

Mothers' Knowledge and Administration of Over-the-Counter Medications during Pregnancy at Al-Baha Region – KSA

Amira Elnour Eltayeb Elbashir

*Assistant Professor of Obstetrics and Gynecological Nursing
Mother and Child Health Nursing Department, Faculty of Nursing, Al-Baha University, Al-
Baha, Saudi Arabia*

Abstract: Background: Self-medication is defined by the World Health Organization (WHO) as using medications to treat self-diagnosed conditions or symptoms, as well as intermittently or continuously taking prescribed medicines for recurrent or chronic illnesses or symptoms after the recommended dosage has been completed. **Purposes:** To assess mothers' knowledge and administration of Over-the-counter medications during pregnancy at Al-Baha region in Saudi Arabia. **Design:** A descriptive cross-sectional hospital-based study was utilized. **Sampling:** it included three hundred and ninety-eight postpartum mothers. **Results:** most (n=233) of the participants were aware and had good knowledge about the Over-the-counter medications, nearly half of the participants (n=167) used those medications even though they knew their side effects. **Conclusion:** This study concluded that most of the study group used over-the-counter medications despite of their harms and risks during pregnancy, even in the first trimester. **Recommendations:** Health education campaigns should be conducted at all levels of the community and in workplaces of women to raise their awareness of the harms and risks of using over-the-counter medications during pregnancy and Future studies with different designs should be conducted to search the awareness, attitude, perception, and practice of pregnant women about over-the-counter medications used during pregnancy are highly recommended.

Keywords: *Knowledge, Administration, Over-the-counter medications, pregnancy.*

Introduction

Due to pregnancy's unique physiological state, medication use must be carefully considered. Pregnancy-related changes in pharmacokinetics make it difficult to assess whether a drug is safe for the mother and the growing fetus.

However, treating acute medical conditions during pregnancy frequently requires the use of medications (Yad, M. & Costantine, 2015).

Different countries have different laws governing the dispensing of drugs, which results in variations in product

***Mothers' Knowledge and Administration of Over-the-Counter Medications
during Pregnancy at Al-Baha Region – KSA***

control and legal status. While pharmacists can dispense over-the-counter (OTC) or non-prescription medications to treat common conditions like fever, pain, cough and cold, allergies, heartburn, diarrhea, or constipation, prescription medications require a medical prescription with instructions from the treating physician. (Alyami et al., 2023).

Pregnant women's use of medications, whether prescribed or not, has increased noticeably over the last forty years. The reason for this trend is that a growing number of women are getting pregnant later in life, frequently with chronic illnesses that need constant care (Mitchell et al., 2011). According to one study, four out of five pregnant women were prescribed one or more medications to treat various medical conditions. These medications ranged from over-the-counter medications to multivitamins and supplements (Undela et al., 2021). 39.3% of participants in a different study of pregnant women at an ambulatory care clinic had at least one chronic illness that required medication therapy (Stock SJ, & Norman JE, 2019).

However, the lack of thorough safety data limits the use of medications during pregnancy, making clinical decisions more difficult and putting the mother's and the fetus's health at risk. This lack of information is a result of the Thalidomide tragedy in the early 1960s, when the medication, which was prescribed to expectant mothers as an antiemetic, caused a high rate of phocomelia, which is characterized by congenital limb malformations in 20% to 30% of cases (Sawicki et al., 2021).

Pregnant women were excluded from clinical trials due to thalidomide's teratogenic effects, which hurt drug development and produced faulty data with additional safety concerns regarding drug teratogenicity (Saint-Raymond et al., 2022).

Few studies have evaluated the use of medications during pregnancy in Saudi Arabia; the first study found that 40% of pregnant women used both prescription and over-the-counter medications and that the information gathered regarding medication use during pregnancy was insufficient despite frequent input from physicians. (Zaki et al., 2014) Using pharmacists as the primary information source, a second study found that 32% of pregnant women used over-the-counter (OTC) medications. (Raheel et al., 2017) According to a third study, 29% of pregnant women would not take their prescribed medications; this raises concerns about serious underlying health conditions that may not be taken as directed. (Aljoher et al., 2018) .

Some over-the-counter drugs, like acetaminophen, are widely used and are thought to be safe for pregnant women. However, observational studies are the only way to learn about randomized clinical trials. Non-steroidal anti-inflammatory drugs are the only over-the-counter (OTC) drugs that are known to have potential side effects. (NSAIDs). Exposure to NSAIDs during fetal development has been linked to a higher risk of spontaneous abortion (Akueson, & Uwera, 2023) as well as ductus arteriosus constriction [Schillie, 2020]. Examining the effects of over-the-counter medication use on

***Mothers' Knowledge and Administration of Over-the-Counter Medications
during Pregnancy at Al-Baha Region – KSA***

fetal outcomes is especially challenging because these medications are not completely documented. There are certain common illnesses that many pregnant women encounter. Many of these conditions are treated with over-the-counter (OTC) medications. Some over-the-counter drugs, like acetaminophen, are widely used and are thought to be safe for pregnant women. Nevertheless, because there aren't any randomized cli Even medical professionals don't always know whether their pregnant patients are using over-the-counter medications. Most over-the-counter medications are not advised to be used during pregnancy due to insufficient evidence regarding their safety or potential risk to the fetus, according to the Dutch self-care guidelines for healthcare professionals (Women's Healthcare in Advanced Practice Nursing, 2023). Consequently, medical professionals ought to offer tailored guidance to expectant mothers regarding the potential adverse effects of over-the-counter medication on their developing fetus. To accomplish this, it is best to highlight women who Consequently, medical professionals ought to offer tailored guidance to expectant mothers regarding potential adverse effects of over-the-counter medication on their developing fetus. To do this, it is best to identify women who may use over-the-counter medications. All drugs used in the United States from 1975 until 2020 have been assigned pregnancy risk factors by the U.S. Food and Drug Administration (FDA). Due to ethical concerns, many medications have sadly not been thoroughly studied during

pregnancy and most likely won't be in the future. Self-medication can occur for a variety of reasons, including overconfidence in one's drug knowledge, illiteracy, media and newspaper advertisements, peer pressure, and advice from friends and family (Women's Healthcare in Advanced Practice Nursing, 2023).

Purpose:

To assess mothers' knowledge and administration of over-the-counter medications during pregnancy at the Al-Baha region in Saudi Arabia.

Methods:

Study Design:

A Descriptive, cross-sectional hospital-based study was conducted on women attending postnatal clinics at Al-Baha hospitals.

Setting:

The study was carried out at five hospitals that provided postnatal care in the Al-Baha region (King Fahad Hospital, Prince Mashari Hospital (Puljurashi) , Aqiq General Hospital, Amandaq General Hospital, , Ahad Al-Masaraha General Hospital.

Sampling:

A purposive sample of 398 women in the postnatal period was selected. A simple random sample was used to assign the hospitals. Data was collected via a pre-tested, well-designed questionnaire (Likert scale type, which consists of Know, Do Not Know, Neutral), which was modified by the researcher to assess the knowledge and administration of over-the-counter medications used during pregnancy at

***Mothers' Knowledge and Administration of Over-the-Counter Medications
during Pregnancy at Al-Baha Region – KSA***

Al-Baha region, every answer by know considered true answer which equal=1 and any answer by do Not Know or neutral, considered false answers and given Zero. The total knowledge score was evaluated as follows: 75%-100% was good knowledge, 50%-74% fair knowledge, and less than 50% poor knowledge.

Reliability:

Reliability was estimated among 39 participating mothers by using a test-retest method. Then, the correlation coefficient was calculated between the scores. The correlation coefficient found was 0.83.

Validity:

A panel of five experts, who were assistant professors in the fields of obstetrics and gynecological nursing, evaluated the instrument's face validity to determine its completeness and relevance. After analyzing each component's relevance, clarity, fluency, and ease of use, the experts concluded that the questionnaire was beneficial.

Ethical Consideration:

Procedure:

A letter was submitted from the dean of the Faculty of Nursing at Al-Baha University to the directors of selected hospitals. The letter included the purpose of the study and the methods of data collection. The period of data collection lasted from December 2022 to March 2023. The study's purpose was explained to the participants, verbal consents were obtained, and data was collected through participant interviews. Participants' anonymity and

confidentiality were maintained throughout the study. They were also informed that they could leave at any moment.

Pilot study:

It was conducted on 10 % of the participants (n=39) to assess the feasibility, reliability, and time required for collecting data.

Statistical Analysis:

Data analysis and tabulation were done using SPSS 22, a social science statistical program. Statistical analysis was conducted using the chi-square test, paired and independent sample t.test, mean, standard deviation, and percentages. If $P \leq .05$, a statistically significant difference was taken into account. A highly statistical significant difference was taken into account. if $P \leq .01$, A very highly statistical significant difference was considered if $P \leq .001$

Results:

Table 1: Illustrates the characteristics of the participants, more than two-thirds (65.3%) of participants their aged more than 30 years, and a few number (3.3%) of the sample were aged less than 20 years old, with a Mean and SD= 2.3 ± 1.1 . Regarding the Levels of education, more than two-thirds (70.80%) of mothers were university graduates or postgraduates, while only 4.30%), (4.80% were Primary school, illiterates, respectively. concerning participants 'Occupations, more than half (51.50%) were workers of middle economic status. Thereafter, more than half (54.30%) of the population came from urban areas.

***Mothers' Knowledge and Administration of Over-the-Counter Medications
during Pregnancy at Al-Baha Region – KSA***

Table 2: Shows more than half (55.3%) of participants had three (3) or more pregnancies, (19.1%) were primigravida, and (25.6%) had 1 to 2 pregnancies.

Table 3: Illustrates the Chronic Diseases and Medications Used During Pregnancy. the vast majority (79.64%) of participants were free of chronic diseases, while only a few (13.56%) of them had chronic diseases and (6.0%) used medications before pregnancy. near half (42.21%) of the participants had a history of taking the-over-the-counter -medications during pregnancy and (41.66%) used medication in the first trimester of pregnancy. The most common reasons behind mothers use over-the-counter medications during pregnancy are to relieve pain and discomfort during pregnancy, while others use medications for comfort and relaxation (60.12%), (21.43%) respectively.

Table 4: Shows the Knowledge of the Participants about the Over- the-Counter Medications used when participants asked about The Over-the-counter Medications Can cross the

placenta and impact the developing baby can cause Infant withdrawal from substances, Low birth weight, Premature birth, Miscarriage or pregnancy loss, Stillbirth, and Birth defects, most of the participants did not know (54.3%), while only a few of the new (39.4%), when asked about the Over —Counter Medications that should not be used during pregnancy (Not safe) their response was, that only 36.9% knew and more than half (52.5%) of the study sample did not know. Regarding exploration, are there any Medications safe that can be used during the pregnancy? more than one-third (37.9%) of participants were aware, about to notify the physician or healthcare provider when a pregnant woman needs medication during pregnancy. The findings showed that only 34.7%) were agreed, and nearly two-thirds (59.5%) did not know. (58.5%) knew that in the first trimester of pregnancy, over-the-counter medications are the most risky and harmful ;on the other hand, one-third (31.9%) didn't know.

***Mothers' Knowledge and Administration of Over-the-Counter Medications
during Pregnancy at Al-Baha Region – KSA***

Table (1) Characteristics of Participants

Item	n	%
Age (Years):		
<ul style="list-style-type: none">Less than 20	13	3.30
<ul style="list-style-type: none">20 – 30	125	31.40
<ul style="list-style-type: none">More than 30	260	65.30
Mean ±SD	2.3±1.1	
Levels of education:		
<ul style="list-style-type: none">Literate	19	4.80
<ul style="list-style-type: none">Primary school	17	4.30
<ul style="list-style-type: none">Secondary School	80	20.10
<ul style="list-style-type: none">University/ postgraduates	282	70.80
Occupations:		
<ul style="list-style-type: none">Housewife	193	48.50
<ul style="list-style-type: none">Working	205	51.50
Levels of Economic status:		
<ul style="list-style-type: none">High level	115	28.90
<ul style="list-style-type: none">Middle Level	267	67.10
<ul style="list-style-type: none">Low level	16	4
Residence of participants:		
<ul style="list-style-type: none">Rural	182	45.70
<ul style="list-style-type: none">Urban	116	54.30

Table (2) Obstetrics history of participants

Gravida:	n	%
• Primigravida	76	19.1
• Gravida :1-2	102	25.6
• 3 or more	220	55.3
Total	398	100%
Para:		
• 0	76	19.1
• 1-2	99	24.9
• 3 or more	223	56.0
Total	398	100%
Abortion:		
• 0	295	41.12
• 1-2	32	29.6
• 3 or more	76	70.4
Total	398	100%

***Mothers' Knowledge and Administration of Over-the-Counter Medications
during Pregnancy at Al-Baha Region – KSA***

Table (3) Chronic Diseases and Medications Used During Pregnancy.

Item	n	%
Chronic Diseases:		
• Had chronic diseases	54	13.56
• Did not have chronic diseases	317	79.64
• Do not Know if they have chronic diseases or not	27	6.78
Total	398	100%
Medications used before pregnancy:		
• Didn't used medications	314	78.90
• Used medications	24	6
• Not sure	60	15.1
Total	398	100%
History of The-Over – Counter medications Used during Pregnancy		
• Yes	168	42.21
• No	210	52.76
• Not remember (not sure)	20	5.02
Total	398	100%
In each Trimester participants used the Over – The -Counter medications ?		
• In the First Trimester	70	41.66
• In the Second Trimester	33	19.64
• In the third trimester	65	38.69
Total	168	100%
Factors lead to use over counter medications during the pregnancy		
• To relief pain	101	60.12
• For comfortable and relaxation	36	21.43
• For Fetal health	17	10.12
• For improving hemoglobin	8	4.76
• Do not Know	6	3.57
Total	168	100%

***Mothers' Knowledge and Administration of Over-the-Counter Medications
during Pregnancy at Al-Baha Region – KSA***

Table (4) Knowledge of the Participants about the Over- Counter Medications used

Item	Know		Neutral		Do Not Know		Mean ±SD
	N	%	N	%	N	%	
1. These are the risks of the Over —Counter Medications during pregnancy:							
1. The Over—the-counter Medications Can cross the placenta and impact the developing baby can cause Infant withdrawal from substances, Low birth weight, Premature birth, Miscarriage or pregnancy loss, Stillbirth, and Birth defects.	157	39.4	25	6.3	216	54.3	1.5±0.52
2. These are the Over —Counter Medications that should not be used during pregnancy (Not safe): Ibuprofen (Motrin, Advil), An antibiotic, Aspirin, Naproxen (Aleve), Codeine, and Nasal congestion	147	36.9	42	10.6	209	52.5	1.5±0.67
3. Is there any Medication that can be used during the pregnancy(safe)?	151	37.9	50	12.6	197	49.5	1.6±0.69
4. Notify your physician or healthcare provider when you need medications during pregnancy.	138	34.7	23	5.8	237	59.5	1.4±0.60
5. In the First trimester of pregnancy the over-the-counter medications are most risky and harmful?	233	58.5	38	9.6	127	31.9	1.8±1.17
Total Knowledge Score (Mean ±SD)	7.8 ±3.6						

Discussion

Approximately 90% of expectant mothers take prescription and over-the-counter (OTC) medications during their pregnancy. Ten percent of all birth defects are directly related to medications taken during pregnancy, making some drugs dangerous for both the expectant mother and the developing fetus. Due to ethical concerns about exposing the fetus to potential risks, research on the safety of many medications during pregnancy is limited. (Stanley et al., 2018). The study's purpose was to assess the knowledge and usage of over-the-counter medications during pregnancy, in the Al-Baha region, among 398 postpartum mothers whose ages ranged between 30 years or more and less than

20 years old, via a descriptive-cross-sectional hospital-based study. 2022-2023.

Chronic diseases exaugurated the complaining of minor disorders during pregnancy, and in this study, few of the participants (13.6%) had chronic diseases, and only 15.10% used medications before pregnancy.

From available literature over- The - counter medications used during pregnancy are serious and harmful, particularly in the first trimester, where Fetal growth and development have occurred, so more care should be taken as it is the period of organogenesis, and drug intake during this period has a profound effect on the fetus. From The study's findings, nearly two-thirds

***Mothers' Knowledge and Administration of Over-the-Counter Medications
during Pregnancy at Al-Baha Region – KSA***

(61.30%) of participants were aware and had good knowledge about the over-the-counter medications during pregnancy with a mean and standard deviation of 7.8 ± 3.65 , this result was similar to the results of a studies conducted by Abduelkarem, Sharjah, UAE, in 2017 (Abduelkarem et al.,2017) and by study conducted by Casey among Canadian's mothers, (Casey, 2023) about awareness of OTC. Despite these, Key findings of this study revealed a high prevalence of use of over-the-counter medications (OTC) during all trimesters of pregnancy in general, and in the first trimester in particular in 63.60% of participating mothers.

Many factors lead participants to use the over-the-counter medications during pregnancy, in this study the vast majority of participants said to relieve the pain and discomfort of pregnancy, and some mothers to feel relaxed and comfortable.

Finally, the awareness and knowledge of participants about the harms and risks of using over-the-counter medications during pregnancy was accepted despite the researcher noticing that participants' knowledge and their real practice were different. So, in general, this area of study needs to be clarified by other studies to explore more about pregnant' knowledge, attitude, awareness, and perception about using of the Over -The- Count Medications during pregnancy in the Al-Baha area.

Conclusion:

In conclusion, the Findings of this study revealed a high prevalence of OTC use by most pregnant women in the Al-Baha region, and most of them took over-the-counter medications during all trimesters of pregnancy, with a high prevalence of use in the first trimester in particular.

Recommendations:

Health education campaigns should be conducted at all levels of the community and in workplaces of women to raise their awareness of the harms and risks of using over-the-counter medications during pregnancy. Communication should be enhanced between Clients and their care providers regarding prescribed or non-prescribed medication use would help address their awareness. Future studies with different designs should be conducted to search the awareness, attitude, perception, and practice of pregnant women about over-the-counter medications used during pregnancy are highly recommended.

References:

- Abduelkarem, A. R., & Mustafa, H. (2017). Use of over-the-counter medication among pregnant women in Sharjah, United Arab Emirates. *Journal of Pregnancy*, 2017(1), 4503793
- Akueson, P., & Uwera, D. (2023). Substance Abuse Mothers and the Risk Effect on Breast-feeding Babies.
- Aljoher, A. M., Alsaeed, M. A., AlKhlfan, M. A., Almethen, A. W., Almukhaitah, M. A.,

***Mothers' Knowledge and Administration of Over-the-Counter Medications
during Pregnancy at Al-Baha Region – KSA***

- Zareen, H., & Alia, S. I. (2018). Pregnant women risk perception of medications and natural products use during pregnancy in Alahsa, Saudi Arabia. *The Egyptian Journal of Hospital Medicine*, 70(1), 13-20.
- Alyami, A. A., Alem, M. M., Dorgham, S. R., & Alshamandy, S. A. (2023). Trends of Over-the-Counter and Prescribed Medication Use During Pregnancy: A Cross-Sectional Study. *Journal of Multidisciplinary Healthcare*, 3847-3856.
- Assessment, P. C. (2023). PLANNED PREGNANCY AND RISK SCREENING PRECONCEPTION HEALTH. *Women's Healthcare in Advanced Practice Nursing*, 397.
- Ayad, M., & Costantine, M. M. (2015, November). Epidemiology of medications use in pregnancy. In *Seminars in perinatology* (Vol. 39, No. 7, pp. 508-511). WB Saunders.
- Casey, E., Velez, M. P., Gaudet, L., & Brogly, S. B. (2023). The use, perceptions and knowledge of safety of over-the-counter medications during pregnancy in a Canadian population. *Women's Health*, 19, 17455057231199394.
- Cuello, C., Stander, E. A., Jansen, H. J., De Bernonville, T. D., Oudin, A., Williams, C. B., ... & Courdavault, V. (2022). An updated version of the Madagascar periwinkle genome. *F1000Research*, 11, 1541.
- Mitchell, A. A., Gilboa, S. M., Werler, M. M., Kelley, K. E., Louik, C., Hernández-Díaz, S., & Study, N. B. D. P. (2011). Medication use during pregnancy, with particular focus on prescription drugs: 1976-2008. *American journal of obstetrics and gynecology*, 205(1), 5.
- Raheel, H., Alsakran, S., Alghamdi, A., Ajarem, M., Alsulami, S., & Mahmood, A. (2017). Antibiotics and over the counter medication use and its correlates among Arab pregnant women visiting a tertiary care hospital in Riyadh, Saudi Arabia. *Pakistan Journal of Medical Sciences*, 33(2), 452.
- Saint-Raymond, A., & Mofenson, L. M. (2022). Pregnancy and medicines: time for paradigm change. *Journal of the International AIDS Society*, 25(Suppl 2), e25906.
- Sawicki, E., Stewart, K., Wong, S., Leung, L., Paul, E., & George, J. (2011). Medication use for chronic health conditions by pregnant women attending an Australian maternity hospital. *Australian and New Zealand Journal of Obstetrics and Gynaecology*, 51(4), 333-338.
- Schillie, S. (2020). CDC recommendations for hepatitis C screening among adults—United States, 2020. *MMWR*.

***Mothers' Knowledge and Administration of Over-the-Counter Medications
during Pregnancy at Al-Baha Region – KSA***

Recommendations and
Reports, 69.

- Stanley, A. Y., Durham, C. O., Sterrett, J. J., & Wallace, J. B. (2019). Safety of over-the-counter medications in pregnancy. *MCN: The American Journal of Maternal/Child Nursing*, 44(4), 196-205.
- Undela, K., Joy, N., Gurumurthy, P., & MS, S. (2021). Knowledge, beliefs, and practice of pregnant women regarding medication use during pregnancy: a hospital-based cross-sectional study. *Journal of Obstetrics and Gynaecology*, 41(4), 522-526.
- Zaki, N. M., & Albarraq, A. A. (2014). Use, attitudes and knowledge of medications among pregnant women: A Saudi study. *Saudi pharmaceutical journal*, 22(5), 419-428.