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Research Article

Self-Medication Among Medical Field Students

Self-Medication Practice During Covid-19 Among Medical Field Students at Umm Alqura University, Makkah, Saudi Arabia: Cross-Sectional Survey

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Abstract: Self-medication is prevalent practice that described as administration of one or more medications in order to treat self-diagnosed or self- recognized diseases or symptoms without the supervision of physician or pharmacist. The world is currently struggling with the COVID-19 pandemic, which makes the prevalence of self-medication practice evident with the ongoing pandemic**.** Our study aimed to assess the prevalence and patterns of self-medication practices among medical field students. Also, to determine the most common reasons, symptoms, and medications associated with self-medication practice. A descriptive cross-sectional study was conducted on 561 medical field students at Umm Al-Qura University to assess the prevalence, attitudes, and practice of self-medication. A web-based questionnaire was conducted to collect their demographic, socioeconomic status, and health-related information. More precisely, Self-medication practice during COVID-19. Two-thirds of the students in the medical sector self-medicated, and almost half of them reported doing so more frequently during the pandemic, according to the research. Pain and flu-like symptoms were the most often reported symptoms leading to self-medication. As a result, the students utilised analgesics and anti-flu drugs most frequently during this time. The report emphasises how common self-medication is among Umm Al-Qura University students studying medicine. These students must, however, grasp the boundaries of self-medication and when it is important to seek professional medical guidance. Medical students may have a strong foundation in medicine, but registered or licensed, trained and skilled healthcare professionals are still required for accurate diagnosis and successful treatment. Therefore, promoting awareness and providing education on responsible medication use is essential to ensure the well-being and safety of medical students during the COVID-19 pandemic
and beyond.

Keywords: Self-medication; Practices; Medical Students OTC; COVID-19, Pandemic.

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1. INTRODUCTION

Self-medication is the act of a person, even a medical student, managing their own health issues without the required oversight by licensed or registered medical professionals. Common people who uses over-the-counter drugs for managing minor ailments, self-medication can be dangerous and even fatal if done carelessly [1,2,3]. Despite their knowledge of medicine, medical students are not exempt from adverse effects involved in self-medication. Self-medication is not recommended generally, including for final year medical students. Several studies have explored the prevalence of self-medication among medical students. For example, a study published in the Journal of Clinical and Diagnostic Research in 2017 found that 87.5% of medical students surveyed engaged in self-medication practices[4]. These students can easily self-diagnose and self-treat because they have easy access to information from drug indices, literature, and other medical students. In addition, "The White Coat" ensures trouble-free access to medications available in pharmacies, and they have simple access to the medication itself through physician samples provided by pharmaceutical representatives [5]. A study conducted in 2018 published in Journal of Clinical and Diagnostic Research reported most frequent justifications given by medical students for self-medication were mild illnesses, familiarity with the symptoms, and prior positive experiences. Apart from this, for a variety of reasons, including cost-effectiveness, perceived familiarity with drugs, lack of time to seek professional assistance, and convenience, medical students may self-medicate [6]. Due to their access to medications and pertinent prior knowledge, medical students are more likely to engage in these practices [7]. Self-medication entails a number of dangers and potential repercussions, including incorrect diagnosis, postponement of necessary medical care, unfavorable drug reactions, drug interactions, concealment of underlying conditions, and antibiotic resistance [8].

The following are the group of drugs which is commonly used as self-medication among medical, pharmacy students and even with public too [9,10].

1. Analgesics and Antipyretics medications: Common over-the-counter pain medicines for mild illness, fever, aches, pains, and headaches include acetaminophen (paracetamol), ibuprofen, and aspirin.
2. Antacids: These medications are used to treat heartburn, indigestion, and acid reflux symptoms, which are frequently brought on by overeating or ingesting particular meals.
3. Cold and cough remedies (Flu like symptoms): Cough suppressants, expectorants, decongestants, and antihistamines are often used over-the-counter to treat the symptoms of coughs, congestion, and colds.
4. Topical creams and ointments: Localised skin irritations, itching, or minor rashes may occasionally be treated with topical medicines like creams or ointments containing chemicals like hydrocortisone.

The majority of over-the-counter medications are advertised as being safe, yet using them improperly can still have negative consequences. Lack of access to the proper medicine for the any ailment, which might delay the identification and treatment of the real medical condition, is another risky consequence of self-medication [9-11]

Coronavirus disease (COVID-19) is a contagious respiratory tract infection caused by severe acute respiratory syndrome (SARS-CoV2)[12]. During the pandemic time due to the rising social media impact, the availability of over-the-counter drugs, and the fear of getting the virus, the medical students public as well as the have turned to self-medication[8]. The aim of this research was probably to look at the self-medication activities of Umm Alqura University's medical students in Makkah, Saudi Arabia, particularly during the COVID-19 pandemic. The objective of the study was likely to assess the prevalence and patterns of self-medication among medical students during the COVID-19 pandemic, investigate the causes and factors that influence self-medication behaviour, pinpoint the common medications used for self-medication, and assess the students' knowledge and awareness of the risks and benefits of self-medication.

2. MATERIALS AND METHODS

A descriptive, cross-sectional study was conducted on 561 medical field students at Umm Al-Qura University to assess the prevalence, attitudes, and practice of self-medication. The survey was sent via emails and social platforms to the students of medical colleges in Umm Al-Qura University which is estimated of 2500 students. The sample size was calculated online using the OpenEpi version 3.01 with a 95% confidence level and 80% study power.[13] The study involves collecting information based on answers of research questionnaire, which developed by the researchers. About their demographic and socioeconomic status as well as health-related information. The questionnaire was validated via the distribution of the questionnaire among twenty students and verified by two of the academic staff. Informed written consent of the study subject to participate voluntarily in the study with a full right to withdraw was obtained from all participants who participated in the survey with an assurance of confidentiality and anonymity of the data. [14] This process ensured that all participants were aware of the purpose of the study and the risks associated with it. It also allowed the researchers to collect reliable data from the participants that could be used to validate the questionnaire.

2.1 Inclusion criteria

Students of both genders above 18 years
Students they studying at Umm Al-Qura University
Students who practicing self-medication

2.2 Exclusion criteria

Students of both genders 18 years or less (foundation year)
Students who did not studying at Umm Al-Qura University
Students who did not practicing self-medication

2.3 Study population

This is a cross-sectional descriptive study was carried out at Umm Al-Qura University, all the health colleges ware included such as (medicine, pharmacy, nursing, dentistry, college of applied medical sciences and college of public health and health information). Approximately 2500 students are currently enrolled at 6 different medical and nonmedical faculties (colleges/schools). A pre-validated questionnaire containing open-ended and closed-ended questions was developed by the researchers and used for the study. The questionnaire was validated via the distribution of the questionnaire among twenty students and verified by two of the academic staff. Informed written consent of the study subject to participate

voluntarily in the study with a full right to withdraw was obtained from all participants who participated in the survey with an assurance of confidentiality and anonymity of the data. This process ensured that all participants were aware of the purpose of the study and the risks associated with it. The questionnaires were distributed in February 2022, and sent via emails and social platforms to the students of health colleges at Umm Al-Qura University. Permission to carry out this project was obtained from the University administration and the medical research ethics committee (Approval No. HAPO-02-K-012-2202-03-1011).

2.4 Study tool

The questionnaire consisted of 3 sections. The first section was question about if the participant was studying at Umm Al-Qura University or not. The second section contained questions regarding demographic, socioeconomic status such as age, sex, type of school, academic year and marital status. In addition, the participants were asked whether they have health insurance or not and if they have any chronic diseases. Students enrolled in pharmacy, medicine, or nursing colleges were designated as "medical" students, whereas the remaining students were designated as nonmedical students. The last section of the questionnaire consisted of questions related to the self-medication practices. The participants were asked if they have ever practiced self-medication in general and is this practice increased during COVID-19 pandemic and the reason for this increase. As well as health-related information, e.g., symptoms that require self-medication, and type of medications used. Respondents were presented with a list of therapeutic classes to choose from it. Moreover, the participants were asked if they did notice any improvement in the symptoms after self- medication practice and when they did normally stop taking the medications in self-medication practice. Furthermore, the participants were asked if experience any side effects while practicing self- medication. Finally, the participants were asked about who recommended self-medication to them.

3. STATISTICAL ANALYSIS

This study was analyzed using IBM SPSS version 23 (IBM Corp., Armonk, N.Y., USA) and visually presented using GraphPad Prism version 9.5.1 (GraphPad Software, Inc., San Diego, CA, USA). A simple descriptive statistic was used to define the characteristics of the study variables through the form of counts and percentages for the categorical. To establish a relationship between categorical variables, this study used the chi-square test. Lastly, a conventional p-value <0.05 was the criteria to reject the null hypothesis.

4. RESULTS

4.1 Characteristics of the study population

A total of 561 questionnaires were completed by medical field students at Umm Al-Qura University (21% response rate). The majority of respondents were between the ages 21-24 (76.5%, n =429), and females (65.2%, n=366) while the males were only 34.8% (n=195) of the total respondents (table1). Most respondents reported their marital status either single (97.1%, n=545) or married (2.9%, n=16). Eighty-six percent (86%, n=484) of the respondents reported that they did not have health insurance, and (86.3%, n=484) reported that they did not have any chronic diseases (table 1). Two-third of the respondents (75%, n=422) reported that they practicing self-medication, and about 43% (n=183) of them reported an increase in their self-medication practice during COVID-19 pandemic (Figure 1 and 2). Self-medication was practiced by (82.8%, n=159) of the pharmacy students, (66.5%, n= 105) of the medicine students, (77.3%, n=283) of females, and (71.3%, n=139) of males (Table 2). Chi-square statistical analysis indicated that practicing self-medication was insignificantly associated with the academic year, while the type of college was significant. Finally, self-medication practice increased during COVID-19 pandemic by (42%, n=119) of females respondents and (45.3%, n=63) of males respondents.

Table 1: Demographic characteristics and self-medication practices among 561 study participants

Demographics		Count	%
Total		561	100.0
Gender	Male	195	34.8
	Female	366	65.2
Age	≤20	118	21.0
	21-24	429	76.5
	≥25	14	2.5
Marital status	Single	545	97.1
	Married	16	2.9
College	College of Pharmacy	192	34.2
	College of Medicine	158	28.2
	College of Applied medical sciences	106	18.9
	College of Public health and health information	33	5.8
	College of Nursing	47	8.4
	College of Dentistry	25	4.5
Academic year	Intern	90	16.0
	2nd year	114	20.3
	3rd year	141	25.1
	4th year	112	20.0
	5th year	85	15.2
	6th year	19	3.4
Medical insurance	Yes	77	13.7
	No	484	86.3
Chronic diseases	Yes	77	13.7

	No	484	86.3
Chronic diseases reported (Multi-answer questions)		**Count**	**%**
Total		77	100.0
Allergy		2	2.6
Arthritis		6	7.8
Diabetes		6	7.8
Gastrointestinal diseases		12	15.6
Heart disease		3	3.9
High blood pressure		3	3.9
Hypothyroidism		8	10.4
Hyperthyroidism		8	10.4
High cholesterol		2	2.6
Multiple sclerosis		1	1.3
Segwa syndrome		1	1.3
Obesity		14	18.2
Respiratory system disease		20	26.0
Oral health problems		2	2.6
Psychiatric illnesses		4	5.2
Others		8	10.4
Practicing self-medications	Yes	422	75.2
	No	139	24.8

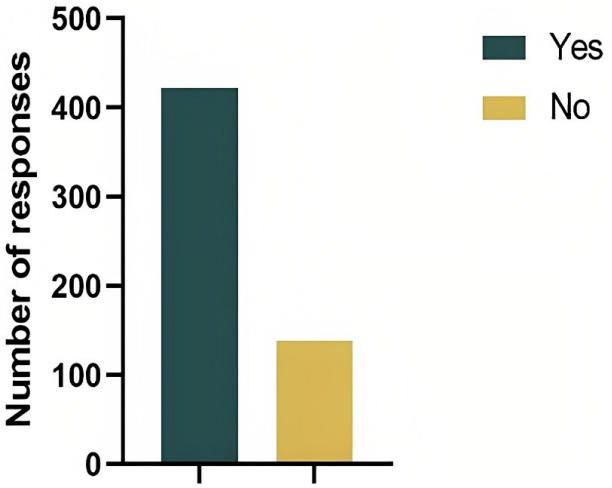


Fig 1. Number of participants who practice self-medication.

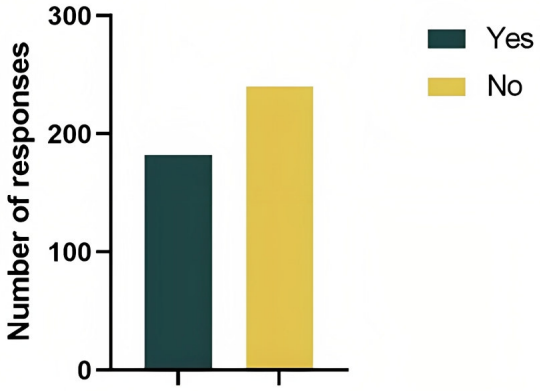


Fig 2. Number of participants with their self-medication practice increased during COVID-19 pandemic.

The relationship between demographic variables and personal self-medication practises is reported in table 2. According to the findings, 75.2% of the participants had used self-medication. In terms of self-medication, gender, age, marital status, health insurance, and academic year did not reveal any statistically significant relationships. The presence of chronic illnesses and college affiliation, however (p = 0.010 and p 0.001, respectively), were strongly linked with self-medication behaviours. The majority of college students who self-medicate are chemists. Additionally, those who did not have chronic illnesses were more prone to self-medicate. These findings highlight the need for personalised interventions and instruction regarding responsible self-care practises by indicating the effect of educational background and health status on self-medication behaviours.

Table 2: Self-Medication practices among different demographic groups

Demographics		Total	Have you ever practiced self-medications?		p-value
			Yes	No	
Total		561	422(75.2%)	139(24.8%)	-
Gender	Male	195	139(71.3%)	56(28.7%)	0.115
	Female	366	283(77.3%)	83(22.7%)	
Age	≤20	118	86(72.9%)	32(27.1%)	0.780
	21-24	429	325(75.8%)	104(24.2%)	
	≥25	14	11(78.6%)	3(21.4%)	
Marital status	Single	545	409(75.0%)	136(25.0%)	0.571
	Married	16	13(81.3%)	3(18.8%)	
College	College of pharmacy	192	159(82.8%)	33(17.2%)	0.010[a]
	College of medicine	158	105(66.5%)	53(33.5%)	
	College of applied medical sciences	106	81(76.4%)	25(23.6%)	
	College of public health and health information	33	27(81.8%)	6(18.2%)	
	College of nursing	47	34(72.3%)	13(27.7%)	
	College of dentistry	25	16(64.0%)	9(36.0%)	
Academic year	Intern	90	66(73.3%)	24(26.7%)	0.994
	2nd year	114	86(75.4%)	28(24.6%)	
	3rd year	141	105(74.5%)	36(25.5%)	
	4th year	112	86(76.8%)	26(23.2%)	
	5th year	85	65(76.5%)	20(23.5%)	
	6th year	19	14(73.7%)	5(26.3%)	
Medical insurance	Yes	77	61(79.2%)	16(20.8%)	0.382
	No	484	361(74.6%)	123(25.4%)	
Chronic diseases	Yes	77	45(58.4%)	32(41.6%)	<0.001[a]
	No	484	377(77.9%)	107(22.1%)	

[a]-Significant using Chi-Square test at <0.05 level.

The table 3 offers details on the results and negative impacts of people' self-medication behaviours. The majority (71.6%) said that their symptoms had significantly improved after using self-medication, while just 1.6% reported no improvement. The most frequent justifications for stopping medication were symptom disappearance (68.0%) and seeing a doctor (10.7%). The majority of adverse effects, nausea/vomiting (50.0%) were experienced by 7.1% of people overall. The majority of those who were exposed to adverse effects reported none, while some chose to stop taking their medicine, consult a doctor, or try other treatments. To guarantee the best results and reduce any possible hazards, our findings emphasise the necessity for thorough monitoring and education on self-medication practises.

Table 3: Self-Medication Outcomes and Side Effects

Practiced self-medications		Count	%
Total		422	100.0
Symptoms Improvement after self-medication practice	Yes, very much	302	71.6
	A little bit	113	26.8
	No improvement	7	1.6
Medication discontinuation in self-medication practice.	After symptoms disappeared	287	68.0
	After consulting a doctor/pharmacist	45	10.7
	After a few days regardless of the outcome	63	14.9
	After medications ran out	9	2.1
	Others	18	4.3
Side effect while practicing self-medication	Yes	30	7.1
	No	392	92.9
Side effect experienced in self-medication practice (Multi-answer questions)	Headache	3	10.0
	Nausea/vomiting	15	50.0
	Stomach pain	8	26.7
	Diarrhea	2	6.7
	Allergy	3	10.0
	Others	8	26.7
Action taken when experienced side effects	I did not experience any side effect	326	77.3
	Stop medication	56	13.3
	Call doctor or pharmacist	20	4.7

	Use Non-pharmalogical e.g., herbal , Ice… etc)	10	2.4
	Take another medication for the side effect	6	1.4
	Ask friends or family	4	0.9

The table 4 investigates the association between demographic variables and the prevalence of adverse consequences in those who self-medicate. A 7.1% total side effects rate was discovered. There were no statistically significant relationships between side effects and gender, age, marital status, college affiliation, academic year, medical insurance, or chronic conditions. However, a marginally significant connection between gender and side effects was found (p = 0.097 and p = 0.075, respectively). These results imply that although demographic characteristics could not have a significant impact on the prevalence of side effects, more research is necessary to understand their possible influence on the results of self-medication.

Table 4: Demographic factors and side effects of self-medication during the COVID-19 pandemic

Demographics		Total	Did you experience any side effects while practicing self- medication?		p-value
			Yes	No	
Total		422	30(7.1%)	392(92.9%)	-
Gender	Male	139	14(10.1%)	125(89.9%)	0.097
	Female	283	16(5.7%)	267(94.3%)	
Age	≤20	86	4(4.7%)	82(95.3%)	0.239
	21-24	325	24(7.4%)	301(92.6%)	
	≥25	11	2(18.2%)	9(81.8%)	
Marital status	Single	409	30(7.3%)	379(92.7%)	0.311
	Married	13	0(0.0%)	13(100.0%)	
College	College of Pharmacy	159	19(11.9%)	140(88.1%)	0.075
	College of Medicine	105	3(2.9%)	102(97.1%)	
	College of Applied medical sciences	81	5(6.2%)	76(93.8%)	
	College of Public health and health information	27	1(3.7%)	26(96.3%)	
	College of Nursing	34	1(2.9%)	33(97.1%)	
	College of Dentistry	16	1(6.3%)	15(93.8%)	
Academic year	Intern	66	3(4.5%)	63(95.5%)	0.768
	2nd year	86	8(9.3%)	78(90.7%)	
	3rd year	105	7(6.7%)	98(93.3%)	
	4th year	86	7(8.1%)	79(91.9%)	
	5th year	65	5(7.7%)	60(92.3%)	
	6th year	14	0(0.0%)	14(100.0%)	
Medical insurance	Yes	61	3(4.9%)	58(95.1%)	0.472
	No	361	27(7.5%)	334(92.5%)	
Chronic diseases	Yes	45	1(2.2%)	44(97.8%)	0.117
	No	377	29(7.7%)	348(92.3%)	

[a]-Significant using Chi-Square test at <0.05 level.

4.2 Reasons for self-medication practices

When respondents were asked why they increased practice self-medication, the primary reason is lockdown during COVID-19 pandemic (20%), or as a precaution from COVID-19 infection (19%). A lesser percentage of respondents reported that they practice self-medication due to unavailability of appointment in hospitals or health facilities. When asked about who recommended self-medication to them, the majority reported that they did so based on their personal knowledge (48%) or based on previous use of the medication (35%). The rest practiced self-medication based on an advice from family and friends or media information. The main conclusions on the use of self-medication during the COVID-19 epidemic are highlighted in the table 5. The research shows that a large number of people increased their use of self-medication, citing factors such the lack of access to doctors' visits and the desire to boost immunity. The flu-like symptoms and discomfort were two common complaints that led to self-medication. Pain relievers, antiviral drugs, and vitamins and minerals were the most frequently utilised pharmaceuticals. The sources used to choose a drug ranged, with personal experience and prior medication usage having the most impacts. These results highlight the need of encouraging safe and knowledgeable self-care behaviours in such trying circumstances and give insight on how the pandemic has affected self-medication behaviours.

Table 5: Self-medication trends during the COVID-19 pandemic: Insights and Implications

Variables		Count	%
Practiced self-medications			
Total		422	100.0
Increasing of self-medications practice during COVID-19 pandemic	Yes	182	43.1
	No	240	56.9
Reasons for increasing the self-medication practice during COVID-19 pandemic (Multi-answer questions)	I did not practice self-medication	228	54.0
	Unavailability of appointments in hospital or health facilities	73	17.3
	Lockdown during COVID-19 pandemic	84	19.9
	Enhance immunity to prevent COVID-19 infection	78	18.5
	Precaution from COVID-19 infection	80	19.0
	Others	14	3.3
Symptoms lead to self-medications practice (Multi-answer questions)	Pain	346	82.0
	Flu-like Symptoms	268	63.5
	GI upset	112	26.5
	Allergy	70	16.6
	Others	346	82.0
Medication used in self-medication practice (Multi-answer questions)	Pain medication (By Mouth/Topical)	362	85.8
	Flu medication	239	56.6
	GI medication	126	29.9
	Anti-allergic	156	37.0
	Vitamins and minerals	179	42.4
	Others	362	85.8
Medication selection sources	Personal knowledge	202	48
	Previous use of the medication	150	35.5
	Advice from a friend or family member	58	13.7
	Information from social media	12	2.8

As shown in figure 3, the participants reported that the primary reason for increasing their self-medication practice during the COVID-19 pandemic is lockdown (20%, n=84) and precaution from COVID-19 infection (19%, n=80). As shown in Figures 4, the most common symptoms that lead them to practice self-medication are pain (82%, n=346) and flu-like symptoms (63%, n=268). Thus, the pain medication (85%, n=362) and flu medication (56%, n=239) were the most frequent self-prescribed medication, as shown in Figures 5.

Fig 3. Reasons for increasing self-medication practice during COVID-19 pandemic.

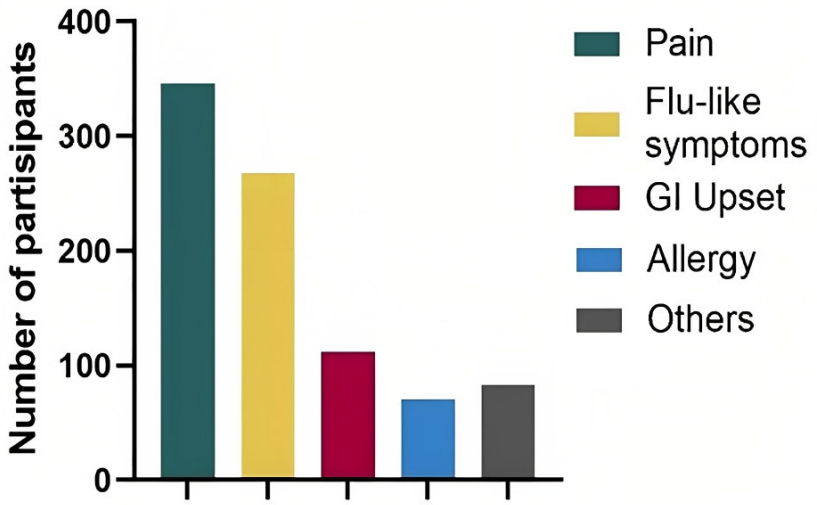
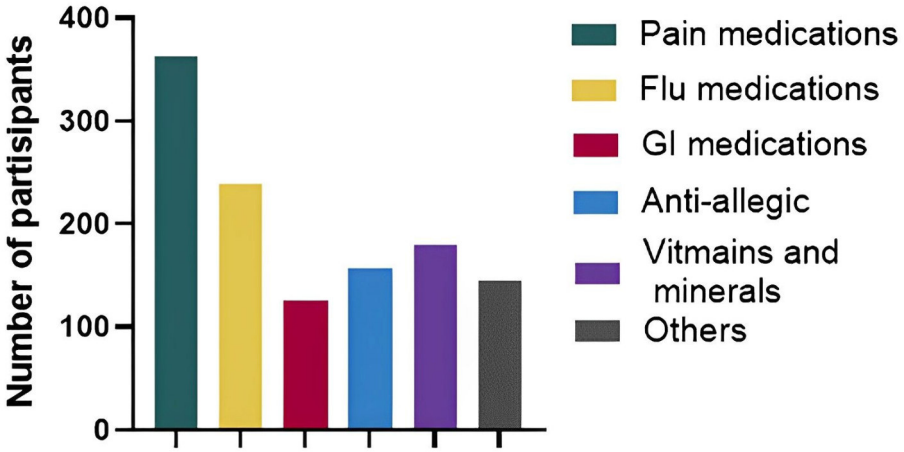


Fig 4. Symptoms that lead to self-medication practice.



As shown in figure 6, almost half of the participants (48%, n=202) reported that their choice of medication was based on personal knowledge, and almost one-third of them (35%, n=150) depend on their previous use of the medication.

Fig 5. Medications used in self-medication practice

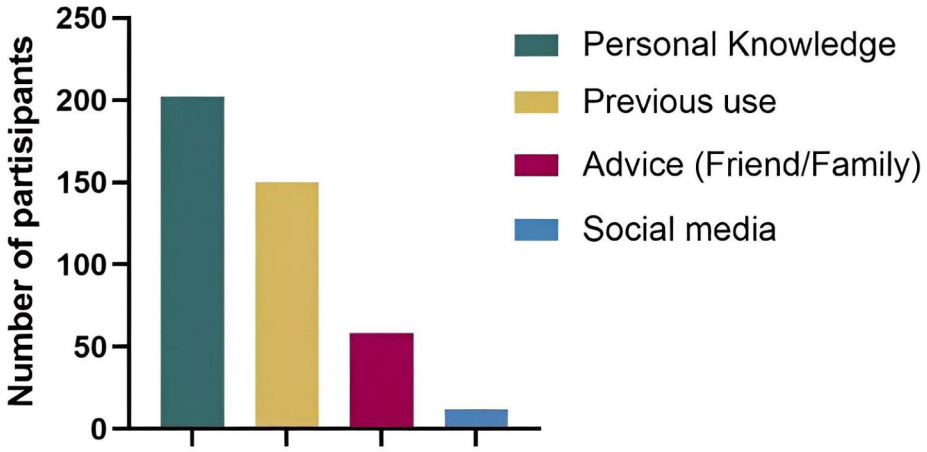


Fig 6. Medication selection sources.

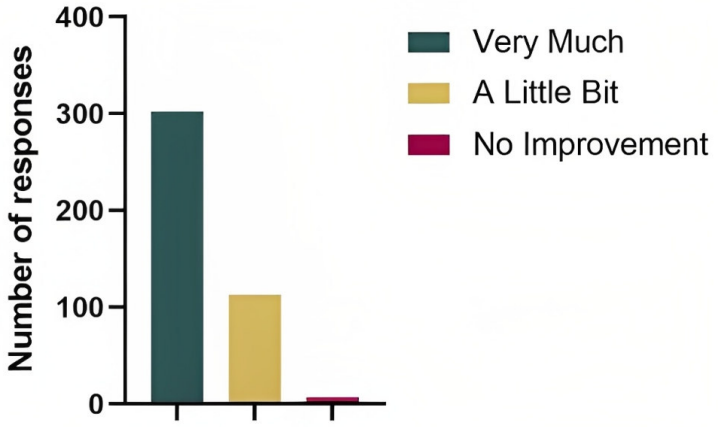


Fig 7. Symptoms improvement after self-medication practice

Approximately, two-thirds of participants (71%, n=302) mentioned that the self-medication practice improved their symptom very much, as shown in figure 7. Be-sides, more than half of participants (68%, n=287) stopped taking the medications after symptoms disappeared, as shown in figure 8.

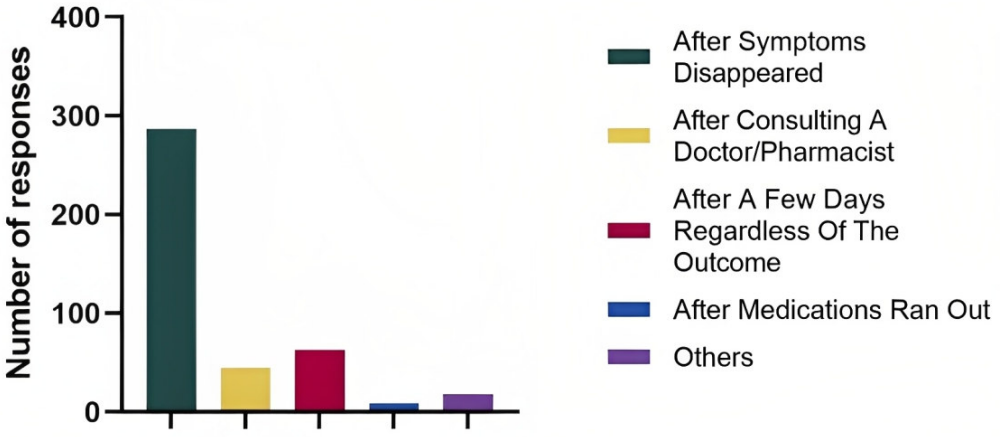


Fig 8. Medication discontinuation in self-medication practice.

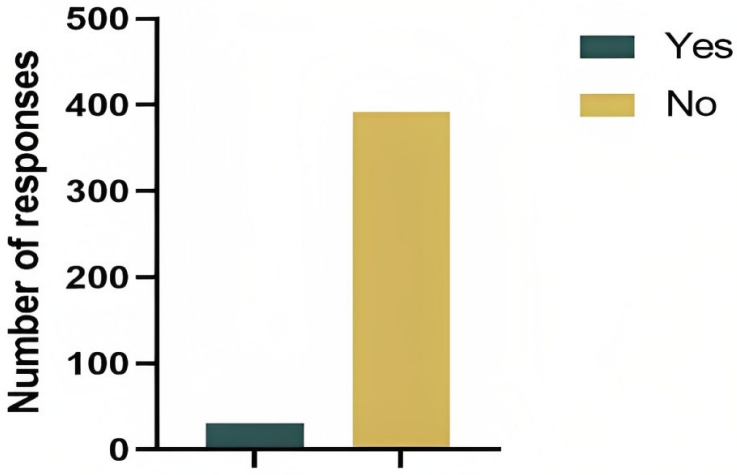
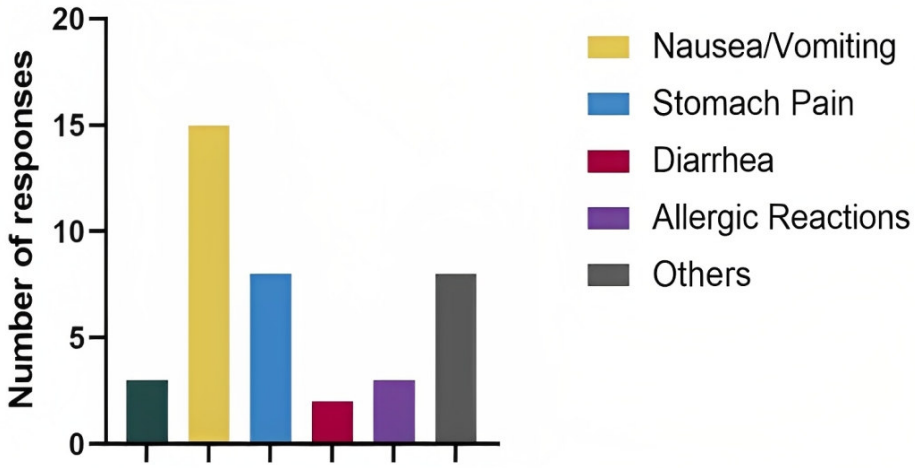


Fig 9. Side effect while practicing self-medication



Moreover, 93% (n=392) of the participants did not experience any side effects while practicing self-medication, as shown in figure 9. However, 7% (n=30) of the participants experienced side effects, and the most reported side effects due to the medication were nausea and vomiting and, as shown figure 10.

Fig 10. Side effect experienced in self-medication practice.

5. DISCUSSION

The COVID-19 pandemic's particular circumstances and difficulties have raised concerns about the self-medication by medical students at this time. Despite possessing some medical knowledge, medical students are still studying and may not have the training or experience of licenced healthcare professionals. Self-care without the right support might result in inaccurate diagnoses, improper drug selections, or insufficient dose regimes. Due to increased workload, uncertainty, and exposure to the frontlines of healthcare, the pandemic has led to increasing levels of stress and anxiety among medical students. These elements may affect how they make decisions and may result in emotional bias when self-medicating.[8] This study accessed the prevalence and patterns of self-medication practice among medical students at Umm Al-Qura University and investigates the most common reasons, symptoms, and medications that lead them to practice self-medication. Self-medication becoming more prevalent mainly in between undergraduate medical students and are considered a major constraint in guaranteeing self-prescribed medication safety and efficacy (table 4 and 5). There were 561 medical field students in the research, and 21% of them responded. 75% of interviewees said they used self-medication, and 43% said it had increased because of the COVID-19 epidemic (table 1). According to the study, self-medication was common among the medical field students who were questioned, with 75% of the participants admitting using self-medication techniques. This shows that a significant majority of the students managed their health on their own rather than seeking a doctor's help. The COVID-19 epidemic and the related lockdown procedures were cited as the main causes of the individuals' increased use of self-medication. Their access to medical services may have been hampered by the lockdown's constraints, which forced them to turn to self-medication. Additionally, it's possible that students who self-medicated did so out of a wish to protect themselves against COVID-19 infection. The subjects most frequently reported using self-medication for pain and flu-like symptoms. The key finding of this study was the use of pain medications, which include most commonly Over-the-counter (OTC) medications were the most used medication which agreed with different studies [15,16]. Moreover, the flu medications were also one of the most frequent self-prescribed medication in this study. These results agree with a study made in Brazil, were flu-like symptoms were the main reasons for self-medication[17]. The simplicity of these symptoms could make the students believe that they can cure themselves easily. However, unfortunately, these symptoms could be symptoms of other serious diseases. Another finding is that most of Umm Al-Qura University medical field students who practice self-medication reported that their choice of medication was based on personal knowledge and previous use of the medication in accordance with previous finding in Ethiopia and India[10,18]. As a consequence, painkillers and antiviral drugs were the most often administered prescriptions by self. It is significant to highlight that self-diagnosis and self-treatment of symptoms might present challenges since they may result in improper pharmaceutical use and inaccurate diagnoses. According to the study, a sizable number of the individuals made their pharmaceutical decisions for self-medication based on personal experience and prior medication usage. As personal knowledge may be limited and prior pharmaceutical use may not always be appropriate to present symptoms or conditions, this emphasises the possible hazards involved with self-medication. It's interesting to note that the majority of participants said self-medication significantly reduced their symptom severity, and that a sizable portion of them stopped using medicine after the symptoms subsided. It's crucial to understand, though, that this method could not treat the underlying source of the symptoms and might cover up any medical problems. The majority of individuals in the research reported no negative side effects from self-medication, according to the study. A limited number of people did, however, suffer negative effects, with nausea and vomiting being the most often reported ones. This emphasises the necessity of exercising caution and careful supervision while using self-medication techniques. Because of a number of variables, including the intensified stress and pressure experienced by healthcare students and the necessity for self-care at this difficult period, self-medication by medical students during the COVID-19 epidemic has been a subject of concern. The dangers and factors related to self-medication remain pertinent notwithstanding the need to recognise the special conditions the epidemic has created. Medical students in particular have experienced a great deal of stress and strain because of the COVID-19 epidemic. The factors that might cause mental and physical tiredness include long hours, more duties, and exposure to difficult clinical situations. Medical students could feel inclined to self-medicate in such situations

to treat symptoms like anxiety, insomnia, and even fatigue[19-21]. Self-medication can also lead to drug interactions, adverse reactions to medications, and delays in seeking appropriate medical treatment. All of these can have serious consequences, such as increase the risk of death or long-term disability. It is noteworthy that the definition of self-medication may vary among different countries, so the results of other studies could not be com-parable to our study (Table 6). The high level of education may generate overconfidence in students about medication utilization, and this could be the main reason for the high prevalence of self-medication practice among medical field students at Umm Al-Qura University. In addition, university campus students might affect and inspire each other to practice self-medication. In the present study, the majority of those who practiced self-medication were females, single, and between the ages of 21-24 [7]. Self-medication habits differ by gender in the general population, with some data pointing to greater rates of self-medication among women than men. Access to healthcare, health-seeking behaviour, and social and cultural factors are only a few of the factors that may have an impact on these gender inequalities [22]. The medical field students of Umm Al-Qura University who reported an increase in their self-medication practice during the COVID-19 pandemic mentioned that the main reason for increasing their self-medication practice during the COVID-19 pandemic was lockdown and precaution from getting COVID-19 infection in agreement with previous studies [7,23]. It is vital for medical students to prioritise their mental health and get the care they need rather than self-medicating. This may entail contacting counselling services, taking care of oneself, or using tools created especially for medical workers dealing with pandemic-related stress[24]. According to a 2012 study that was published in the Nigerian Medical Journal, the proper use of medications is encouraged by teaching medical students about self-medication during their training[25]. Hence, self-medication risks can be reduced by including appropriate training on self-medication, rational drug use, and an understanding of the limitations of self-treatment.

6. CONCLUSION

Our findings demonstrated that self-medication is a highly prevalent practice among medical students at Umm Al-Qura University. However, no significant in-crease in their practices was reported during the COVID-19 pandemic. Self-medication has become an important component of healthcare, but it is also considered as serious global issue, particularly in light of the COVID-19 pandemic. Therefore, it is imperative to implement strict legislation, consult with medical experts, and work with policymakers to manage and control proper self-medication practices. In addition, raising the awareness of the populations about the negative consequences of inappropriate drug use could reduce the self-medication practice. Medical students must understand the limitations of self-medication and know when to seek out expert medical advice. Although they may have a strong foundation in medicine, accurate diagnosis and effective treatment depend on the expertise of a trained healthcare professional.

LIMITATION

Our study had several limitations. Firstly, due to the cross-sectional nature of our study no causality can be inferred. Secondly, the samples we analyzed all came from single university in Saudi Arabia and narrowed to Umm Al-Qura University medical field students. There is a need to recruit more participants from different educational institutes in the Kingdom in order to corroborate our findings. To further validate our results, a more extensive study with a larger sample size should be conducted, involving participants from various universities and other educational institutes across Saudi Arabia.

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8. AUTHOR CONTRIBUTIONS

Banan Z Almatani Methodology and writing, Formal analysis, Eman R Bali; Writing – original draft, Rana M Almuwallad; Project administration, Nasser M Alorfi. All authors reviewed the results and approved the final version of the manuscript.

9. CONFLICT OF INTEREST

Conflict of interest declared none.

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