# Medical Students' Knowledge and Attitudes towards Self-Medication in Al-Iraqia University, Baghdad, Iraq

## Nawar Sahib Khalil[1*]

[1]*Department of Community Medicine, College of Medicine, Al-Iraqia University, Iraq.*

*Author's contribution*

The sole author designed, analyzed and interpreted and prepared the manuscript.

**Original Research Article**

## ABSTRACT

**Introduction:** Self-medication is a serious issue worldwide and its irrational use becomes a major cause of global concern.
**Aims:** The present study aimed to determine the knowledge of and attitude of students towards self-medication.
**Methods:** A descriptive cross-sectional study was conducted among all medical students enrolled in Al-Iraqia Medical College, 400 (> 90%) students were the respondent sample size and data was collected using self-administrated questionnaire.
**Results:** The study finding revealed the mean age of 400 enrolled students was 20.37, most of them were female (66.5%) aged more than 20 years old (53%), in third level (26.5%), single (97.5%), lived with family (74%) and with non-sufficient family monthly income (52.8%). More than half of the respondents found to have a good knowledge (55.25%) and positive attitude (67.25%) towards self self-medication with considerable effect of their socio-demographic characteristics.
**Conclusion:** Medical students have in general good knowledge and positive attitude towards self-medication with favor to practice it saying that it acceptable. Therefore, it is strongly recommended for raising the issue of orientation to enlighten the students about the problems that may arise from inappropriate medication use.

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*Corresponding author: E-mail: dr.nawar83@abc.com;*

## 1. INTRODUCTION

Recently, medical practice face a new challenge, as a human behavior in which an individual uses continuously or intermittently a drug to self-administer treatment for often unmanaged, self-diagnosed ailments, that is called self-medication was increased. [1]

Self-medication is defined as treatment of common health problems with medicines especially designed and labeled for use without medical supervision [2] and approved as safe and effective for such use. Medicines for self-medication are often called Non-Prescription or Over the Counter (OTC) and are available without a doctor's prescription through pharmacies.

There is growing concern about the consumption of medications, since the majority of the side effects developed frequently are more serious than the original disease itself. In addition, the momentary relief of symptoms may mask the underlying disease and could aggravate it [3]. Furthermore, medication has number of potential risks; Incorrect self-diagnosis, failure to seek appropriate medical advice promptly, incorrect choice of therapy, failure to recognize special pharmacological risks, rare but severe adverse effects, failure to recognize or self-diagnose contraindication, interaction ,warning and precaution, incorrect route and excessive dosage, risk of dependence and abuse [4]. Therefore, Self-medication result in the wastage of the resources, increase resistance of pathogens and generally cause serious health hazards that directly or indirectly harms to our physical as well as mental health [5].

There are intense trends towards self-medication among persons with a higher educational level, particularly those in medical fields, taking into consideration that knowledge may make this practice safer [6,7]. Therefore, the study of self-medication among university medical undergraduates is very important as they are a part of parcel of the entire population that is highly educated and with access to information regarding their health [8].

Several studies have addressed the self-medication among general population, however, a few studies were conducted regarding medical students engage in self- medication by their knowledge and attitudes. [2,4,9] So, in this study, we have prospectively study the self-medication among medical students in Al-Iraqia Medical College, to determine their levels of knowledge and attitudes towards self-medication, and to clarify if these levels could be effected by to their socio-demographic characteristics.

## 2. METHODOLOGY

This study was a descriptive cross-sectional survey conducted from March to May 2015. The study population was all students of Al-Iraqia Medical College studying from first to fourth years. Al-Iraqia Medical College is one of four governmental Medical Colleges in Baghdad city, Republic of Iraq. According to the registration office in the College, the total number of students was 440 distributed in four levels, and all students from all levels were invited to participate in the study, taking into consideration the students' right of refusal to participate in the study. 400 students (91%) were the respondents sample size divided as 100 for each first and second year and 106 and 94 students in third and fourth years respectively.

Data collection was developed through self–administrated questionnaire; the questionnaire was prepared by the author based on published researches [1,2,4,5,9-14]. The research tool consists of three parts: First part: Questions related to students' socio-demographic information. Second part: Questions related to students' knowledge about self-medication. Third part: Questions related to students' perception towards self-medication. However, the questionnaire has been restructured and modified and its contents validity was maintained and piloted to have confidence in the reliability that was (0.879) assessed by internal consistency (Cronbach's alpha) test. Then the collected data was checked and reviewed for its completeness.

The data was entered into the computer software program of Statistical Package for the Social Sciences (SPSS) version 15.0, and was been double-checked and analyzed with standard approaches were used including frequencies and percentages. A non parametric test of one sample Komogorov Smirnov was performed for obtained the significant differences among students' general knowledge and attitudes. Chi-square test ($x^2$) with a 95% confidence interval was used for the computed Likert scale scores

related to students' general knowledge and attitudes and their socio-demographic characteristics. A p–value of < 0.05 was been considered to indicate the level of significance throughout the study.

Ethical Approval was given by Al-Iraqia Medical College, Department of Community Medicine before administering the questionnaire. All other ethical requirements including verbal consent of participant with his/ her right's of refusal was highly explicit and confidentiality were also ensured.

## 3. RESULTS

A 400 respondents returned the completed questionnaire, 66.5% were female vs. 33.5% were males. The age was approximately normally distributed with a mean of 20.73 years (median 21, rang 10). Most of them were aged more than 20 years old (53%). Most of the students were in third level (26.5%). The majority of the respondents were single (97.5%) lived with family (74%) and with non-sufficient family monthly income (52.8%) (Table 1).

When we asked about the students' knowledge about the definition of self-medication, we found that the majority of respondent had very much and quite a bit knowledge than those unknown about it (36.8% and 32.5% vs. 5% respectively. While most of the respondents had a knowledge regarding hazards from change of drug timing, 35.5% and 25.3% of quite a bit and some knowledge respectively, only 6% were not known

about it at all. Knowledge on hazards due to increased drug dose, 31.5% of respondents had quite bit knowledge, 27% had some knowledge and 2% had no knowledge. Knowledge about drug adverse reaction, more than one third of respondents had quite a bit knowledge (46%) followed by 20.8% had very much knowledge comparing to 7% were non familiar. Knowledge on completing drug dosage, 36% had a quite bit knowledge, 27.3% had very much knowledge and 4% were non familiar.

Regarding the respondents' knowledge about the drugs, most of the respondents had knowledge about antibiotic (30% and 28.8% vs. 2% of very much, quite a bite and not at all knowledge respectively), Analgesic (28.3% and 26.8% vs. 6% of very much, quite a bite and not at all knowledge respectively), anti-acid (31% and 28.3% vs. 5% of quite a bit, very much and not at all knowledge respectively) and antipyretic (33% and 24.5% vs. 1% of very much, quite a bite and not at all knowledge respectively). 27.3% and 23.3% of respondents had a little and quite a bit knowledge about anti-spasmodic respectively. More than a half of respondents had knowledge about vitamin (35% and 29.3% vs. 3% of very much, quite a bite and not at all knowledge respectively). 35.5% and 24.3% of respondents had very much and little knowledge about herbal respectively. 30.5% and 28.5% of respondents had very much and little knowledge about anti-allergy respectively. Knowledge about sleeping pill, 28.8% of respondents had a little knowledge, 28% had quite a bit knowledge and 17% had no knowledge about it (Table 2).

### Table 1. Respondents socio-demographic characteristics

| Variables | Description | No. (%) |
|---|---|---|
| Age | Mean | 20.73 |
| | Median | 21.00 |
| | Range (min-max) | 10 (19-29) |
| Age-group | ≤ 20 | 189 (47.3) |
| | >20 | 211 (52.8) |
| Gender | Female | 266 (66.5) |
| | Male | 134 (33.5) |
| Academic level | First year | 100 (25) |
| | Second year | 100 (25) |
| | Third year | 106 (26.5) |
| | Fourth year | 94 (23.5) |
| Marital status | Single | 390 (97.5) |
| | Non single | 10 (2.5) |
| Residual status | With family | 296 (74) |
| | In school or private dormitory | 104 (26) |
| Family income | Non Sufficient | 211 (52.8) |
| | Sufficient | 189 (47.3) |

**Table 2. Respondents' knowledge about aspects on self-medication n= 400**

| Items knowledge about | Reponses | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Not at all | | A little | | Some | | Quite a bit | | Very much | |
| | No. | % | No. | % | No. | % | No. | % | No. | % |
| Definition | 20 | 5 | 60 | 15 | 43 | 10.8 | 130 | 32.5 | 147 | 36.8 |
| Hazards due to change of timing | 24 | 6 | 84 | 21 | 101 | 25.3 | 142 | 35.5 | 49 | 12.3 |
| Hazards due to increase drug dose | 8 | 2 | 72 | 18 | 108 | 27 | 126 | 31.5 | 86 | 21.5 |
| Drug adverse reaction | 28 | 7 | 44 | 11 | 61 | 15.3 | 184 | 46 | 83 | 20.8 |
| Completing dose of drug | 16 | 4 | 94 | 23.5 | 37 | 9.3 | 144 | 36 | 109 | 27.3 |
| Antibiotics | 8 | 2 | 75 | 18.8 | 82 | 20.5 | 115 | 28.8 | 120 | 30 |
| Analgesic | 24 | 6 | 64 | 16 | 92 | 23 | 107 | 26.8 | 113 | 28.3 |
| Anti-acid | 20 | 5 | 105 | 26.3 | 38 | 9.5 | 124 | 31 | 113 | 28.3 |
| Anti-pyretic | 4 | 1 | 82 | 20.5 | 84 | 21 | 98 | 24.5 | 132 | 33 |
| Anti-spasmodic | 83 | 20.8 | 109 | 27.3 | 40 | 10 | 93 | 23.3 | 75 | 18.8 |
| Vitamin | 12 | 3 | 40 | 10 | 91 | 22.8 | 117 | 29.3 | 140 | 35 |
| Herbal | 64 | 16 | 97 | 24.3 | 42 | 10.5 | 55 | 13.8 | 142 | 35.5 |
| Anti-allergy | 56 | 14 | 114 | 28.5 | 76 | 19 | 122 | 30.5 | 32 | 8 |
| Sleeping pill | 68 | 17 | 115 | 28.8 | 101 | 25.3 | 112 | 28 | 4 | 1 |

Regarding to the general level of knowledge about self- medication, we found that 221 (55.25%) of respondents had a good knowledge followed by 179 (44.75%) had poor level of knowledge, the obtained value of the test (Z Kolmogorov - Smirnov was 7.363) allowed to confirm this differences (P<0.001) (Graph 1).
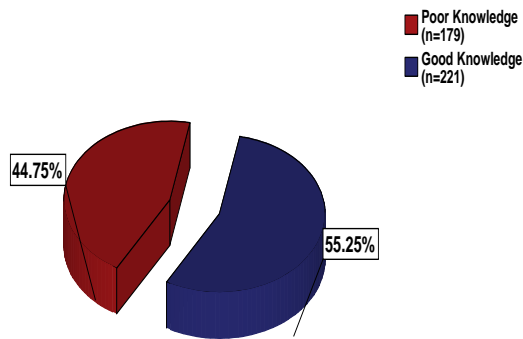


**Graph 1. Respondents' knowledge towards self – medication**
*The obtained value of test (**Z** Kolmogorov - Smirnov was 7.363) allowed confirming this differences (P=0.000)*

There were a significant association between students' knowledge about self medication and their socio-demographic characteristics. In age group, the majority of students aged 20+ years old had a good knowledge more than those aged ≤20 years old (79.6% vs. 20.4% respectively) ($x^2$: 143.249, df: 1, P < 0.001). Female students were likely had a good knowledge more than male (54.8% vs. 45.2% respectively) ($x^2$: 30.600, df: 1, P < 0.001). Students of the third and fourth levels seemed to have a higher level of knowledge than those in second and first levels (46.2% and 40.7% vs. 13.1 and zero percent respectively) ( $x^2$ : 285.664, df: 3, P < 0.001). A higher proportion of single students were had a good knowledge than non-single one (96.4% vs. 3.6% respectively) ($x^2$: 2.541, df: 1, P = 0.011). More than two third of students lived with family had a good knowledge than those lived in school or private dormitory (71.5% vs. 28.5% respectively) ($x^2$: 16.13, df: 1, P = 0.020). Over half of students with non-sufficient family monthly income had a good knowledge more than those with sufficient one (83.3 vs. 16.7% respectively) ( $x^2$ : 184.714, df: 1, P < 0.001) (Table 3).

When we asked students opinion about self-medication is acceptable for medical students we found that 3% and 52.3 were strongly agree and agree respectively, 21.3% and 8% were disagree and strongly disagree respectively, and 15.5% were uncertain. Regarding to the statement of medical students have good ability to diagnose the symptoms, 53% of respondents reported agree and 11% reported strongly agree, while 16% and 4% were reported disagree and strongly disagree respectively, and 16% unsure reported. Most of respondents reported agree (53.3%) and 13% strongly agree regarding to medical students have a good ability to treat the symptoms, while 19.3%, 4% and 10.5% were disagree, strongly disagree and uncertain

respectively. Higher proportion of students reported strongly agree and agree than disagree, strongly disagree and uncertain towards self-medication would be harmful if they are taken without proper knowledge of drugs and disease (53.5% and 32.8% vs. 7.5%, 5.5% and 8% respectively). 50.3% and 12% of respondents agreed and strongly agreed about medical license would be essential for better administration of drugs and 10%, 9.3% and 18.5% were disagreed, strongly disagreed and uncertain respectively. There were more students agreed (56.5%) and strongly agreed (20%) about the course of medicines should be complete although the symptoms subside while only 12.3% were strongly disagreed, 4.85 disagreed and 6.5% were don't know. Over half of students (57.8%) and 22% were agreed and strongly agreed respectively to that doctor or pharmacist is a good source of advice/ information about minor medical problems while low proportion of them were strongly disagreed (9.3%) and disagreed (6.8) with just 4.3% were unsure. 48% and 15.3% of students were

strongly agreed and agreed respectively to bother their doctors with minor problems always, and 18.3%, 16% and 2.5% were disagreed, strongly disagreed and uncertain for this idea respectively. More than one third of students (33.5% agreed and 13.5% strongly agreed to be careful with non-prescribed over the counter medicine, and 20.8%, 20% and 12.3% were disagreed, strongly disagreed and uncertain respectively. The majority of students reported their agreement to that medical students should check the accompanied medication leaflet contain than those were reported their disagreement and those uncertain (52.5% agree and 27% strongly agree vs. 6.8% disagree, 9.5% strongly disagree and 4.3% uncertain) (Table 4)

Regarding to the general level of perception towards self- medication, we found that 269 (67.25%) of respondents reported a positive perception, while 131(32.75%) of them reported a negative perception, the obtained value of the test (Z Kolmogorov - Smirnov was 8.592) allowed to confirm this differences (P<0.001) (Graph 2).

**Table 3. Association between respondents' knowledge and their socio-demographic characteristics**

| Respondents' characteristics | | Respondents' knowledge | | | | Total | | Significance | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Poor knowledge | | Good knowledge | | | | | | |
| | | No. | % | No. | % | No. | % | $x^2$ | df | P |
| Age group | ≤ 20 | 144 | 80.4 | 45 | 20.4 | 189 | 47.3 | 143.249 | 1 | 0.000 |
| | >20 | 35 | 19.6 | 176 | 79.6 | 211 | 52.8 | | | |
| | Total | 179 | 100 | 221 | 100 | 400 | 100 | | | |
| Gender | Female | 145 | 81 | 121 | 54.8 | 266 | 66.5 | 30.600 | 1 | 0.000 |
| | Male | 34 | 19 | 100 | 45.2 | 134 | 33.5 | | | |
| | Total | 179 | 100 | 221 | 100 | 400 | 100 | | | |
| Study level | First year | 100 | 55.9 | - | - | 100 | 25 | 285.664 | 3 | 0.000 |
| | Second year | 71 | 39.7 | 29 | 13.1 | 100 | 25 | | | |
| | Third year | 4 | 2.2 | 102 | 46.2 | 106 | 26.5 | | | |
| | Fourth year | 4 | 2.2 | 90 | 40.7 | 94 | 23.5 | | | |
| | Total | 179 | 100 | 221 | 100 | 400 | 100 | | | |
| Marital status | Single | 177 | 98.9 | 213 | 96.4 | 390 | 97.5 | 254.1 | 1 | 0.011 |
| | Non-single | 2 | 1.1 | 8 | 3.6 | 10 | 2.5 | | | |
| | Total | 179 | 100 | 221 | 100 | 400 | 100 | | | |
| Residual status | With family | 138 | 77.1 | 158 | 71.5 | 296 | 74 | 161.3 | 1 | 0.020 |
| | In school or private dormitory | 41 | 22.9 | 63 | 28.5 | 104 | 26 | | | |
| | Total | 179 | 100 | 221 | 100 | 400 | 100 | | | |
| Family income | Non sufficient | 27 | 15.1 | 184 | 83.3 | 211 | 52.8 | 184.417 | 1 | 0.000 |
| | Sufficient | 152 | 84.9 | 37 | 16.7 | 189 | 47.3 | | | |
| | Total | 179 | 100 | 221 | 100 | 400 | 100 | | | |

**Table 4. Respondents' perception towards self-medication n= 400**

| Items | Reponses | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Strongly agree | | Agree | | Uncertain | | Disagree | | Strongly disagree | |
| | No. | % | No. | % | No. | % | No. | % | No. | % |
| Self – medication is acceptable for medical students. | 12 | 3 | 209 | 52.3 | 62 | 15.5 | 85 | 21.3 | 32 | 8 |
| Medical students have good ability to diagnose the symptoms. | 44 | 11 | 212 | 53 | 64 | 16 | 64 | 16 | 16 | 4 |
| Medical students have good ability to treat symptoms. | 52 | 13 | 213 | 53.3 | 42 | 10.5 | 77 | 19.3 | 16 | 4 |
| Self- medication would be harmful if they are taken without proper knowledge of drugs and disease. | 214 | 53.5 | 131 | 32.8 | 3 | 8 | 30 | 7.5 | 22 | 5.5 |
| Medical license would be essential for better administration of drugs. | 48 | 12 | 201 | 50.3 | 74 | 18.5 | 40 | 10 | 37 | 9.3 |
| The course of medicines should be complete although the symptoms subside. | 80 | 20 | 226 | 56.5 | 26 | 6.5 | 19 | 4.8 | 49 | 12.3 |
| The doctor or pharmacist is a good source of advice/ information about minor medical problems. | 88 | 22 | 231 | 57.8 | 17 | 4.3 | 27 | 6.8 | 37 | 9.3 |
| Medical students are likely to bother their doctors with minor problems always. | 192 | 48 | 61 | 15.3 | 10 | 2.5 | 73 | 18.3 | 64 | 16 |
| We should be careful with non-prescribed over the counter medicines. | 54 | 13.5 | 134 | 33.5 | 49 | 12.3 | 83 | 20.8 | 80 | 20 |
| Medical students should check the accompanied medication leaflet contain. | 108 | 27 | 210 | 52.5 | 17 | 4.3 | 27 | 6.8 | 38 | 9.5 |



Negative Attitude (n=131)
Positive Attitude (n=269)

67.25%

32.75%
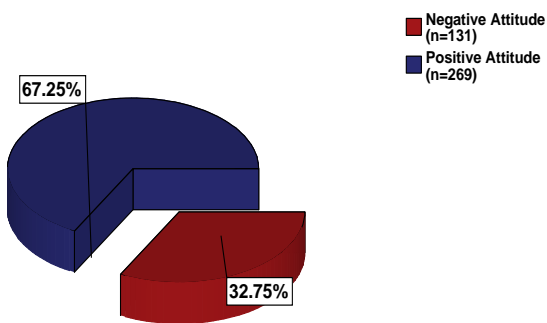
**Graph 2. Respondents' perceptions towards self – medication**

*The obtained value of test (Z Kolmogorov - Smirnov was 8.592) allowed confirming this differences (P=0.000)*

There were a significant association between students' attitude toward self-medication and their socio-demographic characteristics. In the age group, the older students were more likely to report their positive attitude toward self-medication than younger ones (69% aged 20+ vs. 31% aged ≤ 20 respectively). ($x^2$ :88.581, df: 1, P < 0.001). Similarly, female students indicated their positive attitude toward self-medication more than males (67.7% vs. 32.3% respectively) ($x^2$ : 49.41, df: 1, P < 0.001). Students in third and fourth levels were reported their positive attitude more than those in first and second levels (39.4% and 25.7% vs. 24.2% and 10.8% respectively) ($x^2$ : 119.896, df: 3, P < 0.001). The majority of single students indicated their positive attitude more than non-

single one (97% vs. 3% respectively) ($x^2$: 75.70, df: 1, P = 0.0384). 71% of students lived with their families were reported their positive attitude toward self-medication more than those lived in school or in private dormitory (29%) ($x^2$: 38.33, df: 1, P = 0.041). More than two third of students with non-sufficient family income indicated their positive attitude toward self-medication than students with sufficient family income (78.4% vs. 21.6% respectively) ($x^2$: 217.470, df: 1, P < 0.001) (Table 5).

## 4. DISCUSSION

The present study was conducted among medical students to assess their knowledge level and attitude towards self-medication. This type of study carried out using self-administered questionnaire which is largely relied on the students' self-rated assessment of their own knowledge and opinions. Although the respondents were encouraged to fill the questionnaire independently, still mutual influence between pupils and recall bias could not be ruled out completely.

Regarding the level of knowledge about self-medication, 55% of respondents had good knowledge and 45% of them had poor knowledge. These findings are mainly in line with other studies, Mehta and Sharma study [4] showed that 52% of respondents had good knowledge followed by 48% had poor one. James et al study [15] revealed that the majority of students had fairly good knowledge. Mumtaz et al study [10] reported that, 62% of participants knew that self-medication could be harmful. In contrast, the study of El ezz and Ez-Elelarab [9] indicated that only small proportion of students had knowledge about health hazard resulting from self-medication. However, this variation could be attributed to the differences in study design.

Concerning the level of students' attitude towards self-medication, the study finding indicated that most of the students had positive attitude toward self-medication (67%). This finding is supported by study of James et al [15] which reported that the majority of respondents (76.9%) had a positive attitude towards self-medication.

**Table 5. Association between respondents' perception and their socio-demographic characteristics**

| Respondents' characteristics | | Respondents' perception | | | | Total | | Significance | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Negative attitude | | Positive attitude | | | | | | |
| | | No. | % | No. | % | No. | % | $x^2$ | df | P |
| Age group | ≤ 20 | 106 | 80.9 | 83 | 30.9 | 189 | 47.3 | 88.581 | 1 | 0.000 |
| | >20 | 25 | 19.1 | 186 | 69.1 | 211 | 52.8 | | | |
| | Total | 131 | 100 | 269 | 100 | 400 | 100 | | | |
| Gender | Female | 84 | 64.1 | 182 | 67.7 | 266 | 66.5 | 49.41 | 1 | 0.048 |
| | Male | 47 | 35.9 | 87 | 32.3 | 134 | 33.5 | | | |
| | Total | 131 | 100 | 269 | 100 | 400 | 100 | | | |
| Study level | First year | 35 | 26.7 | 65 | 24.2 | 100 | 25 | 119.896 | 3 | 0.000 |
| | Second year | 71 | 54.2 | 29 | 10.8 | 100 | 25 | | | |
| | Third year | - | - | 106 | 39.4 | 106 | 26.5 | | | |
| | Fourth year | 25 | 19.1 | 69 | 25.7 | 94 | 23.5 | | | |
| | Total | 131 | 100 | 269 | 100 | 400 | 100 | | | |
| Marital status | Single | 129 | 98.5 | 261 | 97 | 390 | 97.5 | 75.70 | 1 | 0.038 |
| | Non-single | 2 | 1.5 | 8 | 3 | 10 | 2.5 | | | |
| | Total | 131 | 100 | 269 | 100 | 400 | 100 | | | |
| Residual status | With family | 105 | 80.2 | 191 | 71 | 296 | 74 | 38.33 | 1 | 0.041 |
| | In school or private dormitory | 26 | 19.8 | 78 | 29 | 104 | 26 | | | |
| | Total | 131 | 100 | 269 | 100 | 400 | 100 | | | |
| Family income | Non sufficient | - | - | 211 | 78.4 | 211 | 52.8 | 217.470 | 1 | 0.000 |
| | Sufficient | 131 | 100 | 58 | 21.6 | 189 | 47.3 | | | |
| | Total | 131 | 100 | 269 | 100 | 400 | 100 | | | |

Mehta and Sharma study [4] revealed that 50.7% of the respondents had a positive attitude towards self-medication. El ezz and Ez-Elelarab [9] study reported that 56.5% of medical students were agreed to that taking drug without medical prescription was no problem. The study of Selvaraj, Kumar and Ramalingam [17] reported that the majority of respondents expressed that self-medication is harmless (66.6%) and they are going to use (90%). Kumar et al. [16] study showed that more than 50% of participant wished to continue with self-medication/ start self-medication. In the other hand, Zafar et al. [13] study showed that 87% of students thought self-medication could be harmful, the proper explanation for this high negative attitude rate could be due to differences in study population.

As there were no previous studies include heterogeneous group of students, the associations between medical students' knowledge and attitude towards self-medication and their socio-demographic characteristics were seldom reported. The present study revealed that such factors had an effect, and had significant association with respondents' knowledge and perception. A higher proportion of single females students aged 20+ in third and fourth levels, lived with their families of non sufficient monthly income were seemed to had a good knowledge and positive attitude towards self-medication. Only one study of Kumari et al. [2] concluded that senior medical students have better knowledge about certain aspects of self-medication than junior students although they are well aware of many facts which could be due to easy availability of information through media, internet etc.

## 5. CONCLUSION

This study concluded that the medical students have in general good knowledge and positive attitude towards self-medication with considerable effects of their age, gender, academic level, marital and residual status and family income with in favor to practice it in future. Therefore, it is strongly recommended to enforce the health education curriculum of all Medical Colleges of Republic of Iraq in order to build up a generation of future drug prescribers combating the un-regulated self-medication.

## CONSENT

Verbal consent was obtained from each participant.

## ACKNOWLEDGEMENTS

## COMPETING INTERESTS

Author has declared that no competing interests exist.

## REFERENCES

1. Koly, et al. Self-medication practices among the undergraduate homeopathic students in West Bengal, India. Spatula DD. 2014;4(2):55-62.

2. Kumari, et al. Study of knowledge and practices of self-medication among medical students at Jammu. Journal of Medical Sciences. 2012;15(2):141-44.

3. Pereira, et al. Self-medication in health students from two Brazilian Universities. RSBO. 2012;9(4):361-7.

4. Mehta RK, Sharma S. Knowledge, attitude and practice of self-medication among medical students. IOSR Journal of Nursing and Health Science (IOSR-JNHS). 2015; 4(1):89-96.

5. Badiger S, Kundapur R, Jain A, Kumar A, Patanashetty S, Thakolkaran N, et al. Self-medication patterns among medical students in South India. Australasian Medical Journal. 2012;16(3):66-71.

6. Bohomol E, Ramos LH, D'Innocenzo M. Medication errors in an intensive care unit. J Adv Nurs. 2009;65(6):1259-67.

7. Klemenc-Ketis Z, Hladnik Z, Kersnik J. Self medication among healthcare and non-healthcare students at University of Ljubljana, Slovenia. Med Princ Pract. 2010; 19(5):395-401.

8. Gupta S, Jindal M. Study of self-medication pattern in undergraduate student of Subharti Medical College, Meerut (UP). Journal of Advance Researches in Biological Sciences. 2013; 5(3):266-270.

9. El ezz NF, Ez-Elelarab HS. Knowledge, attitude and practice of medical students towards self medication at Ain Shams

University, Egypt. J Prev Med Hyg. 2011; 52(4):196-200.

10. Mumtaz, et al. Self medication among University students of Karachi. JLUMHS. 2011;10(3):102-105.

11. Jasim AL, Fadhil TA, Taher SS. Self medication practice among Iraqi patients in Baghdad City. American Journal of Pharmacological Sciences. 2014;2(1):18-23.

12. Ibrahim, et al. Self-medication with analgesics among medical students and interns in King Abdulaziz University, Jeddah, Saudi Arabia. Pak J Med Sci. 2015;31(1):14-18.

13. Zafar, et al. Self-medication amongst University students of Karachi: Prevalence, knowledge and attitudes. J Pak Med Assoc. 2008;58(4):214-217.

14. Pandya RN, Jhaveri KS, Vyas FI, Patel VJ. Prevalence, pattern and perceptions of self-medication in medical students. International Journal of Basic & Clinical Pharmacology (IJBCP). 2013;2(3):275-280.

15. James, et al. Evaluation of the knowledge, attitude and practice of self-medication among first-year medical students. Med Princ Pract. 2006;15:270–5.

16. Kumar, et al. Perceptions and practices of self-medication among medical students in coastal South India. PLOS ONE. 2013; 8(8):1-5.

17. Selvaraj K, Kumar SG, Ramalingam A. Prevalence of self-medication practices and its associated factors in Urban Puducherry, India. Perspect Clin Res. 2014;5(1):32–36.