







Evaluation of Turkish women's attitudes and perceptions regarding medication use in pregnancy: A pilot study

Deniz Kaleli Durman¹ , Belkıs Dolgun² , Narin Öztürk Seyhan¹ , İlker Kurt³ , Esen Gül Koçak³ ,
B. Sönmez Uydeş Doğan¹ 

¹İstanbul University, Faculty of Pharmacy, Department of Pharmacology, İstanbul, Türkiye

²İstanbul University, Faculty of Pharmacy, İstanbul, Türkiye

³İstanbul University, Faculty of Pharmacy, Department of Pharmacology, Division of Clinical Pharmacy, İstanbul, Türkiye

ABSTRACT

Background and Aims: Medication use for pre-existing or pregnancy-induced conditions/diseases is common during pregnancy. Understanding the attitudes and perceptions of pregnant women regarding medication use is crucial for healthcare professionals in providing safe and rational drug use during pregnancy. The aim of this pilot study was to evaluate the attitudes and perceptions of Turkish women regarding medication use during pregnancy.

Methods: A cross-sectional, questionnaire-based study was conducted with 60 pregnant/lactating women who applied to a community pharmacy in İstanbul, Türkiye. The questionnaire focused on women's attitudes and perceptions regarding the use of medications and supplements during pregnancy.

Results: 65% of women stated that the use of certain medications is harmful, while 31.7% believed that all medications are harmful in pregnancy, particularly in the first trimester. The majority of participants (90%) consulted with their physicians before using any medication, whereas a few received advice from pharmacists and nurses. Most women adhered to the prescribed treatment regimen for pre-existing (83.3%) and pregnancy-induced diseases (75%), while a few stopped taking medication for not to harm their baby. None of the participants had a habit of self-medication.

Conclusion: The majority of the women used medication with high adherence and had high confidence in the advice from a physician. However, the tendency to avoid medication use due to concerns about fetal harm, and the low consultation rate with pharmacists are notable findings. More effort is needed to encourage pregnant women to obtain information regarding medication use during pregnancy from community pharmacists.

Keywords: Pregnancy, Medication use, Attitudes, Perceptions

INTRODUCTION

Medication use during pregnancy is on the rise globally. Recent studies in developed countries have shown that most women take at least one medication, whether prescribed or over the counter (OTC), during pregnancy (Lupattelli et al., 2014). Medication is often necessary for the effective management of pre-existing chronic diseases such as hypertension, diabetes, asthma, hypothyroidism or epilepsy, as well as acute illnesses like flu/cold, bacterial infections, headaches, toothaches etc., observed during pregnancy. In addition, medication is commonly used to manage pregnancy-induced conditions, including nausea-vomiting, gastroesophageal reflux, and diseases such as gestational diabetes or gestational hypertension (Mitchell et al., 2011).

The use of medication during pregnancy involves carefully weighing the risks and benefits for both the mother and the fetus. Previous studies have shown that the irrational use of medicine and/or supplements may worsen the underlying condition/disease in the mother or can lead to potential harm to the fetus (Sharma, Kapoor, & Verma, 2006; Nordeng, Ystrom & Einarson, 2010; Kassaw & Wabe, 2012).

Besides ensuring the safety of maternal medication use, it is crucial for healthcare providers to understand women's attitudes and perceptions regarding medication use during pregnancy in order to maintain high adherence to necessary treatment regimens as well as to prevent unnecessary usage (Devkota, Khan, Alam, Sapkota, & Devkota, 2017). In this relation, community pharmacists are in a prime position to answer questions

Corresponding Author: B. Sönmez Uydeş Doğan **E-mail:** sonmezdo@istanbul.edu.tr

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and alleviate the concerns of pregnant women. Several studies have investigated women's attitudes and perceptions concerning the potential risks and benefits of medication use during pregnancy, emphasising the pivotal role of pharmacists' practices in promoting rational drug use. (Lupattelli et al., 2014; Petersen, McCrea, Lupattelli, & Nordeng, 2015; Lynch et al., 2017; Ceulemans, Liekens, Van Calsteren, Allegaert, & Foulon, 2020). However, research on pregnant women's attitudes and perceptions on medication use within the Turkish population is limited (Göker et al., 2012; Terzioğlu Bebitoğlu, Hıdıroğlu, Ayaz, Sarısaltık, & Koc, 2022; Albayrak, Demir, Sezik, 2024). The current study is a pilot study with a particular focus on the patterns of medication use in pregnancy for acute and chronic conditions or diseases, as well as the use of OTC medicines and supplements.

MATERIAL AND METHODS

This pilot cross-sectional, questionnaire-based study was conducted between August and September 2024 with 60 pregnant or lactating Turkish women who visited a community pharmacy in Istanbul, Türkiye. A questionnaire was designed to gather information on the demographic and clinical characteristics of the participants, as well as their attitudes and perceptions regarding the use of prescribed and OTC medications or supplements for managing pre-existing or pregnancy-induced conditions and diseases. After obtaining oral and written consent from the participants, a face-to-face questionnaire was administered. This study was conducted in accordance with the approval of the Istanbul University Faculty of Dentistry Clinical Research Ethics Committee (30/07/2024, No:747). Data analyses were performed using GraphPad Prism 10.3.1.

RESULTS

Study Population

Fifty pregnant and 10 lactating women, 60 in total, participated in this pilot study. The demographic and clinical characteristics of the women are shown in Table 1.

Among the women who participated in the survey, 70% were between the ages of 25 and 35. Women under 25 and over 35 years old comprised 30% of the survey participants, indicating that pregnancy is less common in these age groups. A significant portion of the participants (46.6%) had a university or postgraduate degree. In addition, 15% of the women were in the first trimester of their pregnancy, which is considered as the most critical period for teratogenic risks. While the majority (45%) of the participants were in the final term of their pregnancy. A few percent (16.7%) of women were in the lactation period and completed the survey according to their medication use in the recent pregnancy period. Pre-existing chronic diseases such as Type-2 Diabetes Mellitus (T2DM), hypertension,

hypothyroidism, asthma, thalassaemia and kidney failure were determined in some of the participants. None of them reported alcohol consumption, and only one (1.7%) reported occasional smoking.

Women's perceptions of medication use during pregnancy

31.7% of the women believed that medication use in pregnancy is harmful, while 65% of the women stated that the use of certain medications is harmful during pregnancy (Figure 1a). Of those who were concerned about medication risks, 51.7% believed that particularly the first 3 months, while 44.8% reported that the whole pregnancy period was harmful for medication use (Figure 1b).

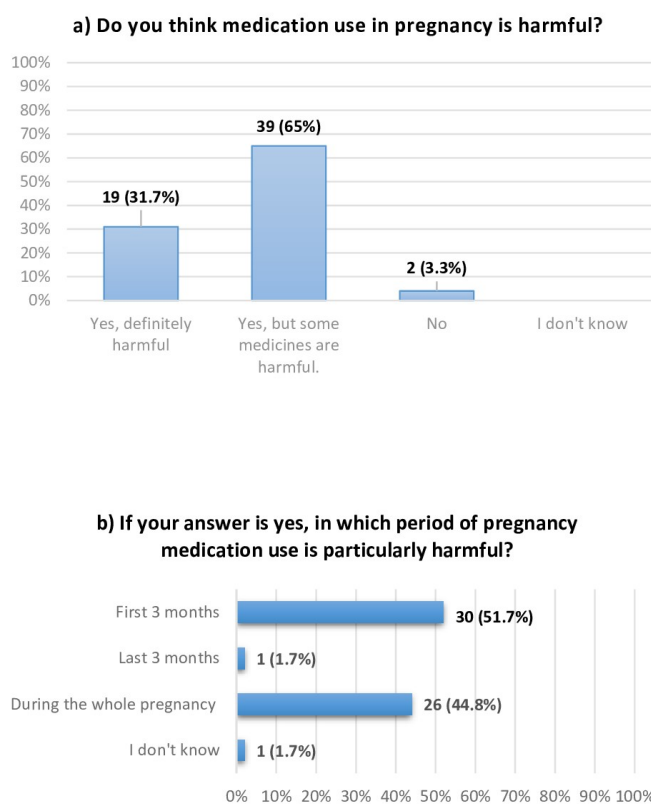


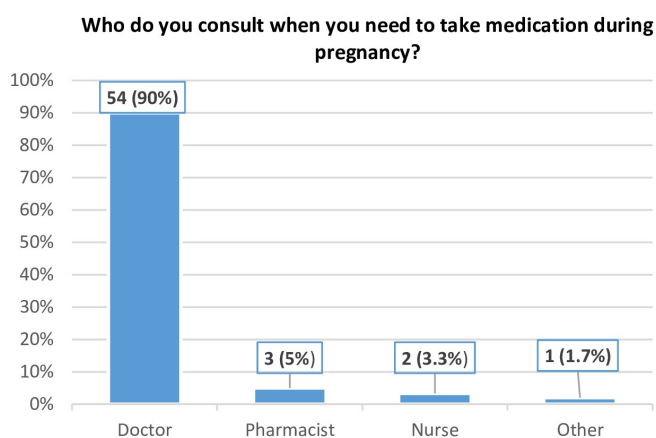
Figure 1. Women's perceptions regarding the safety of medication use in pregnancy. Data are shown as n (%) on the bar graphics

Counselling with healthcare professionals regarding medication use during pregnancy

The majority of the participants (90%) consulted with their physicians before using any medication during pregnancy, while only a few women had received advice from pharmacists (5%), nurses (3.3%) and non-professionals (friends/relatives, 1.7%) (Figure 2).

Table 1. Demographic and clinical characteristics of the women involved in the study

Specifications	Number (n)	(%)
Age		
18-25	10	(16.7)
26-30	24	(40)
30-35	18	(30)
35-50	8	(13.3)
Education Level		
Primary School	17	(28.3)
Middle School	9	(15)
High School	6	(10)
University	26	(43.3)
Master/PhD degree	2	(3.3)
Pregnancy/Lactation		
First trimester of pregnancy	9	(15)
Second trimester of pregnancy	14	(23.3)
Third trimester of pregnancy	27	(45)
Lactation	10	(16.7)
Pre-existing Chronic Diseases		
Asthma	2	(3.3)
Type 2 Diabetes Mellitus	1	(1.7)
Hypertension	1	(1.7)
Hypothyroidism	1	(1.7)
Thalassaemia	1	(1.7)
Renal Failure	1	(1.7)

**Figure 2.** Counselling with healthcare professionals regarding medication use during pregnancy

Medication use for pre-existing chronic diseases

Some participants had chronic conditions such as T2DM, hypertension, hypothyroidism, asthma, thalassaemia, and kidney failure prior to pregnancy (Table 1). The medications prescribed for these pre-existing chronic diseases were insulin, methyl-dopa, levothyroxine, salbutamol, and iron, respectively. The women's attitudes and perceptions regarding medication use for pre-existing chronic diseases in pregnancy are shown in

Table 2. Most women involved in this study adhered to the prescribed treatment regimen, by taking medicine consistently and in the recommended dosage. However, 1 of 6 women discontinued their medications due to concerns about potential harm to the fetus.

Medication use for pregnancy-induced conditions and diseases

All participants were asked whether they experienced pregnancy-induced conditions/diseases or not. 51.7% (n=31) of the women reported that they experienced nausea and vomiting, while 40% (n=24) reported gastroesophageal reflux as pregnancy-induced conditions. These women's attitudes and perceptions regarding medication use on related conditions are given in Table 3. Among these women, 48.4% and 50% used medication under a physician's supervision for nausea-vomiting and gastroesophageal reflux, respectively. The most commonly prescribed medications were metoclopramide and trimethobenzamide for nausea and vomiting and antacids for gastroesophageal reflux. Notably, approximately half of the women did not use any medication for these conditions, instead they attempted to take some supplements (Table 3).

Concerning pregnancy-induced diseases, gestational diabetes (n=3) and gestational hypertension (n=1) were observed

Table 2. Women’s attitudes and perceptions regarding medication use for pre-existing chronic diseases during pregnancy

Which of the following describes how you use the medication for your pre-existing chronic diseases?	n	(%)
I adhered to the prescribed medication regimen, taking it consistently and in the dosage recommended by my doctor.	5	83.3
I only took the medication when my symptoms worsened, as I was concerned it might harm my baby.	0	0
I stopped taking the medication, as I was concerned it might harm my baby.	1	16.7
I never used medication, as I was concerned it might harm my baby.	0	0

Table 3. Women’s attitudes and perceptions of medication use in pregnancy-induced conditions

	Nausea and Vomiting (n=31)		Gastroesophageal Reflux (n=24)	
	n	(%)	n	(%)
What did you do for your nausea and vomiting or gastroesophageal reflux during pregnancy?				
I consulted with my doctor and used a medication under his/her supervision.	15	48.4	12	50
I consulted with a pharmacist and used a medication based on his/her advice.	0	0	0	0
I took a medication that I used before pregnancy.	0	0	0	0
I did not use medication; instead, I attempted to take supplements.	16	51.6	12	50

in 4 (6.7%) out of 60 women. Among these women, 75% reported that they appropriately adhered to the prescribed medication regimen, namely, insulin or methyldopa. While, 1 woman (25%) with gestational diabetes avoided using medication due to concerns about potential harm to the fetus (Table 4).

Medication use for acute conditions during pregnancy

Participants of the survey were asked whether they experienced any acute conditions during their pregnancy. 46.7% (n=28) of the women reported that they experienced flu or cold, while 11.7% (n=7) reported bacterial infection and 48.3% (n=29) reported headache, toothache or joint pain. These women’s attitudes and perceptions regarding medication use for such acute conditions are given in Table 5.

Women who experienced flu or cold during pregnancy used medications containing acetaminophen (paracetamol) under a physician’s supervision (32,1%, n=9) or consulted a pharmacist (3.6%, n=1) to alleviate their symptoms. Most women who had bacterial infection used penicillin antibiotics (85,7%, n=6) under the supervision of their physicians. Additionally, preg-

nant women who experienced headache, toothache, or joint pain during pregnancy used paracetamol under the supervision of their physician (51.7%, n=15) or a pharmacist (6.9%, n=2). Interestingly, 64.3% (n=18) of the women with flu/cold and 41.4% (n=12) of the women with headache, toothache, or joint pain reported that they did not use medication, instead they attempted to take supplements.

Supplement use during pregnancy

Women’s attitudes regarding supplement use during pregnancy are given in Table 6. We determined that 96.7% (n=58) of women used iron and folic acid supplements during the first trimester of pregnancy according to their physician’s recommendation (n=57) or their own preference (n=1). Other supplements/herbal products including fish oil, vitamin D, calcium, multivitamins, and fennel were also determined to be used mostly under the physician’s supervision (n=12) or according to the advice of friends/relatives (n=2), but not with the recommendation of a pharmacist.

Table 4. Women's attitudes and perceptions regarding medication use during pregnancy-induced diseases

	Gestational Diabetes or Hypertension (n=4)	
Which of the following describes how you use the medication for your gestational diabetes or hypertension?	n	(%)
I adhered to the prescribed medication regimen, taking it consistently and in the dosage recommended by my doctor.	3	75
I only took the medication when my symptoms worsened, as I was concerned it might harm my baby.	0	0
I stopped taking the medication, as I was concerned it might harm my baby.	0	0
I never used medication, as I was concerned it might harm my baby.	1	25

Table 5. Women's attitudes and perceptions regarding medication use for acute conditions during pregnancy

	Flu/Cold (n=28)		Bacterial Infection (n=7)		Headache/Toothache/ Joint pain (n=29)	
What did you do for your flu/cold, bacterial infection, and headache/toothache/joint pain during pregnancy?	n	(%)	n	(%)	n	(%)
I consulted with my doctor and used the medication under his/her supervision.	9	32.1	6	85.7	15	51.7
I consulted with a pharmacist and used a medication based on his/her advice.	1	3.6	0	0	2	6.9
I took a medication that I used before pregnancy.	0	0	0	0	0	0
I did not use medication; instead, I attempted to take supplements.	18	64.3	1	14.3	12	41.4

Table 6. Women's attitudes regarding the use of supplements during pregnancy

	Yes		No	
	n	(%)	n	(%)
Did you take iron and folic acid supplements during the first 3 months of your pregnancy?	58	96.7	2	3.3
Did you use any other supplements/herbal products during pregnancy?	14	23.3	46	76.7
Did you or your baby experience any health issues related to the medication or herbal products you used during pregnancy?	0	0	60	100

DISCUSSION

Pregnancy is a critical period for the safety of both the mother and fetus. Medication use during pregnancy may be required because of pre-existing chronic conditions, newly emerged symptoms, or pregnancy-induced diseases (Mitchell et al., 2011). Medication management in pregnancy is based on the principle of providing an effective treatment for the mother and minimising potential harm to the fetus or newborn. In this respect, healthcare providers, including pharmacists, have a

pivotal role in ensuring the rational use of medication during this period (Lynch et al., 2017; Ceulemans et al., 2020). In addition, women's awareness, attitudes and practice also have a significant impact on the safety of medication use during pregnancy (Lupattelli et al., 2014; Petersen et al., 2015; Devkota et al., 2017; Terzioğlu Bebitoğlu et al., 2022). In the current questionnaire-based pilot study, we assessed the attitudes and perceptions of pregnant or lactating Turkish women regarding medication use during pregnancy, who applied to a community pharmacy in Istanbul, Türkiye.

The majority of participants (70%) were between 25 and 35 years of age, which is the most common period of fertility in women. Differences were noted in the age ranges of women participating in similar studies in Türkiye (Olukman, Parlar, Orhan, 2006; Kahraman, Şen Aytekin, Sandalcı, Alparşlan, 2023; Çobanoğlu, 2020; Terzioğlu Bebitoğlu et al., 2022; Albayrak et al., 2024). The age range of our study population may be partly related to the high education level of most women. On the other hand, some participants had pre-existing chronic conditions such as T2DM, hypertension, hypothyroidism, asthma, thalassaemia, and kidney failure, as well as pregnancy-induced diseases such as gestational diabetes and hypertension. In addition, some women experienced common pregnancy-induced conditions such as nausea and vomiting and gastroesophageal reflux, while others experienced various acute conditions, including flu, cold, bacterial infection and headache, toothache, or joint pain.

Medication-related risks vary depending on the stage of pregnancy, with the first trimester being particularly crucial due to the potential for adverse effects on fetal development, including miscarriage, organ malformations, and functional impairments. We determined that the majority (65%) of the women believed that certain medications were harmful during pregnancy. On the other hand, 31.7 % of the women considered that all medications were unsafe, particularly in the first 3 months or during the entire pregnancy. In contrast, other studies have reported a much higher percentage of pregnant women who believed that taking medications either in the first or other trimesters is dangerous or probably detrimental (Wolgast, Lindh-Astrand, Lilliecreutz, 2019; Alhajri et al., 2022). Overall, this difference from our findings may be related to the variations in the education levels of the women who participated in these studies, which was also suggested previously (Nordeng et al., 2010; Zaki & Albarraq, 2014).

Medication use during pregnancy must be carefully supervised by healthcare professionals. In this study, the majority of participants (90%) consulted their physicians before using any medication during pregnancy, whereas some others received advice from pharmacists, nurses or non-professionals (friends/relatives). Most of the women involved in this study adhered to the prescribed treatment regimen for their pre-existing chronic (83.3%) and pregnancy-induced diseases (75%), by taking the medicine consistently and in the recommended dosage. Similarly, a previous study showed that most pregnant women (64.1%) adhered to the prescribed treatment (Wolgast et al., 2019). Thus, it can be speculated that pregnant women ensure a high adherence to the treatment regimen given by the physician. Notably, in the current study, none of the participants had a habit of self-medication while some women with pre-existing chronic (16.7%) or pregnancy-induced diseases (25%) stopped taking their medication thinking that it might harm their baby. In contrast to our findings, a high percentage of women (64.2% and 72.4%) were reported to have a habit of

self-medication in previous studies (Abasiubong et al., 2012; Devkota et al., 2017). This discrepancy may be related to differences in the demographic characteristics of the participants, particularly their education level, highlighting the importance of strategies aimed at educating pregnant women. In the current study, approximately 46.6% of the pregnant women had a high education level, which may explain the high adherence to the treatment regimen given by the physician as well as the lack of self-medication habit. It is noteworthy that the level of education is low in other studies conducted in Türkiye, which reported that self-medication and the tendency to buy drugs from a community pharmacy without consulting a physician are high among pregnant women (Alptekin & Koruk, 2020; Kahraman et al., 2023).

Insulin, methyl dopa, levothyroxine, salbutamol and iron were used for pre-existing chronic and pregnancy-induced diseases, which are the most common medications prescribed for pregnant women (Undela, Joy, Gurumurthy, Sujatha, 2021). Concerning pregnancy-induced acute conditions, which were reported by half of the women who participated, metoclopramide and trimethobenzamide were preferred for nausea and vomiting, while antacids were used for gastroesophageal reflux. Headache, toothache, joint pain, and flu/cold were the most common acute conditions reported by the participants during their pregnancy. For these acute conditions, pregnant women used medications containing paracetamol under the physician's supervision to alleviate their symptoms. In addition, penicillin antibiotics were preferred for treating bacterial infection. Indeed, these are commonly prescribed medications in pregnant women, consistent with previous studies (Nordeng et al., 2010; Wolgast et al., 2019). Notably, 50% of the women experienced pregnancy-induced conditions, and 64.3% of the women with acute conditions (i.e., flu/cold) did not use any medication but instead attempted to take supplements. Furthermore, a small percentage of pregnant women who experienced acute conditions such as headache, toothache, joint pain, or flu/cold used paracetamol-containing medications based on a pharmacist's recommendation, which is comparable to findings from other studies (Wolgast et al., 2019; Ceulemans et al., 2020).

Almost all women who participated in the study were receiving iron and folic acid supplements (96.7%) during the first trimester of pregnancy according to their physician's recommendations. Moreover, fish oil, vitamin D, calcium, multivitamins, and fennel were also determined to be used by pregnant women as other supplements/herbal products, mostly under the physician's recommendation. Notably, none of the pregnant women applied to a community pharmacist for supplement recommendation.

This study has some limitations such as a small sample size and the collection of data by self-reporting, which may be subject to reporting bias. Additionally, the survey was conducted among participants who applied to a community pharmacy in

Istanbul; hence, their knowledge and attitudes on medication use may not be representative of pregnant women in other regions of the country.

CONCLUSION

Overall, most women who participated in this study used medication with high adherence to the treatment regimen and had high confidence in the advice from a physician. This positive attitude and perception is likely to be linked to the higher educational levels of most participants. However, the tendency to avoid medication use due to concerns about fetal harm, and the low rate of consultation with pharmacists are notable findings. Given the pivotal role of community pharmacists in ensuring the appropriate and safe use of medications, more effort is needed to encourage pregnant women to obtain information regarding medication use during pregnancy from these healthcare providers.

Ethics Committee Approval: This study was conducted in accordance with the approval of the Istanbul University Faculty of Dentistry Clinical Research Ethics Committee (30/07/2024, No:747).

Informed Consent: Written consent was obtained from the participants.

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ORCID IDs of the authors

Deniz Kaleli Durman	0000-0002-8669-7480
Belkıs Dolgun	0009-0008-2584-4193
Narin Öztürk Seyhan	0000-0003-4594-4251
İlker Kurt	0000-0002-4932-4183
Esen Gül Koçak	0009-0000-5714-031X
B. Sönmez Uydeş Doğan	0000-0002-6729-8150

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