Medical Science

pISSN 2321–7359; eISSN 2321–7367

Prevalence of self medication among Umm Al-Qura medical students

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To Cite:
Shatla M, Ahmed A, Almasoudi R, Kutbi O, Alsulaimani N, Brashi R. Prevalence of self medication among Umm Al-Qura medical students. Medical Science 2022; 26:ms439e2381.
doi: https://doi.org/10.54905/disssi/v26i128/ms439e2381

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Peer-Review History
Received: 03 July 2022
Reviewed & Revised: 8/July/2022 to 23/October/2022
Accepted: 25 October 2022
Published: 31 October 2022

Peer-review Method
External peer-review was done through double-blind method.

URL: https://www.discoveryjournals.org/medicalscience

ABSTRACT

Background: Self medication is the use of pharmacological drugs without a prescription. The prevalence among medical students was found to be higher reaching 70.1%. *Objective:* To evaluate the prevalence of self-medication, probable reasons, symptoms, attitude, and source of advice among medical students at Umm Al-Qura University in Makkah, Saudi Arabia. *Methods:* This is a cross sectional study that was carried out among medical students in Makkah, Saudi Arabia. All medical students were eligible to participate in the study using a snowball sampling technique until the sample size was satisfied. The data analysis was done using the statistical package for the social sciences (SPSS, version 26.0). *Results:* A total of (474) responses were analyzed with a mean age of 21.7 years ± 1.89 years and two thirds were females 301 (63.5%). The prevalence of self medication practice among students was 282 (59.5%). From the students' perspective, the conditions that cause self medication practice include cold 232 (82.3%), sore throat 222 (78.7%), headache 215 (76.2%), and cough 176 (62.4%). One quarter (24.1%) of self medicated and 20 (4.2%) of non medicated respondents do encourage family and friends to self-medicate. The most common reason for self-medication reported was "no need to visit the doctor for a minor disease" followed by "knowledge from previous experience" (80.1% and 67.4%, respectively). *Conclusion:* The prevalence of self medication among medical students was found to be (63.5%). The majority of medical students do not advice family and friends to self medicate, while they encourage the behavior among those with higher levels of knowledge.

Keywords: Attitude - Makkah - Medical College - Prescription - Saudi Arabia

1. INTRODUCTION

Self medication is the administration of treatment (pharmacological or behavioral) without a physician's or caregiver's prescription (World health organization, 2000). It is a broad term that covers a variety of behaviors, from self care to disease prevention and management (Galato et al., 2009). A Meta analysis study included overall 89 articles with a total of 60 938 students found that self medication to be prevalent in 70.1 % of university students.

Medical students (97.2 %) were more likely than non medical students (44.7 %) to self medicate (Behzadifar et al., 2020). Moreover, an Egyptian study conducted on medical and non medical students showed the causes of self medication were no need to visit the doctor for minor diseases, knowledge from previous experience, doctor prescribes the same medication, time and money saving, fast relieve, chance to have an experience, absence of trust of health service, and unavailability of health service (Helal & Abou ElWafa, 2017).

It is recommended that programs on the dangers of self medication be implemented, as well as increased control and monitoring of drug sales. Students' self medication may be reduced if they have easier availability of medical facilities and doctors (Behzadifar et al., 2020). Despite the importance of the self medication problem among Medical students, to authors knowledge, there is few studies done in Saudi Arabia e.g. among university students in King Khalid university in Abha (Alshahrani et al., 2019), and among university students in Taibah university in al-madinah (Aljaouni et al., 2015), and among medical students in king Abdul-Aziz university in Jeddah (Aashi et al., 2016). No similar studies have been conducted among medical student of Umm Al-Qura University in Makkah. Hence, this study aimed to evaluate the prevalence of self medication, probable reasons, symptoms, attitude, and source of advice among medical students at Umm Al-Qura University in Makkah, Saudi Arabia.

2. MATERIALS AND METHODS

This is a descriptive cross sectional study conducted in Umm Al-Qura University (UQU), Makkah, Saudi Arabia, during the academic year 2021-2022 and included all students from year one to year six of the university college of medicine.

Sample size determination

Data were collected between the 8th to the 30th of September 2021. The total population was 1250 students in the university college of medicine. Hence, the estimated sample size was 294 calculated by the equation n= the total population, the population proportion is 0.5, the margin of error is 5%, and the Z score is 1.96, the calculated sample was multiplied by 1.5 so the errors are less, and the statistical numbers are more accurate. However, the final sample was 474 medical students.

Sampling technique

Snowball sampling technique was implemented. Medical students were selected and contacted through social media platforms to participate in this study.

Study tool

A structured, modified questionnaire was developed and used to collect the study information. It consisted of 28 clear, concise questions, written in English along with Arabic version of each question so that participants can easily understand. The following information was gathered using the questionnaire: Age, gender, living in rural or urban area, marital status, smoking status, weight and height, grade and GPA are examples of socio demographic factors. Health-related questions, for example, the presence of any chronic diseases, the use of any medications, degree about health, present health status, most recent medical consultation, drugs kept at home, self-medication behaviors, health situations requiring self medication, medication types used, and reasons for self medication, sources of advice, recent changes observed during the practice of self medication, current attitude toward self medication and advantage and disadvantage of self medication.

Statistical analysis

Data was collected and cleaned by using Microsoft Excel. Then we used SPSS program version (26) for data analysis of the study. Absolute frequencies and percentages were used to present the categorical variables. Chi-square tests were used to compare the proportion of categorical data. Statistical significance was set at $P < 0.05$.

Ethical approval & confidentiality

Ethical approval was obtained on 7th of September 2021 from the Medical Ethics Committee of the Faculty of Medicine, Umm Al-Qura University (LCMS250821). We wrote a statement to clarify the purpose of the survey and to obtain consent from the participants who were informed that all information provided will be kept confidential and used only for research purposes.

3. RESULTS

A total of 474 participants completed the questionnaire with a mean age of 21.7 years ± 1.89 years. Most of the respondents were females 301 (63.5%) and 457 (96.4%) unmarried. Among those participants, 452 (95.4%) lived in urban areas. In terms of the GPA of enrolment most participants 334 (70.5%) were graded between 3.5- 4. The majority were non smokers 437 (92.2%). Chronic diseases affected 40 (8.4%) of the respondents. Demographic information has been shown in (Table 1).

Table 1 Participants' demographic variables (n=474).

Variable		N	%	P-value
Gender	Female	301	63.5%	0.32
	male	173	36.5%	
Marital	signal	457	96.4%	0.34
	Married	17	3.6%	
Living	Urban	452	95.4%	0.39
	Rural	22	4.6%	
Academic Year	Y1	85	17.9%	0.15
	Y2	78	16.5%	
	Y3	80	16.9%	
	Y4	76	16.0%	
	Y5	78	16.5%	
	Y6	77	16.2%	
GPA	3.5-4	334	70.5%	0.53
	3.49-2.75	130	27.4%	
	<2.75	10	2.1%	
Smoking	Yes	37	7.8%	0.48
	No	437	92.2%	
Chronic disease	Yes	40	8.4%	0.45
	No	434	91.6%	

In this study, the prevalence of self medication practice among students was 282 (59.5%). Students' opinion indicated that the most common health conditions of self medication practices were cold 232 (82.3%), sore throat 222 (78.7%), headache 215 (76.2%), and cough 176 (62.4%). The most common reason for self medication reported was “no need to go to the doctor for a mild disease" followed by “knowledge from previous experience" (80.1% and 67.4%, respectively). The most frequently used medications were analgesics 181 (64.2%), vitamins 156 (55.3%). The most recent changes observed during self-medication by the students were "More careful when I self medicate" followed by "No change" (36.2% and 29.4% resp.) (Table 2). The most common sources of advice were medical websites (58.5%), old prescriptions (41.1%), and their own decision (36.5). About 239 (84.8%) of students who medicate themselves read the leaflet (Figure 1).

Table 2 Health conditions of self medication practice

Health conditions	N	%
cold	232	82.3%
Sore throat	222	78.7%
Cough	176	62.4%
Intestinal colic	42	14.9%
diarrhea	104	36.9%
constipation	125	44.3%
heartburn	94	33.3%
vomiting	83	29.4%
Poor digestion	39	13.8%

Liver problems	3	1.1%
Muscle cramps/pain	125	44.3%
Tooth pain	78	27.7%
Menstrual pain	91	32.3%
headache	215	76.2%
sickness	44	15.6%
Sleep disorder	64	22.7%
anxiety	49	17.4%
Lack of attention	16	5.7%
dizziness	36	12.8%
allergy	75	26.6%
fever	172	61%
Urinary tract infection	8	2.8%
Skin rash	44	15.6%
Other cases	9	3.2%

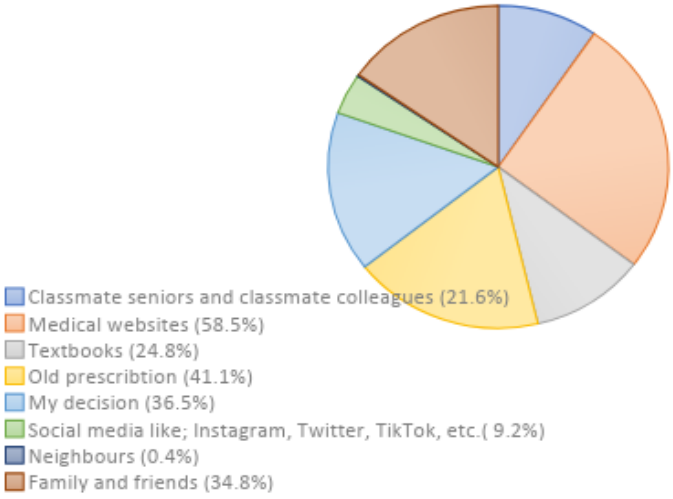

Figure 1 Sources of self medication Advice

Table 3 Causes of self medication practices and health caring.

Variable	N	%
No need to go to the doctor for a mild disease	226	80.10%
Knowledge from previous experience	190	67.40%
The same medication will be prescribed to me by the doctor	117	41.50%
Time and money saving	98	34.80%
Fast relief	113	40.1%
Chance to have experience	31	11%
Health services are not trusted	17	6%

Unavailability of health services in my area of residency	5	1.80%
Difficulty to find proper transportation	21	7.40%

Table 4 Medications used for self medication

Medications	%	N
Analgesics	64.2	181
Cough Syrups	31.9	90
Flu treatment	35.1	99
Medications for joint pain	8.9	25
Diarrhea medications	10.3	29
Vitamins	55.3	156
Anti-inflammatory	19.5	55
Nasal drops	18.8	53
Zinc/Iron	23.8	67
Antipyretics	43.3	122
Antibiotics	12.8	36
Heart burn medications	21.3	60
Laxatives	20.2	57
Skin cream	43.3	122
Food supplements	36.9	104
Acne treatments	22.7	64
Omega-3	30.1	85
Allergy medications	22.3	63

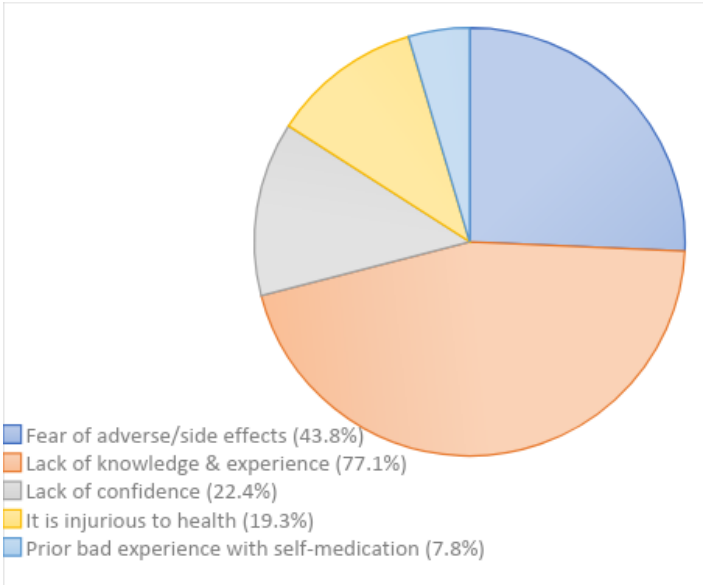

Figure 2 Reasons that prevent participants from self medicating

Being self medicated and living in urban or rural areas is statistically insignificant (P=0.507). Also, the relation between degree of health caring and self medication is insignificant (p=0.153). While being self medicated and storing drugs at a home pharmacy is statistically significant (P=0.001). About 68 (24.1%) of self medicated and 20 (4.2%) of non medicated respondents do encourage family and friends to self medicate. The Majority of self medicated and non self medicated respondents do not encourage family and friends to self medicate (214 (45.1%) and; 166 (35%) respectively. Moreover, most of self medicated students encourage people with strong knowledge and trust themselves to self medicate 193 (68.4%) and only 98 (52.7%) of non self medicated students encourage people with strong knowledge and trust themselves to self medicate. Lack of knowledge and experience is the most frequent reason for non self medication 148 (77.1%). "I prefer to consult/ visit a medical specialist about my condition rather than self- medicating" was the commonest attitude of non self medicating toward self medication 140 (72.9%) Figure 2.

4. DISCUSSION

The current study revealed that the prevalence of self medication practice among the participants was found to be 59.5%. This finding is comparable to the prevalence identified in west Bengal in tertiary care of medical college (57%) (Banerjee & Bhadury, 2012), Egypt (62.95) (Helal & Abou El Wafa, 2017), and Taibah university (64.8%) in Madinah, Saudi Arabia (Aljaouni et al., 2015). However, this finding is higher than that identified by studies conducted at King Saud University (50.9%) (Al Raddadi et al., 2017) and the University of Dammam city (49.3%) (Al Rasheed et al., 2017) in Saudi Arabia, and Gondar university in Ethiopia (52.4%) (Zeru et al., 2020). In contrast, the finding of the current study is lower than that of those studies carried out in tertiary institute among medical students (83.7%) in Jizan city, Saudi Arabia (Albasheer et al., 2016), and Nagpur India (71.7%) (Kasulkar & Gupta, 2015). Difference in study population and tools of data collection might contribute to the discrepancy of prevalence among different studies.

A study was under taken among South Indian medical students, while another was conducted among medical students at Shiraz University (SUMS) in Iran, both studies showed that Cold was the first most common ailment for which self medication were used, which is similar to our findings (Badiger et al., 2012; Niroomand et al., 2020). In contrast, another study performed among the medical students at King Abdul Aziz University's (KAU) of medical college in Jeddah, common cold was ranked among the least common symptoms (Ibrahim & Al Amoudi, 2018) of self medication. This could be explained by the time difference between questionnaire publications; our questionnaire was published during the Covid-19 pandemic. Moreover, we found that analgesics, vitamins, antipyretics, and skin cream (64.2%, 55.3%, 43.3%, and 43.3% respectively) were the medications most frequently used without a prescription among UQU medical students.

In study conducted at King Abdul Aziz University reveal that paracetamol and NSAIDs are the most common used medications (Aashi et al., 2016). Another study conducted at Taibah University revealed that analgesics, antibiotics, antipyretics, vitamins, and antihistamines were the most common used medications (Aljaouni et al., 2015). The frequent use of analgesics may correlate with the most treated condition which is cold. Most of the participants reported the commonest causes to use self medication practice were that there is no need to visit the doctor for a minor illness, as well as having knowledge from previous experience. These results were similar to a local study at King Abdul Aziz University (KAU) there was a high prevalence of self medication use by medical students and interns, and the most common reasons were the non serious of their illness and previous experience with the same drug (Ibrahim & Al Amoudi, 2018). This might be related to the basic nature of the illnesses experienced by the students, since they were aware of their symptoms and diagnoses, along with having sufficient knowledge of the treatment options for such mild illnesses.

This study showed that medical websites, old prescription, and own decision were the most common sources for self medication and lastly neighbors. In another Saudi study, the physicians, community pharmacists, parents or adult relative, and internet were listed as the three leading sources of information by undergraduate medical students (Kumari & Toppo, 2019). Similar finding was observed among medical student in India (Kanwal et al., 2018).

In the current study there was no significant difference among both the frequency of self medication between upper and lower-level medical students. Another study conducted among under graduated medical students reported the same results (Ibrahim & Al Amoudi, 2018). In contrast, research found that when comparing first, second, and third professional year medical students, higher level medical students practiced Self medication more (Kanwal et al., 2018). Senior students may be more likely to engage in self medication activities since they have greater knowledge. However, due to many sources of exposure, even juniors were aware of some features of Self medication (Kanwal et al., 2018) and this could explain our results. In agreement with previous study (Helal & Abou El Wafa, 2017), we found a significant relation between students who medicate themselves and storing drug at pharmacy home (p=0.001). This may indicate that easy availability and accessibility may influence the practice of self-medication.

Our study reveals that the prevalence of non self medicated medical students was 192 (40.5%). Lack of knowledge and experience (77.1%), fear of adverse/side effects (43.8%), and lack of confidence (22.4%) were the commonest reasons to not self medicate. In study conducted in Mansoura University, Egypt revealed that the prevalence of non self medicated is 297 (37.1%), the common causes of not self medicating are fear of adverse/side effects (41.8%), lack of knowledge and experience (24.6%), and lack of confidence (17.5%) (Helal & Abou El Wafa, 2017). The prevalence of non self medicated students in our study is acceptable; this may indicate that knowledge about adverse/side effects gained from college is adequate.

This study suffers from some limitations. The questionnaire was self reported electronically distributed on WhatsApp which could have led to underreporting of practicing self medication. The academic stress over the student might increase the practice of self medication therefore our study demonstrates the importance of raising public awareness about the risks and the proper way of self medication and increasing the control over (over the counter drugs). Further research regarding of self medication practice is recommended to be conducted over a wider sample including non medical students from different colleges.

5. CONCLUSION

Self medication is commonly used among medical students although they do not encourage family and friends to practice self medication. However, they encourage people who got strong knowledge and trust themselves to practice self medication. Considering health education in the curriculum of medical colleges may help in raising awareness and limiting self medication practices.

Author contribution

Mokhtar Shatla: Questionnaire editing, calculating statistical analysis, manuscript final editing.
Alaa Ahmed: Contribute to literature review, leading research group, proposal writing, questionnaire editing, manuscript writing and final editing.
Raghad Almasoudi: Contribute to literature review, Proposal Writing, Data collection and organization (Coding), Manuscript Writing and Editing.
Omnia Kutbi: Contribute to literature review, Proposal Writing, Data Collection, Manuscript Writing and Editing.
Nedaa Alsulaimani: Contribute to literature review, Proposal writing, Questionnaire Editing, Data collection and organization (Coding), Manuscript Writing and Editing.
Reem Brashi: Contribute to literature review, Proposal Writing, Data Collection, Manuscript Writing and Editing.

Acknowledgements

The authors would like to thank the data collectors for their assistance, as well as the participants who completed our questionnaire.

Consent to participate

Informed consent was obtained from all the participants.

Ethical approval

The study was approved by the Medical Ethics Committee of Umm Al-Qura University, Saudi Arabia, ethical approval number: (HAPO-02-K-012-2021-09-735).

Funding

This study has not received any external funding.

Conflicts of interest

The authors declare that there are no conflicts of interests.

Data and materials availability

All data associated with this study are present in the paper.

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