

# Self-Medication Practice among Patients Attending a sample of Primary Health Care Centers in Erbil City

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## Abstract

**Background and objectives:** Self-medication is the use of medicines by the people on their own inventiveness or on the suggestion of others without consulting a qualified health care professional; its practice is continuously increasing worldwide. The aim of this study was addressing the prevalence of self-medication in Erbil city.

**Methods:** This cross sectional, health care center based study was conducted in five primary health care centers of Erbil city, data was collected by direct interviewing with 500 adult patients by using questionnaire.

**Results:** The Prevalence of self-medication was 52.6%, 64.6% of the users practiced it in the past 2 weeks before the survey, significant association was found between its practice and; urban residency ( $p$  value <0.001), high socio-economic status ( $p$  value 0.004), hearing about side effect ( $p$  value 0.013), and patients who experienced side effect ( $p$  value <0.001), self-medication was for many reasons; most commonly due to previous benefit (41.7%). Medications were got from pharmacy by (70.5%); source of information about the used drug was mostly from previous prescription (44.1%). Analgesics and antibiotics were the most frequent drugs used by the respondents. Common cold was the most common condition for which drug was used without prescription followed by head ache.

**Conclusion:** Self-medication is a common practice in Erbil-city, its prevalence varied significantly with a number of socio-demographic factors and some patients' knowledge and practices about the drugs. Many patients can easily practice self-medication for the management of wide range of conditions whether simple or not. The pharmacies are the main source of getting medications.

**Keywords:** Self-medication, primary health care center, previous prescription, prevalence.

## Introduction

Self-medication can be defined as the use of drugs to treat self-diagnosed disorders or symptoms, or the intermittent or continued use of a prescribed drug for chronic or recurrent disease or symptoms.<sup>1</sup> It may include the use of herbs, the retention and re-use of prescription drugs or the direct purchase of prescription-only drugs without medical input.<sup>2</sup> The practice of self-medication is common worldwide in both developed and developing countries.<sup>3</sup> Internationally; self-medication has been reported as being on the rise.<sup>4</sup> The importance of self-medication as a phenomenon has attracted the interest of health professionals, especially when drugs become deregulated and changed from prescription status to be sold over-the-counter (OTC). Generally, it is accepted that self-medication has an important role in the care of minor illnesses.<sup>5,6</sup> Major problems related to self-medication are wastage of resources, and generally initiates serious health hazards such as adverse reactions, prolonged suffering, & antibiotic resistance which is a current problem world-wide, particularly in developing countries where antibiotics are often available without prescription.<sup>7</sup> While responsible self-medication, which is limited to (OTC) drugs, may generate substantial net benefit flows to economies through saving in travel and consultation time and the direct financial cost of treatment.<sup>8</sup> Drugs that are prone to self-medication include analgesics, antibiotics, cough syrups, and antimalarials.<sup>9</sup> Unfortunately, despite public awareness and concern of health care providers, global irrational use of antibiotics is on a rise (50% to almost 100%).<sup>10</sup> Patients who over-report use of medications are likely at increased risk for premature abandonment of treatments, up-titration leading to potentially dangerous dosing, and wasting of medication. Conversely, failure of patients to report ingested drugs during reconciliation can lead to unintended drug-drug interactions, failure to identify adverse drug events, and redundant therapy, all of these consequences ultimately increase health-care costs.<sup>11</sup> The presence of a reward-reinforced pathway is thought to be the cause of repeated self administration of drugs to achieve the desired effects.<sup>12</sup> The World Medical Association (WMA) has developed a statement to provide guidance to physicians & their patients regarding responsible self medication to guide patients, physicians, pharmacists, and medical care givers about what kind of drugs, rout of administration, dose and how many times, can be used safely and in proper beneficial way.<sup>13</sup>

**Aim of the study:** To determine the prevalence of self-medication among patients attending the primary health care centers in Erbil city.

## Objectives

1. To find out the prevalence of self-medication.
2. To identify potential factors that could influence self-medication practices.
3. To find the association between prevalence of self medication & socio demographic factor.
4. To know the sources of used medications.
5. To identify sources of information about medications used.
6. To identify the reasons of using self-medication.

## Patients and Methods

**Study design:** A Cross-sectional study design.

**Study Setting and duration:** This health care center based study, was conducted in five primary health care centers of Erbil city; namely (Brayati, Malafandi, Muhammad Bajalan, Sarwaran, & Tairawa health care centers), from the first of April 2015 to the end of March 2016.

**Sampling technique:** Sample size was estimated based on this formula:<sup>14</sup>

$n = Z^2 P (1-P) / d^2$  ( $Z$  = confidence level of 95% which is 1.96,  $P$  = estimated prevalence 0.5,  $d$  = precision or margin of error allowed in this study degree of precision 0.05 was used), so  $n = 384$ , but for convenience a sample of 500 patients attending these primary health care centers was conveniently taken. Inclusion criteria: All adult patients from 18 years old and above, who attended the above mentioned primary health care centers. Exclusion criteria: Pregnant women, mentally retarded patients.

**Questionnaire and data collection:** The data were collected by a specialized questionnaire, prepared by the researcher for this purpose, and the data were collected by the researcher through direct interview with patients. The questionnaire was including information about:

1. Socio demographic characteristics including age, gender, marital status, and educational level.
2. Information on self reported health aspects of respondents, such as their health status; respondents were asked about whether they had practiced self-medication (both prescription only and OTC drugs)<sup>1, 2, 8</sup> during the last 2 weeks before the day of interview (two weeks in order to be easy for the patients to recall their information to answer the questionnaire).
3. Source of medication used and source of information about such medication.
4. Reasons for self medication.

Socio-economic status (SES) was categorized according to the specific "fifteen score" scoring system to determine the socio-economic class of the study population, low status ( $\leq$ five scores), medium status (six-to-ten scores) and high status (eleven-to-fifteen scores).<sup>15</sup>

**Statistical analysis of data:** Statistical package for the social sciences (version 19) was used for data entry and analysis. Both descriptive and analytic approaches were used; descriptive to determine the frequencies, and analytical by using Chi-square test to find out associations. A p value  $\leq 0.05$  was regarded statistically significant.

**Ethical consideration:** The study proposal submitted to the Ethics Committee of the College of Medicine at Hawler Medical University and the facilitation letter from Erbil Directorate of Health (DOH) obtained. All patients informed about the study before giving consent to participate. Patients assured that their participation is voluntary & anonymous. The information will be kept confidential & would not be used for any other purpose.

## Results

Table 1 shows that: The majority 302 cases (60.4%) were females; majority 390 cases (78%) were married. The highest percentage 404 cases (80.8%) were urban and 96 cases (19.2%) were from rural area. Most of the patients 279 (55.8%) were of low, 175 (35%) medium and 46 (9.2%) high socio economic status. Majorities were of (21-30) years of age; 155 cases (31%), and  $\geq 66$  years were only 3 cases (0.6%).

**Table 1:** Socio-demographic status, N=500.

Variables		Frequency	Percent
Gender	Male	198	39.6
	Female	302	60.4
Marital status	Single	85	17.0
	Married	390	78.0
	Divorced	8	1.6
	Widow	17	3.4
Residency	Urban	404	80.8
	Rural	96	19.2
SES*	Low	279	55.8
	Medium	175	35
	High	46	9.2
Age Category	18-20	40	8.0
	21-30	155	31.0
	31-40	123	24.6
	41-50	120	24.0
	51-60	48	9.6
	60-65	11	2.2
	≥66	3	0.6
	Total	500	100.0

SES\*: Socioeconomic Status

Table 2 shows: Over all 500 cases; 263 (52.6%) were taking drugs without medical advice, in which 170 of them (64.6%) took drug in the last two weeks before obtaining the data, the rest 237 (47.4%) didn't take medication without doctor's opinion because majority of them 106 cases (44.7%) preferred prescription. Table 3 shows that there was statistically significant association between; residency and self-medication practice, the practice was highest among urban resident cases, of 404 urban resident cases; 229 (56.7%) were taking drugs (p value <0.001), and socio-economic status and self-medication practice in which highest percentage was among the high socio-economic state group (73%) (P value 0.004). There was no statistically significant association between self-medication practices with gender, marital status and age category, the highest frequency of age category was (21-30) years of age 155 cases of which 75 (48.4%) were taking drugs without medical advice.

**Table 2:** Frequency distribution of used drugs without medical Advice, using in last two weeks & causes of not using, N=500.

Variables		Frequency	Percentage
Using drugs without medical advice	Yes	263	52.6
	No	237	47.4
	Total	500	100
If yes, administered drug last 2 weeks?	Yes	170	64.6
	No	93	35.3
	Total	263	100
If not, why?	Have no information about drug	76	32.06
	Afraid from side effects	55	23.2
	Prefer prescription	106	44.72
	Total	237	100

**Table 3:** Association of self medication with socio-demographic status, N=500.

Variables		Using drugs without medical advice				Total	P value		
		Yes		No					
		Frequency	%	Frequency	%				
Gender	Male	111	56.1	87	43.9	198	0.210		
	Female	152	50.3	150	49.7	302			
Marital status	Single	40	47.1	45	52.9	85	0.159		
	Married	214	54.9	176	45.1	390			
	Divorced	2	25.0	6	75.0	8			
	Widow	7	41.2	10	58.8	17			
Residency	Urban	229	56.7	175	43.3	404	<0.001		
	Rural	34	35.4	62	64.6	96			
SES*	Low	134	48.0	145	52.0	279	0.004		
	Medium	95	54.3	80	45.7	175			
	High	34	73.9	12	26.1	46			
		Total	263	237		500			

SES\*: Socioeconomic Status.

It was found that there was statistically significant association between self-medication and years of education of patient, highest percentage of self-medication practice (65.6%) was among cases who had diploma, university, and higher education levels ( $p$  value <0.001) (table 4). From the total 500 cases 98 (19.9%) had chronic disease (hypertension, diabetes mellitus, and heart disease), however there was no statistically significant association between having chronic disease and self-medication practice. **Table 4:** Association of self -medication and the level of education. N = 500.

Years of Education		Using drugs without medical advice				P value	
		Yes		No			
		Frequency	%	Frequency	%		
Patient	Illiterate	33	35.9	59	64.1	<0.001	
	read& write	33	57.9	24	42.1		
	primary school	27	39.1	42	60.9		
	intermediate& secondary school	67	53.6	58	46.4		
	diploma, university & higher education	103	65.6	54	34.4		
Father of patient	Illiterate	114	47.5	126	52.5	0.022	
	read& write	64	54.7	53	45.3		
	primary school	17	44.7	21	55.3		
	Intermediate & secondary school	41	60.3	27	39.7		
	diploma, university&higher education	27	73.0	10	27.0		
Mother of patient	Illiterate	178	50.1	177	49.9	0.061	
	read& write	31	57.4	23	42.6		
	primary school	14	42.4	19	57.6		
	intermediate& secondary school	19	70.4	8	29.6		
	diploma, university &higher education	21	67.7	10	32.3		
		Total = 500	263	237			

Table 5 shows that there was statistically significant association between patient's knowledge about side effect and the self- medication practice, it was found that 232 cases (55.0% ) were heard about side effect of drugs and practiced self medication ( $p$  value 0.013). Among all the samples taken, 71 cases (75.5%) experienced side effect of drugs previously and practiced self-medication which was statistically significant ( $p$  value<0.001). Of all 170 cases practiced self medication in the last two weeks 119 (70%) of them knew drugs name, of which 89 cases were taking more than two drugs, among 119 of patients who knew the drugs name which they used; Paracetamol and paracetamol containing drugs were accounted 22 cases (18.4%) followed by Amoxicillin and amoxicillin containing drugs were 21 cases (17.6%) and Voltarin was 18 cases (15.1%). Common cold was most common condition in which the drug was used for without medical advice 46 (27.05%)cases followed by head ache 28 cases, joint pain 18 cases, epigastric pain 14 cases, back pain 7 cases, tooth ache 7 cases, and urinary tract infection 6 cases. Majority 152 (89.4%) were administered the drug(s) by oral route. Most of the patients 80 cases (47%) had adjusted the dose by asking the pharmacist or from whom the drug got, and most of them 120 cases (70%) had brought the drug(s) from the pharmacy, their source of information about the drug that they had used was mostly 75 (44.1%) from previous prescription followed by 73 cases (42.9%) from other peoples' talk, the reason of choosing self-medication among highest percentage of patients 71 (41.7%) cases was because of previous benefit

from this drug for the same symptom followed by 38 cases (22.3%) because of lacking of time and 32 cases (18.8%) for cost preservation; almost most of the patients 155 cases (91.1%) who practiced self-medication was not the first time using this drug which they have been used before 2 weeks. The majority of the patients in the study; 344 cases, didn't read leaflets provided with drugs, most of them; 285 cases, store drugs in the refrigerator, and majority of them 425 cases pay attention to expire date.

**Table 5:** Association between the self -medication with drug information & experience.

drug information & experiences		Using drugs without medical advice				P value	
		Yes		No			
		Frequency	%	Frequency	%		
Hear about side effect	Yes	232	55.0	190	45.0	0.013	
	No	31	39.7	47	60.3		
Experienced side effect	Yes	71	75.5	23	24.5	<0.001	
	No	192	47.3	214	52.7		
	Total	263	52.6	237	47.4		

### Discussion:

Total 500 respondents included in this study. Many articles have described self-medication in different nations like India, Saudi Arabia, Pakistan, China, Malaysia and Emirate, the results of these studies showed that the self-medication practices were prevalent in various age groups, gender and education levels. Comparing results of this study with those of other studies conducted in other countries seem somewhat difficult since studies differ in their definitions of self-medication and in the methodologies employed and due to differences in cultures, health care systems and the roles of pharmacies. This study found that the prevalence of self medication practice was 52.6 % and 170 cases (64.6%) of them have practiced self-medication in the last two weeks before taking the data from the respondents, majority of those who didn't practice self-medication was because they have no information about drugs, followed by that they are afraid from side effect of drugs and the rest was because they prefer prescription. The prevalence rate of self-medication practice was 60 % in Baghdad, 85% in Yemen, Nepal 59%, Bambui 54%, Mexico 34%, Ethiopia 26.2%, 61.2% Pakistan, Indonesia around 60%, Hong Kong of China 63.1%, Palestine 56.0%, Malaysia 62.7%, Puduchery in India 71% and finally in Uganda 75%, UAE reaching 89.2%, Slovenia 94.9% and Brazil 86.4%.<sup>16, 17</sup> In this study, most respondents were married 78% due to religious and traditional considerations which encourage marriage at young ages. Most of the cases were urban resident as far as the data was collected at the primary health care centers of the Erbil city. 55.8% of cases were of low socio economic status; this result is logical because of the fact that patients in this region prefer private health clinics for their illnesses and because of the cost of these places only patients of high socio-economic status can attend them. This study indicated that the majority of cases 79% were of (21-50) years of age category and this seems logical since these individuals have greater ability than older individuals to move and seek medications. Majority of the respondents, 402 cases, didn't have any chronic disease; however, there was no association between self-medication practice and chronic diseases because most of patients with chronic diseases will attend private health clinics. Most of the respondents in this study were females, and there was no statistically significant association between gender and self medication and this result is consistent with the study done in Yemen, and another done in Palestine<sup>17,20</sup>, and contradict the result of the study which was done in Saudi Arabia.<sup>2</sup> There was no association between self-medication practice and marital status of the patient and this finding is consistent with finding in a study done in Klang Valley,<sup>18</sup> and contradicts with that of Yemen.<sup>17</sup> There was statistically significant association between the practice of self-medication and residency, socioeconomic status, patient's educational level, patient's father educational level, and some patients information about the drug and experiences like hearing about side effects, experiencing side effects. It's found that the practice of self medication was higher among urban resident patient this may be due to easy accessibility ways to drugs in the cities rather than rural areas, and this result is in agreement with the study in Yemen;<sup>17</sup> also it was higher among high socio-economic status patients, self medication practice was higher among high education level patients and those patients with high education level fathers, and this is logical as far as high education level patients and high socioeconomic state patients are more urban residents which supports the result of this study, this result was consistent with a previous study which was done in Palestine<sup>20</sup>, however, these findings contradict study done in Baghdad and Saudi Arabia in which it was higher among low socio economic status patients and low educational level.<sup>2,16,17</sup> In the current study, there was significant association between self-medication practice and some patients' knowledges and practices; like hearing about side effects, experienced side effects previously, and reading leaflets provided with drugs; it was surprisingly higher percent among those patients who have heard about side effects previously (55%), and those who have experienced side effects of the drugs in the past (75.5%). Among the patients who do not reading leaflets provided with drugs they are less using drugs without prescription (52%). Fortunately, it is found that the majority of patients involved in the study (425 cases out of 500) pay attention to expiry date of the drugs and approximately half of respondents (285 cases) store drugs in appropriate place. Most of patients who used drugs without medical advice knew the

drug's name (of total 64.6%, 45.2% knew the name) and 17.8% used more than two drugs. It was found that oral route of administration was mostly seen among the respondents, who practiced self-medication; majority of them (47%) adjusted the dose by asking the pharmacist, and most of them (70.5%) got medication from pharmacies, this result agrees with that of previous works and gives an evidence of the importance of community pharmacies in the wide pervasion of self medication practice in the community<sup>16</sup>, this finding is consistent with previous work reported from other countries such as Saudi Arabia<sup>2</sup>, Egypt<sup>19</sup>, Palestine<sup>20</sup>, Sudan<sup>21</sup> and Jordan<sup>22</sup>. Previous prescription was the most frequent source of information about the drugs which could be related to the reason of requiring self-medications by two thirds of the patients.<sup>16</sup> 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, pharmacists or nurses.<sup>2,16,17</sup> Medical staff members other than physicians and pharmacists represented the source of information for (22.9)% of the patients due to ease of access and prevalence in Erbil city. Highest percentages (91.1%) of the patients indicated that this was not the first time to use the drug this also support that previous prescription is the most common source of medication for using drug without prescription, it's also shown that previous benefit from a particular drug is the most frequent cause of using drug without prescription among the respondents (41.7%). A wide range of conditions observed in this study in which drug without prescription used for; common cold was most common condition which drug without prescription used for may be due to that most of the cases was collected in the autumn and winter seasons, followed by head ache, joint pain, epigastric pain, back pain, tooth ache, tonsillitis, and urinary tract infection, and this result was consistent with many other studies.<sup>2, 3, 4,5,20</sup> Many drugs have been used by patients who involved in this study; analgesics and non steroidal anti inflammatory drugs were more frequently used than the others followed by antibiotics, this result is in agreement with majority previous studies in other countries. Paracetamol and NSAIDs were the most common type of analgesics used for self -medication; these results are similar to other studies conducted in other countries.<sup>2, 16, 17, 18, 19, 20</sup> In Erbil, antibiotics can be obtained without a prescription, Amoxicillin was most frequent antibiotic used by the respondents.

**Conclusion:** Self-medication is a common health care practice in Erbil city; where people are becoming increasingly familiar with drugs and their brand names, this behavior was varied significantly with a number of socio -demographic factors and some patients' knowledge and practices about drugs. This study illustrated that many patients can easily practice self-medication for managing their conditions and can obtain many types of drug classes; even prescription only medications could be dispensed for self-medication purposes as well as the OTC drugs, and pharmacies are the main source of getting medication, therefore, it is strongly recommended to initiate education programs for general population to specify the conditions that could be treated by self-medication practice; other recommendation is to reinforce the drugs which could be dispensed legally and safely from the community pharmacies without a medical supervision.

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