shown that self-treatment is strongly embedded within the culture of both physicians and medical students as an accepted way to enhance/buffer work performance.<sup>6</sup>

## MATERIALS AND METHODS

The aim of this survey study is to assess the magnitude, factors and the comparative aspects of self-medication among female students of pharmacy and medicine in three different higher educational institutes. This study has been designed after concise review of specified research regarding different traits of self-treatment and self-medication of prescription drugs from databases such as pubmed, IndexPharmacus, ResearchGate, Medline, PDB, BioMed central and EVISA. A descriptive cross-sectional and self administered survey was conducted on a sample size of students (N=460) in three universities, one for medical and two for pharmacy education .Study samples within each university were randomly selected clusters. A prevalidated questionnaire, containing open-ended and close-ended questions, was administered to the subjects which was to be filled anonymously. This was following the informed consent of the participants who were aware of the purpose of the study. The questionnaire was pretested and was devised from similar studies. It comprised of demographic detail, order of prevalence and practice and the substitute of reasons for this acquired behavior. A multilevel analysis with two levels (respondent and education type) was performed .Data was analyzed using SPSS version 19 and results expressed in counts and percentages. Pearson Chi square-test was applied to measure the dependency of either group of students on the most prevalent cause of self medication and  $p < 0.05$  was considered significant.

## RESULTS

Figure No.1: A comparative use of OTC drugs, Prescription Only drugs and vitamins and minerals is shown in Figure No.1. Self- medication with OTC medicines is 76% by both the pharmacy and medical students. The OTC medicine used after prescription by doctor is 24% in both cases. Self-medication with Prescription Only medicines in medical students is 50% and in pharmacy students is 53%. Figure No.1 shows that the use of OTC drugs with self medication is more than the use of OTC with prescription by doctor, in both the group of students (medical/pharmacy). Use of Prescription

Only drugs with self medication is less than the use of Prescription Only drugs with prescription by doctor, in both the group of students (medical/pharmacy). The use of vitamins and mineral supplements, in medical students, by self medication is 52% and with Prescription by doctor is 48%. The use of vitamins and mineral supplements, in pharmacy students, by self medication is 57% and with Prescription by doctor is 43%. The use of vitamin and minerals by self medication is more than the use with prescription by doctors in both medical and pharmacy students.

**Table No. 1: Prevalence of Self Medication in Respondents with Types of Medications**

Types of medications	Respondent's Type			
	Medical		Pharmacy	
	Self Medication	Prescription by Doctor	Self Medication	Prescription by Doctor
Over the Counter	76%	24%	76%	24%
Prescription Only Drugs	50%	50%	53%	48%
Vitamin / Supplement	52%	48%	57%	43%

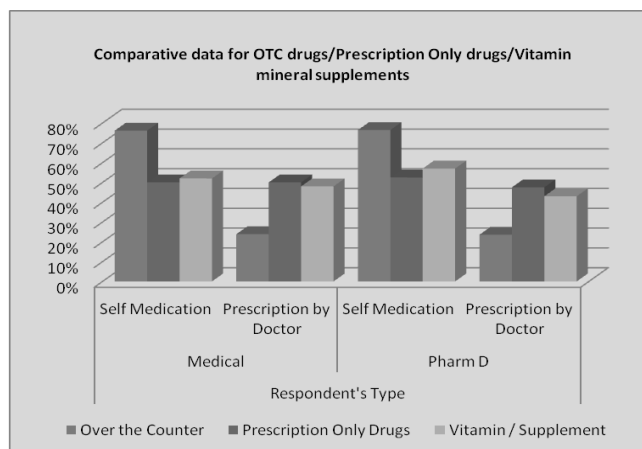


Figure No. 1: A comparative use of OTC drugs:

**Table No. 2: Comparison of Causes for Self Medication in Respondent Type**

Main Cause of Self Medication	Total	Respondent's Type	
		Medical	Pharmacy
Previous knowledge of drug use	67%	65%	68%
Easily available without prescription	17%	17%	18%
To avoid doctor fee/medical expense	9%	11%	7%
They think that the medicine is safe/lack of awareness	7%	8%	6%

Figure No. 2: In medical and pharmacy students self medication due to previous knowledge of drug use is 65% and 68% respectively. Self medication due to easy availability of drug is 17% in both groups. Self

medication to avoid expenses is 11% in medical and 7% in pharmacy students. Lack of awareness attributes to 8% of drug use in medicine and 6% in pharmacy students. Figure No.2 illustrates the main cause of self medication to be "Previous knowledge of drug use" 67% in all respondents.



**Figure No.2: Main cause of Self-medication**

**Table No. 3: Main Cause of Self Medication \* Respondent's Type Cross Tabulation Count**

Main Cause of Self Medication	Respondent's Type		Total
	Medical	Pharmacy	
To avoid doctor fee/hospital expense	25	17	42
They know about the drug use by previous experience	149	157	306
They think that the medicine is safe/lack of awareness	18	14	32
Easily available without prescription	38	42	80
Total	230	230	460

The test result count show 42 (To avoid doctors fee/medical expense), 306 (They know about the drug use by previous experience), 32 (lack of awareness), 80 (easy availability of the drug).

**Table No. 4: Dependency of respondent type on main cause for self medication**

	Value	DF	Asymp. Sig. (2-sided)
Pearson Chi-Square	2.433(a)	3	0.488*
N of Valid Cases	460		
a 0 cells (.0%) have expected count less than 5. The minimum expected count is 16.00.			

\*Value greater than 0.05 shows no dependency but indicates a strong relationship between the two variables.

## DISCUSSION

Both the groups of students are found to practice self-medication (Ref Table 1). Such a comparative study based entirely on medical and pharmacy female students focusing on their conduct, perspective and particular drive for self medication has not been reported before in Pakistan, although habits and attitude of general university students of both genders has been studied and stated. The gender implication might hold

substance as treating children by means of self medication by mothers, is an increasing area of concern.<sup>7-11</sup> On the contrary, responsible self medication by mothers with appropriate consideration of all aspects (e.g. interactions, adverse effects, dose, precautions) can have positive inference on sound health of both the family and the children.<sup>12,13</sup>

This study shows that there is a difference in the prevalence of self medication for OTC (76.27%) & Prescription Only medications (51.30%). The comparison of frequency indicates that the relevant knowledge about rational drug therapy has enabled the students to practice responsible self medication to some degree. It has also been demonstrated in several studies before, that the students studying medicine and pharmacy start self medication with ease in a routine manner with minor elements of concern which can be an intricate scenario, however, the practice of self medication by medical students is more responsible owing to their knowledge about drugs thus leading to a cautious conduct of the practice with relative apprehension.<sup>14-16</sup>

In a same manner many students reported the use of vitamins or supplements without any prescription as they claimed that the use of such medicine is entirely safe and upon discontinuation of these drugs they felt tired and exhausted. So 52% medical students and 57% pharmacy students reported the chronic use of these vitamin supplements by self medication, even though some of them were prescribed with these vitamins for a limited period of time, but due to the assumption that "vitamins bear no side effects and they are wonder drugs", they prolonged the use over period of months and years without further consultation with their physicians, although irrational use of vitamins have associated toxicities.<sup>17</sup> Self medication with vitamin and supplements is relatively larger somehow in individuals suffering from hypochondrias. The lack of awareness about the sensitivity of the medicines has shown to be an important cause of self medication of such drugs in 7% of the respondents.

The most common reason for self medication stated by the students is that "They know about the drug use by previous experience" is 67%. In most of these cases the students had a medical visit and were prescribed with a certain medicine but later on they had used that medicine after self diagnosis on their own accord. This finding may indicate that both the students studying medicine and pharmacy feel inclined towards the use of medicines once they gain knowledge of the relevant indications, and they try to rely on themselves for its use without major concern probably because they study about it and find about them in the text books of medicine and pharmacology. There is substance to believe that the most common cause of self medication in students of other disciplines (non-health sciences) may be at contrast.

The dispensing of many medicines labeled for Prescription Only e.g. antibiotics by local pharmacy, stores and dispensaries without a proper prescription is one of the root cause of self-medication for these drugs on such a large scale (17%). Proper education, public awareness and a more vigilant pharmaceutical care system is required for the effective control of this situation. There also have been studies on the availability of aspirin and acetaminophen as OTC advocating the change of status of these drugs to Prescription Only medicine because of the hazard imparted by self medication.<sup>18</sup> More controlled and careful dispensing of such medicines will reduce the potential of abuse and will make the health care system more effective.

Socioeconomic factors also promote the practice of self medication as depicted by the stated data (9%) by the students who find it convenient to self medicate rather than to bear medical expenses. There is a positive correlation with the economic status and the practice of self medication. Poor economic status leads to more frequent practice of self medication, Studies have shown that avoiding the cost, or perceived high cost, of visiting a doctor tends to favor self-medication.<sup>19,20</sup> Another study states "self-medication is an inferior good at high income levels and a normal good at low income levels, and it shows a strong and robust negative insurance effect."<sup>21</sup> The use of antibiotics without proper prescription and report to the doctor, may lead to masking of symptoms for underlying infections which may go undetected and get complicated. It is also reported that self medication can delay entry of the patient to the proper medical management system and drive the patient to employ a less effective step-care approach as opposed to evidence-based guidelines.<sup>22</sup>

The dependency of each group of student on the different causes of self-medication that may affect them the most was measured in significant value. The Significant value is 0.488, which shows that there is no dependency of medical and pharmacy students on main cause of self medication, because the significant value is greater than 0.05. In cross tabulation of the data, we have observed that the frequency of medical and pharmacy is very close. It means that most common reason for Self medication is somewhat similar in both the respondent type (medical or pharmacy).

## CONCLUSION

A considerable numbers of students are involved in the practice of self medication without elementary concern. The dilemma of this fact is that most of the people are able to get symptomatic relief only by self medication and the seriousness of the actual disease progresses over time. The case reports for chronic use of some medications to extended periods without knowledge of the dire consequences indicates the lack of awareness.

The design and application of an effective pharmaceutical care system can control both the enormity and gravity of the adverse effects of the practice and regulate it, designating its significance in the health care system as a whole.

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