

*Full Length Research Paper*

# Pharmacists' attitude toward self-medication and antibiotic use in Amman and Irbid cities of Jordan

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This study aims to investigate the pharmacists and practitioners' behavior toward the counter drugs use without specialist consultation or physician supervision and how antibiotics misuse by pharmacists and practitioners leads to the development of bacterial resistance. A questionnaire was distributed among 200 pharmacist and practitioner who are working in community pharmacies in Amman and Irbid cities of Jordan between December 2015 and February 2016. The results were analyzed using the SPSS analysis programmer (version 19). Among the participants (77.3%) were females and (22.7%) were males. The range of the participant's age was (20 – 30) years and the majority (82.6%) holds a bachelor degree as their highest educational level and all the pharmacists are practicing self medication. Among the reasons of self medication knowledge of medication and disease (94.2%), time saving (77.3%), emergency use (86.0%) and the need to play a major role (66.3%). Although the majority of the pharmacists were aware of bacterial resistance they were using antibiotics as over the counter (OTC) drug and the most antibiotic drug used was amoxicillin (50.6%) followed by amoxicillin + clavulanic acid (44.2%). The use of OTC drugs among pharmacists is high and most pharmacists deny visiting the physician although they have a recurrence of a disease. The use of antibiotics must have further regulations and supervision in order to decrease the resistance that may result from the misuse. Pharmacists must be trained annually to be updated for the regimens that treat minor conditions effectively.

**Key words:** Over the counter drugs, antibiotics, self medication, pharmacists, Jordan.

## INTRODUCTION

Over the counter drugs (OTC) are drugs safely used by patients and prescribed by pharmacists without a physician consultation (1, 2). Over the time the availability of drugs has been changed from being prescription drugs to over the counter drugs (3), and this change depends on the safety, efficacy and possible toxicity of the medications (3,4).

Self medication is the ability of patients to take the responsibility of choosing the best OTC drug and treat some minor health problems without the referral to a health professional (5, 6). Nowadays, self medication is gaining an increased importance among societies (7) and organizations such as World Health Organization (WHO)

which looks forward to educate patients about self medication in order to encourage them to be more responsible in taking medicine by the drug policies it publish (8).

According to the previous literature there are many reasons of self medication such as mild illness, the reoccurrence of the same disease, the high cost of medical services and in some countries the lack of the professional health personnel (9, 10).

Self medication may have advantages and disadvantages to patients, health professionals, health system and the economy of the country (11). Advantages may include reducing the drug costs and doctor

consultation fees among patients, save patients time, activate pharmacist's role in medical consultations and decrease the pressure on medical services since people are becoming more responsible for self medication practice (12). On the other hand, having OTC drugs easily may lead to many problems as drug misuse, masking the disease symptoms and misdiagnosing it, drug overdose and increase in the microbial resistance (12, 13).

In Jordan there are three types of drugs available in community pharmacies; controlled drugs (narcotic), R<sub>x</sub> (prescription) drugs, and OTC drugs but within the last few years some of R<sub>x</sub> medications has been prescribed by pharmacists as OTC medication without any physician consultation (13, 14), so patients and pharmacists can get some prescription drugs without having valid prescription and with no control (14).

An example of R<sub>x</sub> medications that is widely prescribed without prescription is antibiotics (14) which nowadays in developing countries as well as in Jordan is not restricted and available for everyone (15).

Antibiotics may lead to microbial resistance if patients abuse them or use them for short period of time, on the other hand the inappropriate use of antibiotics may lead to delayed diagnosis of the disease because symptoms may be masked (15). Although pharmacists are aware of antibiotic misuse disadvantages they encourage antibiotic use without the physician supervision (16, 17).

In this research we are studying the role of pharmacist in OTC drug use and prescription and how well they are trained on self medication practice. On the other hand, pharmacists' behavior and beliefs among antibiotic prescription and use were to be looked at.

## METHODS

This study is questionnaire based which was conducted on pharmacists who are working in community pharmacies in Amman and Irbid cities of Jordan. The questionnaire was designed using Suleiman I. Sharif's questionnaire that was conducted on UAE pharmacists, after taking his permission. Some modifications on the questionnaire were made to match our culture in Jordan and cover the aim of this study.

The study was conducted between December 2015 and February 2016. Within this period randomly 200 pharmacies were visited. 18 pharmacists among which denied participating in this study and the rest 172 pharmacists after explaining the aim of the study for them accepted to answer the questionnaire.

The questionnaire consists three sections containing both open and closed ended questions (A total of sixteen questions). The first section was about socio demographic data (pharmacist's age, gender, educational level, professional experience and monthly income). The second section was about OTC drugs use and self medication practice with two parts; one for those who use OTC drugs and practice self medication (Five questions) and the second one for those who do not use OTC drugs (Two questions). The last section was for antibiotic use and the awareness of pharmacists for bacterial resistance (Three questions).

The OTC drugs in the questionnaire were chosen according to the OTC ingredient list of FDA (18) and after a preliminary validation of the questionnaire that was conducted with twenty pharmacists who confirmed that this list contains the most prescribed OTC medication.

The results were analyzed using the SPSS program (version 19).

## RESULTS

All pharmacists answered that they are using OTC drug for self medication including antibiotics. The reasons for self medication practice according to participants varies and as displayed in (Table 2), the majority (n = 162) said that they have a good knowledge for medications and disease, for time saving (n = 133), and to play an active role (n = 113).

Figure 1 showed that pharmacists can prescribe OTC drugs for themselves, their family, their friends or anyone who would ask almost equally. According to the most common OTC drug prescribed for self medication, Figure 2 expose that paracetamol is prescribed by 100% of the pharmacists (as OTC drug), followed by anti-histamines 98.8% and the least prescribed drug is antiviral 33.7%.

The most common disease that pharmacists prefer to self medicate was cold, flu and headache (100%), and cough (95.9%), and the least two conditions were insomnia and pulmonary disease (20.9% and 18.6%) respectively (Figure 3).

According to antibiotic use all pharmacists prescribe antibiotic as an OTC medication and they treat mostly the upper respiratory infection and urinary tract infection as shown in (Figure 4). About 74.7% of pharmacists were aware of bacterial resistance (Figure 5) and the most commonly prescribed antibiotic was amoxicillin followed by amoxicillin + clavulanic acid (Figure 6).

**Table 1:** Socio demographic data of the participated pharmacists (Answers of Q1- Q5).

		Frequency	Percentage
<b>Gender</b>	<b>female</b>	133	77.3%
	<b>male</b>	39	22.7%
<b>Age</b>	<b>( 20 – 30)</b>	104	60.5%
	<b>(31 – 40)</b>	28	16.3%
	<b>(41 – 50)</b>	22	12.8%
	<b>(51 – 60)</b>	18	10.5%
<b>Educational level</b>	<b>Diploma</b>	21	12.2%
	<b>Bachelor</b>	142	82.6%
	<b>Master</b>	9	5.2%
<b>Professional experience</b>	<b>(0 – 3) years</b>	87	50.6%
	<b>(4 – 7) years</b>	29	16.9%
	<b>(8 – 11) years</b>	14	8.1%
	<b>More than 11 years</b>	42	24.4%
<b>Monthly income</b>	<b>Less than 500 JD</b>	101	58.7%
	<b>500 – 1000 JD</b>	43	25.0%
	<b>More than 1000 JD</b>	28	16.3%

**Table 2:** Reasons for self medication among pharmacist <sup>a</sup> (Answer of Q7).

	Frequency	Percentage
<b>Knowledge of medication and disease</b>	162	94.2%
<b>Time saving</b>	133	77.3%
<b>Emergency use</b>	117	68.0%
<b>The need to play an active role</b>	113	66.3%
<b>No need to see physician</b>	88	51.2%
<b>High cost of medical consultation</b>	85	49.4%
<b>Not having insurance</b>	48	27.9%
<b>Privacy</b>	30	17.4%

a. The total of the answers is more than 172 because this is a multi answer question.

Figure 1: For whom pharmacists would prescribe an OTC drug (Answer of Q8).

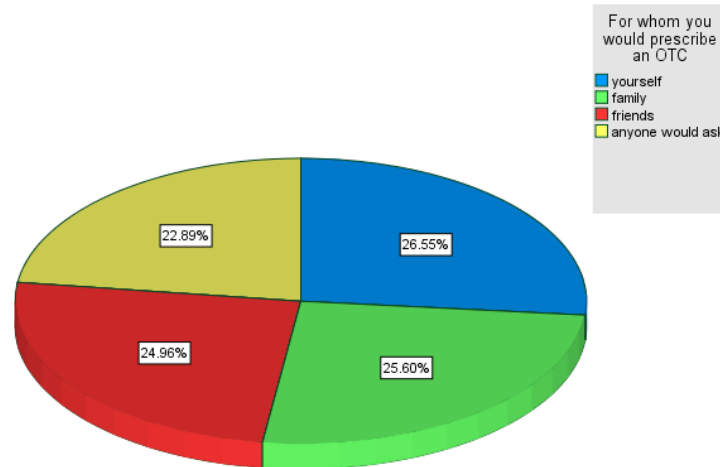
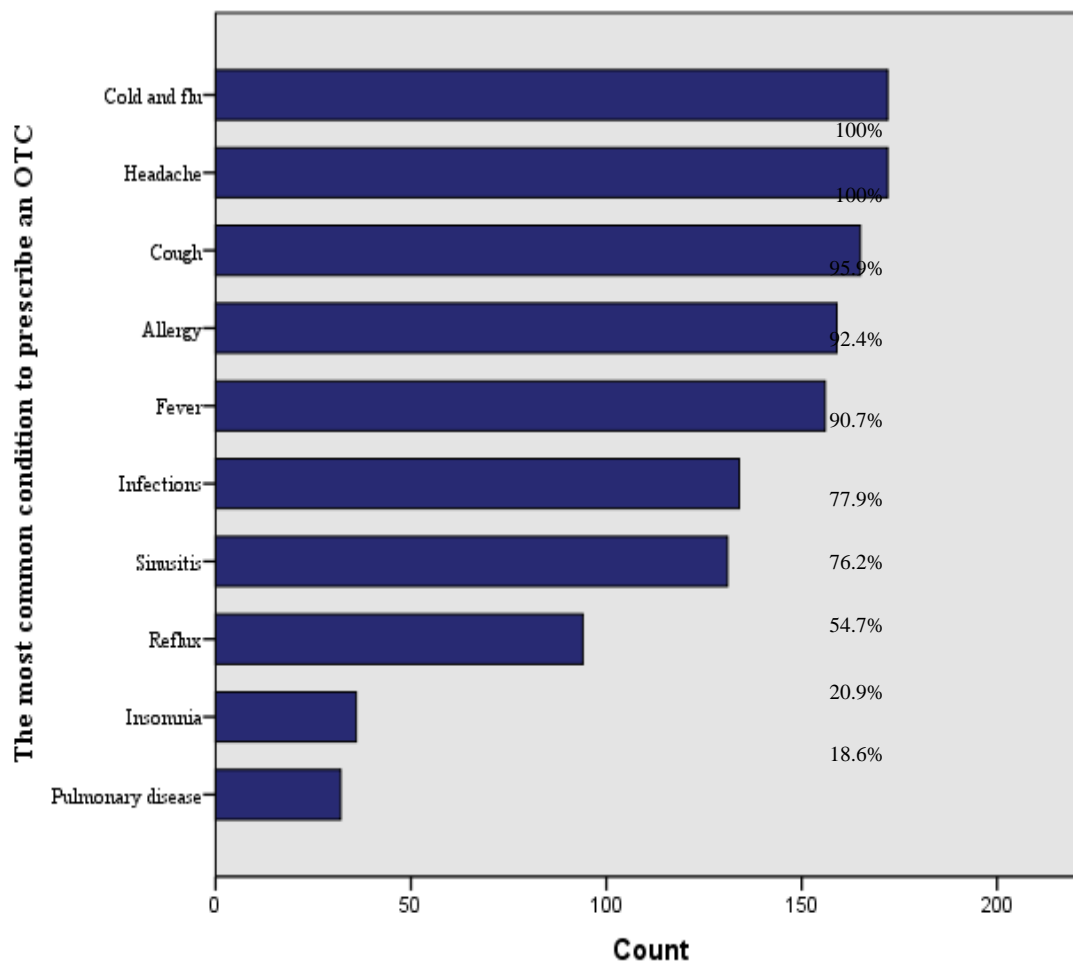
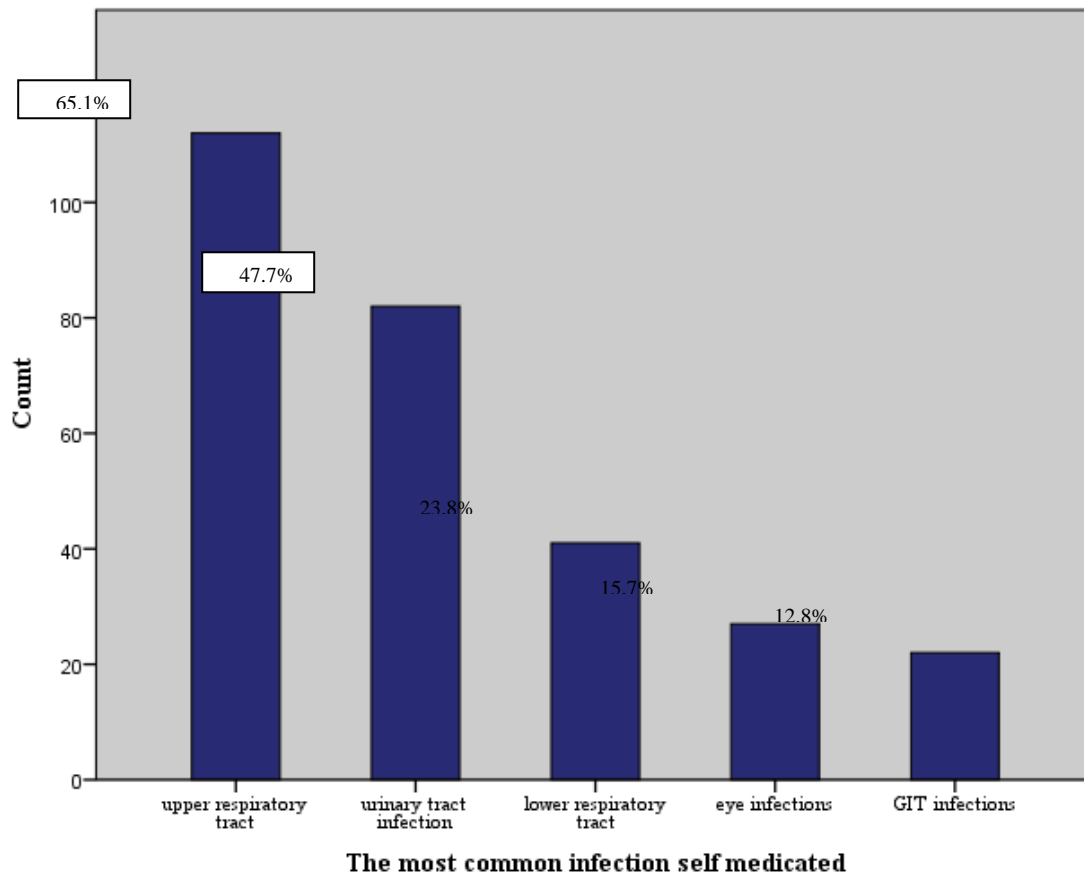


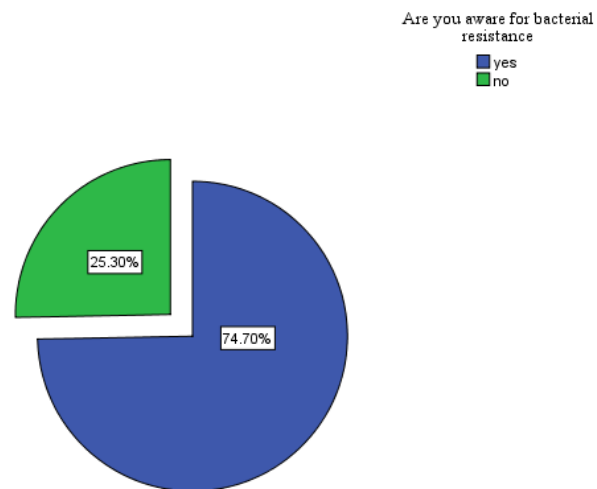
Figure 2: The most common disease that is self medicated by pharmacists (Answer of Q11).

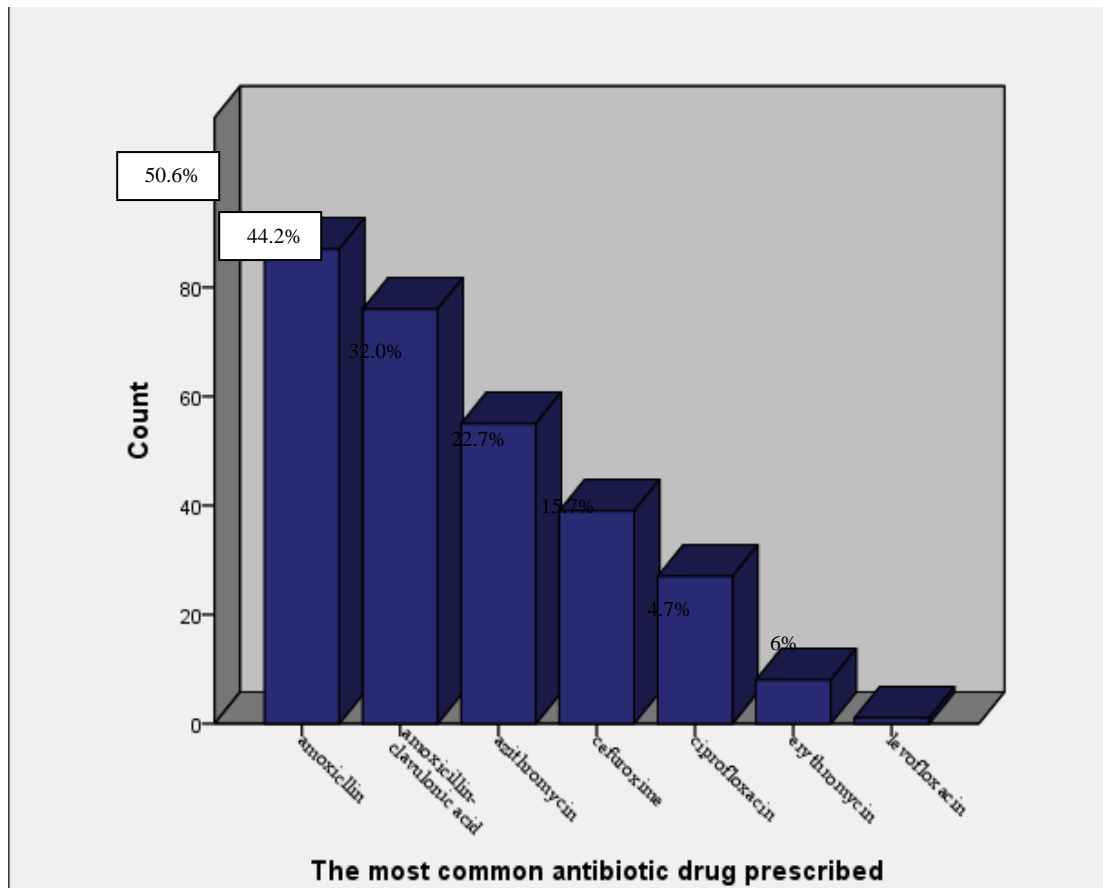


**Figure 3:** The most common infection self medicated by pharmacists (Answer of Q11).



**Figure 4:** Pharmacists awareness according to bacterial resistance (Answer of Q15).



**Figure 5:** The most common antibiotic prescribed as an OTC medication (Answer of Q14).

## DISCUSSION

The results approve that the prevalence of self medication among pharmacists was 100% which conveys with previous studies. Self medication practice among Malaysian health professionals reaches 77.6% (19), and in UAE self medication practice among pharmacists reaches 96.6% (20).

By looking at the socio demographic data there was no correlation between age, gender, monthly income or educational level and OTC drug use because all categories were using OTC similarly but in a previous study that took place in Brazil it was found that self medication practice among nursing workers increase in young people with higher educational level (21), and another study that was conducted in Spain showed that females and patients who are more than 40 years old tend to use self medication than others (22).

The reasons of self medication in this study agrees with Katherine Albarrain and Lorenzo Zapata study that was conducted in Chile in 2008 (7) in which the reasons were having not serious health problem, saving time and good knowledge of disease and human pathology.

The association of the European self medication industry (AESGP) has listed the most common OTC drug and the most common self medicated disease in 2010 (23) and according to it pain, allergy, cold and cough are among the most common minor diseases being self medicated and the most common OTC medications prescribed are pain killers and vitamins. Also the AESGP has listed Germany, Poland, Italy, Spain and Netherland as the European countries that mostly prescribe OTC medications between 2012 and 2014 (24).

The UAE pharmacists study (20) evaluated that the major indication of self medication was headache (63%), followed by cold and flu (54%) and fever (51%). This study confirmed those results and presented that the most common self medicated disease is cold and flu (100%), followed by headache (100%), allergy (92.4%) and fever (90.7%) as shown in (Figure 3).

## CONCLUSION

In Jordan self medication practice among pharmacists is very high but unfortunately most of these pharmacists lack the experience and need more training to choose the

most suitable OTC drug for the disease because the majority of them are young with an experience for less than 3 years.

On the other hand antibiotics are widely used as OTC medication and this practice should be limited and controlled in order to prevent the prevalence of microbial resistance by increasing the regulations on antibiotic prescription and enhance the knowledge of pharmacists toward antibiotics, their use and the possible resistance.

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