

Pattern of over the counter drugs use in a sample of private pharmacies in Erbil city 2016-2017

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Abstract

Background:

The sale of over-the-counter (OTC) medicines from pharmacies can help individual self-manage symptoms. However, some OTC medicines may be abused, with addiction and harms being increasingly recognized.

Objectives of the study:

To find out: The prevalence of over the counter drug use in the studied sample, the types of drugs dispensed as an OTC, and the proportion of medications that should not be sold without doctor's prescription.

Methods:

A cross sectional study was carried out in private pharmacies in Erbil city/Iraq during the period from 20th of September to 25th of October 2016. A convenience sample of 320 individuals was carried out from 17 private pharmacies of Erbil city.

Results:

A total of 320 respondents with practice of self-medication were included in this study. They were relatively young adult with an average of 20-29 years and almost half of the participants were men.

The group of antibiotics represented the commonest type of drugs requested by 104(32.5%) respondents, and most of them were taking antibiotics to treat mild conditions like cough, cold and flu.

Conclusion:

This study showed that many persons can easily practice self-medication for the management of wide range of simple ailments and even relatively serious diseases without medical advice. The prevalence of antibiotics use as an OTC medications was very high and exceeds that of other classes

Introduction

Background

There has been an increasing trend in self-medication practice in both developed and developing countries.¹ Self-medication represents an area of healthcare in which the patient assumes a greater degree of responsibility for the management of a minor ailment, using a pharmaceutical product that is available without a prescription.²

The patient will use his own initiative or the advice of a pharmacist or a layperson to get the 'over the counter drugs' (OTC) instead of consulting a medical practitioner and this behavior varies among countries, age groups, level of education, income and between genders.³

An increasing number of former prescription-only products are now available for self-medication in many countries, either through pharmacies or retail outlets, thereby extending the range and accessibility of these products to the population. However, self-medication is not without risks despite the advantages associated with patient empowerment and the more effective use of pharmacist and physician skills.²

Although self-medication practice is common in both developing and developed countries,⁴ the higher degree of prevalence in the developing countries could be attributed to many causes such as the ability to obtain wide range of drugs over the counter, poor regulatory practices, limited access to health care facilities and the availability of illegal sellers of medications (market sellers and nonprofessional administrators of injectable drugs).⁵

Necessary criteria for making medicines available as OTC:

Criteria which must be met before a medicine, that was previously available on prescription only, can be deregulated:

Safety

If a medicine can cause a serious adverse effect it should not be made available as OTC. For example antihistamines terfenadine and astemizole were withdrawn from OTC sales when it was realized that they could cause ventricular arrhythmias especially when taken

with grapefruit juice and kava was withdrawn in many countries because of concerns over liver damage in both cases the balance of benefit to harm was considered to be unfavorable.⁶

The risks of unwanted effects can be reduced by limiting the dosage strengths of OTC formulations. For example, OTC ranitidine comes in tablets of 75 mg as opposed to the usual strengths of 150 or 300 mg available on prescription.⁷

Efficacy

It is possible for a medicine to be granted OTC status, because it is considered to be sufficiently safe, without consideration of its efficacy. No matter how safe a drug is, lack of efficacy should militate against its use.⁸

Labeling

Provision of information leading to safe use and, which includes warnings and advice on duration of use.⁹

Broad Therapeutic Classes of OTC Medications:

There are more than 80 therapeutic categories of OTC products which can be grouped in 12 broad therapeutic classes (analgesics and antipyretics, cold/cough and allergy products, nighttime sleep-aids, gastrointestinal products, dermatological products, other topical products (including dermal and vaginal antifungals, anorectal medications, head lice products and hair loss products), ophthalmic products, oral health care products, menstrual products, nicotine replacement products, weight loss aids and vaginal contraceptives and emergency contraceptives.¹⁰

Advantages of OTC:

OTC medicines provide a convenient, cost-effective means to treat self-identified symptoms and help to lessen the burden on the health care system by reducing the number of doctor visits and associated prescription costs. They are used by consumers for a number of reasons, including familiarity with self-treatment, perception that symptoms can be managed without health care provider intervention, and time and money savings.¹¹

Disadvantages of OTC:

1. Nonprescription products are generally considered for short-term use in the management of a self-limiting condition; but some products, can also be used for the long-term treatment of certain chronic conditions but not advisable with many nonprescription products which may not be potent enough or appropriate for long-term use.¹²
2. Drug misuse or abuse. The term misuse is applied to the use of a drug for medical purposes, but in an incorrect manner, for example, use over an extended period of time or at an increased dosage. Abuse, on the other hand, is used to describe the use of drugs for nonmedical purposes, for example, to experience their mind- altering effects or to achieve bodyweight loss. All drugs have the potential to be misused while abuse is largely associated with those products containing opioids, antihistamines and laxatives.¹³
3. Other concerns regarding risks associated with self-medication include a potential delay in treating a serious medical condition masking of symptoms of a serious condition.¹⁰
4. Using OTC drugs without medical supervision could lead to drug-drug interactions or drug-food interactions.
5. Older people are at increased risk from self-medication due to concomitant medications and medical conditions. Children differ from adults in their response to drugs, this is particularly the case with neonates, in whom toxicity is manifested through enzyme deficiencies and differing target organ sensitivities.¹⁴

OTC in pregnancy:

Pregnant women commonly use OTC medications. More than 80% of women use medications are sold as OTC.¹⁵

Because it could be dangerous and lead to misuse of self-administered OTC medications in inappropriate way.¹⁶ Many health care professionals stopped from prescribing OTC medications for pregnant women. Some have unproven safety or are known to adversely affect the fetus and cause birth defects (teratogenic effects) as a result of maternal drug exposure.¹⁷

The objectives of the study were to find out: The prevalence of over the counter drug use in the studied sample, the types of drugs dispensed as an OTC, and the proportion of medications that should not be sold without doctor's prescription.

Subjects and methods

Study design:

A descriptive cross-sectional study.

Setting and duration of the study:

Private pharmacies in Erbil city. The duration of data collection was five days, from 25th of September until 29th of September 2016. While the whole period of the study was from 20th of September to 25th of October 2016.

Study sample:

A convenience sample was taken including 320 individuals from 17 private pharmacies. The inclusion criteria were: people attending the mentioned pharmacies for the purpose of buying medications (without a prescription). The questionnaire was prepared by the researchers in English, and data collected by interviews with the purchasers (patients, or relatives of the patients) at the pharmacy. Each interview took about 5-10 minutes, every subject was given the complete choice to participate (or not) without any reward or penalty, and was assured that confidentiality of data throughout the study will be secured and that the data will not be used for other than research purposes.

The first part of the questionnaire consisted of the socio-demographic information which include four questions relating to age, gender, marital status and educational level. The second part was about the classification and dosage form of the drug. The third part included three questions about who prescribed the drug and reasons for self-medication and source of information and what is the disease condition to be managed by OTC drugs. The fourth part of the questionnaire also included miscellaneous questions about reading the Label/leaflet, whether they take this medication before, and their opinion about self-medication if it is safe or not. OTC was defined as all the drugs sold in the mentioned pharmacies without a prescription.

The questionnaire was pilot tested in one pharmacy to confirm the appropriateness of the questions.

Statistical analysis

Data were analyzed using the statistical package for social sciences (SPSS, version 19). Chi square test of association was used to compare proportions. A 'p' value of ≤ 0.05 was considered as statistically significant.

Results

The total number of participants was 320. The mean age \pm SD of the sample was 30 \pm 17.7 years, ranging from 0.25 to 87 years.

Table 1 shows that the greatest proportions (36.3%) of the individuals aged 20-29 years. More than half (52.5%) of the participants were males, and more than half (52.5%) were single. The male: female ratio was 1.1: 1. More than one third (34.7%) were college graduates.

Table (2) shows that the lowest percentage of use of unauthorized medications (30.8%) was found in the age group >10 years. The highest percentage (65.5%) was in the age \geq 50 years (P=0.034).

Table (3) shows that the proportion of males that purchased unauthorized medications was 60.7%, compared with 48% of females (P = 0.023).

Table (4) shows that the least percentage of unauthorized use (29.5%) was among the illiterate group, and the highest was found among the primary schools graduates (65.2%) (P=0.008).

The highest proportion of medications used by the subjects were antibiotics (32.5%), followed by analgesic/NSAID/antipyretics (17.2%), then other medications (12.2%), anti-allergies (7.5%), antacids (7.5%), cough syrups (6.3%), supplements (5%), anti-hypertensive (4.7%), steroids (2.8%), and anti-spasmodic (2.8%), while the hypoglycemic drugs were the least to be used, as only 6 (1.9%) of them used it (Table 5). The table shows that the majority (78.4%) were administered orally.

Table 5 shows that 62 (19.4%) persons used those drugs for cough/cold/flu relief, 57 (17.8%) used them to cure inflammatory symptoms, 52 (16.3%) used them for infections, 45 (14.1%) to relieve GIT problems, 41 (12.8%) used them for other conditions, 27 (8.4%) to relieve fever and milder illnesses, 15 (4.7%) for hypertension, and a similar number used them as supplements (like vitamins), and the least were used for diabetes mellitus 6 (1.9%).

Table (6) shows no significant association between the specialty of the prescriber and the proportion of unauthorized medication dispensing ($P=0.847$).

(Table 7) shows the reasons that led the participants to buy the drugs without the physician's consultation; 75 (46.9%) persons revealed that they have an idea about their condition and the medication they bought, 56 (35%) had a similar or previous prescription, 24 (15%) reported that they don't have time to visit doctors, while 5 (3.1%) of the participants could not visit a doctor because they were poor.

The source of information of those who have previous knowledge was mainly from relatives and friends (65.3%), internet (16%), and the textbooks (9.3%), in addition to the other sources.

(Table 8) shows that 241 (75.3%) persons had previously used the medications they are purchasing during the study time. Nearly half (48.1%) of them used to use them on need only (rarely), while 40 (12.5%) persons used these medications continuously. The table shows also that 40% of the study sample do not read the drug leaflet, and 57.5% believe that the OTC drugs are safe.

Concerning the place of the pharmacies; 8 (47%) of them were near doctors' clinics, and 9 (53%) were located in areas far of the clinics.

Figure 1 shows the classifications of the OTC medications in percentage, the antibiotics and analgesics formed the highest proportions, whereas steroids and the oral hypoglycemic agents were the least.

Figure 2 shows the most commonly dispensed antibiotics as OTC medications, out of 104 antibiotics, the Amoxillin, Amoxiclav, Azithromycin, and Metronidazole percentages form more than half of the used antibiotics.

Table 1. Distribution of sample by socio-demographic variables.

Variables	Categories	No.	%
Age (years)	< 10	39	12.2
	10-19	30	9.4
	20-29	116	36.3
	30-39	43	13.4
	40-49	34	10.6
	≥ 50	58	18.1
Sex	Male	168	52.5
	Female	152	47.5
Marital status	Single	168	52.5
	Married	150	46.9
	Widowed	2	.6
Educational level	Illiterate	44	13.8
	Primary	23	7.2
	Intermediate	15	4.7
	Secondary	105	32.8
	College	111	34.7
	Higher	22	6.9
Total		320	100.0

Table 2. Prevalence of use of unauthorized medications by age.

Age group	Authorized medications		Unauthorized medications		Total	P value
	No.	%	No.	%		
<10	27	69.2	12	30.8	39	100
10-19	14	46.7	16	53.3	30	100

20-29	51	44.0	65	56.0	116	100	
30-39	18	41.9	25	58.1	43	100	0.034
40-49	15	44.1	19	55.9	34	100	
≥ 50	20	34.5	38	65.5	58	100	
Total	145	45.3	175	54.7	320	100	

Table 3. Prevalence of use of unauthorized medications by gender.

Gender	Authorized medications		Unauthorized medications		Total		P value
	No.	%	No.	%	No.	%	
Male	66	39.3	102	60.7	168	100	
Female	79	52.0	73	48.0	152	100	0.023
Total	145	45.3	175	54.7	320	100	

Table 4. Prevalence of use of unauthorized medications by educational level

Educational level	Authorized medications		Unauthorized medications		Total		P value
	No.	%	No.	%	No.	%	
Illiterate	31	70.5	13	29.5	44	100	
Primary	8	34.8	15	65.2	23	100	
Intermediate	6	40.0	9	60.0	15	100	
Secondary	48	45.7	57	54.3	105	100	0.008
College	41	36.9	70	63.1	111	100	
Higher	11	50.0	11	50.0	22	100	
Total	145	45.3	175	54.7	320	100	

Table 5. Classification of OTC medications by medication categories, dosage form and indication

Variables	Categories	No.	%
Classification of the medication	Antibiotics	104	32.5
	Analgesic/NSAID/antipyretics	55	17.2
	Others	39	12.2
	Anti-allergies	24	7.5
	Antacids	24	7.5
	Cough syrup	20	6.3
	Supplements	16	5
	Anti-hypertensive	15	4.7
	Steroids	9	2.8
Dosage form	Hypoglycemic agents	6	1.9
	Orally	251	78.4
	Parentally	3	0.9
	Topically	40	12.5
	Suppositories	9	2.8
	Inhalation	5	1.6
	Ophthalmic	12	3.8
Indication	Cough/cold/flu	62	19.4
	Inflammation	57	17.8
	Infection	52	16.3
	GIT problems	45	14.1
	Others	41	12.8
	Fever/milder illness	27	8.4
	Hypertension	15	4.7

Minerals/vitamins	15	4.7
Diabetes mellitus	6	1.9
Total	320	100

Table 6. Prevalence of use of unauthorized medications by prescriber of the medication

Prescribed by	Authorized medications		Unauthorized medications		Total		P value
	No.	%	No.	%	No.	%	
Pharmacist	64	46	75	54	139	100	0.847
Physician assistant	11	50	11	50	22	100	
Self-medication	70	44	89	56	159	100	
Total	145	45.3	175	54.7	320	100	

Table 7. Distribution of sample by cause of self-medication, and source of information.

Variable	Categories	No.	%
Cause of self-medication	Previous knowledge	75	46.9
	Previous use by himself or others	56	35.0
	Inadequate time for visiting doctors	24	15.0
	High cost of doctor's consultation	5	3.1
Total		160	100
Source of the information about the medication	Relatives/friends	49	65.3
	Internet	12	16.0
	Textbooks	7	9.3
	Media	5	6.7
	Others	2	2.7
Total		75	100

Table 8. Use and knowledge about OTC drugs.

Variables	Categories	No.	%
Previous use of current medication	Yes	241	75.3
	No	79	24.7
For how long it has been taken	Rarely	154	48.1
	Less than 1 month	27	8.4
	1-12 months	20	6.3
	Continuously	40	12.5
Leaflet reading	Yes	109	34.1
	No	128	40.0
	Sometimes	83	25.9
Are OTC drugs safe?	Yes	184	57.5
	No	136	42.5
Are you going to avoid self-medication in the future	Yes	113	35.3
	No	207	64.7
Total		320	100

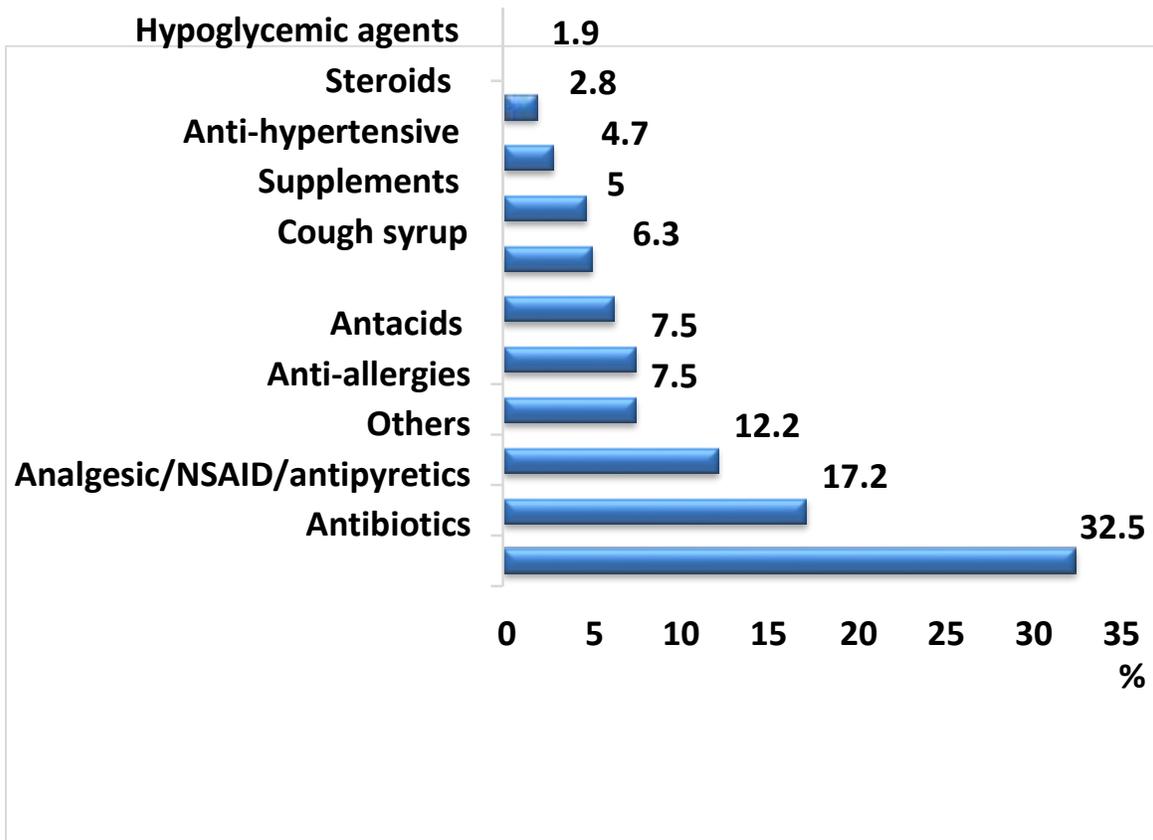


Figure 1. Types of the OTC medications.

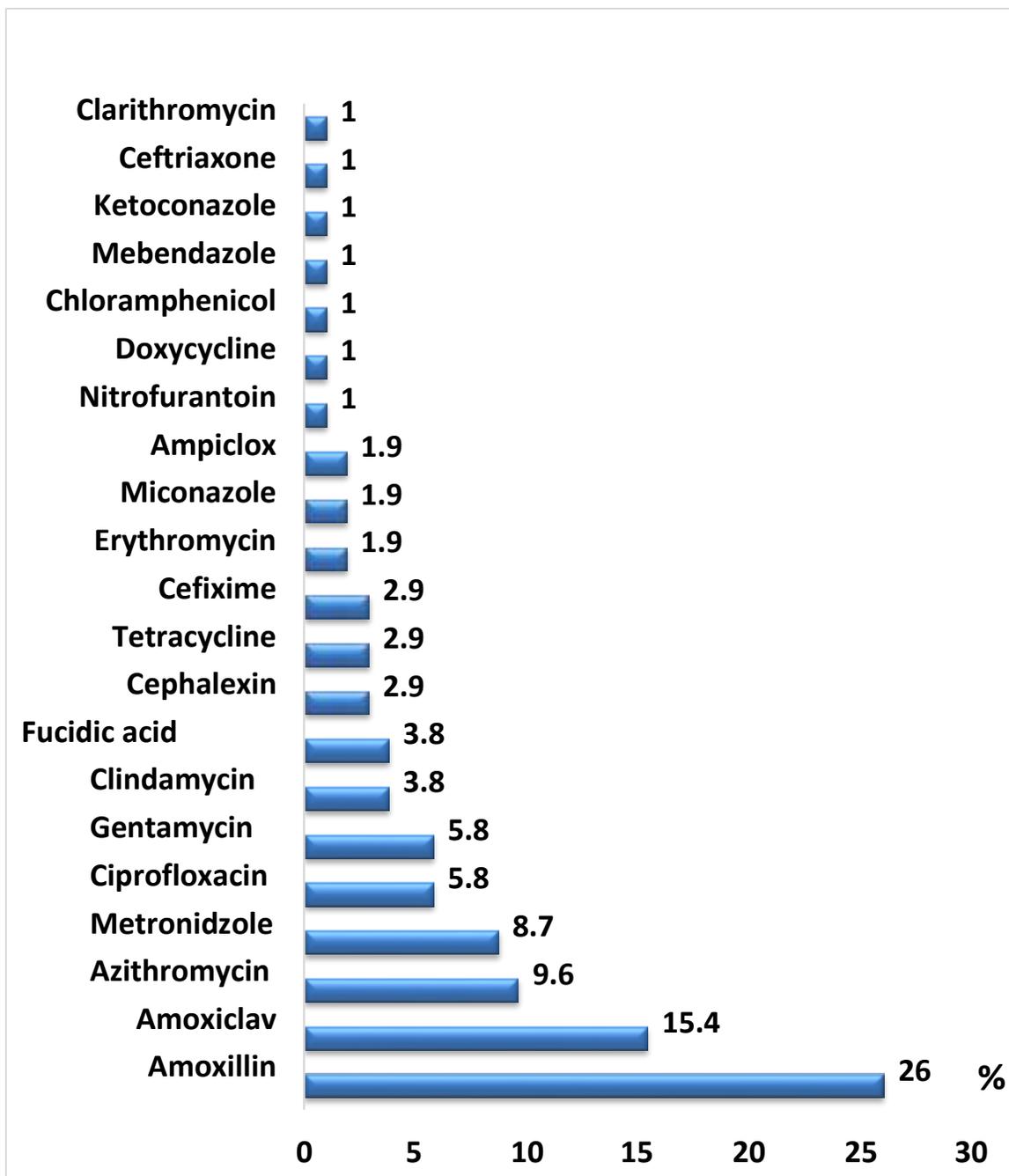


Figure 2. Types of antibiotic dispensed as OTC medication.

Discussion

Self-medication believed to be more harm than good and lead to wastage of resources, microbial resistance development, adverse drug reactions, prolonged illness and drug dependence.¹⁸

Comparing results of this study with those of other studies conducted in other countries seems somewhat difficult due to differences in cultures, health care systems and the roles of community pharmacies. This study found that male respondents practiced self-medication to larger extent than females, this could be due to males being less self-conscious about their health and wellbeing than females.

This study demonstrated that about 4.7% of respondents had finished intermediate school and 34.7% of these individuals had an academic certificate. This could be explained by increasing percentage of educated individuals in the general population, knowing that the sample of the study was a convenience sample, and the study was done inside Erbil.

The main reason of practicing self-medication for half of the study population was experience and knowledge of treatment from similar previous ailments; this could be explained by the ability of people to remember medications whether prescribed or over the counter (OTC) used for similar previous conditions especially if these medications were successful in improving such conditions or symptoms.¹⁹

Other reasons for practicing self-medication included high cost of consulting a doctor in a private clinic for 9.1% of respondents, this is in the same line with the results of other studies from Baghdad²⁰.

The other important source of information represented by 43.4% of the patients was the community pharmacists; this result agrees with that of previous works (51.7% in Baghdad study²⁰) and gives an evidence of the importance of community pharmacies in the wide pervasion of self-medication practice in the community.

This study like others revealed the important roles of other family members and close friends to be a good source of advice about self-medicated drugs because some of them experienced similar conditions previously, while others may be physicians, or pharmacists.²¹

The study showed that some conditions treated by self-medicated drugs were simple and the patients did not require seeing a doctor for these conditions, but other conditions were different and would otherwise require medical supervision for further evaluation or treatment.²⁰

It is obvious that flu or common cold were the most common indications of self-medication reported by 19.4% the patients; the probable explanation of this finding is that the study was done in autumn where the prevalence of these conditions was high, and because more individuals become well educated about the fact that common cold is a self-limiting condition, thus they have the ability to treat it utilizing self-medication without the need to see a physician.

Other common indications included inflammation (17.8%), infection (16.3%), and GIT problems (14.1%). Comparing it with the Baghdad study, GIT problems (17.2%) and headache (33.3%) were the most common after cough/cold/flu.²⁰

The respondents used many types of drug classes for self-medications; some drugs were OTC and could be dispensed according to patients' requests, while other self-medicated drugs were prescription only medications and should be dispensed only according to a physician prescription.

Our study revealed that the most used unauthorized medications among the included sample were antibiotics (32.5%), analgesic/NSAID/antipyretics (17.2%), antiallergic (7.5%), antacids (7.5%), cough syrup (6.3%), supplements (5%), antihypertensive (4.7%), steroids (2.8%), hypoglycemic (1.9%), and others (12.2%). While in other countries like in India, anti-infective agents were the most commonly dispensed (20.6%), followed by medicines acting on the gastrointestinal system (18.2%), vitamins and nutritional supplements (10.9%), analgesics and antipyretics (10.5%).²²

Regarding the antibiotics, amoxicillin (26.0%) was the most frequently used antibiotic followed by amoxiclav (15.4%) then azithromycin (9.6%) while in a study that was carried out in Abu Dhabi showed that 68.4% of the antibiotics were sold without prescriptions, this includes combination of penicillins including beta lactamase inhibitors (34.0%), penicillin with extended spectrum (22.3%) and second generation cephalosporin (11.2%) were most commonly sold.²³ Another study in Vietnam showed that purchasers

visit a pharmacy when they felt they needed antibiotics for minor symptoms, the most often purchased antibiotics were ampicillin (31.1%), amoxycillin (16.7%), cotrimoxazole (11.6%). However in Pakistan a study showed that the most frequently used agents were amoxycillin (16.7%), co-trimoxazole (15.7%), and erythromycin (10.9%).

It has recently been reported that non-prescription antibiotics use (including non-legal use) varies between European regions, e.g. the lowest levels of non-prescription antibiotics use were observed in northern Europe (weighted non-prescription use was 3%) while the highest levels were observed in eastern Europe (weighted non-prescription use was 30%).⁸

Non-prescribed antibiotics are associated with very short courses and inappropriate drug and dose choice and this could lead to many complications. Poor regulation of antibiotics results from absent policies or, more commonly, from absent enforcement of policies.² Also lack of professionalism of community pharmacy practice, and the absence of public awareness of the danger of some medication.³

Limitations of the study were the shortage of time, the sample didn't include equal number of subjects of different ages at different places, and the sample was not representative of all the pharmacies in Erbil city.

In conclusion, self-medication is a common health care practice in Erbil city. The prevalence of using unauthorized medications was high among males and those aged ≥ 50 . This study illustrated that many patients can easily practice self-medication for the management of a wide range of conditions whether simple or not.

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