
GENERAL

**EVALUATION OF SELF-MEDICATION AMONGST UNIVERSITY STUDENTS
IN ABBOTTABAD, PAKISTAN; PREVALENCE, ATTITUDE AND CAUSES**

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Abstract: Self-medication is a serious issue in most parts of the world. This study aims to evaluate self-medication among university students of Abbottabad, Pakistan. This cross-sectional survey study was carried out in COMSATS Institute of Information Technology, Abbottabad during December 1 - December 31, 2011. A sample of 275 students was selected for the study using convenience method of sampling. Data were managed and analyzed *via* SPSS version 16.0. Inferences were drawn using Z-test. Out of 268 respondents (male = 61.6%, female = 38.6%), 138 were non-health professional students whereas 130 were health professional students. The prevalence of self-medication was 95.5%. Most common factor (45.7%) responsible for self-medication was “low severity of disease”. Most common symptom (50.8%) that caused self-medication and stocking of medicines was “storage of medicines for multi purposes”. Some respondents (22.7%) got addicted due to self-medication. Most of the students trust in allopathic medicines system. High prevalence of self-medication can be controlled through regulatory authorities, mass education and availability of health facilities.

Keywords: self-medication, OTC drugs, practice, prescription

It is a common human experience to face disorder or disease. However, the individual's response to such disorder is dependent upon different beliefs of individual and certain other underlying factors (1). All the individual responses and activities during the period of disorder are called “self-care”. Self-medication can be defined as the medicines required by an individual for the settlement of a self-identified disorder or disease or the continued usage of an already prescribed medicine for the recurrent or chronic disorder. Self-medication includes taking medication without having a prescription (OTC), sharing medicines with relatives or friends or using left-over medicine stored at residential place. There is a common observation of diseased people with demands for such medicines available in the market without proper physician's prescription report (2-4). Wrong self-medication leads to the loss of resources and high pathogenic resistance resulting in unavoidable health problems such as side effects of the med-

icines, drug dependence because of the tolerance produced to some drugs (5, 6), masking diagnosis of certain harmful diseases (7) and problems associated with over- and under-dosing (8).

Self-medication, which is a type of care or self-care, is the necessary first step to treat disorders and many of these can be cured successfully at this level. Self-medication is practiced by a large part of the population irrespective of their relation with field of medicines (6).

World Health Organization (WHO) appreciates the presence of a crucial role of self-medication in curing disorders. Therefore, approaches to elucidate the appropriateness of self-medication are yet to be organized and enhanced (3). Little amount of literature has reported that self-medication practices are more common in women of younger age and among students as well (5).

WHO has reported that prescription by untrained persons and self-medication led to inad-

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quate dosing, incomplete treatment courses and inappropriate usage of medicines and had produced resistance to many medicines especially to “antimicrobial drugs” (3). The incidence of self-medication within university students in previous studies was found to be 76% in Karachi (1), 54% in Turkey (9), 88% in Croatia (4) and 94% in Hong Kong (2).

Thus, present study was conducted to evaluate self-medication in university students of COMSATS Institute of Information Technology, Abbottabad, Pakistan.

METHODOLOGY

Study location

This study was conducted in COMSATS Institute of Information Technology, Abbottabad, Khyber Pakhtun Khwa (KPK), Pakistan. This city is situated at a distance of 61.7 km from Islamabad, capital of Pakistan. The number of students in this institute is 5000. For health facilities, the local population has access to Ayub Medical Complex as well as other three secondary care hospitals. There are also a lot of private clinics and some traditional practitioners.

Study design

This study was reviewed and approved by Departmental Ethical Committee. A cross-sectional survey was conducted in students of health profession and non-health profession during December 1 - December 31, 2011. A convenience sample of 275 students was taken from the students enrolled in the aforementioned Institution. Data were collected from students sitting in class rooms, hostels and courtyards. The students, who were not enrolled in COMSATS Institute of Information Technology, were excluded. The purpose of study was explained to them, their consent was taken and a questionnaire prepared from various previous studies (3-8) was distributed amongst them. The questionnaires were filled independently to avoid mutual influence. The questionnaire consisted of two parts: first part consisted of demography while questions about self-medication were included in second part in which factors responsible for self-medication, symptoms that lead to stocking of medicines, and trust in medicine system were asked.

Statistics

The data were managed and analyzed through SPSS version 16.0. Descriptive analyses were done by the calculation of percentages and frequencies, and inferences were drawn by Z-test at 0.05 level of significance.

RESULTS AND DISCUSSION

A questionnaire-based study mainly depends upon the information provided by the respondents. Even though, the students were encouraged to fill the questionnaire independently, mutual dependence cannot be excluded completely. From high response rate, this study can be used to approximate the behavior of students in Abbottabad.

As we know, self-medication can treat minor disorders and thus lessens the burden of therapy on the part of patients as well as reduce the pressure on medical staff in developing countries like Pakistan with inadequate health facilities. Self-medication is associated with certain serious problems that the individual may encounter upon taking the medicine(s) (9).

With a response rate of 97.4%, 268 students participated in this study. Among them, 138 were non-health profession students whereas 130 were health profession students. There were 103 (38.4%) females and 165 (61.6%) males. The prevalence of self-medication was determined to be 95.5% in the students of COMSATS Institute of Information Technology, Abbottabad belonging to various age groups (Table 1), which was significantly ($p < 0.0001$) higher from that of Karachi (10). Additionally, difference between health- and non-health students was statistically non-significant ($p = 0.0996$). There was non-significant ($p = 0.1467$) difference in self-mediation between the two genders. Most common factor responsible for self-medication was “low severity of disease” (45.7% $n = 117$). This finding coincides with the study elaborated by Suleman and co-workers in southwestern Ethiopia (14). The second most common factor for self-medication was “told by doctor verbally” (44.9%) (Table 1). Most common symptom that caused self-medication and stocking of medicines was “storage of medicines for multi-purposes” (50.8%). This was followed by occasional pain (12.9%), common infections (10.9%) and cough/cold (9.8%) (Table 1). Out of 256 students, 22.7% got addicted with self-medication, and 78.5% of students reported that they encountered no resistance during the time of purchase of medicines from medical stores without prescription. Out of 256, 73% of respondents obtained medicines from community pharmacies, while 23.8% of respondents revealed that they bought a new medicine even if the same was available at home, which lead to loss of resources. Like previous studies (2, 14), most of the students trust in allopathic medicine system (75.8%) and the percentages of students trusting in homeopathic, Ayurvedic and

Table 1. Data of respondents having self-medication (n = 256)

	Parameter		Response (%)
Demography	Gender	Male	62.5
		Female	37.5
	Age (years)	18 to 20	37.9
		21 to 23	52.3
		24 to 26	8.2
		Above 26	1.6
	Total	100	
Factors responsible for self-medication	Occasional pain		12.9
	Common infection		10.9
	Need for study 5.5		
	Fever/ Headache		7.0
	Cough and cold		9.8
	Gastric pain		2.7
	Multipurpose		50.8
	Previous stock		0.4
	Total		100.0
Symptoms that lead to stocking of medicines*	Previous prescription ^a		39.5
	Doctor told verbally		44.9
	Told by a person already a victim of same disorder		15.6
	No access/time to visit doctor		38.7
	Cannot afford modern health care		15.6
	Low severity of illness		45.7
Trust in medicine system	Allopathic		75.8
	Ayurvedic		7.8
	Homeopathic		12.1
	Unani		4.3
	Total		100.0

*Multiple responses, total does not add to 100%. ^aPrescription received from physician in the past.

Unani system were 12.1%, 7.8% and 4.3, respectively (Table 1). The percentage of respondents who successfully get cure by self-medication was 67.2%, while 33.7% experienced more severity in disease conditions.

It is extremely astonishing to find that the difference in prevalence of self-medication among health and non-health profession students was not quite significant statistically. Students of health profession are expected to have lower rate of self-medication as compared to non-health profession students (11). Despite of a comprehensive knowledge

about the hazards of self-medication, students of health profession are under the influence of self-medication at the same rate as that of non-health profession. The possible cause may be the knowledge owned by the health profession students about the use of medicines. The male and female are equally involved in the practice of self-medication (12, 13). The overall cause of high prevalence rate of self-medication may be poor regulatory affairs of the country having weak control over the pharmacy stores about sale of medicines as evident from 78.5% of respondents who faced no resistance from

pharmacy stores in the purchase of medicines without doctor's prescription. A majority of the students consider disorder as a minor condition and thus may lead to mask a potential life-threatening condition by the use of pain killer or any other medicine. Likewise, many students (44.9%, Table 1) consulted health-care professionals verbally and took medicine(s) without proper diagnosis. Storage of medicines for more than one purpose and consequent administration of two or more drugs concurrently may lead to drug-drug interaction. Other causes of self-medication were lack of access and time, and financial issues. The potential source of self-medication are private firms, from where the medicines are purchased without prescription (14).

CONCLUSION

The practice of self-medication is terrifyingly high among Pakistani students irrespective of their gender and knowledge about the use of medicines. It is recommended that there should be a proper control over the sale of medicines especially in case of private firms. The pharmacy proprietors should keep in mind the role of medicines in curing of ailments as well as their adverse effects rather than considering it as a profitable business activity. Health professionals should actively participate to control the practice of self-medication through mass education about the same. Health facilities should be available to each individual irrespective of gender, nation, race, religion and economic status.

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