



Study on Self-medication Practices among University Students of Bangladesh

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Authors' contributions

This work was carried out in collaboration between all authors. Author TI designed the study. Author MA managed the literature searches. Authors SK and MSU prepared the draft of the manuscript. Author MAI prepared the graphs. Authors FN and SSH reviewed the scientific contents of the manuscript. All the authors read and approved the final manuscript.

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ABSTRACT

Aims: To know how much knowledge and awareness university students of Bangladesh have about commonly used medicines.

Study Design: The study was conducted on 1200 students randomly selected from 9 university of Bangladesh, in which 87.5% were master's student and remaining 12.5% were honor's students. Each willing participant shared their opinion.

Place and Duration of Study: Dhaka University (DU), Jahangirnagar University (JU), Eastern University (EU), East West University (EWU), Daffodil International University (DIU), North South University (NSU), International Islamic University Chittagong (IIUC), University of Information Technology & Science (UITS) and University of Science & Technology (USTC), Bangladesh, from May to July 2012.

Methodology: Questionnaires were distributed among the students, information about students and knowledge about self-medication practices of medicine was determined.

Results: The present study revealed that most frequently used medicine was analgesic/antipyretic

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(58.75%), followed by antiulcerants (40.17%), antibiotics (18.17%), antihistamines (10.58%) and antitussive (9.33%). 54.5% students took analgesic/antipyretic based on self-decision, followed by 49.83% antibiotics, 43.5% antiulcerants, 46.83% antitussives and 31.08% antihistamines respectively. Based on retailer advice 25% students took antimicrobials. 47.83% students said that they took antibiotics because of fever, 27% said the reason was infection, 13.58% took antibiotics because of GI disease and 12.5% mentioned others. 67.67% had no idea about side effect of antibiotics, followed by 53.17% for analgesic/antipyretic, 53.2% for antihistamine, 47.75% for antitussives and 28% for antiulcerants.

Conclusion: Self-medication was practiced with a range of drugs from the analgesic/antipyretic to antibiotics. Most of the students didn't know about the side-effects of these medicines as well as the antibiotics resistance. Although the practice of self-medication is unavoidable; drug authorities and health professionals need to educate students about the health hazards of self-medication.

Keywords: Self-medication; practice; knowledge; medicines; university students.

1. INTRODUCTION

Self-medication is a widespread practice regarded by the World Health Organization (WHO) as being part of self-care [1,2]. It is a common practice globally and is reported to be on rise [3]. Prevalence rates of self-medication are reported to be higher in developing countries [4]. The drugs most frequently used through self-medication are analgesics and antipyretics, nonsteroidal anti-inflammatory drugs, and antimicrobials [5-11]. Practice to self-medicate is reported to be influenced by many factors such as education, family, society, law, availability of drugs and exposure to advertisements [12-14]. Self-medication is one of the important issues in healthcare sector and has been debated. Those who are against it believe that it may be related to incorrect self-diagnosis, delays in seeking medical advice when needed, infrequent but severe adverse reactions, dangerous drug interactions, incorrect manner of administration, incorrect dosage, incorrect choice of therapy, masking of a severe disease, and risk of dependence and abuse [15-18].

On the other hand, WHO has pointed out that an appropriate self-medication can be beneficial in treating acute ailments that do not require medical consultation, can save the time spent in visiting a physician and provides a cheaper alternative for treating common diseases [19]. Some governments are also encouraging self-care of minor illnesses, including self-medication. Responsible self-medication help to reduce the cost of treatment, travelling time as well as consultation time [20]. Young adult students are prone to practice self-medication due to their low perception of risk associated with the use of drug(s), easy access to internet, increase in unregulated pharmaceutical advertising, ready

access to drugs, level of education, social status etc [21]. The prevalence rates of self-medication amongst university students are high and previous studies have reported this rates of about 94% in Hong Kong, [22] 76% in Karachi, Pakistan, [23] 87% in India, [24] 86.4% in Brazil, [25] 98% in Palestine, [26] 55% in Egypt [27] and 43.2% in Ethiopia [28].

The current scenario of Bangladesh shows that most of the people when they get sick, instead of going to the hospital or rushing to the doctors', take medicines on their own accord that are usually influenced by some common factors like advise of family or friends. In this study, an attempt has been made to assess the knowledge of Bangladeshi people about some commonly used medicines like NSAID's, antibiotics, anti-allergies, gastric medicines and cough syrup. The target population, to assess the perceptions and attitudes towards commonly used medicines in Bangladesh, was the university students as they represent the intellectual portion of our population and if the situation in that population segment is not up to scratch, then it poses an alarming circumstance for the rest of the populace.

This pilot study expected to evaluate the self-medication practices in different diseases among university students in Bangladesh.

2. MATERIALS AND METHODS

The study was conducted on 1200 university students randomly selected from 9 university (Dhaka University, DU; Jahangirnagar University, JU; Eastern University, EU; East West University, EWU; Daffodil International University, DIU; North South University, NSU; International Islamic University Chittagong, IIUC; University of Information Technology & Science,

UITS and University of Science & Technology, USTC) of Bangladesh. The period of this study was between May, 2012 to July, 2012. A predesigned questionnaire was distributed among the students, demographic characteristics of student and information on the knowledge about self-medication practices was collected and the results were finally compiled and presented. The students who denied to participate and who disagreed to share the necessary information were excluded from the study. Summary of information is given in Table 1. All participants signed the consent form and the study was approved by the Ethical Review Committee of the Bangladesh Medical Research Council (BMRC). Analysis was carried out in the Department of Pharmaceutical Technology, University of Dhaka, Bangladesh. This study was conducted in accordance with the International Conference of Harmonization (ICH) guideline for Good Clinical Practice (GCP) and in compliance with the Declaration of Helsinki and its amendments [29,30].

Table 1. List of collected information

I. Student related information
1. Age
2. Sex
3. Education level
4. Residential status
II. Medicine related information
1. Self-medicated drug
2. Reason of self-medication
3. Reason of taking antimicrobial drug
4. Knowledge about side effects of self-medicated drug

2.1 Statistical Analysis

Microsoft Excel 2010 (Roselle, IL, USA) was used for the statistical and graphical evaluations. This was calculated using the standard error method.

3. RESULTS

Out of 1200 students 51.75% were male, and 28.25% were female. The majority of the students (87.5%) were honors students. Detailed students related information is given in Table 2.

In this study, the most frequently used self-medicated medicine was analgesic/antipyretic, 58.75% followed by antiulcerants, 40.17% followed by antibiotics, 18.17% followed by antihistamines 10.58% and antitussive, 9.33% (Fig. 1).

Table 2. Demographic profile of the patients (n = 1200)

Parameter	n	%
Sex		
Male	621	51.75
Female	579	48.25
Age		
18-23	853	71.08
24-26	237	19.75
27-29	110	9.17
Education level		
Honor's	1050	87.5
Masters	150	12.5
Residential status		
Residential	394	32.83
Non-residential	806	67.17

Most of the students (54.5%) took analgesic/antipyretic on self-decision, followed by antibiotics (49.83%), antiulcerants (43.5%), antitussives (46.83%) and antihistamines (31.08%) respectively. Larger portion of students (25%) took antimicrobials based on retailer advice. Detailed reason of self-medication related information is given in Fig. 2.

In this study 47.83% claimed that they took antibiotics because of fever, 27% said the reason was infection, 13.58% took antibiotics because of GI disease and 12.5% mentioned others as given in Fig. 3.

53.17% don't know about the side-effects of analgesic/antipyretic (paracetamol) and 22.75% had a little knowledge. About 55.7% students didn't answer the question related to the side-effects of gastric medicines, about 15.1% answered positive, 28% students didn't know about the side-effects and 14.3% had a little knowledge. 57.57% students had no knowledge about drug resistance and other side effect of antibiotics. 55.7% students were ignorant about the side-effect of antiulcerant (Fig. 4). The null hypothesis was: most of the university students did not have enough knowledge about OTC drugs. After analysis the p-value was >0.05, meaning that the null hypothesis could not be rejected. We did a chi-square test for the analysis of data. The value (72.808) & degree of freedom (4) was entered into the p-value calculator and the significance of the study was determined.

4. DISCUSSION

In Bangladesh there is no difference in the selling of consumer products and medicines. In fact

some commonly used OTC and prescription only medicines (POM) are also available in consumer shops. Many patients directly purchase medications from the community pharmacies because medicines are easily accessible, less expensive than going to the doctor's clinic first. This is even more obvious in rural areas where medical services are inadequate.

Self-medication was conveyed to be comprehensively practiced among the studied population. In this study most widely

self-medicated medicine was analgesic/ antipyretic. In the study of assessment of self-medication practices among medical, pharmacy, and health science students in Gondar University, Ethiopia Amelo W. et al. [31] also reported similar finding. Self-medication practice of antiulcerant was 40.17%. As developing country poverty, malnutrition, food habit, is mainly responsible for this ulceration. Ali AN et al. [32] in the study of self-medication practices among health care professionals in a Private University, Malaysia

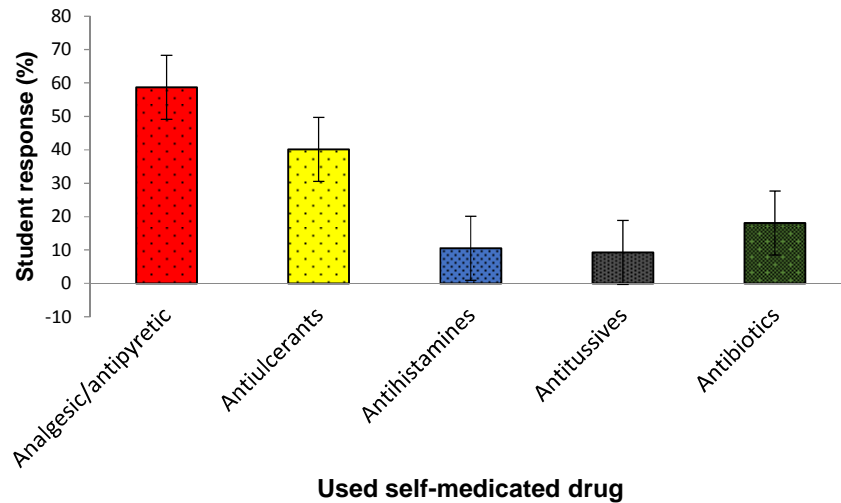


Fig. 1. Self-medicated drug

This was calculated using the standard error method

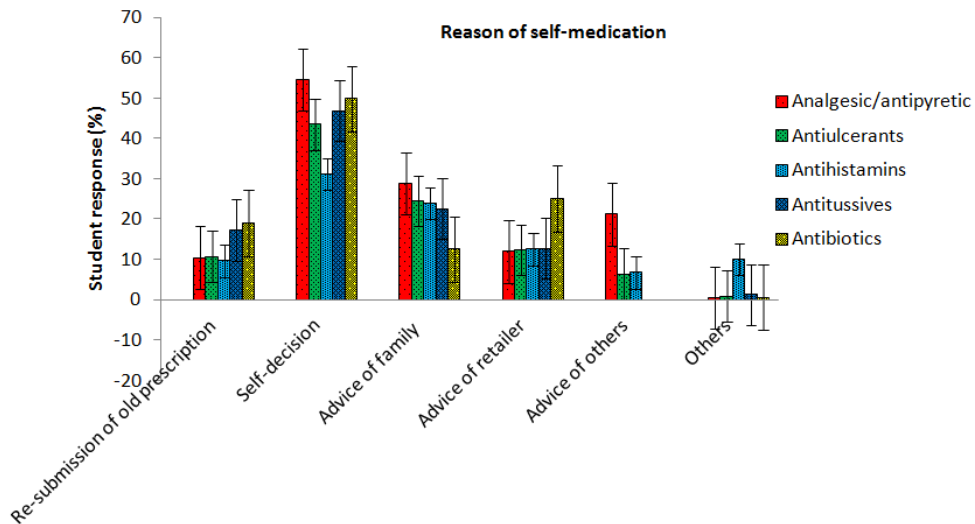


Fig. 2. Reason of self-medication

This was calculated using the standard error method. Due to multiple options respondents could select, sum of percentage is not always 100

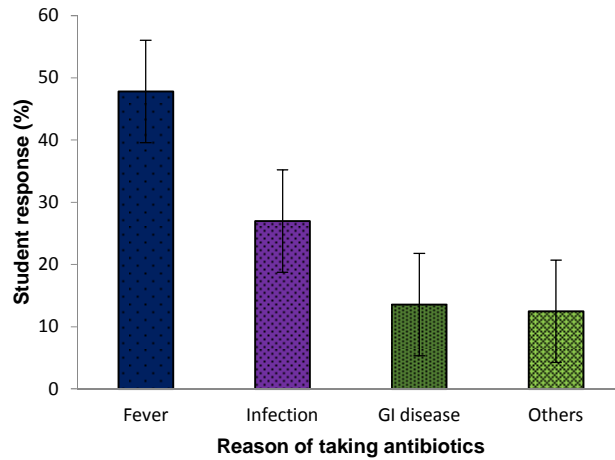


Fig. 3. Reason of taking antimicrobial drug
 This was calculated using the standard error method

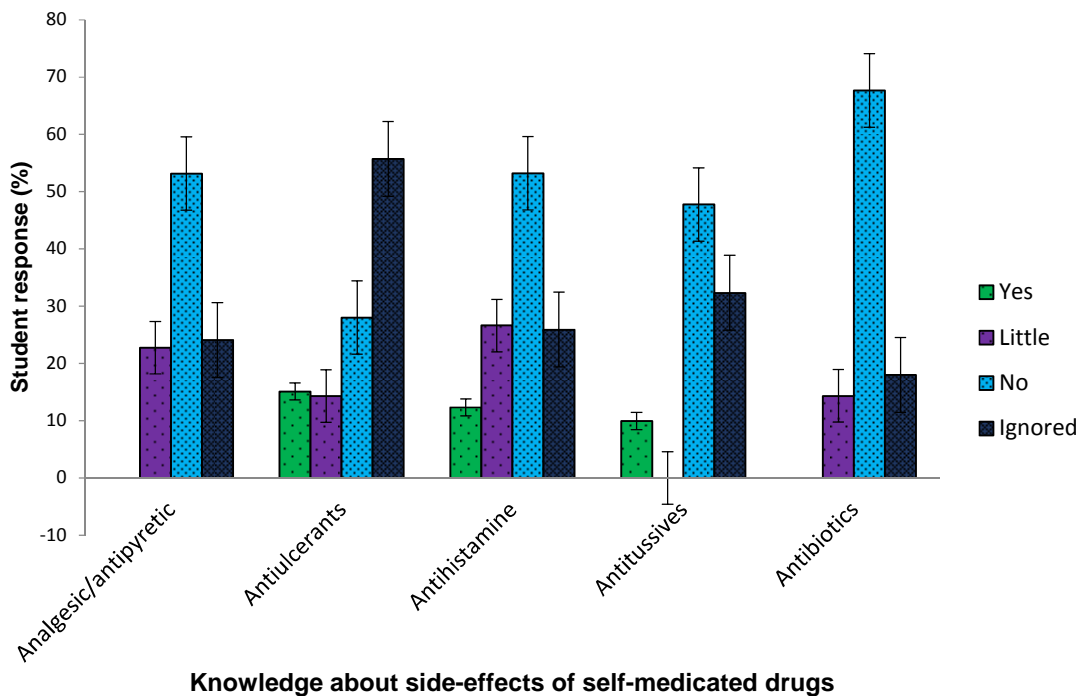


Fig. 4. Knowledge about side effects of self-medicated drug
 This was calculated using the standard error method

showed 9.6% self-medication practice of antacid. Antimicrobials are drugs used more consciously in developed country, but in this country antibiotics are not used judiciously. Here antimicrobials are used like OTC drugs, which causes antimicrobial resistance. Factors such as unregulated dispensing and manufacture of antimicrobials, truncated antimicrobial therapy,

inadequate access to effective drugs and sometimes drugs of questionable quality and overall poverty are likely to be contributing to antimicrobial resistance [33]. In this study self-medication practice of antibiotics was seen among 9.4% students. A study on evaluation of self-medication practices in acute diseases among university students in Oman Khan SA, et

al. [34] showed self-medication of antimicrobials among 45.1% male and 47.2% female. In addition to this inappropriate prescription pattern of antimicrobials is also responsible for drug-resistant. Basher A, et al. [33] showed that the most frequently prescribed antibiotics are ceftriaxone (30.19%) followed by cefixime (18.87%), and amoxicillin (16.98%). It was observed that cephalosporins accounted for more than 55% of the total antibiotics used, where the most frequently used antimicrobials were ceftriaxone, cefixime, and cefuroxime.

In this study most common reason of selecting analgesic/antipyretic was self-decision. Advice of retailer was also responsible for selecting antimicrobials. Biswas M, et al. [35] in the study of self-medicated antibiotics in Bangladesh: a cross-sectional health survey conducted in the Rajshahi city showed that pre-experience was responsible for selecting antibiotics.

The most common reason that enforces students to take antibiotics was fever and infection. In developing countries infections are common. Infectious diseases are major health problems in Bangladesh requiring frequent use of antimicrobials [33]. Biswas M, et al. [35] showed that diarrhea, dysentery and food poisoning are causes for selection of antibiotics.

Paracetamol is widely self-medicated drug. But most of students in this study are not conscious about side effect of paracetamol. Uddin et al, [36] showed that paracetamol is responsible for severe liver damage, renal medullary necrosis and rebound headache. Side effects of antibiotics are responsible for development of drug hypersensitivity, toxicological hazards. Inappropriate use of these agents is associated with allergic reactions, toxicities, super infection and more importantly the development of antimicrobial resistance [37]. This study revealed that most of the students had no knowledge about side effect of antibiotics. In Bangladesh, misuse of antibiotics appear to be frequent.

5. CONCLUSION

From this study it is clearly demonstrated that analgesic/antipyretic, antiulcerants, antibiotics, antihistamines and antitussives are among the most commonly reported self-medications consumed among students. The overall knowledge of students about rational use of the medications was poor. Strategies to promote proper use of medicines are needed. We

recommend intensive education and comprehensive awareness campaign to educate the student community on the pros and cons of self-medication. Substantial advances in educating the students can be made with the use of tools that are part of their everyday life such as social media, virtual games, blogs, and microblogs etc.

CONSENT

Consent of the university students as well as university authorities was taken prior to the survey. They cooperated completely for completing this survey.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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