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Original Article

Evaluation of self-medication among Iraqi pharmacy students

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Abstract

Background: Practicing self-medication is common and a worrisome issue because of irrational drug use. This study aimed to evaluate self-medication knowledge and views among the final year pharmacy students in Iraq.

Methods: A cross-sectional descriptive study was conducted from December 2018 to January 2019. A pre-validated and self-administered questionnaire was recruited to survey pharmacy students at the University of Baghdad and Al-Rafedain University College. The Statistical Package for the Social Sciences version 20 (SPSS v. 20) software used to save and analyze the data. Results expressed as numbers and percentages.

Results: A total of 344 students (response rate: 94.24%) with a mean age of 22.10 years included in this study. Most of them were female (61.60%). Self-medication was high in the past year (84.88%), and most of them (86.04%) got their medications from pharmacies. About (62.79%) of students used antibiotics as self-medication for a few days, although a significant number were aware of bacterial resistance. The main reasons to self-medicate were quick relief desired, convenience, and avoiding waiting at clinics. The reasons against it were a misdiagnosis, adverse effects' risk, and wrong medication use. Doctor visits sought necessary in cases of worsening symptoms, severe pain, and serious problems. Headache, cough, and diarrhea were the most frequent indications.

Conclusion: The self-medication prevalence is high; the knowledge is moderate, and the views about the self-medication concept are generally appropriate.

Keywords: Self-medication, knowledge, pharmacy students, Baghdad, Iraq.

Background

Feeling unwell is common for people, and there is a tendency in humans to use herbs, potions, and medications to treat their condition. The action of consuming the Over-the-Counter (OTC) and/or prescription drugs that are not medically ordered called self-medication or self-care [1]. Whenever the health problem is simple, self-medication becomes the first option among patients [2]. Self-medication may also extend to the use of only prescription medications (POM) such as antibiotics [3,4]. Practicing self-care is widespread behavior among people. However, allowing patients to be responsible and confident in their ability to deal with their health problems may carry a risk of rushing into self-medication [5]. In the recent era, the pharmacist's role was no longer restricted to the distribution of the drug but also involved in multi-professional teamwork, providing healthcare [5]. Indeed, the more there is self-medication, the more prominently the role of the clinical pharmacist in choosing the right, safe, and sound OTC medications or referral to other health professionals [5-7]. Responsible self-treatment encourages rational use of medications. The patient takes the right medicine, the correct dose and duration, and at an affordable cost [8]. However, a certain level of knowledge should be available by those who use self-medication [9]. Literature showed that several factors might influence the self-medication practice, such as educational level, family, social conditions, law, the availability of drugs, and advertisement exposure [10,11]. High educational and professional statuses significantly predict self-medication [12]. The benefits of self-medicine can be summed up by its ability to deal with acute conditions, saving money, and the physician's time [1]. However, in addition to resource waste in case of inappropriate self-medication, serious health risks such as adverse side effects, addictive, and increase pathogen resistance may occur [1,13,14]. In the profile of Iraq, since 2003, the health sector has witnessed a marked deterioration at all levels [15]. Widespread corruption, mismanagement, and poor strategic planning have resulted in the apparent absence of health oversight bodies over health institutions, including hospitals and pharmacies. Previous studies showed a high prevalence of self-medication among undergraduate students [16] and patients of Iraq [17].

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Indeed, self-medication is suspected to be high in Iraq because many drugs (including antibiotics) can be obtained from the community pharmacies and other non-official drug stores with no need for a medical prescription. This study aimed to evaluate self-medication among Iraqi final year pharmacy students.

Methods

Study design

A cross-sectional study was conducted among a sample of the final year pharmacy students at the College of Pharmacy, Baghdad University, and Pharmacy Department, Al-Rafedain University College in Baghdad, the capital of Iraq. The data was collected from December 2018 to January 2019, employing a universal sampling technique and a self-administered questionnaire. The inclusion criteria were the pharmacy students, in the final year, available at the time of study and willing to participate. Teaching staff and the absent students were excluded from the study.

Study tool

This study recruited a pre-validated questionnaire [18,19] having two parts. The socio-demographic variable such as age, gender, etc., were in the first part, while the second part focused on the practicing of self-medication during the last twelve months. Self-medication considered when the respondents used POM or OTC drugs without medical consultation.

Statistics analysis

The Statistical Package for the Social Sciences version 20 (SPSS v. 20) software was used to save and analyze the data. Numbers and percent used to measure the frequency of responses (categorical data).

Results

Descriptive analyses

A total of 344 participants (response rate 94.24%), 198 () students of them from the College of Pharmacy, Baghdad University, and 146 from the Pharmacy Department, Al-Rafedain University College. Most of the respondents were female (61.6%) with a mean age of respondents was 22.1 in a range of 22-23 years. Most of the students (84.88%) had self-medication practices in the past year. Females used self-medication more frequently than males (91.5% and 72.24%, respectively). More than two-thirds of the students used the medications for a few days (70.93%), and most of them (86.04%) got their medicines directly from pharmacies. The highest percent (87.20%) of respondents expressed awareness towards the rational use of drugs; however, about two-thirds of students (62.79%) used antibiotics as self-medication for one week (75.85%). Moreover, many of them (81.39%) realized that bacterial resistance could develop if antibiotics were misused (Table 1). The main reasons for self-medication were quick relief is desired (88.37%), convenience, and minor illness (82.55%), respectively (Table 2). The main reasons against self-medication were misdiagnosis risk (86.04%) and adverse effects risk (82.55%), respectively (Table 3). The reasons for seeking professional help were investigated, and the responses of the students were the highest in cases of worsening symptoms (89.53%) and severe pain (88.95%), respectively (Table 4).

Table 1: Past year Self-medication practice by pharmacy students (n=344).

No.	Self-medication practice	No. (%)
1.	The past year use of self-medication	292 (84.88)
2.	Treatment duration	
2A	One week	244 (70.93)
2B	Two weeks	44 (12.79)
2C	One month	36 (10.46)
2D	Longer	20 (5.81)
3.	Medications source	
3A	Pharmacy	296 (86.04)
3B	Herb stores	8 (2.32)
3C	Friends or relatives	24 (6.97)
3D	Others	16 (4.65)
4.	Antibiotics self-medication as self-medication	216 (62.79)
5.	Antibiotics use duration	
5A	One week	260 (75.85)
5B	Two weeks or longer	84 (24.42)
6.	Bacterial resistance awareness	
6A	Aware	280 (81.39)
6B	Not Aware	64 (18.60)
7.	Rational drug use awareness	
7A	Aware	300 (87.20)
7B	Not Aware	44 (12.79)

Table 2: Reasons for self-medication (n=344).

Reasons for self-medication	No. (%)
No serious health problem	192 (55.81)
Quick relief is desired	304 (88.37)
Convenience	284 (82.55)
Long waiting and crowd avoidance at clinics	216 (62.79)
Medical consultation high cost	160 (46.51)
Relative/friend suggestion	160 (46.51)
Opportunity to learn	168 (48.83)
Active role playing needs	192 (55.81)
Self-management's advice by physician	164 (47.67)
No effective physician prescription	96 (27.90)
Absence of trust in the physician	48 (13.95)
Minor illness	284 (82.55)
Embarrassment of discussion own symptoms	104 (30.23)

Table 3: Reasons against self-medication (n=344).

Reasons against self-medication	No. (%)
Adverse effects risk	284 (82.55)
Wrong medication consumption risk	264 (76.74)
Misdiagnosis risk	296 (86.04)
Drug interaction risk	236 (68.60)
Drug abuse and dependence risk	208 (60.46)

The indications of self-medication were included in figure (1). The most common conditions that required self-medication include headache, cough or sore throat, diarrhea, fever, stomach-ache, and vomiting. Table (5) shows the perceptions of the pharmacy students who participated in this study toward the aspects of self-medication. The most common elements approved by the students, including the increasing drug dose,

concomitant use of drugs, and using medications with unknown substances in patients with liver and kidney disease, can be dangerous. Also, they approved that seeing the doctor in case of adverse effects is mandatory and that all medications (OTC, POM, and herbal) can cause adverse effects.

Table 4: Reasons against self-medication (n=344).

Reasons for seeking professional help	No. (%)
Severe pain	306 (88.95)
Symptoms stay more than one week	280 (81.39)
Worsening symptoms	308 (89.53)
Serious problem	288 (83.72)
Not effective	248 (72.09)
Side effects	216 (62.79)

Table 5: Aspects of self-medication views by the students (n=344).

No.	Student's views	Approved N (%)
1	All drugs (OTC, POM, and herbal) can cause adverse effects.	284 (82.55)
2	Concomitant use of drugs can have hazards.	320 (93.02)
3	It can be dangerous to increase the drug dose.	324 (94.18)
4	It can be dangerous to decrease the drug dose.	148 (43.02)
5	Physician help must be sought, if adverse effects developed.	312 (90.69)
6	Using medications without knowing its ingredients in patients with liver and kidney disease is dangerous	320 (93.02)
7	During pregnancy, no drug can be used.	124 (36.04)
8	Mild health problems do not need drug treatment.	200 (58.13)
9	Signs and symptoms of the disease can be masked by self-medication, so the physician can miss them easily	256 (74.41)

Discussion

The results of this study indicated a widespread practice of self-medication (84.88%) among the Iraqi fifth-year pharmacy students in the past year, especially when seeking quick relief for minor illness. Similar findings reported in studies from Malaysia (80.9%) [21] and the United Arab Emirates (UAE) (86%) [18]. However, the prevalence varied widely among the developing countries, it was very low in an Ethiopian study (25.4%) [21] and increased in Slovenia (51%) [22], Egypt (55%) [23]and India (78.6%) [24]. As in our study sample, the pharmacy students supposed to be well medically educated and know the hazards of the medicines' abuse. However, the high prevalence of self-medication can be attributed to misplaced self-confidence in their knowledge about medications.

Considering the socio-demographic factors, female students used self-medication more frequently than males. Similarly, Smogavec et al. [22] and Kumar et al. [24] considered gender as a determinant of self-medication among young adults. Additionally, female doctors seem more prone to fatigue and stress [25], which may motivate their desire to self-medication more than men.

Most of the surveyed students practiced self-medication for less than a week; however, a small percent (5.81%) of them stayed on medication for more than four weeks. Our results are in line with an earlier study conducted by Sharif et al. [18]. The more extended period of using self-medication can have severe underlying problems related to wrong diagnosis or the consumption of wrong medication. Previous studies [18,26] confirmed our findings that the pharmacy is the most frequent source of medications because all the students had a prior pharmacy training program as a part of their curriculum program. Moreover, in Iraq, most of the pharmacy students are working as assistants in private or public pharmacies, giving them the knowledge that the pharmacy is the only trustable source of medications. Surprisingly, most students aware of the risk of bacterial resistance, yet this did not prevent about two-thirds of them using antibiotics for self-medication without a prescription. However, our results coincided with the results of many studies [18,27,28].

Indeed, most Iraqi pharmacies sell medicines by hand even if they are not OTC regardless of the strict guidelines for antibiotics administration and use from the Iraqi Ministry of Health (MOH). A tiny proportion of pharmacies are committed to the rules of MOH, however still antibiotics, like most other POM medications, can be easily obtained with no need for a prescription, which eventually raised the prevalence rate of self-medication. Results of this study are comparable to previous studies [18,19,29] found that seeking for quick relief, minor illness, convenience, avoiding the crowd and the waiting time at clinics constitute the main reasons for self-medication. The reasons for self-medication among pharmacy students in the final year are due to earlier ideas about their profession and experience in the health care system, which makes them behave as medical professionals so that they can deal with minor illnesses and save time [30].

The main reasons that stand against self-medication were the possible risk of misdiagnosis, side effects, and wrong medication. The results of our study were supported by earlier studies [19,31,32]. The results of our study are consistent with other studies [18,26] that worsening symptoms, severe pain, an acute problem, and symptoms that last for more than a week that call for medical advice. The medical conditions for which self-medication was practiced were the headache at the top of the list followed by cough, cold or sore throat, diarrhea, fever, stomach-ache, vomiting, and nausea. These results are compatible with the finding of many studies [19,28,33]. Most of the students had a good knowledge regarding the concepts of self-medication, they agreed about the risks of increasing medication dose, using medications of unknown ingredients and the concomitant renal or liver diseases.

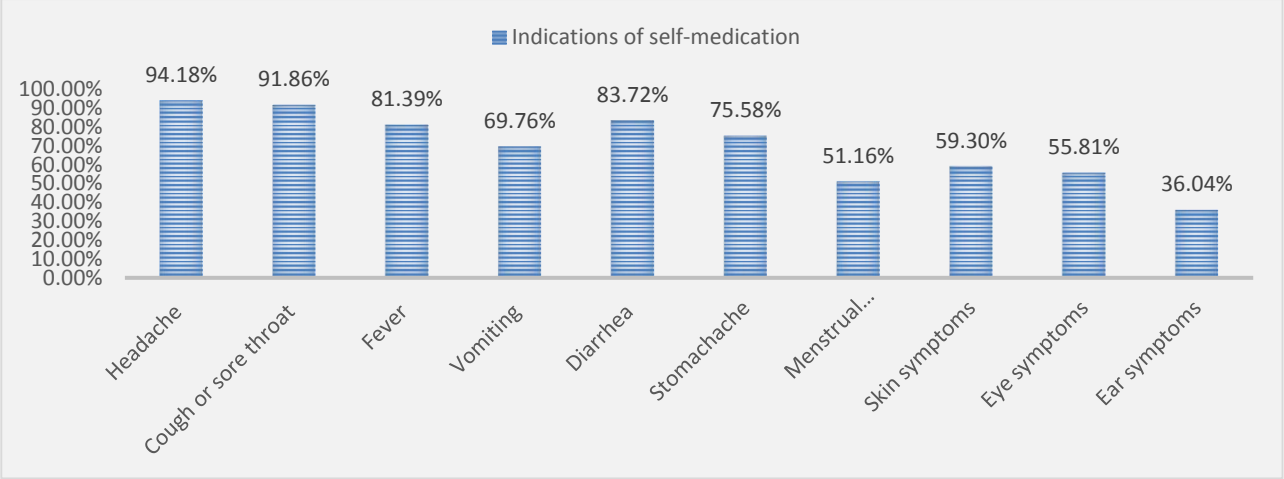

Figure 1: Indications of self-medication

Moreover, they approved the fact that all medications, including herbal ones, have adverse effects and the necessity for physician visits in case of any side effects. However, about 26% to 58% of the students did not have the right information about some concepts, including that self-medication can mask the symptoms and lead to misdiagnosis, no drug use during pregnancy, the risks of decreasing the dose and mild medical problems may not require medications. These results coming from final year pharmacy students may reveal the need for additional courses of pharmacy practice and suitable training time in community pharmacies. Hassouni et al. [34] explained "the high prevalence throat colonization among medical students" might be related to the behavior of students, which is consistent with the nature of society in the excessive and unjustified use of medications including the antibiotics.

This study may complain of some limitations. First, the cross-sectional design cannot establish a cause-effect relationship. Secondly, although the study sample was collected from two universities (public and private), the analysis of the results lacked a comparison between the two sectors, which is beyond the current study. Third, the results of the study were limited to the final stage in the College of Pharmacy in Baghdad, and therefore it is not possible to generalize the results at the national level.

Conclusion

The prevalence of self-medication was high among final year pharmacy students, including the antibiotics use despite their knowledge of its risks. The students showed moderate knowledge about the reasons for and against self-medication and generally appropriate views about the concepts of self-medication. However, responsible self-medication should be encouraged by increasing the study courses related to clinical pharmacy and pharmacy practice. Moreover, commencing Pharm-D programs in Iraqi pharmacy schools will improve the students' knowledge about self-medication. Besides, strict rules and control on pharmacies from the authorities are required to deal with the illegal use of medications, especially antibiotics.

Abbreviations

SPSS: Statistical Package for the Social Sciences OTC: Over the Counter POM: Prescription Only Medications WHO: World Health Organization FIP: International Pharmaceutical Federation UAE: United Arab Emirates.

Declarations

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Availability of data and materials

Data will be available by emailing fadia81th@gmail.com

Authors' contributions

FTA is the principal investigator for the study concept, design, writing, reviewing, editing and approving the manuscript in its final form. GYMA contributed in the data collection, statistical analysis, drafting the work, and writing the manuscript. All authors read and approved the final manuscript.

Ethics approval and consent to participate

We conducted the research following the Declaration of Helsinki, and the protocol was approved by Department of Clinical Pharmacy, Faculty of Pharmacy, University of Baghdad (Ref: The Ethic Committee at 03-March -2019). Moreover, written informed consent was obtained from each student willing to participate after explanation of the study objectives and guarantee of secrecy.

Consent for publication

Not applicable

Competing interest

The authors declare that they have no competing interests.

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