# Knowledge and attitude of medical students toward self-medication

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## ABSTRACT

**Background:** Self-medication is promoted in many countries for several reasons such as prevention of simple diseases and symptoms, provision of rapid treatment, simpler health system diseases, and reduction of doctor's examination fees in health funds. The aim of this study is to assess the knowledge and attitude of self-medication among medical students in Tikrit University.

**Subject and Material**: A cross-sectional study was conducted at Tikrit University College of Medicine from December 15, 2017 to March 15, 2018. The sample consisted of 225 students, out of which 113 were males and 112 were females. Samples were selected in a stratified, random sampling design from all stages of the college. The data were collected using a questionnaire which was administered by interviewers and email.

**Results:** About 81.3% of the medical students who enrolled in the study used self-medications. The frequency of self-medication among the clinical stages was higher than the basic stages. Headache (92%) was the common reason for self-medication practice among people, followed by fever (64%) and common cold (58.6%), according to the opinion of the medical students. Doctors' advice was the main source of information that the students (64%) depended on, followed by advice from pharmacists (47.5%). Most of the respondents had poor knowledge (72.8%), but more than half of the students had a positive attitude (67.25%) toward self-medication.

**Conclusion**: Countless understudies were distinguished to rehearse self-medicine, and a large portion of the respondents had helpless information; however, they had a great demeanor about self-prescription. Commonness of self-medication drug increments as year of study increments. This might be because of expanded review openness to illnesses and prescriptions. Hence, it is unequivocally suggested for raising the issue of direction to edify the understudies about the issues that might emerge from unseemly drug use.

**Keywords:** *level of study; medical students; prevalence; self-medication; Tikrit University.*

## INTRODUCTION

Self-medication (CHIC) is defined as the use of drugs to treat self-diagnosed symptoms or diseases.[1] Drug use without consulting experts, sharing drugs with one's social environment or family members, and reusing unfinished drugs at home can severely impact a person's health.[2] With the rise of over-the-counter drugs and encouraging people to make choices and take responsibility for their own health, it has become an important issue with medical, economic and social consequences.[3] The promotion of self-medication in many countries is based on the prevention of simple diseases and symptoms, the provision of rapid treatment, simpler health system diseases, the reduction of doctor's examination fees in health funds. When a person pays for his medicine out of his pocket, the money spent by the state in the field of health is reduced. In addition, promotion of self-treatment is aimed at making people directly responsible and more sensitive for their own health and stay away from behaviors that may harm their health. It can be said that it creates a driving force.[3] Patients, whose expectations are not met in doctor–patient relationships, taking medications after consulting pharmacists to save time and money has also increased self-medication.[2] However, despite the above advantages, self-medication carries risks for individuals and society. Multiple drug use and related side effects due to drug interactions, delayed diagnosis of diseases due to suppression of symptoms, and inability to adjust the dose and duration of the drug used affect the health of individuals negatively.[4] The use of over-the-counter antibiotics, especially without a doctor's advice, causes antibiotic resistance and has created concern in health authorities worldwide.[5] Usage of over-the-counter laxatives to lose weight, tranquilizers of sympathomimetics and antihistamines, or abuse due to their stimulant effects are some of the problems.[6] In the literature, it has been observed that the frequency of RCC is higher in students studying at faculties where information about drugs is obtained.[7,8] Medical faculty students are given training on rational drug use during their education process. In this respect, medical students are aware of the risks that may arise from self-medication. Self-medication behavior varies significantly based on demographic characteristics.[9] Some of them are of scientific level, which means when respondents have poor or unspecialized knowledge about self-medication. Here, we have conducted a study on the self-medication among medical students at Tikrit University College of Medicine (TUCOM) to determine their levels of knowledge and attitude toward self-medication and to clarify whether these levels could be affected by their demographic characteristics.

## THE AIM OF STUDY

This study is conducted to determine the knowledge and attitude of medical students toward self-medication at Tikrit University.

### Objectives

The main objectives of this study are as follows:

1. To evaluate the knowledge and attitude of medical students toward self-medication and to determine the frequency of self-medication among them.
2. To clarify the association between the prevalence of self-medication and level of study among medical students.
3. To identify the main reasons for self-medication among people, and to evaluate the information of medical students about the drugs that are used as self-medications, as well as to identify the sources of information that the students depend on for self-medication.

## SUBJECT AND METHODS

A cross-sectional study was carried out at TUCOM from December 15, 2017 to March 15, 2018.

A stratified sampling was chosen randomly from all the six stages, which consisted of 225 students (113 males and 112 females). Our team was well trained to interview and fill in the emails carefully in a scientific way to avoid any bias. The questionnaire used for data collection was designed in English language as the study was conducted on medical students. It included questions on demographic characteristics of the students, followed by questions to determine their knowledge and attitude toward self-medication. It was administered by interviewers and through emails. It mainly included closed questions, and all data management and analyses were done by using programmed statistical methods. Data were represented by suitable tables and figures.

## RESULTS

Table 1 shows the demographic characteristic of the respondents at TUCOM.

Figure 1 shows the high frequency of self-medication practice among the medical students at Tikrit University.

**TABLE 1.** Demographic Characteristics of Respondents.

| Demographic characteristics | | Number | Percentage (%) |
|---|---|---|---|
| **Age group** | **Years** (17–19) (20–22) (23–25) | 67 100 58 | 29.7 44.4 25.7 |
| **Gender** | Female Male | 112 113 | 49.8 50.2 |
| **Stage** | 1st stage 2nd stage 3rd stage 4th stage 5th stage 6th stage | 61 44 24 20 30 46 | 27.1 19.6 10.7 8.9 13.3 20.4 |
| **Resident** | Dormitory Home | 121 104 | 53.7 46.3 |
| **Marital status** | Single Married | 213 12 | 94.7 5.3 |

Table 2 shows the association between the demographic characteristics of medical students and self-medication practice.

Figure 2 shows the main reasons for self-medication practice among people, according to the opinion of the medical students at TUCOM. It was revealed that headache was the major cause for self-medication practice.

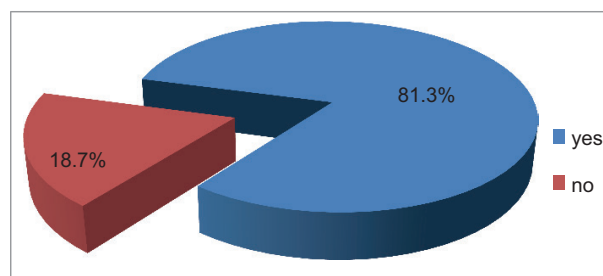Figure 3 provides details about the various sources of information on self-medication drugs.



**FIGURE 1.** Frequency of the self-medication practice.

**TABLE 2.** Frequency of Self-Medication Practice among Respondents.

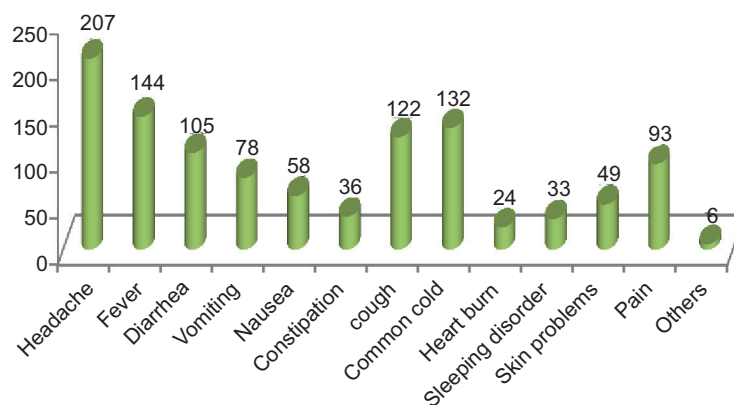| Variables | Description | Number of users | Percentage (%) |
|---|---|---|---|
| **Age group** | (17–19) (20–22) (23–25) | (53/67) (78/100) (52/58) | 79.1 78 89.6 |
| **Gender** | Female Male | (94/112) (89/113) | 83.9 78.7 |
| **Stage** | 1st stage 2nd stage 3rd stage 4th stage 5th stage 6th stage | (47/61) (31/44) (19/24) (17/20) (27/30) (42/46) | 77 70.4 79.1 85 90 91.3 |
| **Resident** | Dormitory Home | (98/121) (85/104) | 80.9 81.7 |
| **Marital status** | Single Married | (175/213) (8/12) | 82.1 66.6 |

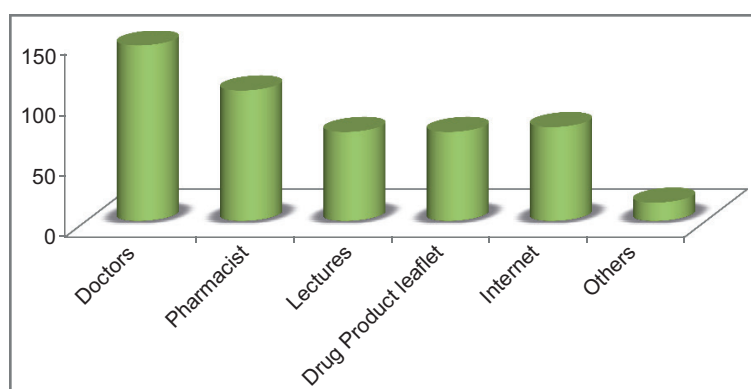**FIGURE 2.** Main reasons for self-medication practice.



**FIGURE 3.** The source of information on self-medication drugs.

Table 3 shows the level of knowledge and information of the medical students at TUCOM on the common drugs that are used for self-medication and the hazards that occur due to their usage.

Figure 4 shows the percentage of knowledge, good (good and much) and poor (not at all and little), that medical students at TUCOM have on self-medication drugs.

Table 4 reveals the opinion of medical students on the their ability to diagnose and prescribe medicines for diseases. It also reveals the perception of the students toward the hazards of using medicines without proper knowledge and without completing the course.

Figure 5 shows the percentage of the positive (strongly agree and agree) and negative (uncertain, disagree, and strongly agree) perceptions toward self-medication among medical students at TUCOM.

**DISCUSSION**

Regarding the demographic features of students who participated in the study, there were 112 (49.8%) females and 113 (50.2%) males, aged between 17 and 25 years. Majority of them were more than 20 years old as most of the students in medical college fell in that age category. The respondents were from all stages of TUCOM. Majority were from the first stage, 61 (27.1%), while the least were from the fourth stage, 20 (8.9%), because the first stage contained the greatest number of students and the fourth stage contained the least. The study

**TABLE 3.** Knowledge and Information of Medical Students toward Various Aspects.

| Knowledge about items | Reponses | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Not at all | | Little | | Good | | Much | |
| | No. | % | No. | % | No. | % | No. | % |
| Definition | 22 | 9.8 | 113 | 50.2 | 83 | 36.9 | 7 | 3 |
| Antibiotic | 28 | 12.4 | 76 | 33.8 | 98 | 43.6 | 23 | 10.2 |
| Analgesic | 39 | 17.3 | 95 | 42.4 | 76 | 33.8 | 15 | 6.7 |
| Antipyretic | 66 | 29.3 | 100 | 44.4 | 51 | 22.7 | 8 | 3.9 |
| Antacid | 83 | 36.9 | 88 | 39.1 | 43 | 19.1 | 11 | 4.9 |
| Antiallergic | 89 | 39.6 | 84 | 37.3 | 43 | 19.1 | 9 | 4 |
| Antispasmodic | 109 | 48.4 | 82 | 36.4 | 30 | 13.3 | 4 | 1.8 |
| Sleeping pills | 114 | 50.7 | 76 | 33.8 | 29 | 12.9 | 6 | 2.7 |
| Drug adverse reaction | 90 | 40 | 84 | 37.3 | 41 | 18.2 | 10 | 4.4 |
| Hazards due to increased drug dosage | 87 | 38.7 | 87 | 38.7 | 47 | 20.9 | 4 | 1.8 |
| Hazards due to change in timing taken | 90 | 40 | 84 | 37.3 | 46 | 20.4 | 5 | 2.2 |
| Hazards due to interaction of drugs | 108 | 48 | 74 | 32.9 | 37 | 16.4 | 6 | 2.7 |
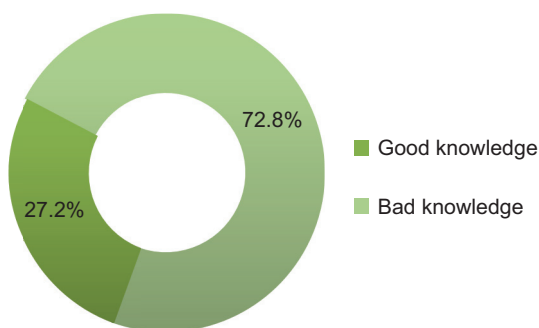


**FIGURE 4.** Respondents' knowledge on self-medication.

sample was chosen through stratified sampling method. Most of the respondents were students from other governorates and lived in dormitories, 121 (53.7%). Majority of the respondents were single, 213 (94.7%).

Regarding the frequency of self-medication practice among the medical students at TUCOM, this review uncovered that the recurrence of self-prescription practice was high (81.3%) among clinical understudies in TUCOM. This finding was similar to another review, where the recurrence of self-medication drug among understudies had gone from 67–88%.[10] A similar outcome was accounted for by Meauri et al. in their review of understudies at the University of Papua New Guinea.[11] The high recurrence of self-medication could be identified with the basic idea of illnesses experienced by the understudies and the time factor (as most understudies think that it is hard to have fitting clinical arrangements during concentrate on hours). Regarding the association between the demographic characteristic of medical students and the practice of self-medication, our study revealed that the frequency of self-medication practice was slightly higher in females than in males (83.9% of female medical students in TUCOM practiced self-medication, which is slightly more than the male students who practiced self-medication, 78.7%). This study also revealed that the frequency of self-medication practice is higher in 23–25 year olds. Our results was in agreement with the findings another study conducted among medical students in India, where it was revealed that most of the female medical students (86.4%) were self-medication users, and most of those who practiced self-medication were more than 22 years old.[12] Our study revealed that

**TABLE 4.**    Respondents' Perception toward Self-Medication.

| Items | Reponses | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Too agree | | Agree | | Undefined | | Upset | | Strongly disagree | |
| | No. | % | No. | % | No. | % | No. | % | No. | % |
| Have good response | 21 | 9.3 | 84 | 37.7 | 54 | 24 | 50 | 22.2 | 16 | 7.1 |
| Accepted response | 23 | 10.2 | 81 | 36 | 45 | 20 | 58 | 25.8 | 18 | 8 |
| Harmful expression | 89 | 39.6 | 97 | 43.1 | 22 | 9.8 | 11 | 4.9 | 6 | 2.7 |
| Complete the course | 78 | 34.7 | 82 | 36.4 | 48 | 21.3 | 14 | 6.2 | 3 | 1.3 |
| Source of information: pharmacists | 47 | 20.9 | 110 | 48.9 | 40 | 17.8 | 21 | 9.3 | 7 | 3.1 |
| Cautious but agreed | 67 | 29.8 | 119 | 52.9 | 30 | 13.3 | 9 | 4 | 0 | 0 |
| Medical student should check the accompanied medication leaflet contained in it | 56 | 24.9 | 107 | 47.6 | 40 | 17.8 | 15 | 6.7 | 7 | 3.1 |
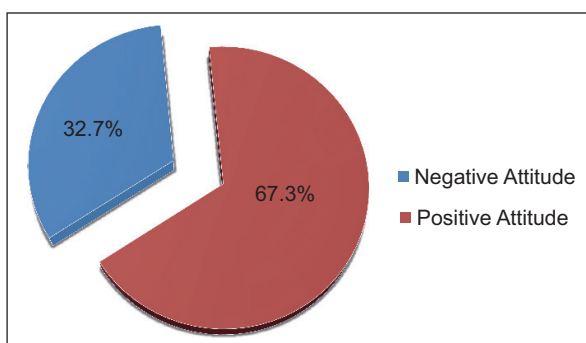


**FIGURE 5.** Respondents' perception toward self-medication.

the self-medication practice was higher among the fourth, fifth, and sixth clinical stages (85, 90, and 91.3%, respectively) when compared to the basic stages, first, second, and third (77, 70.4, and 79.1%, respectively). These findings were similar to those of the study conducted among clinical and engineering understudies in a private college in North India. It revealed that the recurrence of self-prescription practice increased with the degree of study.[13] Our study revealed that there is no significant variation in the practice of self-medication between students who lived in homes or in dormitories.

According to the opinions of the students in TUCOM, headache, 207 (92%), fever, 144 (64%), and common cold ,132 (85.6%) were the major reasons for the practice of self-medication among people. The other reasons reported were cough, 122 (54.2%), diarrhea, 105 (46.6%), pain, 93 (41.3%), vomiting, 78 (34.6%), and nausea, 58 (25.7%). These results were comparable with that of the study conducted at Gondar University, which reported that fever and headache were the most frequent causes of self-medication practice among people, while gastrointestinal tract diseases and cough, and common cold were the second and the third most common diseases treated by self-medication, with prevalence rates of 55 (24.8%), 51 (23.9%), and 28 (13.2%), respectively.[14]

Our study revealed that the main source of information regarding drugs was obtained through advice from doctors (64%), followed by asking pharmacists about the drugs (47.5%), internet (34.2%), reading about the drugs in lectures or drug leaflets (32.4%), and through other sources such as family members (6.6%). These results were similar to the results from another study conducted in medical students in India, which showed that doctors were

the main source of information, followed by pharmacists and internet, with the rates being 59.7%, 41.4%, and 32.1%, respectively.[12] Regarding the level of knowledge and information of medical students in TUCOM about the common drugs that are used as self-medications, countless understudies were distinguished to rehearse self-medicines, and a large portion of the respondents had helpless information; however, they had great demeanor about self-prescription. Commonness of self-medication drug increased with the year of study. This might be because of the expanded review openness to illnesses and prescriptions. Hence, it is unequivocally suggested for raising the issue of direction to edify the understudies about the issues that might emerge from unseemly drug use than those who had not at all and little (43.6%, 10.2% vs 12.4%, 33.8%, respectively), and this is considered as a good knowledge. The level of knowledge and information of the students on the common drugs that are used for self-medication and the hazards due to their usage were as follows: Analgesic (17.3%, 42.4% vs 33.8%, 6.7% of Not at all, Little and Good, Much knowledge, respectively), antipyretic (29.3%, 44.4% vs 22.7%, 3.9% of Not at all, Little and Good, Much knowledge, respectively), Antacid (36.9%, 39.1% vs 19.1%, 4.9% of Not at all, Little and Good, Much knowledge, respectively), antiallergic (39.6%, 37.3% vs 19.1%, 4% of Not at all, Little and Good, Much knowledge, respectively), antispasmodic (48.4%, 36.4% vs 13.3%, 1.8% of Not at all, Little and Good, Much knowledge, respectively), sleeping pill (50.7%, 33.8% vs 12.9%, 2.7% of Not at all, Little and Good, Much knowledge, respectively), drug adverse reaction (40%, 37.3% vs 18.2%, 4.4% of Not at all, Little and Good, Much knowledge, respectively), hazards due to increased drug dose (38.7%, 38.7% vs 20.9%, 1.8% of Not at all, Little and Good, Much knowledge, respectively), hazards due to change in timing taken (40%, 37.3% vs 20.4%, 2.2% of Not at all, Little and Good, Much knowledge, respectively), hazards due to interaction of drugs (48%, 32.9% vs 16.4%, 2.7% of Not at all, Little and Good, Much knowledge,

respectively). In general, 27.1% of the respondents had a good level of knowledge, and 72.8% had helpless information. These discoveries are basically in accordance with the investigation results of El Ezz and Ez-Elarab[14], which showed that only little extent of understudies knew about the well-being and danger of self-medications. Conversely, the study by Mehta and Sharma[3] showed that 52% of the respondents had a great knowledge, while 48% had helpless information. The study by James et al.[8] uncovered that most of the understudies had reasonably good information. The study by Mumtaz et al.[15] revealed that 62% of the members were aware that self-medication drugs could be unsafe. Be that as it may, this variation could be credited to the distinctions in concentrate on plan.

10.2% of the respondents firmly concurred and 36% concurred individually that self-medication is adequate for clinical understudies. 25.8% differed, 8% emphatically differed separately, and 20% were unsure about this. Concerning the assertion that clinical understudies have a great capacity to analyze the manifestations, 37.7% of respondents announced concur and 9.3% revealed emphatically concur, while 22.2% and 7.1% were accounted for differ and firmly differ separately, respectively. Higher extent of understudies detailed unequivocally concur and concur than deviate, firmly differ, and were questionable toward whether self-prescription would be destructive in case they are taken without legitimate information on medications and infection. Most understudies concurred (36.4%) and unequivocally concurred (34.7%) with regard to the course of medications ought to be finished albeit the indications die down, while just 1.3% firmly dissented, 6.2% differed, and 21.3% did not have a clue.

The greater part of understudies, 48.9%, concurred, and 20.9% emphatically concurred individually that drug specialist is a decent wellspring of data about drugs utilized in self-prescription, while a low extent of them firmly differed, 3.1%, 9.3% differed, and 17.3% were simply uncertain. The greater part of understudies, 52.9%, concurred, and

29.8% emphatically consented to be cautious with unrecommended over-the-counter medication, and nobody firmly conflicted. Most of the understudies detailed their consent to that clinical understudy should check the accompanied drug pamphlet, while some of them accounted for their conflict and those questionable (47.6% concur and 24.9% firmly concur vs 6.7% dissent, 3.1% firmly differ, and 17.8% unsure). By and large, the review discovering demonstrated that most of the understudies had an uplifting outlook toward self-prescription (67.3%). This finding is upheld by the investigation of James et al.[16] which revealed that most of the respondents (76.9%) had an uplifting outlook toward self-medication drugs. The study by Mehta and Sharma[3] also uncovered that 50.7% of the respondents had an uplifting outlook toward self-medication drugs. The investigation of Selvaraj et al.[16] detailed that most of the respondents expressed that self-medication is innocuous (66.6%) and they will use (90%). On the other hand, a study by Zafar et al.[17] showed that 87% of the understudies figured that self-prescription could be hurtful, the legitimate clarification for this high regrettable mentality rate could be because of contrasts in concentrate on populace.

## CONCLUSION

This study has revealed that self-medication is very common among medical students, related to the simple nature of diseases encountered by the students and the time factor, which was also facilitated by the easy availability of drugs and information from textbooks. Prevalence of self-medication increases as year of study increases. This may be due to the increase in information in students about the drugs and increased study exposure to diseases and medications. There is no significant association between frequency and the sex of respondents. Headache, fever, and common cold are the most common reasons for self-medication practice among the people according to the opinion of medical students in TUCOM. This may be because these conditions generally occur more frequently. Doctors and pharmacists are considered the best references by medical students to take information about drugs that they use as self-medication, as they generally prefer to take information from another person rather than reading about it.

In general, the respondents had poor knowledge and information about the common self-medication drugs and their hazards. This a bad sign as a medical student, which may be because of lack of reading about these drugs. Overall, the respondents showed positive attitude toward self-medication.

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