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KNOWLEDGE, ATTITUDE AND PRACTICE OF PREGNANT WOMEN REGARDING MEDICINES USE IN PREGNANCY

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ABSTRACT

Background: It has become clear that pregnant women around the world are using more drugs in recent years, both with and without doctor's prescription and over-the-counter. **Aim of the study:** This study was conducted to: asses the knowledge, attitude, and practice of pregnant women regarding medicine use during pregnancy, and asses the knowledge of the potential risk of using non-prescribed medications during pregnancy. **Patients and methods**: Across-sectional study had been conducted from January 2022 to July 2022, on (404) pregnant women who attended three main hospitals for obstetrics and gynecology (Al-Batool Teaching Hospital, Al-Khansaa Teaching Hospital and A-Salam Teaching Hospital) in Mosul city, the northern part of Iraq for various medical issues. A random sampling technique was used as the sampling technique selection for this study, a recommended method of sampling for such types of research. All women were between the ages of 15-4, cooperative women with no disability to understand and answer all the questionnaire aspects were included in the study. A well-organized scoring system was utilized in this study to demonstrate the actual influence of participant's knowledge, practice and attitude derived from Bloom's cut-off point, into good, satisfactory and poor categories. This study's statistical evaluation was conducted with the aid of statistical Package for the Social Sciences software version 26 (SPSS Inc.) and P values < 0.05 were accepted as statistically significant. **Results:** The present study included 404 patients with a mean age of 27.44+-6.18, with 264 (65.3%) < 30 years and 140 (34.7%) >30 years. Regarding the educational level most patients had primary education (48%), followed by illiterate (21.3%), secondary education (17.6 %) and finally only (13.1%) with higher education. Additionally, the majority of patients were housewives (87.1%) compared to (12.9%) employees. Also, nearly half of the patients were form urban areas (51 %) and (49%) from rural areas. The majority of patients had a history of drug use (95 %) compared to only (5 %) with no history of medicines use. Additionally the majority of women were multiparous (71.8 %) compared to (28.2%) primiparous. In term of knowledge score analysis of the enrolled patients, the study showed that the majority of patients had good knowledge (72.3%) and only (2.7%) had poor knowledge. Regarding attitude score analysis of the enrolled patients, the study showed that the majority of the patients had good attitudes (74.3%) compared to (0.7%) with poor attitudes. In terms of practice score analysis, most patients had fair practice levels (49%), while only (2.7%) had poor practice levels. **Conclusion:** Most of the enrolled pregnant women were multiparous, with a primary education level, housewives and a history of drug use. Additionally, most of them demonstrated good knowledge and attitude, and fair practice towards medication use during pregnancy.

KEYWORDS: Knowledge, attitude, practice, over-the-counter medication, pregnancy.

INTRODUCTION

Background

Pregnant women use medications to control their chronic illnesses and treat acute or pregnancy-related symptoms such as backache, indigestion and nausea which can either develop suddenly during pregnancy or might be made worse by it.[1] According to findings from researches on drug use conducted over the past two decades, pharmaceutical exposure during pregnancy is frequent, with frequencies ranging from 39 to 99 %.[2]

Pregnant women frequently utilize herbal remedies as well[3], and they frequently do so without notifying doctors[4], due to the low cost of treatment and easy

accessibility of these substances, more pregnant women in Africa turning to herbal treatments to manage pregnancy-related issues.[5] Notably there is even less information available on the safety of herbal medicines during pregnancy than there is for modern medications, and because there is little information available about their side effects, using herbal medicines during pregnancy is rarely advised.[6]

Teratogenic drug effects

There is a 2-4% basal risk of serious birth abnormalities for all pregnancies.[7] However, teratogenic effects brought on by maternal drug use account for less than 1% of these abnormalities. Only a short list of medications or pharmacological classes has been confirmed to be teratogens in humans.

Examples of drug groups or drugs with potential for teratogenic effects.

- Agents acting on the renin-angiotensin system
- Antidepressants
- Antiepileptic drugs
- Anti-cancer agents
- Anxiolytics
- Androgens
- Coumarin derivatives (Warfarin)
- Estrogen
- Oral contraceptives
- Retinoids (Isotretinoin)
- Carbimazole
- Lithium

Assessment of drug side effects on pregnancy

For both health care professionals and patients, the long standing FDA pregnancy risk categories A,B,C,D and X serve as a reference for the relative safety of drugs.[8]

FDA pregnancy risk categories

A: Appropriate human studies-no risk.
B: Insufficient human studies, but animal research suggests safety.
Or: Animal studies show issues but human studies show safety.
C: Insufficient human studies, but animal studies show problems.
Or: No animal studies, and insufficient human studies.
D: Human studies with/without animal research show fetal risks, but the drug is important to some women to treat their conditions.
X: Fetal risks are evident; there are no situations where the risk/benefit justifies use.

Drug information sources for pregnant women

Patients are urged to actively engage in their own healthcare and treatment decisions,[9] which suggests a need for access to relevant drug information. Accordingly pregnant women indicate a need for knowledge of the side effects of medications.[10] Since the thalidomide disaster, it is widely believed that no medicine is safe to use while pregnant.[11] Pregnant women are still advised by healthcare providers to avoid taking medications unless they are absolutely required.

Justification of the study Studies showed that pregnant women frequently use medications without the necessary information.[12] In many underdeveloped countries, pregnant women have been reported to often self-medicate and many of them may not be aware of the intended use of a medicine.[73]

Pregnant women who lack sufficient pharmaceutical knowledge and practice may eventually have negative effects on both the mothers and the child' health. One effective way to teach this necessary knowledge is counseling.

Previous studies from Iraq showed that there is a bad practice among pregnant women regarding non-prescribed self-inflicted drug use and the excessive use of herbal medications. Furthermore, there is improper pregnant women counseling regarding drug usage.[13]

AIM OF THE STUDY

To assess knowledge, attitude and practice of pregnant women regarding medicine use in pregnancy.

OBJECTIVES

1. To assess the knowledge of the potential risk of using non-prescribed medications during pregnancy.
2. To describe socio-demographic characteristics of study participants.
3. To compare knowledge, attitude and practice levels in relation to different sociodemographic characteristics

PATIENTS AND METHODS

A cross-sectional study had been conducted from January 2022 to July 2022, on (404) pregnant women who attended three main hospitals for obstetrics and gynecology in Mosul city in the northern part of Iraq for various medical issues. The current study included Al-Batool Teaching hospital, Al-Khansaa Teaching Hospital and Al-Salam Teaching Hospital. It was conducted to highlight the impact of pregnant Knowledge, attitude and practice regarding medicines used in pregnancy and to demonstrate the probable contributors. All of the participants were randomly selected between ages 15-46 years old who they went to hospital for various health issues and whom their pregnancy was confirmed by ultrasound investigation. All of participants were cooperative and who had no disability to understand and answer all the questionnaire aspects of this study. We excluded women who were less than 15 years age and older than 46 years, who were not pregnant and who had disability to coordinate with the questionnaire. The study relied on a special designed questionnaire which was composed of four parts; part I for sociodemographical, gynecological and obstetrical aspects, part II, for knowledge-related questions about medicines use in pregnancy, part III, including attitude related questions

and part IV for practice related aspects. A well-organized scoring system was utilized in this study to demonstrate the actual influence of participant's knowledge, practice and attitude derived from Bloom's cut-off point, into good, satisfactory and poor categories classified as.
The good category was applied to those achieved (80-100 %) of the total correct answers.
The satisfactory category applied for those achieved (60-79%) of total answers.
The poor category for those who achieved less than 60% of total answers.

Regarding the knowledge-related questions, achievement of more than or equal to[6] correct answers was considered good knowledge,[4-5] correct answers considered a satisfactory score while those who achieved less than[4] correct answers considered poor score.

For attitude-related aspects; participant answered more than or equal to[6] correct answers considered as good attitude, with[4-5] correct answers were considered a satisfactory attitude and those who achieved less than[4] correct answers considered as poor score.

For practice-related aspects; achievement of more than or equal to[4] correct answers considered as good practice,[3] correct answers as satisfactory score while those who achieved less than[3] correct answers considered poor score.

Variables were defined as follows.

- Level of education

Illiterate (has no ability to read or write), primary education (completed six years of primary education), secondary education (completed twelve years of primary, intermediate and secondary education) and higher education (completed bachelors or diploma degree).

- Parity

Multiparous and Nulliparous

This study's statistical evaluation was conducted with aid of Statistical Package for The Social Sciences Software Version 26 (SPSS Inc.). The Chi-square test was used to determine if two groups where statistically different on categorical variables given as numbers and percentages (*X2).* In order to determine which variables contributed to the Chi-square results, adjusted standardized residuals were utilized. As the dependent interval in statistics, P-values less than 0.05 were considered statistically significant. This was based on a 95% confidence interval.

An official agreement was obtained from the directorate of health in Mosul before conducting this study. Verbal legal consent was taken from participants before carrying out the study after full clarification, interpretation and emphasizing the exact influence of such study conduction in promoting women's health.

RESULTS

The present study included (404) patients with a mean age of 27.44 + - 6.18 age, 264 (65.3%) of them less than 30 years and 140 (34.7%) of them older than 30 years. Most patients had primary education (48%) followed by illiterate (21.3%), with secondary education (17.6%) and only (13.1%) with higher education. Additionally, the majority of patients were housewives (87.1%) compared to (12.9%) employees, nearly half of the patients were from urban areas (51%) and (49%) rural areas. The majority of patients had a history of medicine use (95%) compared to only (5%) with no history of medicine use. Also the majority of women were multiparous (71.8%) compared to (28.2%) primiparous.

General demographic characteristics of study participants

Variables		**Frequency (No. 404)**	**Percent**
Age	Mean ± SD	22.44 ± 6.18	
	Median	27.00	
	Minimum-Maximum	15	46%
	<30 years	264	65.3%
	>30 years	140	34.7%
Educational Level	Illiterate	86	21.3%
	Primary education	194	48.0%
	Secondary education	71	17.6%
	Higher education	53	13.1%
Occupation	Employee	52	12.9%
	Housewife	352	87.1%
Residency	Rural	198	49%
	Urban	206	51%
History of drug use	Yes	384	95%
	No	20	5%
Parity	Primiparous	114	28.2%
	Multiparous	290	71.8%

Knowledge related data distribution of the studied population

The majority of participants thought that medicines are used differently in pregnancy (91.8%), while (5%) did not know that and only (3.2%) did not think that medicines are used differently in pregnancy. Majority of them did not think that every medicine causes adverse events (92.3%), while (4.5%) did not know that every medicine causes adverse events or not and only (3.2%) thought that every medicine causes adverse events. Additionally, most participants thought that some medicines could harm the mother and fetus (89.4%) while (6.2%) did know that and only (4.5%) did not think that some medicines could harm both mother and fetus.

More than half of the participants knew the exact use of the prescribed medicines (65.6%) and (34.2%) did not knew that. Also, most patients thought that medicine choice depends on the pregnancy trimester (77%), while (19.1%) did not think so and only (4%) did not know that medicine choice depends on pregnancy trimester.

Variables		Frequency	Percent
Medicines are used differently in pregnancy	Yes	371	91.8%
	No	13	3.2%
	Don't know	20	5%
Every medicine causes adverse events	Yes	13	3.2%
	No	373	92.3%
	Don't know	18	4.5%
Some medicines could harm the mother and fetus	Yes	361	89.4%
	No	18	4.5%
	Don't know	25	6.2%
Exact use of prescribed medicines	Yes	265	65.6%
	No	138	34.2%
	Don't know	1	0.2%
Medicine choice depends on the pregnancy trimester	Yes	311	77%
	No	77	19.1%
	Don't know	16	4%
Pregnant women with chronic diseases should continue to use their usual medicine after consulting a doctor	Yes	279	69.1%
	No	33	8.2%
	Don't know	92	22.8%
Some medicines are essential to be taken in every pregnancy (e.g. folic acid)	Yes	378	93.6%
	No	20	5%
	Don't know	6	1.5%

Knowledge scores of the studied population

Good Knowledge (72.3%)
Fair knowledge (25%)
Poor knowledge (2.7%)

Variables		Frequency (No. 404)	Percent
Do you think that supplements are essential during pregnancy?	Agree	366	90.6%
	Disagree	34	8.4%
	Don't know	4	1%
Do you think that herbal remedies are less harmful than medicines	Agree	158	39.1%
	Disagree	139	34.4%
	Don't know	107	26.5%
Do you think that medicine should be taken only after consultation with the doctor?	Agree	367	90.8%
	Disagree	35	8.7%
	Don't know	2	0.5%
Do you think that Over-The-Counter medications are safe during pregnancy?	Agree	99	24.5%
	Disagree	303	75.0%
	Don't know	2	0.5%
Do you think that the dose of medicine should be changed during pregnancy?	Agree	275	68.1%
	Disagree	31	7.7%
	Don't know	98	24.2%
Do you think that some drugs affect fetuses in the future?	Agree	279	69.1%

	Disagree	33	8.1%
	Don't know	92	22.8%
Do you think that you should immediately notify any adverse effects of drugs to doctor or pharmacist?	Agree	378	93.5%
	Disagree	20	5%
	Don't know	6	1.5

Attitude score of the studied population
Good attitudes: (74.3%)
Fair attitude: (25%)
Poor attitude: (0.7%)

Practice-related data distribution of the studied population.

Variables		**Frequency (No. 404)**	**Percent**
Do you have a habit of self-medication?	Always	307	76
	Sometimes	42	10.4
	Never	55	13.6
Did you change this habit after being pregnant?	Always	282	69.8
	Sometimes	64	15.8
	Never	58	14.4
Did you ask or read about the safety of a medication during pregnancy?	Always	188	46.5
	Sometimes	33	8.2
	Never	183	45.3
Do you use to take the medication exactly as prescribed?	Always	253	62.2
	Sometimes	4	1.0
	Never	147	36.4
Did you avoid taking medications as possible during pregnancy?	Always	166	41.1
	Sometimes	224	55.4
	Never	14	3.5

Practice score of the studied population
Fair practice: (49%)
Good practice: (48.3%)
Poor practice: (2.7%)

DISCUSSION

We found that more than 72% of the studied women have good knowledge regarding medication use in pregnancy. About 89% thought that some medication may cause harmful effects on fetus, 92% commented that each drug may have side effects while only 655 knew that the exact benefit of prescribed drug.

According to a study that was done in Iran, in 2005 by Hajiseidjavadi et al, on 400 pregnant women who were referred to the Kosar hospital prenatal care facility for follow-up, most included females (74%) had poor knowledge regarding drug complications during pregnancy, furthermore, 9.6% of them used medications without a doctor prescription.[14]

Poor NSAID (Non-steroidal anti-inflammatory drug) knowledge among pregnant women was also revealed by a study conducted in Ethiopia, 2012[12] and only 33% of pregnant women in India were aware that drug utilization during pregnancy might have negative effects on both mother's and unborn child's health according to the findings of retrospective cross-sectional study held in 2006.[15]

The articles on medication use during pregnancy also demonstrated that pregnant women's health ideas and attitudes tended toward caution or restriction.[16] Women were also aware of the benefits of vitamins for their unborn child's development, the role they played in reducing the risk of birth abnormalities, and the fact that they were safe to take throughout pregnancy according to studies.[17] Interestingly, more than 90% of the females in this study aware about the benefits from vitamins supplements.

Interestingly, majority of the ladies in this study weren't eager to try herbal medicines when pregnant, this is in contrast to the results of polls conducted on women in the United Kingdom, Italy and Norway, where over 57.8%, 50% and 36% respectively of the women stated utilizing herbs during pregnancy reflecting a more conservative mindset.[4] 69% of the women thought that using medication during pregnancy may have an adverse effect on the fetus in the, including congenital malformation and other inborn disease. However, these results are opposite to that of Zaki et al, in their cross-sectional study on 760 pregnant women in Riyadh, Saudi Arabia, 2014 which revealed that the vast majority of participants did not hold the belief that drugs are to blame for any congenital abnormalities that their offspring may have.[18]

A large percentage of the participants have a habit of self-medication (76%), however most of them (70%) gave it up once they found they were pregnant. Similar percentage (72.4%) found in a Nigerian study that was published in 2012[19]; a lower percentage was seen in another study in Nepal, 2013 (64%)[20], suggesting that more interventional measures are needed to educate people about the risks of using drug during pregnancy.

This study does have certain limitations, first of, reporting bias may have been present in the answers of the participants because the majority of the data was gathered through self-report and could not be verified. Second, because this study was conducted in northern Iraq, it is important to determine whether the results can be applied to all of the population there.

CONCLUSIONS

Most of the enrolled pregnant women were multiparous, with a primary education level, housewives and a history of medicine use. Most of them demonstrated good knowledge, attitude and practice towards medication use during pregnancy.

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