

## Self Medication Among Medical Students, Taibah University, Al-Madinah, Saudi Arabia 2013

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### Abstract

**Background:** Self medication is a growing phenomena; especially among economically deprived communities and medical students.

**Objective:** To identify the pattern of self medication among medical students, Taibah University, Al-Madinah, Saudi Arabia 2013.

**Methods:** A cross sectional survey was carried out in the medical college; male and female sections, Al Madinah, Taibah University, Saudi Arabia 2013 including 188 students. Multistage sampling technique was used. Data was collected using a specially designed pretested self applied questionnaire in English form.

**Results:** The mean percent score for meaning of self-medication was  $72.9 \pm 19.75$ , the adherence to drug pamphlet mean percent score was  $42.0 \pm 21.85$ . 55.3% significantly determined the dose through pamphlet ( $p=0.047$ ). Selection of a drug depends on experience (54.8%), previous knowledge from study (53.2%), relatives 'advise (28.7%) and severity of pain (27.7%). The most frequent complaints encountered in self-medication were headache (76.6%), fever (61.2%), common cold (60.4%), and sore throat (50.0%). Panadol (90.1%), ibuprofen (86.2%), antihistamincs (35.1%) and vitamins (32.4%) were the most frequently utilized self-medications.

**Conclusion:** Self-medication is prevalent phenomena among medical students. Medical students have insufficient knowledge regarding meaning of self-medication and calculation of dose. Panadol and Ibuprofen were the most frequently used medications. Headache, common cold, cough, and abdominal pain were the mostly listed complaints for self-medication. The prior experience, saving time and money, minor illness were the stated causes for self-medication.

**Key words:** Medical students; self-medication, health care service

### INTRODUCTION

Self medication is election and utilization of drugs by individuals to treat self- diagnosed diseases or symptoms without return to physician's consult. These medicines include herbal and traditional products.<sup>1,2</sup> WHO defines it as the use of medication which is patient based on the advice of a pharmacist or relatives instead of consulting a doctor<sup>3</sup>. Meanwhile misuse is defined as drug use for a medical reason but in higher doses or for a longer period than recommended.<sup>3</sup>

As a component of self care, self medication is greatly considered. Self care empowerment and encouragement is considered as an important step in developing positive relation between patient and health

care provider but it also has a negative impact. The World Health Organization (WHO) has also pointed out that responsible self-medication can help prevent and treat ailments that do not require medical consultation and provides a cheaper alternative for treating common illnesses.<sup>4,5</sup> However, it is also recognized that self-medication must be accompanied by appropriate health information.

Self medication is a growing phenomena; especially among economically deprived communities and medical students. In Bahrain 2006, 44.8% of first year medical students practiced self medication <sup>4</sup>. In Egypt 2011, it was reported that 55% of medical students used self medications.<sup>6</sup> Meanwhile in Kuwait it was 97%. Students tended to use self medications to relief headache, dysmenorrhea or constipation.<sup>5</sup>

The most frequent reasons for self medications were easy access; saving money and time, increased knowledge about diseases' management especially among medical students. Also self-medication were convenient and providing quick relief in common illnesses.<sup>7-9</sup>

Inappropriate self-medication results in wastage of resources, increases resistance of pathogens and generally entails serious health hazards such as adverse drug reactions, prolonged suffering and drug dependence. Self medication is associated with risks such as over dosage, prolonged duration of use, drug interactions and polypharmacy.<sup>9</sup> Others include development of drug side effects, drug interaction, disease aggravation.<sup>10,11</sup>

Self medication is influenced by education, family, society, law, availability of drugs and exposure to advertisements. In Saudi Arabia, few researches were targeting self medications especially among medical students. Assessment of the pattern of self medications among medical students; the future physicians is an important topic.

## **Objective**

To identify the pattern of self medication among medical students, Taibah University, Al-Madinah, Saudi Arabia 2013.

## **SUBJECTS AND METHODS**

A cross sectional survey was carried out in the medical college; male and female sections, Al Madinah, Taibah University, Saudi Arabia 2013. Data was collected from both male and female students enrolled in the clinical years (namely 3<sup>rd</sup>, 4<sup>th</sup>, 5<sup>th</sup> years).

Multistage sampling technique was used. First dividing the students according to their grades was done. Then stratified random technique was used where medical students of each grade was divided into two strata according to gender (males and females) then random selection of 50 % of students from each strata and each grade was carried out to have a final sample size of 188 student.

Data was collected using a specially designed pretested self applied questionnaire in English form. It included socio-demographic and economic data, the students' attitude and concept about self medication, reasons for use, when and how. It contained also some questions about exercise, vitamins, protein consumption and smoking. Regarding females the menstrual and obstetric history was included.

Approval of the research committee of Medical College, Taibah University was obtained. Ethical consideration was considered. Privacy and confidentiality were assured. Informed verbal and written consent were obtained from every participant after explanation of the objective and methodology of the study.

### Statistical Analysis

The data entry was carried out using SPSS version 20. Data from questionnaires was entered as numerical or categorical, as appropriate. Two types of statistics have been done: 1) Descriptive statistics; where quantitative data was shown as mean, SD, and range, and qualitative data has been expressed as frequency and percent. 2) Analytical statistics: chi-square test and student t-test were used. P-value was considered statistically significant when it is less than 0.05.

## RESULTS

The mean age the studied students was 22.6 ±1.15 years, most of them (96.3%) were from rural origin, majority of them (90.4%) never married. Nearly two thirds (66.5%) stated that their average family monthly income was ≥10000 SR. Regarding parents' education, 85.6% of fathers and 77.1% of mothers got high education but only 51.6% of fathers and 62.2% of mothers were working. (Table 1)

**Table 1: Socio-demographic characteristics of the studied students**

	Third Year N=60	Fourth Year N=55	Fifth Year N=73	Total N=188	p-value
<b>Age in years</b> Mean ±SD	21.4 ±0.58	22.6 ±0.68	23.4 ±0.94	22.6±1.15	0.000*
<b>Origin (N/%)</b> Urban	3(5.0)	2(3.6)	2(2.7)	7 (3.7)	0.790
Rural	57(95.0)	53(96.4)	71(97.3)	181 (96.3)	
<b>Sex (N/%)</b> Male	27(45.0)	31 (56.4)	35 (47.9)	93 (49.5)	0.451
Female	33(55.0)	24 (43.6)	38 (52.1)	95 (50.5)	
<b>Number of siblings</b> Mean ±SD	6.1 ±2.64	5.4±1.98	5.8 ±2.60	5.8±2.45	0.359
<b>Marital status (N/%)</b> Never married	56 (93.3)	52 (94.5)	62 (84.9)	170 (90.4)	0.122
Ever married	4(6.7)	3 (5.5)	11 (15.1)	18 (9.6)	
<b>GPA</b> Mean ±SD	4.1±0.45	3.8±0.53	3.9±0.58	3.9 ±0.30	0.044*
<b>Stated average family income/Month (N/%)</b> <5000SR	1(1.7)	4(7.3)	3(4.1)	8 (4.3)	0.373
5000-	18(30.0)	12(21.8)	25(34.2)	55 (29.3)	
≥10000SR	41(68.3)	39(70.9)	45(61.6)	125 (66.5)	
<b>Father education (N/%)</b> Illiterate or read & write	4 (6.7)	2 (3.6)	2 (2.7)	8(4.3)	0.703
Basic	6 (10.0)	4 (7.3)	9 (12.3)	19(10.1)	
High	50 (83.3)	49 (89.1)	62 (84.9)	161(85.6)	
<b>Mother education (N/%)</b> Illiterate or read & write	10 (16.7)	5 (9.1)	3 (4.1)	18 (9.6)	0.107
Basic	6 (10.0)	10 (18.2)	9 (12.3)	25 (13.3)	
High	44 (73.3)	40 (72.7)	61 (83.6)	145 (77.1)	
<b>Father work status (N/%)</b> Working	27 (45.0)	30 (54.5)	40 (54.8)	97(51.6)	0.152
Not working	33 (55.0)	25 (45.5)	33 (45.2)	91(48.4)	
<b>Mother work status (N/%)</b> Working	37 (61.7)	36 (65.5)	44 (60.3)	117(62.2)	0.468
Not working	23 (38.3)	19(34.5)	29 (39.7)	71(37.8)	

Only one fourth (28.2%) of the students were regularly performing exercise, 83.0% and 81.4% drinking coffee and tea regularly respectively. Minority (9.0%) was active cigarette smokers and 18.6% was active hookah smokers. (Table 2)

**Table 2: Habits of the studied students**

	<b>Third Year N=60</b>	<b>Fourth Year N=55</b>	<b>Fifth Year N=73</b>	<b>Total N=188</b>	<b>p-value</b>
<b>Exercise (N/%)</b>					
Yes	16 (26.7)	17 (30.9)	20(27.4)	53 (28.2)	0.752
No	14 (23.3)	17 (30.9)	22 (30.1)	53 (28.2)	
Sometimes	30 (50.0)	21 (38.2)	31 (42.5)	82 (43.6)	
<b>Coffee (N/%)</b>					
Yes	48 (80.0)	45 (81.8)	63 (86.3)	156 (83.0)	0.607
No	12 (20.0)	10 (18.2)	10 (13.7)	32 (17.0)	
<b>Tea (N/%)</b>					
Yes	49 (81.7)	46 (83.6)	58 (79.5)	153 (81.4)	0.832
No	11 (18.3)	9 (16.4)	15 (20.5)	53 (17.0)	
<b>Cigarette smoking (N/%)</b>					
<b>Active</b>					0.504
Yes	5 (8.3)	7 (12.7)	5 (6.8)	17 (9.0)	
No	55 (91.7)	48 (87.3)	68 (93.2)	171 (91.0)	
<b>Passive</b>					0.322
Yes	23 (38.3)	27 (49.1)	37 (50.7)	87 (46.3)	
No	37 (61.7)	28 (50.9)	36 (49.3)	101 (53.7)	
<b>Smoking Hookah (N/%)</b>					
<b>Active</b>					0.758
Yes	10 (16.7)	12 (21.8)	13 (17.8)	35 (18.6)	
No	50 (83.3)	43 (78.2)	60 (82.2)	135 (81.4)	
<b>Passive</b>					0.696
Yes	22 (36.7)	17 (30.9)	22 (30.1)	61 (32.4)	
No	38 (63.3)	38 (69.1)	51 (69.9)	127 (67.6)	

The mean percent score for meaning of self-medication was  $72.9 \pm 19.75$ ; with the highest score for fourth year ( $74.8 \pm 17.43$ ) and the adherence to drug pamphlet mean percent score was  $42.0 \pm 21.85$ ; with the highest score among third year students ( $47.1 \pm 24.83$ ). More than half (55.3%) significantly determined the dose through pamphlet ( $p=0.047$ ). Lack of knowledge was encountered for misdiagnosis (27.3%), drug interaction (41.0%), prolonged duration (69.1%) and financial loss (88.3%). (Table 3)

Table 3: Knowledge of the studied students about self-medication

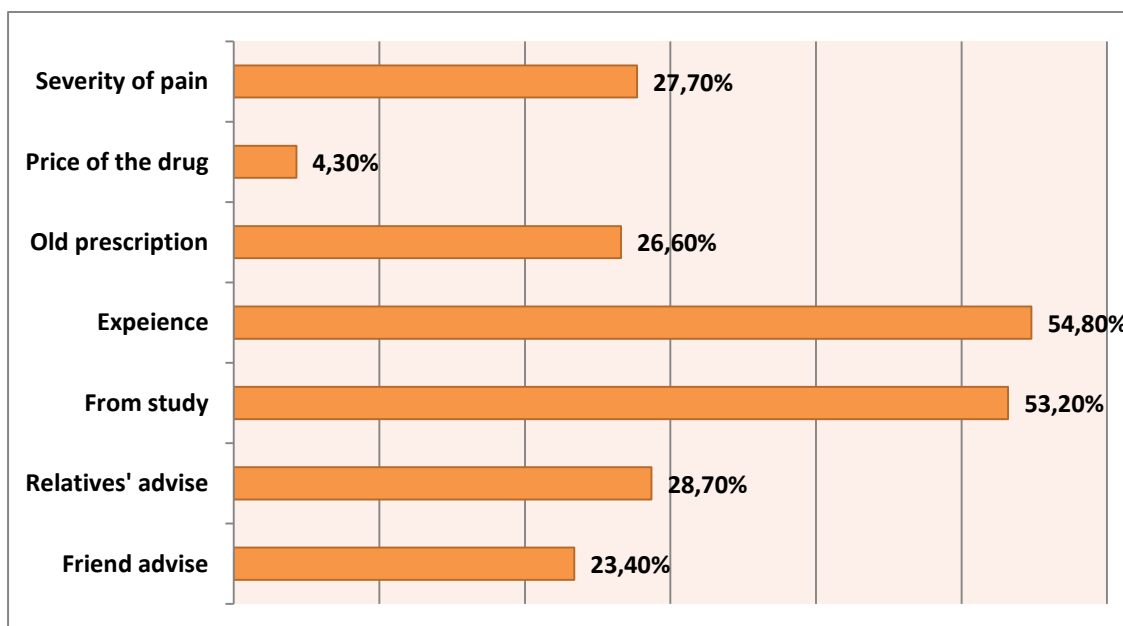
	Third Year N=60	Fourth Year N=55	Fifth Year N=73	Total N=188	p-value
<b>Meaning of self-medication mean percent score</b> Mean ± SD	71.9 ±17.01	74.8±17.43	72.4±16.13	72.9±19.75	0.619
<b>Adherence to drug pamphlet mean percent score</b> Mean ± SD	47.1±24.83	40.0±21.30	39.4±19.06	42.0±21.85	0.092
<b>Determination of dose through:</b> Pamphlet Old prescription Pharmacist	26 (43.3) 13 (21.7) 21 (35.0)	32 (58.2) 5 (9.1) 18 (32.7)	46 (63.0) 14 (19.2) 13 (17.8)	104 (55.3) 32 (17.0) 52 (27.7)	0.047*
<b>Disadvantages of self-medication</b> <i>Misdiagnosis</i> Know it Did not know it	45 (75.0) 15 (25.0)	39 (70.9) 16 (29.1)	52 (71.2) 21 (28.8)	136 (72.3) 52 (27.3)	0.855
<b>Drug interaction</b> Know it Did not know it	40 (66.7) 20 (33.3)	33 (60.0) 22 (40.0)	38 (52.1) 35 (47.9)	111 (59.0) 77 (41.0)	0.230
<b>Prolonged duration</b> Know it Did not know it	14 (23.3) 46 (76.7)	18 (32.7) 37 (67.3)	26 (35.6) 47 (64.4)	58 (30.9) 130 (69.1)	0.293
<b>Financial loss</b> Know it Did not know it	4 (6.7) 56 (93.3)	6 (10.9) 49 (89.1)	12 (16.4) 61 (83.6)	22 (11.7) 166 (88.3)	0.213
<b>Know meaning of drug interaction</b> Know it Did not know it	1 (1.7) 59 (98.3)	0 (0.00) 55 (100.0)	70 (95.9) 3 (4.1)	184 (97.9) 4 (2.1)	0.268

Nearly a quarter (23.9%) never afraid of self-medication, 50.5% sometimes change drugs, 53.2% stop it when there is no response and 79.8% significantly never developed drug interaction (p=0.017). (Table 4)

**Table 4: Some attitudes and practices towards self-medication**

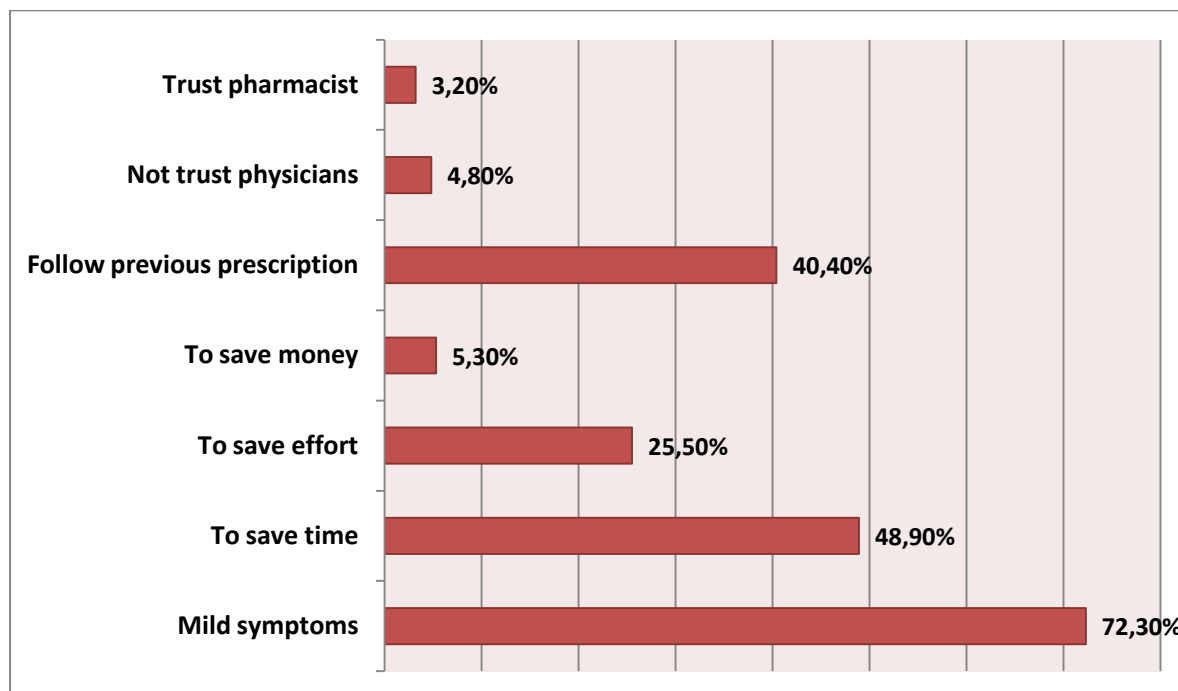
	<b>Third Year N=60</b>	<b>Fourth Year N=55</b>	<b>Fifth Year N=73</b>	<b>Total N=188</b>	<b>p-value</b>
<b>Fear of self-medication (N/%)</b>					
Always	10 (16.7)	6 (10.9)	7 (9.7)	23 (12.2)	0.612
Sometimes	39 (65.0)	35 (63.6)	46 (63.0)	120 (63.8)	
Never	11 (18.3)	14 (25.5)	20 (27.4)	45 (23.9)	
<b>Frequent change of drugs (N/%)</b>					
Always	2 (3.3)	2 (3.6)	2 (2.7)	6 (3.2)	0.619
Sometimes	31 (51.7)	23 (41.8)	41 (56.2)	95 (50.5)	
Never	27 (45.0)	30 (54.5)	30 (41.1)	87 (46.3)	
<b>If no response (N/%)</b>					
-Consult physician	25 (41.7)	30 (54.5)	28 (38.4)	83 (44.1)	0.283
-Stop it	33 (55.00)	25 (45.5)	42 (57.5)	100 (53.2)	
-Monitor the progress	2 (3.3)	0 (0.0)	3 (4.1)	5 (2.7)	
<b>Ever developed drug interaction (N/%)</b>					
Yes	5 (8.3)	4 (7.3)	2 (2.7)	11 (5.9)	0.017*
No	40 (66.7)	44 (80.0)	66 (90.4)	150 (79.8)	
Did not remember	15 (25.0)	7 (12.7)	5 (6.8)	27 (14.4)	

Selection of a drug depends on experience (54.8%), previous knowledge from study (53.2%), relatives' advise (28.7%) and severity of pain (27.7%). The price of the drug (4.3%) had the least effect. (Figure 1)



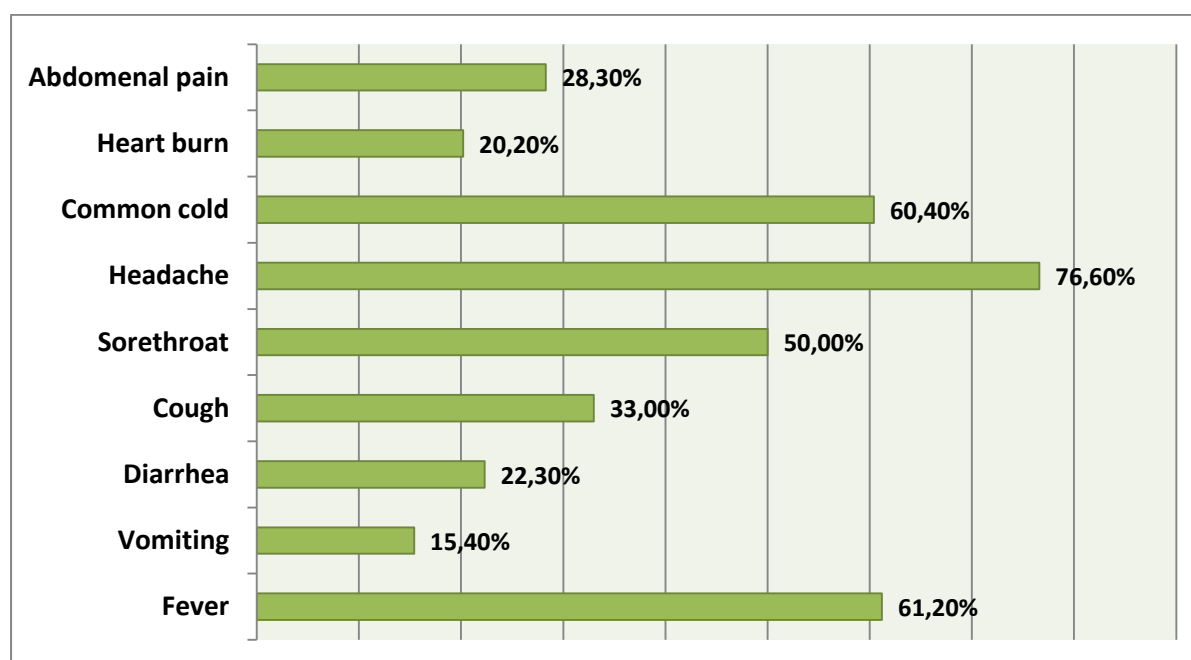
**Figure 1: Influencing factors to choose a drug for self-medication**

The chief cause for self-mediations was presence of mild symptoms (72.3%) followed by a trial to save time (48.9%). (Figure 2)



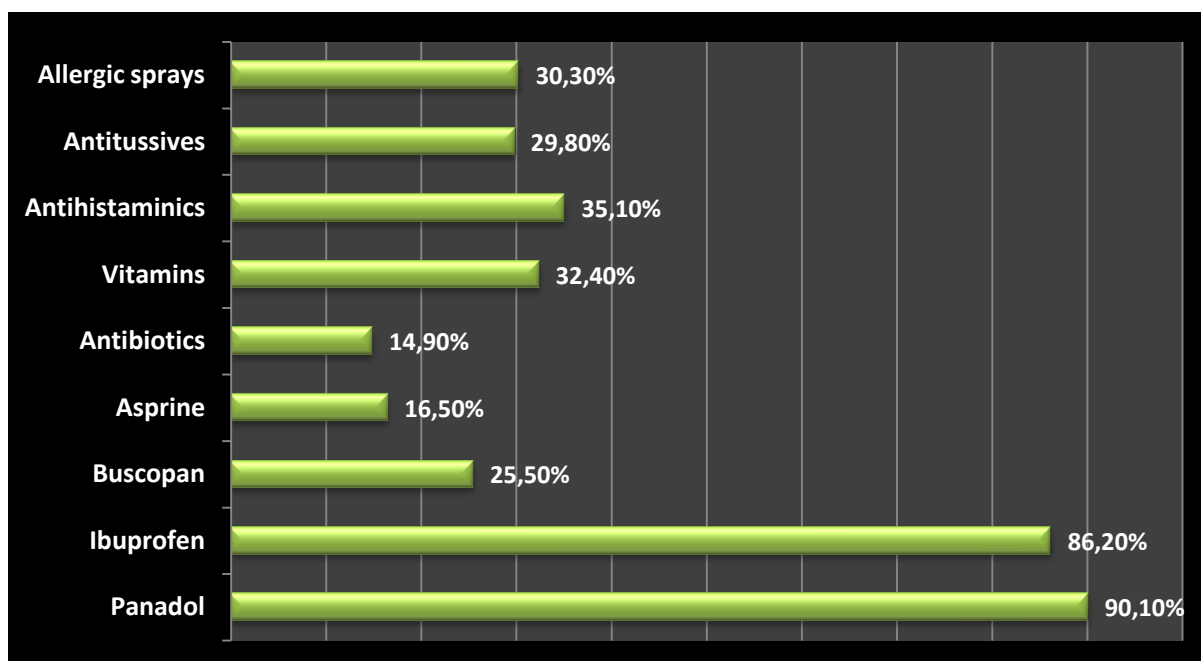
**Figure 2: Causes of self-medication as stated by studied students**

The most frequent complaints encountered in self-medication were headache (76.6%), fever (61.2%), common cold (60.4%), and sore throat (50.0%). (Figure 3)



**Figure 3: Most frequent complaints treated by self-mediations**

Panadol (90.1%), ibuprofen (86.2%), antihistaminics (35.1%) and vitamins (32.4%) were the most frequently utilized self-medications. (Figure 4)



**Figure 4: Most frequent utilized drugs for self-medications**

## DISCUSSION

Self medication is a universal phenomenon and practiced globally with varied frequency. Medical students were the most inclined in self medications. Self-medication among the college students reflects prevalence in the future generation.<sup>12</sup> Frequency of self reported medication is highly variable in different parts of the world; as low as 45% in Turkey to as high as 94% in Hong Kong.<sup>13</sup>

The mean age of the studied students in the present study was  $22.6 \pm 1.15$  years. This was concomitant with one study which concluded that the age group 16-44 years was the most age group utilized self medication.<sup>14-16</sup>

Nearly two thirds of the studied students were of high social class (depending on their income), and more than three fourths of their parents got high education. The level of education and social class were stated as predictors for self medication.<sup>17-19</sup> Others stated that personal habits also affect the pattern of self medication.<sup>20</sup>

The present work revealed that the meaning of self medication score was  $72.9 \pm 19.75$  and only 55.3% determined the dose of the drug depending on pamphlet. Medical students supposed to have enough knowledge about the meaning of self medication and the most appropriate methods of determining the correct dose.



The type and extent of self-medication and the reasons for its practices may vary from country to country. In developing countries, both modern drugs and traditional medicines are commonly used for self-medication.<sup>21-23</sup> The previous experience with certain drug, perception of a disease as a minor one, relatives' or friends' advices were the most frequent influencing factors for self-medication among the studied students.

The present work illustrated that the main disadvantages of self medication were misdiagnosis, drug interaction, undue prolonged use of drugs and loss of resources. The same results were obtained from other researches. Moreover, currently, there is a worldwide concern about the emergence of antibiotic resistant strains of micro-organisms which might have been highly augmented by self-medication with development of serious drug side effects which may be fatal.<sup>12,17,20</sup> Unfortunately, utilizing health care service is fairly expensive making self-medication a good alternative. Self medication increases the probability of illegitimate use of drug and drug dependency and may mask the signs and symptoms of underlying disease and delaying diagnosis. On the other hand, if done properly, it can relieve acute medical problems, can save the time spent in waiting to see a doctor, may be economical and can even save lives in acute conditions. It is now accepted that self-medication can be helpful for patients, healthcare providers, the pharmaceutical industry and governments.<sup>19-22</sup>

Headache, common cold, fever, cough and abdominal pain were the most frequent complaints treated by self medication in the current study. Also, the present work revealed that panadol, ibuprofen, antihistaminic, antitussives, vitamins and buscopan were the most frequently used medications. Other studies proved that non steroidal anti-inflammatory medications were the most widely used for self medications; which is similar to the current work.<sup>22-25</sup>

## CONCLUSION

Self-medication is prevalent phenomena among medical students. Medical students have insufficient knowledge regarding meaning of self-medication and calculation of dose. Panadol and Ibuprofen were the most frequently used medications. Headache, common cold, cough, and abdominal pain were the mostly listed complaints for self-medication. The prior experience, saving time and money, minor illness were the stated causes for self-medication.

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