

## Practices of self-medication with antibiotics among nursing students of Institute of Nursing, Dow University of Health Sciences, Karachi, Pakistan

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### Abstract

Self-medication practice among nursing students is of growing concern. Access to drugs and handling them in their future practices make nursing students susceptible to self-prescription and self-medication. This cross-sectional study assesses the prevalence and pattern of self-medication with antibiotics among nursing students of Institute of Nursing, Dow University of Health Sciences, Karachi, Pakistan. A random sample of convenience of 160 nursing students underwent a predesigned questionnaire. More than half of nursing students 79 (52.7%) experienced self-medication with antibiotics. It was more prevalent among males 49 (62%). Knowledge about the drug 59 (74.7%) and convenience 13 (16.5%) were the key reasons to self-medicate. Fever 37 (46.8%) and sore throat 27 (34.2%) were the common symptoms predisposing to self-medication. Beta-lactam group of antibiotics 35 (44.3%) was most frequent used. Only 26 (32.9%) respondents completed the entire antibiotic course. Efforts must be directed towards educating nursing students about responsible and informed self-medication practices.

**Keywords:** Self-medication, Antibiotics, Nursing students.

### Introduction

Self-medication can be defined as the consumption of any drug in order to treat self-diagnosed ailments without any authentic medical supervision.<sup>1</sup> Self-medication practices are common in developing countries for the reason of convenience, accessibility, cultural traditions and perceived saving of time and money to consult a doctor.<sup>2,3</sup> However, inappropriate use may result in health hazards such as prolong suffering, adverse drug reaction and increase in antimicrobial resistance.<sup>4</sup>

Nursing students are susceptible to self-medication and

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self-prescription on account of handling and having access to different types of drugs in their future practices.<sup>5</sup> Several studies conducted on nursing students have shown that a sizeable population of them experience self-medication with antibiotics.<sup>6,7</sup> A study conducted in a University Hospital in India reported antibiotic self-medication as a frequent practice among medical and nursing students with a prevalence rate of about 74%.<sup>7</sup>

There is a paucity of literature on the prevalence of antibiotic self-medication practices among nursing students of Karachi, Pakistan. Though studies have mentioned self-medication practices in Pakistan among university students<sup>8</sup> but no study has been conducted to holistically explore antibiotic self-medication practices. This short report aims to determine the prevalence of antibiotic self-medication among nursing students of Institute of Nursing, Dow University of Health Sciences, Karachi, Pakistan, and characterizes the behaviour, patterns and factors influencing self-medication practices.

### Methodology

After prior approval from Institutional Review Board of Dow University of Health Sciences; this questionnaire based, cross-sectional study was undertaken at Institute of Nursing, Dow University of Health Sciences, Karachi. The study was conducted between February-March 2015. The calculated sample size was 146 subjects assuming 50% prevalence, keeping confidence level at 95% and accepting 5% margin of error.<sup>7,9</sup> The required sample size was rounded off to 160 participants. A sample was drawn from above mentioned study setting using random sampling technique. Nursing students willing to participate were briefed about the study and were administered a predesigned proforma. Anonymity was maintained and no inducements were offered. Questionnaire comprised of two components. First component dealt with the demographic details while second component consisted of both open and close-ended questions related to self-medication behavior, pattern, indications and drugs used for self-medication with antibiotics. Data obtained was entered and analyzed in Statistical Package for Social Sciences-17 (SPSS,

Chicago, Illinois, USA). A p value of <0.05 was regarded as statistically significant.

## Results

Out of 160 participants, 150 subjects with completely filled questionnaires were included for final analysis (Response rate: 93.7%). Study population comprised of 79 (52.7%) females and 71 (47.3%) males. Mean age was  $23.5 \pm 3.6$  years. Of the 150 nursing students, 35 (23.3%) respondents were from the 1st year, 43 (28.7%) from 2nd year, 32 (21.3%) from 3rd year, and 40 (26.7%) from the final year.

Overall, 79 (52.7%) nursing students experienced self-medication with antibiotics. Among males, frequency of self-medication with antibiotic was significantly higher, 49 (62%) as compared to females 30 (38%) ( $p < 0.001$ ). Age and year of the nursing class were not statistically correlated with the prevalence of antibiotic self-medication ( $p = 0.08$  and  $p = 0.34$ ).

The key reasons for self-medication with antibiotic was knowledge about antibiotic 59 (74.7%) followed by convenience 13 (16.5%) and cost saving 9 (11.4%). The chief complaints which predisposed respondents to self-medication practices were fever 37 (46.8%), sore throat 27 (34.2%) and runny nose 19 (24.1%) (Figure). Amoxicillin/clavulanic acid was the most frequently used antibiotic 35 (44.3%) followed by amoxicillin 11 (13.9%) and ciprofloxacin 9 (11.4%). The most common route of

**Table:** Complaints predisposing to antibiotic self-medication practices.

S. No.	Complaints	Frequency (n)	Percentage (%)
1	Fever	37	46.8%
2	Sore throat	27	34.1%
3	Runny nose/Influenza	19	24%
4	Cough	15	19%
5	Vomiting/Diarrhoea	15	19%
6	Toothache	13	16.5%
7	Skin wounds	10	12.7%
8	Urinary Tract Infection	9	11.4%
9	Pain	6	7.6%
10	Eye infection	5	6.3%

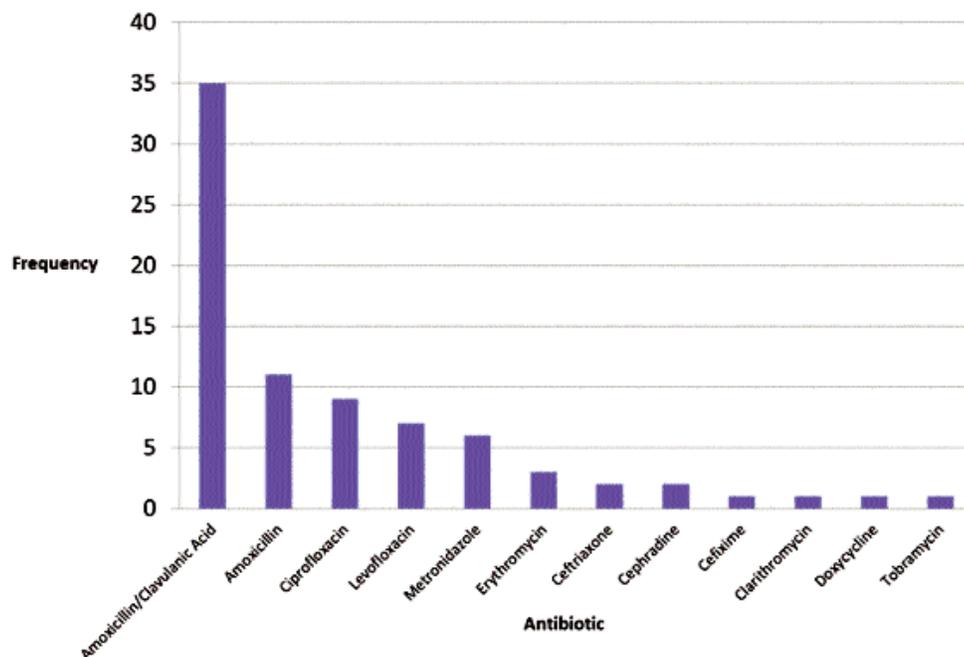
administration was oral 75 (94.9%). Selection of antibiotic was based on previous experiences 55 (69.6%) and previous doctor prescriptions 17 (21.5%).

Data concerning the completion of antibiotic course revealed that only 26 (32.9%) respondents completed the entire antibiotic course. Most of the subjects either stopped antibiotic course few days after recovery 29 (36.7%) or stopped taking antibiotics after symptoms disappeared 24 (30.4%). Adverse effects with antibiotic self-medication were experienced by 12 (15.2%) subjects and were mostly related to gastrointestinal system particularly nausea, vomiting and diarrhoea. Six (7.6%) of the study participants discontinued the antibiotic course upon experiencing an adverse effect and 3 (3.8%) switched antibiotics during the course of self-treatment.

Forty eight (60.8%) participants reported complete satisfaction with their antibiotic self-medication practices. Most of the respondents 44 (55.7%) cited self-medication with antibiotics as an acceptable practice while 23 (29.1%) referred it as unacceptable practice as a health care personnel.

## Discussion

To the best of our knowledge, this was the first study undertaken to evaluate self-medication practices with antibiotics among nursing students. The study showed that antibiotic self-medication is a very frequent practice



**Figure:** Frequency of antibiotics used for self-medication practices.

among nursing students of Institute of Nursing, Dow University of Health Sciences with a prevalence rate of about 53%. It is in range with the prevalence estimate (36-74%) reported by other studies on nursing and medical students.<sup>7,9</sup> Our study results were significantly higher compared to general population reported by Kim et al. and Deshpande et al.; 16.6% and 31%, respectively.<sup>10,11</sup> Surprisingly, prevalence reported by our study was very similar with the study conducted by Gholap et al. (53.57%) on antibiotic self-medication practices among staff nurses.<sup>12</sup> Pankaj et al have also attested the alarming increase in antibiotic self-medication among health care professionals (36.47), out of which 70% comprised of practicing nurses.<sup>13</sup> Increased prevalence among health care providers might be due to their professional course. High level of education and professional status were reported earlier as predictive factors for self-medication.<sup>9</sup>

In contrast to other studies, the practice of self-medication was more prevalent among males in our study.<sup>5</sup> In the present study the most common symptoms leading to antibiotic self-medication were fever, sore throat and runny nose. Similar findings were reported in a study in urban areas of Peshawar.<sup>14</sup> Antibiotics belonging to beta-lactam group were commonly used for self-medication. Our results are similar to those reported earlier.<sup>12,13</sup> Irrational antibiotics use may lead to antimicrobial drug resistance and super infection which is a growing global concern.<sup>7</sup>

As reported by previous studies, the most common reason for self-medication was lack of time and economic resources.<sup>15</sup> Although cost and time saving were important factor in our study, knowledge constituted the predominant reason for self-medication among nursing students. Similar findings have also been observed in a study conducted on staff nurses in Karad, India.<sup>12</sup>

Serious and appropriate measures are need of an hour to such a high prevalence of antibiotic self-medication since these nursing students are future staff nurses and clinical practice will further escalate their antibiotic self-medication practices if not acted accordingly. Our study had few limitations. One of the major limitations of the study was pilot nature of the study which could hinder the generalisability of the results. Further, students were requested to recall their practices of antibiotic self-medication, this could result in reporting bias.

## Conclusion

Overall, this study has shown that the practice of self-

medication with antibiotic is prevalent among nursing students of Institute of Nursing, Dow University of Health Sciences, Karachi, Pakistan. Self-knowledge about the drug and convenience were the key reasons to self-medicate with antibiotics. Fever and sore throat were the common symptoms predisposing to self-medication and beta-lactams were the most common antibiotic used for self-medication. Education about responsible and informed self-medication practices should be promoted.

**Conflict of Interest:** No conflict of interest or financial conflict to disclose for all authors.

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