

Self-Medication of Anti-Biotics amongst University Students of Islamabad: Prevalence, Knowledge and Attitudes

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Abstract: The prevalence and pattern of self-medication with antibiotics among undergraduate and graduate community of students at different universities of Islamabad was evaluated using structured self-medication administered questionnaire. This cross-sectional, study was conducted in March 2013. A convenience sample was taken from 4 non-medical universities of the city of Islamabad, Pakistan. Data was analyzed using SPSS v14 and associations were tested using the Chi square test. A total of 210 questionnaires were randomly distributed with a respondent rate of 100%. The prevalence of self-medication was found to be 77.03% (Female: Male Ratio=1:1.14). The major reasons given for self-medicating with antibiotics were; 33.63% assumed knowledge on antibiotics ($P=0.478$), 26.64% prior experience on use ($P=0.378$), while 9.17% admitted lack of time to go for consultation ($P=0.130$). Majority of respondents however, self-medicate with antibiotics occasionally. The most reported antibiotic class (48.58%) was the β -lactams (as amoxicillin) while co-trimoxazole was rarely used (2.23%). The most reported condition for self-medication was respiratory tract infections (59%). About almost half of the respondents (46.79%) purchased the drugs from drug stores. These findings highlight the needs for planning interventions to promote the judicious use of antibiotics within the student population.

Keywords: Antibiotics, drugs, Pakistan, rational use, self-medication, students.

I. Introduction

Medication is the act of consuming medicines for diagnosis, prevention or treatment of diseases. Correct medication is observed by reporting any symptom or disease to the physician in the hospital or clinic who diagnoses and prescribes the needed drugs to alleviate the condition ^[1].

Self medication can be defined as obtaining and consuming medication without professional supervision, which comprises of acquiring medicines without a prescription, purchasing drugs by resubmitting/reutilizing an old prescription, taking medicines on advice of relative or others, or consuming left-over medicines already available at home ^[2]. There is much public and professional concern about the irrational use of drugs ^[3]. The prevalence rates are high all over the world; in developing countries it is as high as 92% ^[4], up to 68% in European countries ^[5]. Our neighboring countries have a prevalence rate of 31% in India and 59% in Nepal ^[4]. Very few studies regarding self medication have been conducted in Pakistan which has also confirmed high rates of prevalence of around 51% ^[6].

The misuse of non-prescription drugs amongst students has become a serious problem. The youth is very much exposed to the media and the increased advertising of pharmaceutical products through electronic and print media pose a larger threat to the young population. This increases concerns of incorrect self-diagnosis, drug-drug interaction and use other than for the true indication. To our knowledge, studies have been done in Pakistan to assess self medication in the young generation.

A major problem with self-medication with antibiotics is the resistance of human pathogens. Self-medication with antibiotics is of serious medical concern. Antibiotics resistance is a current problem world-wide particularly in developing countries, where antibiotics are often available without a prescription ^[7]. This study presents the results of the Pakistani youth's knowledge, attitude and practice towards self medication.

II. Study Background

The objective of this study was to evaluate the prevalence of self-medication among undergraduate and graduate students in Islamabad. A community based cross-sectional survey was conducted in different universities of Islamabad.

III. Methodology

Self administered, structured questionnaires were designed for the purpose of data collection. The questionnaires consisted of both closed and sometimes open-ended questions. The information on the questionnaires included social demographic variables such as gender, age and marital status. In addition to

questions on demographic information, the questionnaire included questions on involvement in self-medication practices, frequency of self-medication, sources of antibiotics used, names of antibiotics used, reasons for self-prescribing of antibiotics, self-medication of antibiotics as a precautionary measure, and recommendation of physician for culture test. Data was analyzed using SPSS v14 and associations were tested using the Chi square test.

IV. Results

The prevalence of self-medication was 77.03% (161/209), out of which most of the respondents (63.97%) reported that they get involved in self medication “occasionally”, 18.63% admitted that they self-medicate “most of the time” while the remaining respondents claimed to self medicate “frequently” as seen in TABLE 1. Majority of the students 95 (P=0.540) reported that they self medicated for respiratory tract infections (RTIs) and skin infections (TABLE 2).

Table 1: Frequency of self-medication

Response	Frequency	Percentage (%)
Occasionally	103	63.97
Frequently	28	17.40
Most of the time	30	18.63

Table 2: Conditions for which persons self-medicated

Condition	Frequency	Probability*
G.I.T Infections	20	0.124
Genitourinary Infections	10	0.062
Respiratory Tract Infections	115	0.714
Skin Infections	35	0.217
Others	15	0.093

*Multiple responses, total value doesn't add to 1.

Table 3: Factors influencing self-medication

Reasons for SM	Frequency	Probability*
Knowledge about drugs	77	0.478
Prior experience on use	61	0.378
Lack of time	21	0.130
Financial constraints	11	0.068
Nonchalant attitude of clinic staff	47	0.292
Illness considered not serious for consultation	6	0.037
Others	6	0.037

*Multiple responses, total doesn't add to 1.

Table 4: Type of antibiotics used in self-medication

Antibiotics	Frequency	Probability*
Amoxicillin	87	0.540
Tetracycline	14	0.087
Ciprofloxacin	21	0.130
Co-trimoxazole	4	0.024
Cefuroxime	5	0.031
Metronidazole	12	0.074
Others	34	0.211

*Multiple responses, total doesn't add to 1.

Table 5: Source of purchase of antibiotics

Place	Frequency	Probability*
Hospital Pharmacy	45	0.279
Community Pharmacy	15	0.093
Private Clinic	31	0.192
Drug store	80	0.446

*Multiple responses, total doesn't add to 1.

Table 6: Experience of persons about self-medication effectiveness

Response	Male (%)	Female (%)
Yes	40.69	22.66
Sometimes	39.55	66.67
No	19.76	10.67

The major reasons given for self medication included assumed knowledge on antibiotics (P=0.478) and prior experience on use (P=0.378). The most common antibiotic that was reported for self-medication was Amoxicillin with frequency of 87 (P=0.540) as indicated in TABLE 4. It was also observed that minor community of students take paracetamol and non-steroidal anti-inflammatory drugs (NSAIDs) instead of antibiotics in case of respiratory tract infections and also in gastro-intestinal infections.

Eighty (P=0.446) of the respondents purchased drugs directly from drug stores (private pharmacies) as given in Table 5. Other sources of the drugs included hospital pharmacies 45 (P=0.279), private clinics 31 (P=0.192) and community pharmacies 15 (P=0.093). 52.17% of the student community reported the effectiveness of self-medication “sometimes”. It has also been observed that only 33.54% of the students take antibiotic as precautionary measure. 60.86% had heard about antibiotic-resistant bacteria.

V. Discussion

The occurrence of antibiotic self-medication among undergraduate and graduate students is considerably high. The major factors associated with self medication with antibiotics is assumed knowledge on diseases and their treatments, prior experience on use of antibiotics and nonchalant attitude of hospital/clinical staff.

From this study, self medication with antibiotics was found to be dominantly related to assumed knowledge of antibiotics (TABLE 3). Although these students admitted to have knowledge on antibiotics, consequences of their misuse and hazards associated with self medication but alarmingly, these didn't deter them from indulging in this practice.

This practice is based upon the assumption that same or similar symptoms of a disease or infection could be treated with same drug and regimen as used earlier. These drugs may have been prescribed initially but they keep purchasing the same drugs or just use up the “left-overs” whenever the symptoms reappear. A number of students claimed that the negative attitude of some clinical staff kept them away from the clinic/hospital and so, indulge in self medication with antibiotics when they needed medication.

The disease conditions for which the students self-medicated are common health problems among many populations and this suggests that the trend of antibiotic self-medication may continue if proper measures are not taken. Amoxicillin was reported as the main drug used to self-medicate in this study (TABLE 4) and this correlates with the “assumed knowledge” of drugs as amoxicillin is probably used here because of its broad spectrum action to treat respiratory tract infections which is the major disease for which these students self medicated.

A major problem of self-medication with antibiotics is the emergence of drug resistance. Antimicrobial resistance is a current problem world-wide; particularly in developing countries. Inadequate dosing, incomplete treatment courses and indiscriminate drug use have major contributions to the emergence and progress of drug resistance in microbes. The consequence of this is the loss of relatively affordable drugs that will require new drugs development, which will be more expensive and will further put developing and progressing countries at disadvantages. The rational use of antibiotics is thus of utmost importance to limit the increase in bacterial resistance.

From the study, the major source of purchase of antibiotics was drug stores (private pharmacies) as mentioned in TABLE 5. Though regulations that categorize most of these drugs as prescription only exist, regulatory authorities and departments often lack resources to enforce them. Even if enforcement was possible, having and enforcing a strict prescription policy without providing adequate and affordable access to medical consultation and treatment, might exclude the lower class people from accessing drugs, leading to increased morbidity from otherwise curable infectious diseases.

VI. Conclusion

The results from this study are limited to self-reported data, and as with all self-reported data, it depends on information given by the respondents. This study shows that self medication with antibiotics is widely common and inappropriate among university students. We recommend that a holistic approach must be taken to prevent this problem from escalating which would involve (i) Awareness and education regarding the

implications of self-medication (ii) Strategies to prevent the supply of medicines without prescription by pharmacies (iii) Strict rules regarding pharmaceutical advertising and (iv) Policies to make receiving health care much less difficult. This study has also opened gateways for further research in this issue, besides showing that it is a real problem and should not be ignored.

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