Self-Medication Among King Khalid University Students, Saudi Arabia

Purpose: This study objective was to explore the pattern of self-medications among King Khalid University students, Saudi Arabia.

Patients and methods: A cross-sectional study was conducted over five months among King Khalid University students, Abha, Saudi Arabia.

Results: Among all the study participants, nearly 98.7% were practicing self-medication. Headache (75.9%), cough and cold (52.5%), and fever (35.6%) and body pain (24.6%) were the most reported symptoms. Use of painkillers (91.6%) was significantly predominant among the medical students, whereas non-medical students used antibiotics (35.4%). Time saving (64.2%), mild symptom (51.7%) and quick relief (36.9%) were the reasons behind seeking self-medication in this study.

Conclusion: Self-medications was common in King Khalid University. Educational programs are highly recommended.

Keywords: self-medication, students, medical, nonmedical, King Khalid University, Saudi Arabia

Introduction

The World Health Organization (WHO) refers the self-medication practice to “use of over-the-counter medication (OTC) to treat self-diagnosed symptoms or disorders, or for the continuous and re-use of prescribed medications for recurrent diseases”. The United States Food and Drug Administration (FDA) delineates the OTC medications as the medications where the people can buy it with without prescriptions from prescribers. Self-medication practice is also referred to the consumption of either drugs or herbs based on self-initiative or other people’s advice including friends, family, pharmacists, and popular magazines and newspapers. Self-medication practice is a global health-care problem especially in developing countries, which is led by economic and social motivations. The appropriate practicing of self-medication may reduce the burden on governments and health-care systems by reducing the waiting time at the hospital for getting treated by physicians and reduce the overall cost of health care services. However, the misuse of self-medication, herbal products and over the counter (OTC) drugs may result in significant health-related problems and consequences.

In Saudi Arabia, as well as developing countries and as a result of this malpractice among pharmacy dispensers, people and students can buy what they need easily from the community pharmacies. The literature reported that the self-medication among university students was high. Although the comparison of self-medication practice...
among medical versus non-medical university students was conducted in some other Arabic countries like Jordan and Egypt, there is no similar study -to our knowledge- has been conducted in Saudi Arabia. Besides, there is a lack of data about the self-medication in King Khalid University students. Therefore, the main aim of this study was to explore the pattern of self-medication among King Khalid University students, Saudi Arabia.

Materials And Methods

Study Design
This is a cross-sectional survey-based study that was conducted over five months between October 2018 and February 2019 among King Khalid University students, Abha, Saudi Arabia.

Sample Size And Sampling Technique
This study was conducted at King Khalid University in Abha city. From a previous study conducted on Saudi university students, the prevalence of self-medication among university students was found to be 86.9%. The total number of students enrolled at King Khalid University is about 60,000 students (59,495). The α-level was set at 5% and the confidence interval was set at 95% with 5% precision. Based on that assumption, the number of subjects was 502 students including male and female students from medical and nonmedical colleges. The total number of returned surveys was 528 out of 600 surveys distributed with a response rate ~ 88%.

Study Instrument And Data Collection
A self-administered questionnaire was adapted from the literature. Three lecturers from the clinical pharmacy department revised the survey for validation of the contents. Survey reliability was done by a pilot study by administering the survey to 10 faculties and 20 students and repeating these studies one week later. Cronbach’s alpha coefficient was 0.73 which indicated that the survey could be used in this study. The validated survey was translated into the Arabic language from an independent agency. The participants were approached by pharmacy students (data collectors), and the purpose of the study was clarified, and the procedures of filling the survey were explained. The participation of the participants in the research was voluntary. Then, the participants were asked to read and sign the written consent form. Sufficient time was given to the participants to complete the survey forms. Sufficient time was given to the participants to complete the survey forms.

Ethical Considerations
Ethical approval was granted from the Ethical Regional Committee in Aseer Region and the College of Medicine at King Khalid University (REC#2018-03-65), and all participants were asked for their consent to participate in the study before being given the survey. The responses were anonymous and confidential, and the participants were informed that before start answering the questionnaire.

Statistical Analysis
The data received from the completed forms were entered into the Excel sheet and exported to statistical package for social sciences (SPSS), version 22.0 for Windows for statistical analysis. Both descriptive and inferential statistics were used for data analysis. The comparison between medical and nonmedical students was performed by using independent Student’s t-test for continuous variables and test for categorical data. P value was considered significant if <0.05.

Results
Participant characteristics are listed in Table 1.

The findings of this study show that there was a significant difference between medical and other students in terms of self-medication practice. The majority of nonmedical students considered the self-medication is safe and does not prefer to read the leaflet before using it. Moreover, we observe nearly as twice as the medical students, the non-medical students prefer to obtain antibiotics as self-medication (Table 2).

Self-medication was reported by 98.7% of students. We observed a significant difference in the pattern of self-medication among these two groups of students (Table 3). The most commonly used drug classes as self-medication by all students in the past 6 months were painkillers (81.4%), cold and flu preparations (29.4), antibiotics (28.2%), eye/nasal drops (26.7%), cough syrups (25.8%) and antipyretics (20.8%). Use of some of the drug classes were significantly higher among medical students such as painkillers (91.6% vs 70.5%, p=0.000) and antihistamines (17.2 vs 9.8%, p=0.014), whereas, the use of antibiotics (35.4 vs 21.5%, p=0.000), antipyretics (25.6 vs 16.4%, p=0.010) and appetizers (4.3 vs 0.7%, p=0.008) were higher with non-medical students.

Headache (75.9%), cold (52.5%), fever (35.6%), body pain (24.6%) and tooth pain (22%) were answered by the participants. (Table 3).
Table 4 lists out the sources of information about self-medication. The primary source of information for taking self-medication among all the students was personal knowledge (51%), relatives (30%), pharmacists (26%) followed by friends (20%).

Table 5 represents the factors that influenced the study participants toward self-medication. A major portion of the students (64.2%) considered self-medication as time saving. Another 51.7% of students go for self-medication if they think the condition is not worth seeing doctors. Other reasons such as quick relief (36.9%), cost of treatment (26.7%) and previous experience also play important reasons that drive the students towards self-medication.

Discussion

98.7% were practicing self-medication in this study, which is higher than a study conducted by Saeed MS, et al 2014 reported that 86.6% of male students at Qassim University, Saudi Arabia practiced self medications.4 The findings of our study is similar to the studies conducted in Jordan17 and Bangladesh.18 Anyhow, this result is much higher than other studies conducted in various developing countries such as 43.2% in Ethiopia,19 51% in Slovenia,20 55.3% in Pakistan,21 55% in Egypt,22 56.9% in Nigeria.23

Prevalence of self-medication could be different from one study to another and could be affected by many factors such as study design, age of participants,
People in Saudi Arabia can buy OTC medications as well as prescribed medications as a result of pharmacies not adhering to the pharmacy law in Saudi Arabia. This is common practice in many Arabic countries as well as developing countries,7,14,15,25 and this could affect the high prevalence of self-medication in this study. The findings of this study show that medical students practiced self-medication more than non-medical students and this is partially explained by some of the variables such as the medical knowledge and exposure of the students, area of residence, availability of hospital facilities in their vicinity and their surroundings. Nearly 40% of the medical students and 64% of non-medical students did not know that if the medicines self-prescribed by them need prescription or not. Regarding the side effects, nearly 35% of the students did not know the potential side effects of the self-prescribed medicines. This study shows that the participants’ knowledge toward self-medications was poor and on the other hand their attitude was positive and this is similar to the previous study in the central Saudi Arabia.13

The students participated in this study frequently used various classes of drugs to treat different illnesses (Table 3) and the study discipline had an influence on the practice of self-medication.

This study shows that there was a significant between medical students and others in terms of medications used. Medical students used painkillers, topical agents, herbs, nutritional supplements and antihistamines drugs more than non-medical student did. Possibly, the medical or pharmaceutical knowledge gained in college might have given them the confidence to make decisions of self-medication26 & type of medications used. Additionally, easy accessibility or availability of drugs and consultants and their colleagues’ advice may also be the influencing factors. Previous knowledge & experience, pharmacists, physicians, friends & relatives recommendations were reported as the sources of self-medications in this study and this is similar to what reported in the literature.27–31

The most common justification among the study population to indulge in self-medication was ‘time saving’ and ‘conditions not worth seeing doctor’. This finding was harmonious with previous literature reported from Madinah, Saudi Arabia.32 Considering the health problem as a “mild illness” is an another commonly found justification(35.2%) for self medication among our study participants, which is inline with a study (34.2%) conducted by Abbas et al.33 Contrarily, nearly two-third of students (69.7%) registered their attitude that self-medication practice is not safe. This was a precious finding as previous studies conducted among the same population reported that most of the students of Jazan University (52.6%) and Taibah University (87%) appeared totally against the practice.32,34

Moreover, students’ academic stress may be considered as one of the driving force of students towards self-medication. Even though the present study’s objective is not of that context,35 their academic responsibilities can

Table 2 Knowledge, Attitude And Practice (KAP) Of Participants Towards Self-Medication

| Questions                                                                 | Total Response (528), N(%) | Medical Students’ Response (274), N(%) | Non-Medical Students’ Response (254), N(%) | P value† |
|---------------------------------------------------------------------------|----------------------------|----------------------------------------|--------------------------------------------|----------|
| Do you know the medicines you consumed need prescription or not?           | Yes 270(51.1)              | 108(39.4)                              | 162(63.8)                                  | 0.000*   |
|                                                                           | No 258(48.9)               | 112(40.9)                              | 146(56.2)                                  |          |
| Do you know the potential adverse drug reactions of the drug by which you self-medicated? | Yes 340(64.4)              | 199(72.6)                              | 141(55.5)                                  | 0.000*   |
|                                                                           | No 188(35.6)               | 75(27.4)                               | 113(44.5)                                  |          |
| Do you think self-medication is safe                                      | Yes 160(30.3)              | 68(24.8)                               | 92(36.2)                                   | 0.005*   |
|                                                                           | No 368(69.7)               | 206(75.2)                              | 162(63.8)                                  |          |
| When you treat yourself with a medication, do you read the leaflet of the medication before using it? | Yes 377(71.4)              | 203(74.1)                              | 174(68.5)                                  | 0.177    |
|                                                                           | No 151(28.6)               | 71(25.9)                               | 80(31.5)                                   |          |
| Did you prefer antibiotic obtained as self-medication?                    | Yes 158(29.9)              | 56(20.4)                               | 102(40.2)                                  | 0.000*   |
|                                                                           | No 370(69.5)               | 217(79.2)                              | 150(59.1)                                  |          |

Notes: *P value <0.05, statistically significant. †χ² test
**Table 3 Self-Medication Pattern Of Participants**

| Factor                                | Total Response (528), N (%) | Medical Students' Response (274), N (%) | Non-medical Students' Response (254), N (%) | P value |
|----------------------------------------|-----------------------------|----------------------------------------|---------------------------------------------|---------|
| Which of the following drugs have you taken without prescription for the last 6 months?^‡ |                             |                                        |                                             |         |
| Pain killers                           | 430 (81.4)                  | 251 (91.6)                             | 179 (70.5)                                  | 0.000*  |
| Antibiotics                            | 149 (28.2)                  | 59 (21.5)                              | 90 (35.4)                                   | 0.000*  |
| Drugs for fever (antipyretics)         | 110 (20.8)                  | 45 (16.4)                              | 65 (25.6)                                   | 0.010*  |
| Antihistamines (anti-allergy)          | 72 (13.6)                   | 47 (17.2)                              | 25 (9.8)                                    | 0.014*  |
| Cough syrups                           | 136 (25.8)                  | 71 (25.9)                              | 65 (25.6)                                   | 0.933   |
| Drugs for constipation                 | 42 (8)                      | 18 (6.6)                               | 24 (9.4)                                    | 0.222   |
| Drugs for diarrhea                     | 26 (4.9)                    | 13 (4.8)                               | 11 (4.3)                                    | 0.820   |
| Oral contraceptives                    | 13 (2.5)                    | 6 (2.2)                                | 7 (2.8)                                     | 0.675   |
| Anti-emetics                           | 17 (3.2)                    | 9 (3.3)                                | 8 (3.1)                                     | 0.930   |
| Appetizers                             | 13 (2.5)                    | 2 (0.7)                                | 11 (4.3)                                    | 0.008*  |
| Nasal/Ear/Eye drops                    | 141 (26.7)                  | 75 (27.4)                              | 66 (26)                                     | 0.719   |
| Topical agents (skin treatment agents) | 68 (12.9)                   | 44 (16.1)                              | 24 (9.5)                                    | 0.27    |
| Nutritional/energy supplements/vitamins| 97 (18.4)                   | 51 (18.6)                              | 46 (18.1)                                   | 0.911   |
| Herbs                                  | 73 (13.8)                   | 40 (14.6)                              | 33 (13)                                     | 0.616   |
| **For which of the following indications have you taken medications without prescription for the last 6 months?^‡** |                             |                                        |                                             |         |
| I do not take self medication          | 6 (1.3)                     | 2 (0.7)                                | 4 (1.6)                                     | 0.360   |
| Head ache                              | 40 (75.9)                   | 202 (73.7)                             | 199 (78.3)                                  | 0.214   |
| Cough & common cold                    | 277 (52.5)                  | 136 (49.6)                             | 141 (55.5)                                  | 0.177   |
| Fever                                  | 193 (35.6)                  | 102 (37.2)                             | 91 (35.8)                                   | 0.739   |
| Infection                              | 28 (5.3)                    | 16 (5.8)                               | 12 (4.7)                                    | 0.568*  |
| Heart burn/Ulcer                       | 42 (8)                      | 14 (5.1)                               | 28 (11)                                     | 0.012*  |
| Allergy                                | 58 (11)                     | 30 (10.9)                              | 28 (11)                                     | 0.978   |
| Disorder of digestive system (diarrhea, vomiting, constipation, etc) | 73 (13.8)                  | 27 (9.9)                               | 46 (18.4)                                   | 0.006*  |
| Body pain                              | 130 (24.6)                  | 69 (25.2)                              | 61 (24)                                     | 0.756   |
| Tooth pain                             | 116 (22)                    | 62 (22.6)                              | 54 (21.3)                                   | 0.704   |
| Acne/skin diseases                     | 54 (10.2)                   | 29 (10.6)                              | 25 (9.8)                                    | 0.779   |
| Menstrual problems                     | 38 (7.2)                    | 25 (9.1)                               | 13 (5.1)                                    | 0.075   |
| Contraception                          | 9 (1.7)                     | 4 (1.5)                                | 5 (1.9)                                     | 0.652   |
| Insomnia                               | 45 (8.5)                    | 21 (7.7)                               | 24 (9.4)                                    | 0.463   |
| Hemorrhoids                            | 12 (2.3)                    | 4 (1.5)                                | 8 (3.1)                                     | 0.300   |

**Notes:** ^‡Number and percentage of positive responses, *p value <0.05, statistically significant, ‡χ² test

**Table 4 Sources Of Information About Self-Medication**

| Source                              | Total Response (528), N (%) | Medical Students' Response (274), N (%) | Non-Medical Students' Response (254), N (%) | P value |
|-------------------------------------|-----------------------------|----------------------------------------|---------------------------------------------|---------|
| Relatives                           | 157 (29.7)                  | 55 (20.1)                               | 102 (40.2)                                  | 0.021*  |
| Friends                             | 104 (19.7)                  | 52 (19)                                 | 52 (20.5)                                   | 0.600   |
| Personal knowledge                  | 269 (50.9)                  | 172 (62.8)                              | 28 (10.2)                                   | 0.004*  |
| Mass media                          | 56 (10.6)                   | 28 (10.2)                               | 28 (11)                                     | 0.715   |
| Advised by Doctors but without prescription | 95 (18)                  | 66 (24.1)                               | 29 (11.4)                                   | 0.000*  |
| Pharmacists or those working in the pharmacy | 136 (25.8)                  | 83 (30.3)                               | 53 (20.9)                                   | 0.018*  |

**Notes:** *P value <0.05, statistically significant
hinder them from getting professional advice. It can be substantiated from the finding that students at King Khalid University understand the limits of self-medication.

**Conclusion**

Self-medication is high among medical and non-medical students at King Khalid University. Although the prevalence is similar among medical and nonmedical students, some differences with respect to medical indications and the type of drugs utilized were observed between students. Health professional colleges have to improve students’ awareness about the consumption of prescription-only drugs such as antibiotics and its health consequences. The dispensing of medicine has to be controlled by Saudi health authorities through developing effective preventative and interventional strategies; thus, appropriate use of medications will be achieved.

**Acknowledgments**

We would like to thank all the participants in this study.

**Author Contributions**

All authors contributed to data analysis, drafting or revising the article, gave final approval of the version to be published, and agree to be accountable for all aspects of the work.

**Disclosure**

The authors report no conflicts of interest in this work.

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