Obat: Jurnal Riset Ilmu Farmasi dan Kesehatan
Volume. 2 No. 5 September 2024
e-ISSN : 3031-0148, dan p-ISSN : 3031-013X, Hal. 208-230
DOI: https://doi.org/10.61132/obat.v2i5.678
Available online at: https://journal.arikesi.or.id/index.php/OBAT

Knowledge, Attitude and Practice Of Self Medication (Self Drugs Prescription) Among Students In Al-Qadisiyah University/ College Of Medicine

Israa Mahmood Abd Al-Zihra[1*], Fatima Abd Alkathem Redha Alkhalidi[2]
[1] M.B.Ch.B, Al-Diwaniyah Health Directorate, Al-Diwaniyah, Iraq.
[2] M.B.Ch. B; F.I.C.M.S/Community Medicine, College Of Medicine / University Of Al-Qadisiyah, Al-Diwaniyah, Iraq.
ahmedisraa514@gmail.com[1*], fatima.alkhalidi@qu.edu.iq[2]

Author Correspondence: ahmedisraa514@gmail.com*

Abstract. *Background: Self-medication is defined as using medicinal products to treat the disorders or symptoms diagnosed by oneself, Self-Medication is common practice worldwide in both developed and developing countries, Regulations usually distinguish between prescription-only medicines (POM) and over the counter (OTC) drugs. inappropriate self-treatment can pose various risks including drug side effects, recurrence of symptoms, drug resistance, etc. the purpose of this study was to investigate the knowledge, attitude, and practice of medical students towards self-medication. Subjects and Methods: A cross-sectional study was carried out among five stages that were selected by the simple random sampling for choosing the students. Data collections were performed from the beginning of March to October 2023. Data were collected with A four-part researcher questionnaire. It was designed to address the students' knowledge, attitude, and practice. Statistical analysis was performed using Statistical Package for the Social Sciences 23 software. Results: Out of 462 questionnaires distributed, 445 questionnaires were completed; giving a response rate of 96.3%. According to the results, 310 (69.7%) students had carried out self-medication within the past one year. Common cold was the most common ailment treated with self-medication (73.9%) and antipyretics analgesics (64.5%) were the most used drugs. The primary information sources used by the students were their academic knowledge and books (47.4%). Health problems are not serious the most reason for self-medication in the study and lack of knowledge about medicine the highest causes for not taking medication. Conclusion: students' knowledge of self-medication appears to be good and significantly high. As well self-medication was highly practiced among the students. Therefore, medical students should be viewed as important contributors to the public health care system, and future health professionals should be properly educated on good pharmacy practice and responsible self-medication.*

Keywords: *Knowledge,Attitude,Practice*

Abstrak.Latar Belakang: Pengobatan sendiri diartikan sebagai penggunaan produk obat untuk mengobati gangguan atau gejala yang didiagnosis oleh diri sendiri, Pengobatan Sendiri adalah praktik umum di seluruh dunia baik di negara maju maupun berkembang, Peraturan biasanya membedakan antara obat resep saja (POM) dan obat lain. obat yang dijual bebas (OTC). pengobatan mandiri yang tidak tepat dapat menimbulkan berbagai risiko antara lain efek samping obat, kambuhnya gejala, resistensi obat, dll. Tujuan penelitian ini adalah untuk mengetahui pengetahuan, sikap, dan praktik mahasiswa kedokteran terhadap pengobatan mandiri. Subyek dan Metode: Sebuah studi cross-sectional dilakukan di antara lima tahap yang dipilih dengan simple random sampling untuk memilih siswa. Pengumpulan data dilakukan mulai awal bulan Maret hingga Oktober 2023. Data dikumpulkan dengan menggunakan kuesioner peneliti yang terdiri dari empat bagian. Ini dirancang untuk mengatasi pengetahuan, sikap, dan praktik siswa. Analisis statistik dilakukan dengan menggunakan perangkat lunak Paket Statistik untuk Ilmu Sosial 23. Hasil: Dari 462 kuesioner yang disebarkan, 445 kuesioner terisi; memberikan tingkat respons 96,3%. Hasilnya, 310 (69,7%) siswa telah melakukan pengobatan mandiri dalam satu tahun terakhir. Pilek adalah penyakit yang paling umum diobati dengan pengobatan sendiri (73,9%) dan analgesik antipiretik (64,5%) adalah obat yang paling banyak digunakan. Sumber informasi utama yang digunakan siswa adalah pengetahuan akademis dan buku (47,4%). Masalah kesehatan yang tidak serius menjadi alasan terbanyak melakukan pengobatan sendiri dalam penelitian dan kurangnya pengetahuan tentang obat menjadi penyebab tertinggi tidak minum obat. Kesimpulan: Pengetahuan mahasiswa tentang pengobatan mandiri tampak baik dan tinggi secara signifikan. Pengobatan sendiri juga sangat dilakukan di kalangan siswa. Oleh karena itu, mahasiswa kedokteran harus dipandang sebagai kontributor penting bagi sistem layanan kesehatan masyarakat, dan para profesional kesehatan di masa depan harus dididik dengan baik mengenai praktik farmasi yang baik dan pengobatan mandiri yang bertanggung jawab.

Kata Kunci: Pengetahuan, Sikap, Latihan

Received: Juli 02,2024; Revised: Juli 16,2024; Accepted: Agustus 18,2024; Online Available: Agustus 20,2024;

1. INTRODUCTION

Healthcare policies in most countries, particularly in European countries, promote citizens empowerment and responsibility towards their own health and well-being. This is based on the definition of self-care by the World Health Organization (WHO) which dates back to 1983. The WHO defines Self-care is the ability of individuals, families and communities to promote health, prevent disease, maintain health and cope with illness and disability with or without the support of a health worker. [(1)]

Self-medication (SM) is a global phenomenon. It is prevalent in every age group, though its extent differs among individuals and region. Self-medication (SM) defined as the use of medicinal products by the consumer to treat self-recognized disorders or symptoms, or the intermittent or continued use of a medication prescribed by a physician for chronic or recurring diseases or symptoms without the consultation of a physician for either diagnosis, treatment or monitoring [(2,3)]. In practice, it also includes the use of the medication of family members, especially where the treatment of children or the elderly is involved. Self-Medication thus forms an integral part of self-care. Self-care includes the use of drugs, non-pharmacological approaches, social support in illness, and first aid in day-to-day life. Self-care refers to actions and attitudes, which are practiced by people to help them contribute to the maintenance of their well-being and personal health [(2).] However, SM practice could be divided into two distinct groups: responsible practice and irresponsible or irrational practice [(4)]. Responsible Self-Medication: It is used of non- prescribed drugs available legally without a physician's prescription; with all legal aspects taken into considerations for use of drugs for SM which is the same the (OTC) drugs [(4-6)].

Irresponsible self-medication: It is the use of prescribed drugs that are not available legally to be sold without a physician's recommendation [(4)]. That includes various types of activities like acquiring medicines without a prescription, resubmitting old prescriptions to purchase medicines, sharing medicines with relatives or members of one social circle, using leftover medicines stored at home or failure to comply with prescription (either by prolonging or interrupting it too early) or decreasing or increasing the originally prescribed dosage [(7)].

Irresponsible SM is high all over the world and considered a major global issue [(4,8)]. It is a very common practice, both in the economically deprived communities as much as it is in economically privileged communities [(8)]. Self-medication has a strong correlate with the use of drugs, when drug used to treat, cure, prevent or diagnoses a disease or to promote well being called a medication or medicine [(5)].

Medicines it was defined as any drugs or preparations used for the treatment or prevention of disease; Different countries use different terms for classifying drugs. The term ‘scheduling’ is used in Australia, Canada, and New Zealand, while ‘classification’ is used in the United Kingdom (UK) and New Zealand. The United States of America (USA) uses the term ‘classes’ while France uses the term ‘list’. Several scheduling options for medicines are available, such as (POM), pharmacy-only, pharmacist-only and (OTC) drugs. Regulatory authorities in some countries have used some or all of these options in their medicines scheduling systems [(9)].

However, misuse of OTC drugs by the consumer is through overuse, taking several drugs concurrently and using home remedies to treat potentially serious diseases. People often think that prescription and OTC drugs are safer than illicit drugs, but that is only true when they were taken exactly as prescribed and for the purpose intended. When abused, prescription and OTC drugs can be addictive and put abusers at risk for other adverse health effects, including overdose—especially when taken along with other drugs or alcohol [(10)]. Besides, codeine, dextromethorphan pseudoephedrine, and chlorpheniramine add to cough syrups for their antitussive activity, they are considered as OTC cough formulations which associated with abuse, toxicity, and they may also display such anticholinergic symptoms [(11)]. Data from surveys and poison control center records demonstrate increased non-medical use of prescription and over-the-counter cough and cold preparations, particularly those containing Dextromethorphan. The non-medical use of such drugs may result in serious clinical effects with potentially life- threatening complications, dependence and withdrawal syndromes. Dextromethorphan causes alterations in mental status that may contribute to judgment impairment leading to injury or fatality [(10)].

In some cases, moreover, products have been changed back from SM to POM status because new safety issues have arisen. This underlines the fact that it is of crucial importance carefully to monitor the use of medicinal products and post-marketing data on adverse effects to be able to respond adequately and quickly to possible harmful developments [(2)]. However, physicians and pharmacists are consulted when in doubt or in cases where more information is required. That access to essential medicines is A human right and a targeted goal for sustainable health development [(13)]. It should be realized that the distinction between SM products and prescription medicines is not a sharp one; differences in dosage and/or in indications can lead to differences in classification. For example, ibuprofen is sold only on prescription at high doses for treatment of arthritis and over the counter at low doses for

treatment of headaches and other minor pain. It is sometimes the practice that smaller packages are available as SM [2].

The World Health Organization (WHO) supports responsible SM as it economizes on both the individual and the health care system [2]. When practiced correctly, SM has a positive impact on individuals and health care systems. It allows patients to take responsibility and build confidence to manage their health, thereby promoting self- empowerment [13].SM has an important role in health care and the continued improvement of public education [14]. It can help in the prevention and the treatment of signs and symptoms which do not require a doctor's visit, as well as it can enable those patients with chronic conditions to take responsibility to control their condition. Also, rational self-care practice can decrease the pressure on medical services, where health care personnel are inadequate [3]. Some governments are increasingly encouraging self-care of minor illnesses, including SM. That, responsible SM help to reduce the cost of treatment, doctor's time as well as consultation time. At the community level, good SM can be lowering the costs of community-funded health care programs (including prescription reimbursement systems) and reducing absenteeism from work due to minor symptoms [2].

The prevalence of non-prescription medication varies according to geographic location and the demographics of the population [12]. The prevalence rates of SM are high all over the world. It has become quite common in developed and while much higher in developing countries. In developing countries, SM is highly practiced, which might be due to the availability of medicines from informal sectors such as open market, supermarket, and inadequate health care services; that people in developing countries are not only using OTC products as SM but also POM, as SM products, without supervision [9].

The study was done in Baghdad City Iraqj 2014 about SM practice among Iraqi patients show that about 60% self-medicated at monthly intervals, while 18.9% practiced SM every 6 months or even longer [15]. Also, study was done in Al-Hussein Teaching Hospital in Kerbala Iraq; it was found that irrational use of antibiotics was 83.3% [16], In Alexandria Egypt, SM was 86.4% [17], while in Ethiopia, the prevalence of SM varied from 12.8% to 77.1%, with an average of 36.8% [13].

The youth worldwide is vulnerable to SM, as they are highly influenced by the media and the internet, which promotes SM behavior [7]. The college-age group represents an integral part of the community, especially SM in medical students has a special impact usually tries to implement their knowledge into practice, and SM has been frequently assessed among these individuals [18]. In cross-sectional study from Iraq to estimate the prevalence of SM among

university students in Baghdad was 92.4% of students [19], and at Anbar and Fallujah Universities, Iraq it was 73% [20]. The prevalence of SM among university students varied it was70.4% in Kuwait [12]; Saudi Arabia 74%; 62.9% Egypt, Jordan 78.5%, Ethiopia 32.7% ,44.8% in Bahrain, USA 89% and Iran 45.1% [21].

Healthcare services in Iraq, including medication, is open and free [19]. Assessing the practices of SM can be useful to governments, drug regulatory agencies, hospitals, physicians, pharmacists, and consumers. Government and regulatory agencies along with health care providers can utilize this information to improve and implement policies, patient communication, and medication awareness [22] Education of the general public, especially the university students about rational usage of the SM are necessary for their safety and for ensuring proper use of the self-drug medication. Studies that describe the SM issue among university students in Iraq are scarce [20].

To the best of the knowledge, there have been few studies conducted in Iraq about SM use [15,19,20] especially among college of medicine students who represent the most proportion had knowledge about drugs, and it's uses. The results of this study are important to build baseline data for Iraq.

a. Objective Of The Study

This study is conducted to determine the knowledge, attitude and practice of medical students toward self-medication at Al-Qadisiyha University college of medicine. The main objectives of this study are as follows: To determine the knowledge and attitude of medical students toward self-medication and to determine the practice of self-medication among them; To clarify the association between the knowledge of self-medication and level of study among medical students; To identify the main reasons for self- medication among students, as well as to identify the sources of information that the students depend on for self-medication.

2. PERSON AND METHODS

a. Study design and setting:

An analytic cross-sectional study was carried out in Al-Qadisiyah university college of medicine (city in the middle of Iraq), which including1535 student in different stages. The students were selected by simple random sampling. See **table1** for the distribution of the participants of the study sample in different Stages.

b. Sample size:

The sample size was considered based on Steven K.Thampson equation.

$$n = N \times P\,(1-P) / \left[(N-1) \times \left(d2 \div z2\right)\right] + P(1-P)$$

n: sample size

N: population size=1535

P: probability =50

d: margin of error =0.05

z: 1.96 (for 95% confidence level)

The sample size was calculated based on the confidence level of 95% and 5% of margin error. The result from equation was (308) that multiply by design effect (1.5), so the required sample size was 462. questionnaires distributed there was (445) students completed the questionnaires;(7) non responders;(11) non- completed the questionnaires.

c. Students' selection

students selected randomly from each stage according to the percentage from the real number as in Table 1.

Table1: Distribution of students in the study.

Stage	Second	Third	Forth	Fifth	Sixth	Total
Number	263	322	456	266	228	1535
Percentage	17%	21%	30%	17%	15%	100%
Sample size	79	97	139	79	69	462

d. Data collection method:

A self-administered questionnaire was used to obtain the data from all participants in this survey. The researcher explained the aim of the study and the way of answering the questionnaire before data collection. The majority of the participants responded at the same time of distributing the questionnaires, while some of them responded later and handed the questionnaires back to the researchers in the following days. The questionnaire was completed within approximately 10-15 minutes. The respondents were given sufficient time to complete the questionnaires before they were collected.

e. Study tool and time:

The questionnaire was used to obtain data from the participants. The questions were developed based on the previous literature [24'29'35],and take agreements of six experts . the questionnaire consisted of Four parts mainly to assess the knowledge, attitudes and the practice of SM among students , Data collection were performed from beginning of March to October 2023.

1. **Socio-demographic and personal information;** the first section was used to obtain information like age, sex, stage of study, smoking status, Fathers' Profession, Mother's profession, the presence of chronic diseases, family home, working-as a medical Representative, working in a pharmacy.

2. **Knowledge questions**: The second section assessed the students' knowledge regarding SM. The response choices for knowledge items included "yes", "no" and "do not know". Correct answers were scored as 1, while incorrect answers and "do not know" were scored as 0. The total knowledge score ranged from 0 to 7 (7 items). Knowledge was defined as poor for a score of 0–4 and good for a score of 5–7.
3. **attitude questions:** The third section consists of seven questions assessed the attitudes of students toward SM. Five-point Likert scale items were used; strongly agree responses were scored as 5, agree as 4, uncertain as 3, disagree as 2, and strongly disagree as 1.
4. **Practice questions:** were the forth section in which students were asked to report SM use or not during the previous 6month ,asked if visit pharmacy in the previous 6month, examples of drug if he /she was taken in the last 6month , Indication of taken medication ,This part of the questionnaire also included questions regarding the sources of medicine for SM and sources of information for SM, reason (s)for taking or not and if he /she was developed negative side effect after taken SM.

f. Ethical consideration

The scientific committee of family medicine in the Iraq board committee in Baghdad approved the protocol of the study. Approval for this study was obtained from the Research and Ethical Clearance Committee of the University of Al-Qadisiyah college of medicine. The consent form was obtained from all participants before involving them in the survey.

g. Pilot study

The clearness of questions, the time needed to complete the questionnaire and the response rate was assessed by the pilot study to overcome any difficulties or related issues that may arise during data collection. The pilot study was done on 30 students in college in two days' duration, the students selected from different stages. Some modifications were made to several questions of practice to make them clearer to students. The average time needed to complete the questionnaire was approximately 10-15 minutes.

h. **Statistical analysis**

Data was collected and included in a data-based system and analyzed by statistical package of social sciences ((SPSS, Inc., Chicago, IL, USA)) version 23. Parametric data were expressed as mean ± standard deviation (SD). While non-parametric data were expressed as percentages and were analyzed using chi square Spearman's rho used to measure the association between knowledge score and attitudes score. A *P*-value of $\leq$0.05 was considered to be statistically significant. with a confidence level of 95 %.

3. RESULT

a. Demographic information

Four hundred and forty-five of the 462 students completed his questionnaires response rate of 96.3%.

Table-2: Socio-demographic characteristics of the participants of the study sample.

Variable		No (445)	100%
Sex	Male	135	30.3%
	Femle	310	69.7%
Residence	Urban	385	86.5%
	Rural	60	13.5%
Stage	Second	81	18.2%
	Third	88	19.8%
	Fourth	137	30.8%
	Fifth	79	17.8%
	Sixth	60	13.5%
Fathers' Profession	Medical	64	14.4%
	Non -medical	381	85.6%
Mothers' Profession	Medical	32	7.2%
	Non-medical	224	50.3%
	Housewife	189	42.5%
Do you have health insurance?	Yes	115	25.8%
	No	330	74.2%
Do you have any medical illness?	Yes	96	21.6%
	No	349	78.4%
Did you work as a medical Representative?	Yes	51	11.5%
	No	394	88.5%
Did you work in pharmacy?	Yes	19	4.3%
	No	426	95.7%
Smoking status	Smoker	39	8.8%
	Not smoker	389	87.4%
	Ex-smoker	17	3.8%

Table-2 presents the socio-demographic features of the participants. Two third of the participants 310(69.7%) were females, whereas 135(30.3%) of them were males. The mean age ± SD was 21.3 ±1.6year. Three hundred and eighty-five, (86.5%) were from urban residents. Most of the students did not have medical illness 349 (78.4%), Most of them did not have work as medical representative 394 (88.5%) and did not work in a pharmacy 426 (95.7%).

b. Students' knowledge of self-medication:

More than two thirds (74.6%) of students had adequate knowledge that SM is defined as self-consuming medication without receiving advice from a physician. Moreover, the majority (75.5%) of students knew that all medications (prescription, OTC and herbal) had adverse effects. Most of them (84.5%) recognised the importance of seeking physician help in case of adverse drug effects.

A total of 445 (87.6%) students were aware that using medications with unknown substances in patients with known disease is dangerous, and nearly all students knew that increasing or decreasing medication doses without a doctor consultation can be dangerous. About (78.4%) of students knew that SM could mask signs and symptoms of some diseases **(Fig. 1)**.

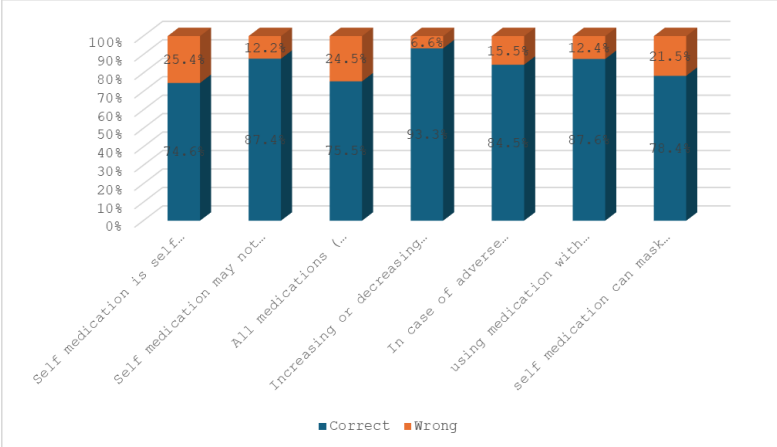

Fig-1 Self-medication knowledge of medical students.

The results show that 381 out of 445 students, which represent 85.6% of the total sample, had good knowledge of SM, indicating total 5and above, while the other 64 students, which represent 14.4% of the sample, had poor knowledge of SM, indicating total scores lower than 5. **Table 3:** demonstrates a statistically significant association ($P \leq 0.05$) between good knowledge and the following student characteristics: being female and stage of study and others listed in table.

Table-3: Association between knowledge and demographic variables (n=445).

		Knowledge score		Total	p-value
		Good	Poor		
Stage	**Second**	63	18	81	0.1
	Third	76	12	88	
	Forth	116	21	137	
	Fifth	70	9	79	
	Sixth	56	4	60	
Sex	**Female**	269	41	310	0.2
	Male	112	23	135	
Residence	**Rural**	42	18	60	*
	Urban	339	46	385	**0.001**
Smoking	**Ex-smoker**	15	2	17	*
	Not smoker	340	49	389	**0.002**
	Smoker	26	13	39	
Mother	**House wife**	163	26	189	0.8
	Medical	28	4	32	
	Non-medical	190	34	224	
Father	**Medical**	56	8	64	0.6
	Non medical	325	56	381	
	Yes	81	15	96	0.4

Do your have any medical illnesses?					
	No	300	49	349	
Did you work as medical representative?	**Yes**	36	15	51	* **0.002**
	No	345	49	394	
Did you work in pharmacy?	**Yes**	16	3	19	0.5
	No	365	61	426	

***Statically significant p value <0.05**

c. Students' attitudes toward self-medication.

Figure 2 shows the students' responses to the seven questions on attitudes toward SM. The highest mean score was 3.8 out of the 5-point scale for (No need for training about self-medication), followed by mean score 3.7 for (I recommend self-medication to others). The lowest mean score of agreement was 2.4 out of 5 (The availability of OTC medication and belief of their safety leads to use self-medication). The overall mean score for attitudes toward SM was 3.05 out of the 5 scales, with an SD of 0.692, which represents approximately 61% of the total sample, and has high agreement with the questions on attitudes toward SM among students in college of medicine.

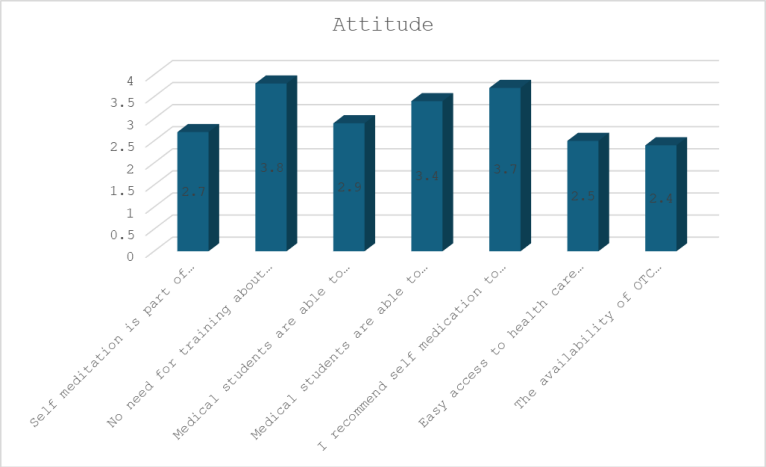

Fig-2 Attitudes of medical students toward SM.

Table 4; demonstrates a statistically significant difference ($P \leq 0.05$) in the mean knowledge score and attitude score. A statistically significant negative correlation between knowledge and no need for training about SM ($r=-0.108$, $p< 0.05$). The higher the knowledge of SM, the lower the believe in the SM needing training. In addition, there was a statistically significant negative correlation between knowledge and recommendation of SM to others ($r=-0.111$, $p< 0.05$). Hence, the higher the good knowledge of SM, the lower the recommendations of SM to others.

Table-4 Correlation between knowledge score and attitudes score (no=445)

Attitude	Spearman's rho	p-value
1-Self meditation is part of self-care	-0.092	0.052
2-No need for training about self-medication	- 0.108	**0.02***
3- Medical students are able to diagnose different diseases	-0.058	0.2
4- Medical students are able to treat different diseases	-0.077	0.1
5- I recommend self-medication to others	-0.111	**0.02***
6- Easy access to health care information and facilities is the main cause that medical students use self-medication	0.051	0.2
7-The availability of OTC medicines and belief of their safety leads to use self-medication	0.245	**0.001***

*** =Statically significant p value <0.05**

d. Students' practices toward self-medication:

The students' practice towards the statements about SM is illustrated in Table 4. Morethan half (69.7%) of the students reported that they had practiced SM in the last 6months. The majority (51%) of respondents knew the medication classification of OTCs and prescription drugs. Antipyretics, Analgesics ere the most common medication used for SM by the majority of the students (64.5%), followed by antibiotics (61.8%). It was also observed that 32.8% of the students reported having self-medicated with Multivitamin; others are listed in **figure 3**.

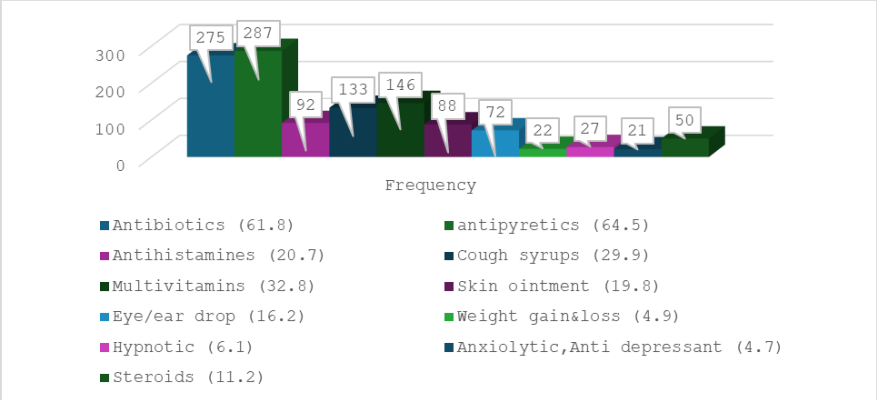

Fig-3: Most common drugs used by medical students for self-medication.

More than half (73.9%) of respondents reported that the most frequent causes for the practice SM were common cold followed by headache (64%) then fever (44%) **figure 4.**

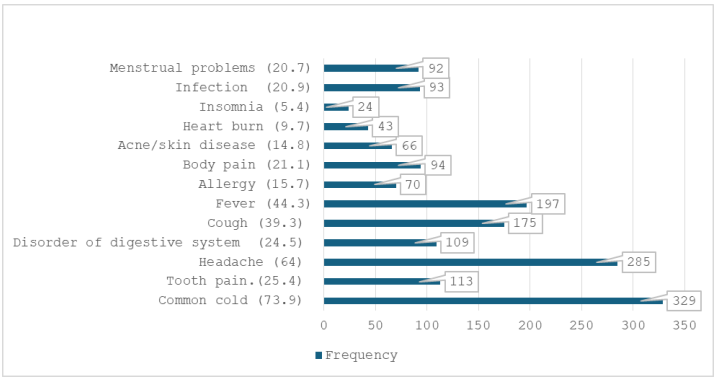

Fig-4 Most common diseases treated with self medication among medical students.

More than half (51.9%) of respondents reported that their Academic knowledge and books was the major source of information for the practice of SM, followed by (37.3%) for personal knowledge and advised by doctors but without prescription other sources of information include friends/family, pharmacists or those working in the pharmacy and multimedia (36.4 ,35.9 ,25.2% respectively) **Figure 5**

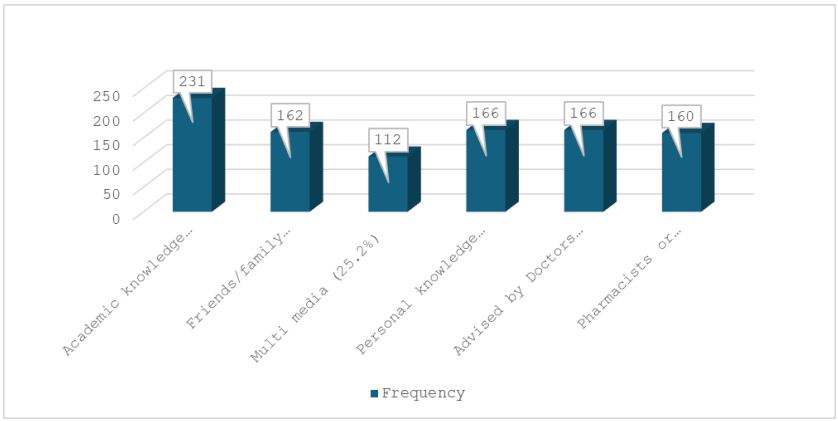

Fig- 5 Information sources used medical students to self-medicate.

More than half (60%) of respondents knew the potential adverse reactions of the drug. The majority (86%) of respondents reported that they obtained SM from a pharmacy, **figure 6.**

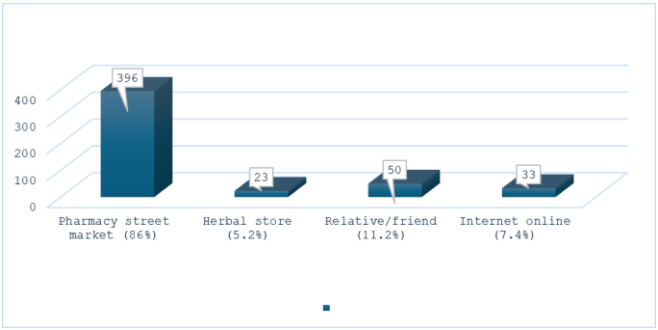

Fig-6 Sources of receiving self-medication drugs.

More than half (58.4%) of respondents reported that they self-medicated because of non-seriousness of the illness, followed by quick relief (53.3%) Approximately one- quarter (29.4%) of respondents reported that they experienced a negative side effect after SM.

Approximately (70.6%) of them reported no side effects from the drug. Two third (64%) of respondents reported that they felt confident about the use of SM.

The majority (80.4%) of the respondents reported that they should not treat patients with medication without certified medical practitioner.

Table 5: Students' practices toward self-medication (n = 445).

Question about practice		**N**	**%**
1- Did you practice SM in the last 6 months?	Yes	310	69.7
	No	135	30.3
2- How frequently did you visit the pharmacy to purchase drugs without a prescription for yourself in the last 6 Months?	Once	132	42.7
	Twice	64	20.7
	Three times	50	16.2
	Four times	25	8.1
	Five times	10	3.1
	More than five times	29	9.2
3- Do you know if the medicines you consumed needed prescription or not?	Yes	227	51
	No	67	15.1
	May be.	151	33.9
8- what do you know about the drug you requested	Name of the drug	373	83.8
	Indication	228	64.7
	How to use	340	76.4
	Dose	259	58.2
	Frequency	194	43.6
	Duration	197	44.3
	Storage of the drugs at home	177	39.8
10- Reasons for self-medication	To save money	104	23.4
	To save time	219	49.2
	Privacy	61	13.7
	Need quick relief	237	53.3
	No hospital near by	51	11.5
	Previous experience	211	47.4
	Health problem not serious	260	58.4
	Embarrassed of discussing own symptoms	25	5.6
11- Have you ever experienced a negative side effect after self-medication	Yes	131	29.4
	No	314	70.6
12- Do you feel confident with the use of self-medication	Yes	285	64
	No	160	36
13- Do you think it's okay for medical students to treat patients with medication in the absence of certified medical practitioners	Yes	87	19.6
	No	358	80.4

Note: numbers do not add to 100% because a single participant may have more than one indication for SM.

Students explained the risk of adverse effects of drugs the main cause for not practicing SM, followed by lack of knowledge about medicine **figures 7.**

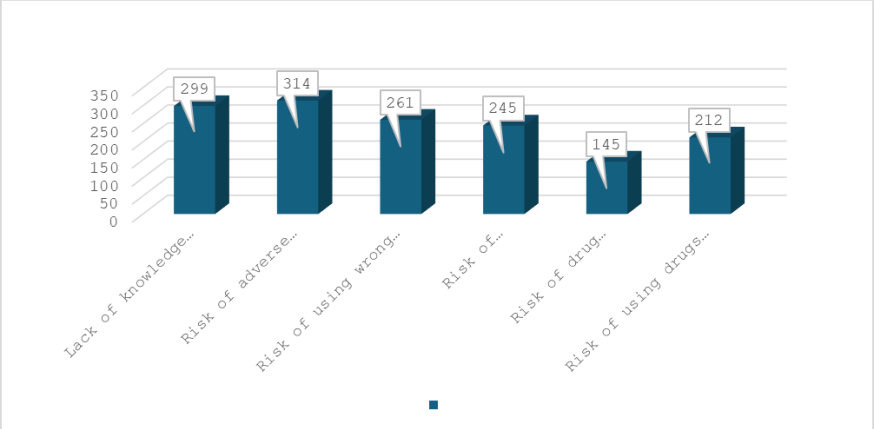

Fig-7 the reasons for not taking self medication.

5. DISCUSSION

All over the World, people desire to take responsibility for their health care management. Many do so by SM trend which is now increasingly being considered as a component of self-care [23]. This study was conducted to assess the knowledge, attitudes and practice of SM among undergraduate medical students in colleges of medicine in AL-Qadisiyah university. Among the 445 students participate in the study in the college, the mean age was 21.3±1.6 years, this is similar to study in university students in Karbala Iraq 2019 [9],Anbar and fallujah universities 2019 [20], Jordan 2018 [18],The current study shows two-thirds of the participants (69.7%) were females, and this was consistent with the study done in Karbala Iraq 2019 [9], Saudi Arabia 2017[4] and in Saudi Arabia 2015 [63], The majority of students (86.5%) were urban residence, which is similar to a study done at Karbala Iraq 2019 85.3%[9] Ethiopia 2022 90.7% [24].

Regarding smoking status 8.8% of the students was currently smokers, this result is similar to what was reported in Karbala Iraq 2019[9], Kuwait university 2018[12], while in Jordan 2018 [18] Saudi Arabia smoking status was higher about 18.1 %, 27.8% [18,25] respectively among students. Most of the students did not have medical illnesses (78.4%), this is similar to study among university students in Baghdad Iraq 2021[26], Saudi Arabia 2023 77.4% [27] However, there was a higher result in a study in Karbala Iraq 2019 95% [9], Jordan 2018 96% [18] of them did not have medical illness.Regarding the overall knowledge level of the students 85.6% had good knowledge where's 14.4% poor knowledge, this finding is similar to a study conducted among medical students inEthiopia 83.9% [24], While in medical student in Saudi Arabia 2022[25] knowledge score higher 90.6% [25].

The high level of knowledge returns to Health science students, especially those in medicine professions are expected to have well equipped knowledge regarding appropriate drug use. They are expected to be medication experts as they take numerous drug-related courses that may well upsurge students' knowledge and understanding about drug utilization principles [28]. However, it is better than a study report from public and private universities in Al- Kuwait where 53.5% of the students in the study failed to score the median value [12] and in Iran where only 16% of medicine students achieved good scores regarding drug information [29]. These differences may be due to the level of education and field of study of respondents, the level and experience of the academic institutions, or other socio-demographic variables of the respondents. Unsatisfactory knowledge level of health science students results in unsuitable medication consumption. Accordingly, promoting knowledge of students and the general public regarding medication use can aid the aptitude of using medication cautiously. Hence, knowledge enrichment mediations using campus-based seminars, evidence-based brochures, and self-instructional modules can be applied [30].

SM has not only pros, but also cons. Should it have been practiced with great responsibility, it can be suitable substitute to manage minor illnesses as part of self-care. However, its unfortunate application can lead to unexpected-destructive outcomes. Its use inappropriately due to insufficient knowledge about drug side-effects may be one major reason for such misadventures [28]. Based on the results of this study, about 87.4% agreed that SM may not always be safe and effective. Additionally, more than half of the students 75.5% knew that all medications, whether prescription, OTC, or herbal drugs can have adverse effects. The proportion of respondents who knew the danger of "increasing or decreasing medication dose without a prescriber consultation" "the need of physician help in case of adverse events" and "the dangerousness of using medications with unknown substances" were also adequate.

In our study There's statically significant relation between smoking status, area of living and knowledge score this similar to study conducted in Saudi Arabia 2022 [25] Ethiopia2022[28], Riyadh Saudi Arabia 2021[31],In contrast There was no significant difference in the knowledge score between students in different stages, this like study done in Saudi Arabia 2022[25], Turkey 2024 [32]and unlike study done in Iran 2021[29], Riyadh Saudi Arabia 2021[31],The level of knowledge of the students increases dramatically as they progress to the higher study levels. The presence or absence of chronic diseases also had no significant impact on the knowledge level among the student this result similar to study in Iran 2021[29], turkey 2024 [32], and unlike study done in Ethiopia 2022[24].

In a number of studies, however, there was no significant differences between males and females as the resulting of our study, Iran 2021[29] and unlike study done in Saudi Arabia2022[25] ,turkey 2024 [32],theirs higher knowledge in female than male, In a study done in Al Kuwait 2018 [12], theirs higher knowledge in male than female.our study also showed there was significant relation among medical student who work as medical representative and knowledge level.

The attitude of the students in our study were mostly showing careful about self medication because their knowledge level is good ,about 61% of the students of the total sample has high agreement with the questions .this is in-line with survey reports in Ethiopia2022 [24],Saudi Arabia 2022 [25],Eritrea 2019[33] .As most of the respondents in these studies demonstrated a positive attitude towards practicing SM.

According to the result of this research, one-third of the respondents agreed that SM is part of self-care while about 75.1% of them responded positively for the need of training about SM,Constantly,31.9%of respondents from study in Ethiopia2022 [24],A similar study in Iran2021[29],also reported that 41.2% of health science students believed that SM is part of self-care and 67.7% students agreed with the need of training about it SM. One hundred fifty-eight (34.5 %) of respondents agreed on the ability of medical students to self-diagnose medical conditions. About half (51%) of the respondents disagreed on the ability of medical students to self-treat different diseases. this is nearly similar to a study in Ethiopia 2022 [24], The only observed significantly positive associated between knowledge and attitude scores (the availability of OTC medicines and belief of their safety lead to use self-medications), also there's negative associations the higher knowledge of SM the recommendation of SM to other, this results similar to study conducted Saudi Arabia 2022 [25].

Despite the strict regulations to control the dispensing of drugs without a prescription affectively controlling SM. Practices have proven to be challenge accordance these findings the practice of SM in the current study among undergraduate students in college of medicine Al-Qadisiyah university was found to be 69.7% in the last sixth month.This findings nearly the same finding to another study that was achieved in Karbala University 2019 63%[9] , Wollo University, Ethiopia 64.9% [34] , Saudis Arabia 2022 60 %[25], Qasim University Saudi Arabia 63.9%[35],medical students in Anbar and Fallujah university Iraq 2018 72.8% [20] , medical students in universities (Baghdad, Al-Mustansiriyah , Al- Nahrain) Iraq 2017 85.5% [19]while the practice of Self-Medication among Medical Students at Sudan International University Sudan 2022 96.6% [36], but the practice is considerably higher than similar study reports of the universities in Kuwait35.9% [12]. Zabol University, Iran 57.1% [29] and among students groups

in the developed western regions such as (France 17%, German 8%, United Kingdom 39.2%, USA22% Spain45%, Italy 53.4%, and Norway 54%) [9].Still, there are another studies indicating a high level of prevalence of SM among medical science students in those European and other developed countries such as Australia 91.7%,Serbia 79.9% and and Slovenia92.3%[21] From these reports, it can be posed that SM is a commonly practiced part of health care all over the world, in varying degrees.

Generally, the prevalence of self-medication in students worldwide was 70.1% The range of prevalence of SM in students (7.9–99.0%). In addition, the prevalence of self-medication in students was higher than non-student adults they found that the prevalence of self-medication in students in medical science was more than twice the prevalence of self-medication in non-medical 97.2% [21] .

Self-medication prevalence is reported to be higher in developing than developed countries. The health status, income, better quality health care, and more efficient drug supply management system can be listed as the main factors. In addition, educational level and specialty, acquired knowledge about specific disease perceptions, and other related sociodemographic variations could be reasons for the similarity and differences among those reports [29].and because of different methodologies used in finding out the prevalence of SM and differences in the study design such as variable sample size or duration of practicing SM. That some studies considered SM in last year other in past 6 months other in last one month; and also, there where studies were done for students in different colleges and because of the different level of medical knowledge and the responsible SM between students.

Regarding the frequency of SM practice in the current study the highest frequency was 1 time which represents 42.7%, This result is accepted as a frequency for SM. It was nearly about the frequency of SM practice in Saudi Arabia, Qasim University 2022 48.4% [35], 42.9% in Saudi Arabia 2022[25], Ethiopia 2022[24] and it is lower than a study was done in Kuwait 2018[12].

In the current study, most symptoms for which SM were practiced common cold 73.9%, headache 64% this result was similar to observations reported in studies common cold was74.8% and the headache was 58.8% in study was conducted among health sciences students in Iran 2018[12] from Jordan, 2018[18]. Similar results were found in studies was done in Kuwait 2018[12], Turkey 2024 [32], Ethiopia, 2017[13]. This practice for SM is considered safe and accepted. In the most mentioned studies, headache is the most common cause of SM which can be explained that headache is a common symptom and exists in most diseases; therefore, patients have to take medicine to relieve headaches. In contrast, in Anbar and Fallujah

Universities students selected sneezing and headache by 72%and 67% respectively [19]. In Saudi 2017, cough and flu were the most common morbidities which prompted the students to practice SM [7]. In developing countries wide variety of medicines are available in pharmacies and stores, and they are easily accessed by the users without any medical consultation. There are no clear rules and control on the over-the-counter medications in the Middle East region, one of these countries is Iraq [9].The typical classes of drugs used to practice SM was used by students in this study was antipyretics analgesics drug 64.6% similar observations were found Saudi Arabia 2023[27], Sudan 2023[36], Baghdad Iraq 2021[26], Karbala Iraq 2019 [9], Kuwait University2018[12] ,The primary reason for using analgesics and antipyretics for SM is that they do not require a medical prescription, More overs tress induced headache and other associated health perceptions are common among college students due to educational loads, especially in medicine students. plus are easily and quickly available in pharmacies and other general stores nearby.These observations align with the fact that common cold, headache, tooth pain and fever were reported as the most prevalent indications for self-treatment In the current study.They may also be victims of the common cold and other cough inducing illnesses due to their living environmental conditions, especially in institutions of less-developed countries where facilities are not well-furnished.the second most frequent drugs used for SM was antibiotics 61.8%. that was similar to study in Sudan 2023 61.6%[27] , also high result in Iran 2021 70%[29] in Saudi Arabia 2023 [27] . While many studies showed less rates as in Ethiopia 2022 29.8% [24].

This is largely due to the absence of regulations governing the use of antibiotics in Iraq and due to a high rate of using antibiotics without prescription for treating minor illnesses like a common cold, cough and sore throat which are mostly viral not requiring antibiotics for treatment. This inappropriate use of antibiotics may delay the prescribing of proper treatment and may increase the likelihood of bacterial resistance. The dispensing of antibiotics must be restricted and regulated on different levels including legislation, physicians' prescribing, pharmacy dispensing, and awareness of the population.

Heavy load of drug-related courses in health colleges would certainly empower student's knowledge and confidences, sixty four percent of the students they feel confident with the use of SM in current study. Our study also revealed that very few students anticipated adverse drug reactions, indicating that all students, regardless of study level, have at least basic knowledge of the drugs used for SM.

A significant majority of the students identified pharmacy as their primary source for obtaining drugs. These findings are consistent with other studies that have reported 71.3% in

Iraq 2021[26], Ethiopia 2022 79.5% [24], Karbala Iraq 2019 84.1% [9], Baghdad Iraq 2016 92.9% [19], Turkey 2024 97% [32].

Concerning the source of information obtained for self-medication, our study found that Academic knowledge and book 231 (51.9%) the first source of information , the same result in Saudi Arabia 2022 [25],followed by doctors advise but without prescription, personal knowledge (37.3%), friends /family (36.4%) ,In contrast to a study done tikrit university 2021 Iraq [20], which declare that the main source of information, was existed from Doctor 64%, Pharmacist 47.5% ,internet 34.2%, Lectures Drug Product leaflet 32.4% and A Study in Saudi Arabia 2023[27] pharmacist 44.9% Previous prescription 43.4%.

The reasons which encouraged the students to practice SM the majority of students selected "Health problem is not serious" followed by "needing quick relief" this result similar to result conducted in Sudan 2023 [36],Karbala 2019 [9], Iran 2021[29], Kuwait 2018[12] ,The need for quick relief and saving time were the most frequently mentioned reasons for SM by the students in Ethiopia[24].

Regarding the results to reasons for not taking SM the majority of students selected "risk of adverse effects" similar to a study that was conducted Karbala Iraq 2019 [9], Study with similar results in Egypt 2017[17], and Riyad Saudi Arabia 2021[31], Saudi Arabia 2022 , despite the fact that about two thirds of students knew the potential adverse reactions of the drugs A large number of the student's attitude toward SM agreed recommendations drugs to other, as a result students should be aware of the effects of improper medication use, which can lead to increased risk of drug resistances, toxicity, and increased adverse effects.

However, self-treating perceived illnesses based on past experiences or with perceived knowledge without accurate diagnosis could lead to misdiagnosis, missed therapeutics, and subsequent unwanted health problems. Practicing SM to save time and money may also result in costing the irreplaceable health and life. About one -third of the respondents with a history of SM experienced some adverse effect related to their medications. This is a significant number as at least a few and less-serious cases could happen with higher prevalence of SM practice. This difference may be from misinterpretation of symptoms and side effects as an adverse effect, Whatever the case, the report should not be neglected, and appropriate measures should be outlined to prevent further losses.

Relaxed availability and accessibility of medications, including those prescription-only drugs from drug retail outlet, might be allied to the lack of strict legislation concerning medicine utilization in developing countries. This regulation gap could subsidise to an increased prevalence of SM practice, thus resulting in irrational drug use, possibility of

resistance development, and harmful life conspiracy at large Students in the health departments are the future health practitioners, health leaders, health policymakers, and decision makers. Hence, investing in them about appropriate use of medicines and OTCs is reimbursing in the generation for a better health management system that will come tomorrow. Studies should be promoted to attract government attention in order to diminish the factors promoting SM in low income and developing countries.

6. CONCLUSIONS

- The results of this study which was conducted among undergraduate students in Al-Qadisiyah University college of medicine show that more than half of the students practiced self-medication.
- The result show most of them had good level of knowledge about SM, knew that the using of drugs need prescription, all drugs had adverse effects and can mask sign and symptoms of diseases.
- Students primarily treat themselves to relive common cold and headache, there is a misuse of analgesic, antipyretics and antibiotics irrationally; it may constitute a health problem.
- The study also showed that students are primarily dependent on pharmacies as sources of medication.

7. RECOMMENDATIONS

- This study demonstrates the need to raise students' awareness regarding the right way to self-medicate, becoming more conscious during any drug utilization and the advisory role of pharmacists.
- The dispensing of medicine must be controlled by Iraqi health care authorities through developing effective preventative and interventional strategies; thus, an appropriate use of medications is achieved.
- In addition, we highly suggest further research conduction regarding the practice of self-medication among non-health students and other age groups adults, old age, and prevalence of self-medication among larger samples in different cities of Iraq is also recommended.

8. REFERENCES

Abdelmotalab, M. A. A., Alhaj, M. M. A., Eltaib, M. Z. A., Abd Alghafar, M. S. E., Nour, A. S. M., & Ali, H. H. M. (2023). Knowledge, attitudes, and practice of self-medication among medical students at Sudan International University, Sudan. Al-Kindy College Medical Journal, 19(1), 57–61.

Al Ameri, R. J., Badri, A., Husham, J., & Lafta, R. K. (2017). Prevalence of self-medication among university students in Baghdad: A cross-sectional study from Iraq. Eastern Mediterranean Health Journal, 23(2), 87-93.

Al Shawi, A. F., Ali, A. F., Enad, M. M., & Salih, J. A. (2018). Self-medication among medical students in Anbar and Fallujah Universities–Iraq. Journal of the Faculty of Medicine, 60(3), 156-159.

Albayrak, A. (2024). Assessment of pharmacy students' knowledge, attitudes, and practices on self-medication. Bezmialem Science, 12(1), 38-45.

Alduraibiibi, R. K., & Altowayan, W. M. (2022). A cross-sectional survey: Knowledge, attitudes, and practices of self-medication in medical and pharmacy students. BMC Health Services Research, 22(1), 352.

Al-Omrani, H., Marwah, M. K., Al-Whaib, R., Mekkawy, M., & Shokr, H. (2023). Patterns of drug utilization and self-medication practices: A cross-sectional study. Pharmacy, 11(6), 183.

Al-Qahtani, A. M., Shaikh, I. A., Shaikh, M. A. K., Mannasaheb, B. A., & Al-Qahtani, F. S. (2022). Prevalence, perception, and practice, and attitudes towards self-medication among undergraduate medical students of Najran University, Saudi Arabia: A cross-sectional study. Risk Management and Healthcare Policy, 15, 257–276.

AlRaddadi, K., Barakeh, R., AlRefaie, S., AlYahya, L., Adosary, M., & Alyahya, K. (2017). Determinants of self-medication among undergraduate students at King Saud University: Knowledge, attitude and practice. Journal of Health Specialties, 5(2), 95-101.

Alshogran, O. Y., Alzoubi, K. H., Khabour, O. F., & Farah, S. (2018). Patterns of self-medication among medical and non-medical university students in Jordan. Risk Management and Healthcare Policy, 169-176.

Araia, Z. Z., Gebregziabher, N. K., & Mesfun, A. B. (2019). Self-medication practice and associated factors among students at Asmara College of Health Sciences, Eritrea: A cross-sectional study. Journal of Pharmaceutical Policy and Practice, 12(1), 3.

Bassoum, O. (2019). Practices about antibiotic use among urban residents: A cross-sectional survey in Rufisque, Senegal. Central African Journal of Public Health, 5(1), 1.

Behzadifar, M., Behzadifar, M., Aryankhesal, A., Ravaghi, H., Baradaran, H. R., & Sajadi, H. S. (2020). Prevalence of self-medication in university students: Systematic review and meta-analysis. East Mediterranean Health Journal, 26(7), 846–857.

Bekele, K. M., Abay, A. M., Mengistu, K. A., Atsbeha, B. W., Demeke, C. A., Belay, W. S., Yimenu, D. K. (2020). Knowledge, attitude, and practice on over-the-counter drugs among pharmacy and medical students: A facility-based cross-sectional study. Integrated Pharmacy Research and Practice, 135-146.

El Nimr, N., Wahdan, I., Wahdan, A., & Kotb, R. (2015). Self-medication with drugs and complementary and alternative medicines in Alexandria, Egypt: Prevalence, patterns and determinants. Eastern Mediterranean Health Journal, 21(4), 256-265.

Gabriel, D. C., Balakrishna, B. B., Coll, M., Brugada, R., Parisi, P., & Striano, P. (2021). Knowledge and practices of self-medication among adolescents. Annals of Clinical and Translational Neurology, 8(9), 1557-1565. https://doi.org/10.1002/acn3.51382

Haroun, M., & Al-kayali, R. (2017). Self-medication among undergraduate medical students in two universities in Syria. International Journal of Pharmaceutical Sciences and Research, 8(4), 1881.

Hashemzaei, M., Afshari, M., Koohkan, Z., Bazi, A., Rezaee, R., & Tabrizian, K. (2021). Knowledge, attitude, and practice of pharmacy and medical students regarding self-medication: A study in Zabol University of Medical Sciences; Sistan and Baluchestan province in south-east of Iran. BMC Medical Education, 21, 1-10.

Jakubowski, P., Łukasz, P., & Waldemar, G. (2018). Recreational use of popular OTC drugs–pharmacological review. Farmacia, 66(2), 209-215.

Jasim, A. L., Fadhil, T. A., & Taher, S. S. (2014). Self-medication practice among Iraqi patients in Baghdad City. American Journal of Pharmacological Sciences, 2(1), 18-23.

Kassie, A. D., Bifftu, B. B., & Mekonnen, H. S. (2018). Self-medication practice and associated factors among adult household members in Meket district, Northeast Ethiopia. BMC Pharmacology and Toxicology, 19(1), 15.

Kulkarni, P., Ajmera, A., Gadekar, S., Garg, A., Mahajan, A., & Kulkarni, P. (2018). Global scenario of self-medication: A review of literature. Indian Journal of Commerce and Management Studies, 9(1), 99-107.

Kumar, P. D. (n.d.). Knowledge, attitude and practice of self-medication among patients visiting a dental hospital in Chennai: A cross-sectional study.

Limaye, D., Limaye, V., Krause, G., & Fortwengel, G. (2017). A systematic review of the literature on survey questionnaires to assess self-medication practices. International Journal of Community Medicine and Public Health, 4(8), 2620-2631.

Mannasaheb, B. A., Al-Yamani, M. J., Alajlan, S. A., Alqahtani, L. M., Alsuhimi, S. E., Almuzaini, R. I., Albaqawi, A. F., & Alshareef, Z. M. (2021). Knowledge, attitude, practices and viewpoints of undergraduate university students towards self-medication: An institution-based study in Riyadh. International Journal of Environmental Research and Public Health, 18(16), 8545.

Manohar, H. D., & Manohar, H. L. (2015). Impact of knowledge and attitude on practices of over the counter medications. IEOM Society, 775-783.

Mitra, A. K., Imtiaz, A., Al Ibrahim, Y. A., Bulbanat, M. B., Al Mutairi, M. F., & Al Musaileem, S. F. (2018). Factors influencing knowledge and practice of self-medication among college students of health and non-health professions. IMC Journal of Medical Science, 12(2), 57-68.

Obaid, N. A., Sallum, H. H., & Abutiheen, A. A. (2017). Misuse of antibiotics in Al-Hussein Teaching Hospital in Karbala. Karbala Journal of Medicine, 10(2), 2732-2739.

Parihar, A., Sharma, D., & Malhotra, P. (2018). Questionnaire based assessment of knowledge, attitude and practice of self-medication among medical undergraduates of a medical college in North India. JK Science, 20(1), 10.

Salih, M. R., & Abd, A. Y. (2021). Self-medication survey among pharmacy students in Iraq. Journal of Pharmacy and Bioallied Sciences, 13(3), 291-297.

Salman, B. I., Al-Muthaffar, H. A., & Alqazzaz, I. M. (2023). Knowledge and practice towards self-medication among University of Kerbala students. Karbala Journal of Medicine, 16(2).

Sharif, S. I., & Sharif, R. S. (2014). Self-medication among non-healthcare students of the University of Sharjah, United Arab Emirates. Archives of Pharmacy Practice, 5(1), 35.

Siraj, E. A., Yayehrad, A. T., Kassaw, A. T., Kassahun, D., Solomon, E., Abdela, H., Gizachew, G., Awoke, E. (2022). Self-medication prevalence and factors associated with knowledge and attitude towards self-medication among undergraduate health science students at GAMBY Medical and Business College, Bahir Dar, Ethiopia. Patient Preference and Adherence, 3157-3172.

World Health Organization. (1998). The role of the pharmacist in self-care and self-medication: Report of the 4th WHO Consultative Group on the Role of the Pharmacist, The Hague, The Netherlands, 26-28 August 1998. Geneva: World Health Organization. Retrieved from https://apps.who.int/medicinedocs/en/d/Jwhozip32e/

World Health Organization. (2022). WHO guideline on self-care interventions for health and well-being, 2022 revision: Executive summary. Retrieved from http://apps.who.int/iris

World Health Organization. (n.d.). Guidelines for the regulatory assessment of medicinal products for use in self-medication. Geneva, Switzerland: World Health Organization.

Zewdie, S., Andargie, A., & Kassahun, H. (2020). Self-medication practices among undergraduate university students in Northeast Ethiopia. Risk Management and Healthcare Policy, 1375-1381.