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Use of Over-the-Counter Medication among Pregnant Women in Duhok City

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Abstract

Background and objective: The rates of use of over-the-counter medications are increasing across the world. The objective of this study was to explore the prevalence of over-the-counter products use and awareness among a sample of pregnant women.

Methods: This cross-sectional study was conducted in 498 pregnant women in three primary health centers and one maternity hospital in Duhok city from 1st may 2019 to 31th December 2019.

Results: The mean age of the patients was 29.01± 6.26 ranged 18-45 years old. The study found that 48.0% of the patients used over-the-counter drugs before or during pregnancy, despite most of them reported as non-safe drugs (91.6%). A small percentage (15.5%) experienced side effect. This study showed the mean age and getting more children were more among over counter user than non-user (29.7±6.42 vs., 28.32± 6.05 years and 2.88±1.45 vs. 2.33±1.28, respectively. Besides, the patients who received prenatal care were less likely to use over-the-counter (45.43%). The major percentage (89.74%) from OTC user among pregnant women considered it as a safe drug. Moreover, those who were recommended by pharmacies (97.10%), medical doctors (88.89%), and paramedics (94.32%) were more likely to use over-the-counter products, these results have statistical significance.

Conclusions: This study showed that the patients who considered over-the-counter as safe products were more likely to use during and before pregnancy. The over-the-counter users were more likely to be older and have more children compared to non-user over-the-counter. The patients who received prenatal care were more likely to not use over-the-counter compared to non-users.

Keywords: Over-the-Counter; Pregnant women; Duhok city.

Introduction

According to the World Self-Medication Industry, self-medication is defined as medicines determined and used for use without the direct and indirect supervision of a clinician. These medicines are considered safe and effective for these kinds of usages. One of the ways for self-medication is over-the-counter (OTC) drugs. These kinds of drugs are widely available and are used for the treatment of common pregnancy-related health problems. The over-the-counter agents could have an adverse impact the embryo and fetal development since the pregnancy is accompanied by anatomic and physiological changes[1-2]. The pregnant women who use over-the-counter products may expose them and their babies to various toxicological effects. The current reports across the world mention that more than 90% of pregnant women take over-the-counter products[3]. A study reported that acetaminophen, ibuprofen, and pseudoephedrine was used by at least 65%,

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18%, and 15%, respectively in the metropolitan areas of Boston, Philadelphia, Toronto, and San Diego[4]. The studies do not guarantee the safety of these kinds of drugs for pregnant women[5-6].The most common reasons that pregnant women use over-the-counter drugs are nausea, vomiting, heartburn, backache, constipation, or even migraine, pains, and cough during pregnancy[7-8]. Kurdistan region/Iraq has an evident gap in dealing with these kinds of issues in pregnant women. Given the increasing number of pharmaceutical agents in this region, it is so valuable to determine the prevalence and related factors to OTC in this region. The aim of this study was to identify the prevalence, and awareness and knowledge as variable factors of over-the-counter medication among pregnant women in Duhok city and to find out their association with socio-demographic characteristics and other variables.

Patients and methods

A cross-sectional study was conducted among a 498 convenient sample size of pregnant women who attended three primary health centers and one maternity hospital in Duhok city in 2019. The centers were Avro city primary health center (PHC), Zanist PHC, Shahidan PHC, and Duhok maternity hospital). The three mentioned PHCs are the only family centers in Duhok city. The pregnant women attend only these PHC for a medical check-up. And those who need intervention and further management were refer to Duhok maternity hospital. The data collection was performed between 1/5/2019 and 31/12/2019.To achieves the aim of the study, an agreement from women was obtained. A consent form was signed from. The pregnant women who attended the primary health center/hospital for periodical medical a check-up to do an interview and taking information for the purposes of the study. Inclusion criteria: all pregnant women aged 18 years and older irrespective to their socio-demographic characteristics and medical conditions. We excluded tired patients and those who refused to participate. The following information was collected from the patients and recorded in a questionnaire. The questionnaire has the following sections. A pre-designed questionnaire was completed for every pregnant woman in the studied sample. The general information: age, marital status, education level, occupation, and number of children, and smoking. The knowledge of the mothers about the over the counter medication (OTC) was recorded in some categorical questions taken from previous studies in the literature. These items were extracted from the investigations in the literature[3,5 , 9].To achieve the aim of this study; an agreement from ethical committee of the Kurdistan Board of Medical Specialties (KBMS) was obtained. A consent form was signed from the pregnant women who attended the primary health center/hospital for periodical medical a check-up to do an interview and taking information for the purposes of the study. The confidentiality of the personal information of the patients was protected throughout the study steps. The participation was optional, and those women who refused to participate were not included in the study. The descriptive purposes of the study were presented in frequency and percentage or mean and standard deviation. The prevalence of over-the-counter was determined in frequency and percentage. The association of over-the-counter prevalence with patients' characteristics was examined in Chi-Square, or Fishers' exact tests. The significant difference was determined in a p-value ≤ 0.05. The statistical analysis was performed by Statistical Package for Social Sciences version 24:00 (SPSS: 24; IBM).

Results

The mean age of the patients was 29.0±6.26 ranged between 18-45 years old. The mean number of current children of patients was 2.58±1.38 ranged between 1 and 13 children. The patients live in inside and outside (43.8% and 56.2%, respectively). Most of the patients were primary and secondary school graduates (66.5%) and (85.3%) of them were housewives and majority of them had a moderate level of socio-economic status (75.1%). The study revealed that only one pregnant woman was widowed and remaining were married, as showed in Table (1).

Table (1): Demography of patients

Patients' characteristics (n=498)	**Mean**	**SD***
Age (Range: 18-45 years)	29.01	6.26
No. of children (Range: 1-13)	2.58	1.38
Sleeping hours (Range: 4-15 hrs.)	8.08	1.76
	No.	**%**
Residency		
Inside	218	43.8
Outside	280	56.2
Education		
Illiterate/Read	94	18.9
Primary/Secondary	331	66.5
College/Post Graduate	73	14.7
Occupation		
Housewife	425	85.3
Student	42	8.4
Employee	31	6.2
Socio-economic status		
Low	105	21.1
Moderate	374	75.1
High	19	3.8
Marital status		
Married	497	99.8
Widowed	1	0.2

***SD: Standard Deviation.**

This study revealed that more than half of the included women had abortion/stillbirth (54.0%) and mostly received prenatal care (81.3%). A small percentage of the patients were smoker (2.8%). Most of the patients had no chronic disease (86.3%). The chronic diseases were hypertension (4.6%), asthma (0.4%), diabetes (1.0%), disc and migraine (1.6%), and other chronic diseases (6.0%). Only 7.6% of the patients had congenital disease child as showed in Table (2).

Table (2): Clinical information of patients

Clinical characteristics (n=498)	**Statistics**	
	Number	**Percentage**
Abortion/Still birth	269	54.0
Prenatal care	405	81.3
Smokers	14	2.8
Chronic diseases		
Hypertension	23	4.6
Asthma	2	0.4
Diabetes	5	1.0

Disc and migraine	8	1.6
Others	30	6.0
No chronic disease	430	86.3
Congenital disease Child		
Yes	38	7.6
No	460	92.4

The study revealed that 59.0% of the patients reported that they knew what is meant by over-the-counter drugs. The patients used the following OTC drugs during pregnancy (48.0%); allergy medications, analgesics, respiratory medications, gastrointestinal medications, skin condition products, multivitamins, and folates, the remaining patients (52.0%) did not use OTC Table (3). The study found that 8.4% of the patients reported that the OTC drugs are safe, whereas the majority of them reported that OTC drugs are not safe generally (91.6%) and for herbal medications as well (87.3%). Most of the patients reported that they read the leaflet of the drugs before using (68.55) and check the expiry date (70.3%). In general, 15.5% of the patients who used OTC reported side effects. The side effects were cough (1.7%), headache (0.8%), constipation (0.4%), nausea (2.5%), dizziness (1.7%), sleepiness (0.4%), and other side effect (7.9%), Table (3).

Table (3): Information about over-the-counter drugs of patients

N=498	**Statistics**	
	Number	**Percentage**
Meaning of over-the-counter drugs		
Yes	294	59.0
No	204	41.0
OTC use		
User	239	48.0
Non-user	259	52.0
OTC drugs are safe		
Yes	42	8.4
No	456	91.6
herbal medications are safe		
Yes	63	12.7
No	435	87.3
Reading leaflet		
Yes	341	68.5
No	157	31.5
Side effects		
Cough	4	1.7
Headache	2	0.8
Constipation	1	0.4
Nausea	6	2.5
Dizziness	4	1.7
Sleepiness	1	0.4
Other	19	7.9
Sub-total	37	15.5
No side effects	202	84.5
Expiry Date Check		
Yes	350	70.3
No	148	29.7

Of the total 294 patients who used OTC, 178 of them mentioned different reasons (60.54%). The remaining 116 patients did not report any reason. The reasons of patients to use OTC were to improve general health (29.5%), increase energy

(1.2%), supplement prescription medications (1.0%), improve the immune system (0.8%), help with nausea (0.2%), and help with other problems (3.0%). The patients reported that they used the OTC because pharmacy (56.1%), doctors (10.0%), and paramedics recommend (34.7%), or they received the free samples (0.8%), as presented in Table (4).

Table (4): Reasons for over-the-counter drugs use and source of recommendations

Reasons for OTC use (n=498)	Statistics	
	Frequency	Percent
OTC Reasons		
Improve general health	147	29.5
Increase energy	6	1.2
Supplement prescription medications	5	1.0
Improve immune system	4	0.8
Help with nausea	1	0.2
Help with other problems	15	3.0
OTC users (n=239)	178	60.54
No Response	320	64.3
Recommends (n=239)		
Pharmacy	134	56.1
Doctors	24	10.0
Free sample	2	0.8
Paramedics	83	34.7

The study showed that the OTC users were more likely to be older (29.75 vs. 28.32 years; p=0.011) and have more children (2.88 vs. 2.33 no, p<0.001) compared to non-user OTC. In addition, the patients who received prenatal care were more likely to not use OTC (54.57%; p=0.017) compared to non-users (45.43%).The study did not find a significant association with other patients' characteristics Table (5).

Table (5): Association of OTC use with patients' Socio-demographical and obstetrical history variables

Patients' characteristics (n=498)	OTC use		p-Value (two-sided)
	Users (n=239)	Non-users (n=259)	
Age (year)	29.75 (6.42)	28.32 (6.05)	**0.011***
Current children	2.88 (1.45)	2.33 (1.28)	**<0.001***
Sleeping hrs.	8.13 (1.77)	8.04 (1.76)	0.548*
Residency			0.541**
Inside	108 (45.2)	110 (42.5)	
Outside	131 (54.8)	149 (57.5)	
Education			0.176**
Illiterate/Read	49 (20.5)	45 (17.4)	
Primary/Secondary	162 (67.8)	169 (65.3)	
College/Post Graduate	28 (11.7)	45 (17.4)	
Education			0.074**
Under College Level	211 (88.3)	214 (82.6)	
College/Post Graduate	28 (11.7)	45 (17.4)	
Occupation			0.096**
Housewife	212 (88.7)	213 (82.2)	
Student	14 (5.9)	28 (10.8)	
Employee	13 (5.4)	18 (6.9)	
Socio-economic status			0.141**
Low	46 (19.2)	59 (22.8)	
Moderate	180 (75.3)	194 (74.9)	

High	13 (5.4)	6 (2.3)	
Smoking			0.879**
Yes	7 (50.0	7 (50.0	
No	232 (47.93	252 (52.07	
Abortion/Stillbirth			0.986**
Yes	129 (47.96	140 (52.04	
No	110 (48.03	119 (51.97	
Prenatal care			**0.017****
Yes	184 (45.43	221 (54.57	
No	55 (59.14	38 (40.86	
*Independent t-test and ** Pearson Chi-squared test were performed for statistical analyses. The bold number shows a significant difference.			

The study showed that the patients who considered OTC as safe drugs were more likely to use OTC drugs (89.74%) compared to those who did not consider the OTC drugs as not-safe (44.74%; p<0.001). Also, the patients used OTC drugs had significant association with the recommendation that they get it from pharmacy (97.10%), doctors (88.89%), and paramedics (94.32%; p<0.001). However, having a chronic disease, reading leaflets, and free samples did not have any effect on OTC drug use as showed in Table (6).

Table (6): Association of use of over-the-counter use with knowledge and medical professionals' recommendations

Patients' characteristics (n=498)	OTC use		p-Value (two-sided)
	User	Non-user	
OTC Safe			**<0.001**
Yes	35 (89.74)	7 (10.26)	
No	204 (44.74)	252 (55.26)	
Safety of herbal medications			0.383
Yes	27 (42.86)	36 (57.14)	
No	212 (48.74)	223 (51.26)	
Leaflet			0.518
Yes	167 (48.97)	174 (51.03)	
No	72 (45.86)	85 (54.14)	
Chronic diseases			0.721
Yes	34 (50.0)	34 (50.0)	
No chronic disease	205 (47.67)	225 (52.33)	
Congenital disease Child			0.797
Yes	19 (50.0)	19 (50.0)	
No	220 (47.83)	240 (52.17)	
Expiry Date Check			0.691
Yes	170 (48.57)	180 (51.43)	
No	69 (46.62)	79 (53.38)	
Pharmacy recommends			<0.001
Yes	134 (97.10)	4 (2.90)	
No	105 (29.17)	255 (70.83)	
Doctor recommends			<0.001
Yes	24 (88.89)	3 (11.11)	
No	215 (45.65)	256 (54.35)	
Paramedics recommend			<0.001
Yes	83 (94.32)	5 (5.68)	

No	156 (38.05)	254 (61.95)	
Free sample			0.230
Yes	2 (100)	0 (0.0)	
No	237 (47.78)	259 (52.22)	
Pearson Chi-squared test was performed for statistical analyses except for free samples (Fishers' exact test). The bold numbers show a significant difference.			

Discussion

The present study found that 48.0% of the pregnant women used OTC drugs before or during pregnancy for different reasons. Most of these pregnant women reported that OTC drugs are not safe. A small percentage of the patients experienced side effects possibly related to the use of OTC drugs (15.5%). A Hispanic study aimed to explore the use of herbs, vitamins, and OTC products and prescription medications[10]. They reported that 19% and 47% used herbs and took vitamins during pregnancy, respectively. We did not ask about type of the OTC; because our patients were unlikely know the OTC types. But, majority of the patients reported that herbal medications are not safe. The most common reasons to use herbs and vitamins in Hispanic study were to improve general health and energy level (59.0%), and specific pregnancy-related problems (12.0%). In addition, 77.0% took prenatal vitamins, and 21.0% used supplementations with folic acid. The rates of OTC use and prescription medications were 23% and 29%, respectively. The prescription medication use was more likely in women with medical issues (OR: 2.59; 95% CI: 1.59-4.25; p<0.001) in agreement with the present study.Bohio explored the practice of the OTC products before and during pregnancy in 351 Pakistani patients[8]. Bohio reported that 63.5% of the patients used OTC drugs before pregnancy, 36.5% used the products in a previous pregnancy, and 37.9% used the products during the current pregnancy. The study showed that most of the patients had no knowledge about the medicines (77.45)[10]. In agreement with the current study, Bercaw reported that 20.0% of women believed that herbs and vitamins are safer than prescribed medications[10]. In consistent with the present study, the previous studies that have shown that using OTC products is more prevalent in older women and with higher socio-economic status and education[11-14]. There was no significant association of OTC user with different educational level of pregnant women. Bohio reported that headache was the most common side effects reported by the patients. Other reported side effects by Bocio were backache, weakness, constipation, cough, common cold, fever, and multiple complications[8]. Other studies have reported different side effects, such as nausea in India[15] and reduced sleep, vomiting, fever, and infections in Nigeria[9]. Using some of these OTC products may be risky to the woman and fetus as well. For example, using ibuprofen during pregnancy could be a risk factors for premature closure of the fetal ductus, persistent pulmonary hypertension for the newborn, periventricular hemorrhage, fetal nephrotoxicity, and gastroschisis[16-17].The reasons to use OTC were to improve general health, increase energy, supplement prescription medications, improve the immune system, help with nausea, and help with other problems. The availability of an OTC product may be safe for a non-pregnant population, but it does not necessarily reflect being safe for the pregnant population. The ignorance of pregnant women about the safety of an OTC may raise the risky outcomes to the fetus[18]. The present study showed that the patients who considered OTC as safe drugs were more likely to use OTC drugs

compared to those who did not consider the OTC drugs as not-safe. In addition, the patients used OTC drugs according to the recommendations of a pharmacy, doctors, and paramedics. The present study showed that most of the patients used the OTC because the pharmacies offered them, followed by paramedics. In disagreement with the results of the present study Abasiubong reported that most of the patients used the OTC by themselves, followed by their husbands and pharmacist/drug stores[9]. The similar results about the OTC were reported in other studies [18-19]. In light of the results of present study, we recommend educational programs about OTC products and their side effects to increase the knowledge about the risks to pregnant women to reduce self-medication.

Conclusions

This study showed that in the face of 48% of pregnant women using OTC only 8.4% considered over-the-counter medications as safe. Most of the patients read the leaflet of the medications before using and check the expiry date. They considered herbal medications are not safe and that OTCs have no side effects. The reasons of patients to use OTC were to improve general health, increase energy, supplement prescription medications, improve the immune system, help with nausea, and help with other problems. They used the OTC because pharmacy, doctors, and paramedics recommend. The study showed that OTC users were more likely to be statistically older, received prenatal care, and have more children compared to non-user OTC.

Conflicts of interest

There were no conflicts of interest.

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