Pattern of self - prescribed medications and predictor variables among pregnant women at King Abdulaziz Hospital, Al-Ahsa

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Abstract

Background: Self-prescribed medications among pregnant women is widespread, driven by factors like accessibility, affordability, and cultural beliefs. This practice poses risks to both maternal and fetal health, necessitating a deeper understanding. Aim: To explore the Pattern of self-prescribed medications and predictor variables among pregnant women at KING ABDULAZIZ HOSPITALS (KAH) Al-Ahsa. **Methodology**: This cross-sectional study was conducted at the maternity outpatient clinic in KING ABDULAZIZ HOSPITALS (KAH) Al Ahsa; involving 272 pregnant women aged 20-45 attending the antenatal clinic. **Results**: the majority of participants are aged >30 years (48.5%), with university education (53.3%) and employed (55.9%), particularly in administrative roles (32%). All participants reported using self-prescribed medication, primarily Paracetamol (27.9%) for pain relief. While 71.7% reported relief from symptoms, 38.6% experienced side effects, notably headaches (16.5%). Participants often consulted pharmacists (48.9%) and friends (36%) for advice. Importantly, 25.4% increased medication dosage due to worsening symptoms, there was a significant statistical association between self-medication and age ($p=0.025$), educational level ($p<0.001$), type of mother's work ($p= 0.017$), and trimester of pregnancy ($p=0.013$) and no significant relation with number of living children ($p= 0.005$). Highlighting the need for informed medication use during pregnancy. **Conclusion**: The prevalence of self-prescribed medicine use among Saudi Arabian pregnant women and its predictor variables are clarified by this study. Recommendations: The findings highlight how crucial is the need for addressing self-medication behaviors with comprehensive healthcare interventions that are adapted to the sociodemographic and cultural context.

Key Words: Pregnant Women, OTC Drugs, Self-prescribed Medications.

Introduction

Self-medication is defined as a practice by which an individual selects and uses medicines to treat symptoms or minor health problems, recognized as such by themselves. This is an essential part of self-care, including proactively using medications, herbal remedies or home remedies with the help of others, and avoiding seeking medical advice. Self-medication is prevalent in every nation. The World Health Organization (WHO) estimates that between 70 and 80 percent of people globally receive their primary care from sources other than traditional pharmaceuticals (WHO in Rathod et al., 2023). In underdeveloped nations,

self-medication is widespread because there aren't enough medical facilities and there isn't enough regulatory oversight of pharmaceutical products. People were consequently forced to self-medicate with a range of drugs that are typically used to treat a range of medical conditions. Furthermore, most underdeveloped countries, like Ethiopia, sell a lot of medications without a prescription, and between 60% and 80% of medical conditions are treated by self-medication (Belachew, Hall, & Selvey; 2022).

Because they frequently and regularly self-medicate to avoid having an abortion, treat pregnancy related illnesses like mood disturbance during pregnancy, and avoid anemia, pregnant women are among the most vulnerable groups. Due to the increased accessibility, affordability, and availability of herbal remedies, pregnant women frequently self-medicate. Pregnant women were encouraged to self-medicate with natural remedies because they are both more potent and safer than modern medicine for both the mother and the fetus. Pregnant women were urged to self-medicate due to the illness's severity, the requirement for emergency care, and prior illness experiences (Pereira et al., 2021).

Self-medication is an important part of daily self-care and is influenced by many factors, including money, local culture, age, gender, education, knowledge, availability of medications, Perceptions of the dangers of self-medication, past drug use experience, gestational age, and occupation. Pregnant women who self-medicate with drugs and/or herbal medicines are at risk of disrupting embryonic or fetal development, as well as serious structural and functional side effects such as low birth weight, preterm birth, feeding or breathing difficulties, birth defects, fetal developmental toxicity, and adverse effects on the fetus and other potential hazards to the mother. In addition, more self-medication can lead to irrational drug use, increasing the risk of drug interactions and side effects. Therefore, it is important to evaluate and understand the medications that women are taken during pregnancy (Belachew, Hall, & Selvey; 2022).

Significance of the Study

Pregnancy is one of the most important and sensitive times in a woman's life. Every mother wants to protect her fetus. Sometimes, when pregnant women feel unwell or face minor discomforts, they may choose to treat themselves using medicines, or treatments shared by family or friends, without physician advice. Many women believe these medications are harmless, especially if they seem "natural" or she used them in the past. In reality, using medicines during pregnancy without proper medical advice can be risky. Some medicines, even common ones, can affect on the fetus's growth and development, or cause serious health problems. Despite these risks, self-medication during pregnancy is still very common, may be this related to difficult accessibility to healthcare clinics, or cultural, beliefs, and personal experiences.

This study is important because it helps us understand why pregnant women choose to self-medicate, what types of remedies they use, and what influences their decisions. By focusing on women attending King Abdulaziz Hospitals in Al-Ahsa, this research can give real insight into the challenges and beliefs that pregnant women in this community face.

The findings can help doctors, nurses, and health educators create better ways to talk with women about safe medication use during pregnancy. It can also help in designing support programs that are more understanding and suited to women's real-life needs and concerns. More importantly, it can help prevent avoidable harm to both

mothers and their babies by raising awareness and promoting safer choices.

Therefore, this study's aimed to explore the Pattern of self - prescribed medications and predictor variables among pregnant women at King Abdulaziz Hospitals (KAH) Al-Ahsa.

Aim of the Study:

This study aims to explore the Pattern of self-prescribed medications and predictor variables among pregnant women at King Abdulaziz Hospitals (KAH) Al-Ahsa.

Research question:

What is the pattern of using self-prescribed medications and predictor variables during pregnancy?

Materials and Methods:

Study Design:

Cross-sectional study design was adopted to achieve the aim of this study.

Study Setting:

This study was conducted at King Abdulaziz Hospitals (KAH) affiliated with the Ministry of National Guard for Health Affairs (MNGHA) in Al Ahsa, Saudia Arabia. The setting was chosen due to its large and diverse population of pregnant women, high patient volume, and comprehensive antenatal services. As a tertiary care facility with standardized protocols and quality care, KAH provided a suitable environment for reliable data collection and ensured the relevance of the findings to maternal health practices within the region.

Study Subjects:

Inclusion criteria: age of the women between 20-45, attending in King Abdulaziz Hospitals (KAH) antenatal clinic, and read and write. Exclusion criteria: not hospitalized in King Abdulaziz Hospitals (Kah), and Women who have medical or mental disorders.

Sample Size:

In outpatient clinics at King Abdulaziz Hospitals (KAH) in Al Ahsa. population was estimated to be 38990 patients. After calculation, the sample size will be 272 pregnant women. Sample size was calculated using Raosoft sample size calculator http://www.raosoft.com/samplesize.html. With margin error 5%, confidence level 90% and 50 % response distribution.

Sampling Technique:

A purposeful sampling will be used to recruit a total of 272 pregnant women.

Data Collection methods:

To achieve the aim of the study a structured interviewing schedule questionnaires is developed by the researchers. This questionnaire consists of three parts:

Part I: Sociodemographic data. This section consists of three questions about age, level of education, and occupation.

Part II: Obstetrical data of the current pregnancy. It contains three questions related to the number of living children, gestational age of current pregnancy and number of antenatal visits.

Part III: Self-prescribed medication questionnaire. It includes 18 questions about the using of self-prescribed medication during pregnancy, when and for how long, the symptoms that needs medications, type of medications, and side effects on the woman and her baby. To use the questionnaire in the current setting, it will be translated into Arabic and back translated to English by a bilingual faculty, then the translated questionnaire will be distributed to five nursing faculties and accordingly modification will be done to ensure its content validity. Additionally, the questionnaire will be piloted by 10 women to assess its reliability before the main data analysis.

Study Procedure:

Data for this study were collected through a structured, self-administered questionnaire distributed to pregnant women attending the maternity outpatient clinic at King Abdulaziz Hospital (KAH), affiliated with

the Ministry of National Guard Health Affairs (MNGHA) in Al-Ahsa, Saudi Arabia. The questionnaire was designed based on literature review and validated tools from previous studies, and it was reviewed by a panel of experts in maternal health for content validity. Participants were selected using a convenience sampling method. After obtaining ethical approval and informed consent, eligible pregnant women were approached during their routine antenatal visits. The purpose of the study was clearly explained, and confidentiality was assured.

The questionnaire consisted of three main parts: demographic and obstetric information, patterns of self-prescribed medication use (types, indications, sources), and related outcomes or side effects. The data collection period spanned over several weeks to ensure sufficient and diverse sample size. Researchers were present during the completion of questionnaires to clarify any questions and ensure accuracy and completeness of responses, while maintaining participant privacy and comfort throughout the process.

Data Management and Analysis Plan:

The collected data was coded, categorized, tabulated, and analyzed using the Statistical Package for the Social Science (SPSS 20.0). Descriptive data were expressed as mean and standard deviation. Qualitative data were expressed as frequency and percentage.

Ethical Considerations:

Informed Consent: Approval of the research study will be obtained from research unit; College of Nursing – Al Ahsa (CON-A) dean and King Abdullah International Medical Research Center (KAIMRC). The women will be informed about the purpose of the study and their right to withdraw at any time and will be assured that their refusal or withdrawn will not affect their healthcare services& women who accepted to participate in the study will be asked to sign an informed consent. Confidentiality of all women in the study will be maintained at all time of the study period. Each question will be given a code, so no participant identification will be required.

Results

The aim of the current study was to explore the Pattern of self - prescribed medications among pregnant women at KING ABDULAZIZ HOSPITALS (KAH) Al-Ahsa. The results are supplied in main three components: **Part (I)** affords an in-depth description of the demographic characteristics of the study sample, highlighting key elements inclusive of age, educational degree, and occupation. **Part (II)** explores into the styles of self-prescribed medicinal drugs commonly used by pregnant women, discussing common medications and the side effects of using them. Finally, **Part (III)** investigates the predictor variables for self-medication among pregnant women. Together, these findings advance our understanding of self-medication practices during pregnancy and provide insights on safe and efficient medication usage in this population.

Part (I): Demographic Characteristic of the Study Sample

In Table 1, the demographic characteristics of the study sample are supplied. The highest percentage of participants falls within the age range of >30 years, accounting for 132 (48. 5%), while the lowest portion is found within the age group <20 years, representing 4.4% of the sample. The age of the sample range was 18-45 year with a mean of 31.31 ± 7.42 years old. Regarding educational level,145 (53.3%) of the sample received university education while, 1.5% of the sample cannot read and write. In terms of occupational level, 152(55.9%) of the sample were working while, 12 (44.1%) of women were housewives.

Among working sample, 41(15.1%) of women were health care worker.

In Table 2, regarding the obstetrical history,117 (43%) of the sample had 1-3 children, while the lowest frequency is observed among those with more than 6 children, comprising only 7 (2.6%) of the participants. The mean of the current pregnancy gestational age was 31.69 ±7.31 weeks. The mean of antenatal clinic visits was 6.66± 3.03 times.

Part (II): The self-prescribed medications taken by pregnant women.

In Table 3, 272 (100%) of the sample participants reported using self-prescribed medication. Among the types of medication used, 76 (27.9%) of pregnant women reported use of paracetamol drug, followed by NSAIDs at 38 (14%), and Multivitamins at 22 (8.1%) while, the lowest proportions are seen for various medications, such as Muscle ache & spasm, Vaginal anti-vaginal, and Ear drop, each comprising only 0.4% of the sample. Regarding the indication for medication usage, the highest frequency is for Pain at 62 (22.8%), followed by Nausea & vomiting at 33 (12.1%), and Headache at 39 (14.3%). The lowest frequencies were observed for conditions such as Adrenal disorder, Eye infection, and irritable bowel syndrome, each representing only 1 (0.4%) of the sample.

In **Table 4,** regarding the impacts of self-prescribed medications on pregnancy outcomes,195 (71.7%) of the sample reported relieving symptoms. However, 105 (38.6%) of participants experienced various side effects after taking the medication as headache 45 (42.85%), Nausea 11 (10.5%), and Cough 7 (6.7%). The most common actions taken by participants when experiencing side effects were doing nothing 7 (6.7%), notifying the doctor 46 (43.8%), stop the medication 36 (34.3%), or consult a friend 8 (7.6%). The pharmacist was the most common advisor for medication usage by 133 (48.9%) of participants, followed by friends 98 (36%). Additionally,111 (40.8%) of participants give their experience of medication used to another pregnant woman, and 113 (41.5%) used herbal treatment alongside self-prescribed medication. The majority of participants 206 (75.7%) were using medication from their doctor's prescription in addition to self-prescribed medication. Notably, 69 (25.4%) of participants admitted to increasing the dose of medication due to increasing symptoms. The timing of self-prescribed medication usage varied, with 95 (34.9%) starting between 13-27 weeks of gestation, while the lowest percentage 18 (6.6%) began using medication from 37 weeks until the end of gestation.

Part III Predictor variables for self-medication among pregnant women

Using multiple regression analysis results indicated a significant relation between self - prescribed medications and age, educational level, type of mother’s work and trimester of pregnancy and no significant relation with number of living children ($p=0.025$, <0.001, $= 0.017$, $=0.013$ &$= 0.005$ respectively).

Table 1: Distribution of the study sample according to demographic characteristic (N = 272)

Items	Freq.	%	Chi square	P value
Age				
<20	12	4.4	0.6752	0.009
20 - 25years	56	20.6		
26 -30 years	72	26.5		
> 30 years	132	48.5		
Mean ±SD 31.31 ± 7.42 **yrs**				
Educational level				
Can't read and write	4	1.5	14.03	0.01
Primary education	28	10.3		
High School	78	28.7		
University education	145	53.3		
Postgraduate education	17	6.3		
Occupational level				
Working	152	55.9	10.2	<0.01
Housewife	120	44.1		
Type of work (n=152)				
Manual	24	15.79		
Administrative	87	57.24		
Health care worker	41	26.97		

Table 2: Distribution of the Study Sample according to Obstetrical History (N = 272)

Items	Freq.	%	Chi square	P value
Number of living children First times	80	29.4	2.18	0.18
1-3	117	43		
4-6	68	25		
More than 6	7	2.6		
Gestational age (weeks)	31.69 ±7.31			
Number of antenatal visits	6.66± 3.03			

Table 3: Distribution of The Study Sample According to use a Self-Prescribed Medication (N = 272)

Items	Freq.	%	Chi square	P value
Number of mothers who took medication				
• No	20	7.4	10.65	0.227
• Yes	252	92.6		
Types of medication used				
• Paracetamol	76	27.9		
• NSAID	38	14		
• Anti-acidity Stomach drugs	22	8.1		
• Vit D	7	2.6		
• Folic acid	2	0.7		
• Multivitamins	22	8.1		
• Iron supplement	5	1.8		
• Antibiotics	6	2.2		
• Antihistamine	20	7.4		
• Omega 3	3	1.1		
• Nasal drop	2	0.7		
• Anti-nausea & vomiting	17	6.3		
• Progestone	1	0.4		
• Muscle ache & spasm	6	2.2		
• Vaginal anti-vaginal	2	0.7		
• Anti-tissue &muco-solvent	3	1.1		
• Ear drop	6	2.2		
• Corticosteroid	1	0.4		
• Laxative	3	1.1		
• Antidiarrhea	2	0.7		
• Irritable bowel syndrome	3	1.1		
Number of mothers who have indication to take medication				
• No	30	11	5.03	0.801
• Yes	242	89		
Type of indications				
• Headache	39	14.3		
• Migraine	3	1.1		
• Pain	62	22.8		
• Stomach acidity	13	4.8		
• Bone health	2	0.7		
• Fetal health	3	1.1		
• Supplement & malnutrition	33	12.1		
• Nausea & vomiting	19	7		
• Maintain pregnancy	2	0.7		
• Anemia	1	0.4		
• Infection	6	2.2		
• Adrenal disorder	1	0.4		

• Allergy	9	3.3		
• Constipation	3	1.1		
• Cough	8	2.9		
• Diarrhea	3	1.1		
• Otitis media	1	0.4		
• Irritable bowel syndrome	4	1.5		
• Eye infection	6	2.2		
• Vaginal infection	2	0.7		

Table 4: Distribution of The Study Sample According to Side Effect of Self-Prescribed medication (N = 272)

Items	Freq.	%	Chi square	P value
Does your self-prescribed medication help to relieve the symptoms?				
No	77	28.3	4.563	0.820
Yes	195	71.7		
After taking this medication, did you notice any side effects?				
No	167	61.4	2.333	0.098
Yes	105	38.6		
What are these side effects? (N=105)				
Headache	45	42.85		
Mouth ulcer	3	2.85		
Dental pain	2	1.9		
Cough	7	6.7		
Acidity	3	2.85		
Vomiting	1	0.95		
Nausea	11	10.5		
Asthma	1	0.95		
Diarrhea	3	2.85		
Fever	1	0.95		
Skin disease	2	1.9		
Hair loss	3	2.85		
Faints	9	8.57		
Migraine	6	5.7		
Eye infection	2	1.9		
Running nose	5	4.76		
Ear pain	1	0.95		
What did you do when you experience the side effect? (N=105)				
Nothing	7	6.67		
Notify the doctor	46	43.8		
Consult a friend	8	7.6		
Stop the medication	36	34.3		
Search in Google	3	2.85		
Reduce the dose	1	0.95		

Seek the pharmacist	4	3.8		
Did you report to your doctor that you are using these medications?			3.109	0.057
No	101	37.1		
Yes	171	62.9		
Who advise you to use this medication?			6.561	0.096
The pharmacist	133	48.9		
Friends	98	36		
Obstetrician	15	5.5		
My self	17	6.3		
Social media	5	1.8		
My husband	3	1.1		
Medical prescription before pregnancy	1	0.4		
Give experience of medication use to another pregnant woman			2.150	0.079
No	161	59.2		
Yes	111	40.8		
Did you try a medication according to your friend's or relative's suggestion before pregnancy			5.998	0.845
No	136	50		
Yes	136	50		
Did you use herbal treatment besides self-prescribed medication?			2.001	0.058
No	159	58.5		
Yes	113	41.5		
Are you using medications from your doctor's prescription besides self-prescribed medication?			9.790	0.091
No	66	24.3		
Yes	206	75.7		
Have you ever increased the dose of this medication because of increasing the symptoms?			1.310	0.099
No	203	74.6		
Yes	69	25.4		
In which week of pregnancy did you start taking self-prescribed medication?			3.095	0.092
1-12 weeks gestation	91	33.5		
13-27	95	34.9		
28-36	68	25		
37 to end of gestation	18	6.6		

Discussion

The present study aimed to explore the pattern of self-prescribed medication use and identify predictor variables among pregnant women attending King Abdulaziz Hospital, Al-Ahsa. The findings revealed a universal prevalence of self-medication, with all participants reporting the use of at least one self-prescribed medication during pregnancy. This high prevalence aligns with previous studies conducted in Saudi Arabia, where a significant proportion of pregnant women reported self-medicating practices. For instance, a study in Riyadh found that 58.19% of pregnant women used non-prescribed medications during pregnancy, with analgesics being the most frequently used class (Alyami et al., 2023).

Analgesics, particularly paracetamol, were the most commonly used medications among the study participants, followed by non-steroidal anti-inflammatory drugs (NSAIDs) and multivitamins. The widespread use of paracetamol is consistent with global trends, as it is often considered safe during pregnancy when used appropriately. However, recent research has raised concerns about potential associations between prolonged paracetamol use during pregnancy and adverse outcomes, such as attention-deficit/hyperactivity disorder (ADHD) in offspring (Baker et al., 2025). The use of NSAIDs during pregnancy, especially in the third trimester, is generally discouraged due to risks such as premature closure of the fetal ductus arteriosus (Nilsen et al., 2023).

The primary indications for self-medication among the participants included pain, headache, nausea and vomiting. These findings are in line with previous studies that have identified common pregnancy-related discomforts as leading reasons for self-medication (Baraka et al., 2021). Notably, a significant proportion of participants (38.6%) reported experiencing side effects from self-medicated drugs, including headaches, nausea, and cough. These adverse effects underscore the potential risks associated with unsupervised medication use during pregnancy.

The study also highlighted the sources of information influencing self-medication practices. Pharmacists were the most common source of advice, followed by friends. This reliance on non-physician sources is concerning, as it may lead to misinformation and inappropriate medication use. Furthermore, a substantial number of participants reported using herbal treatments alongside self-prescribed medications and sharing their medication experiences with other pregnant women. These practices highlight the need for improved education and counseling regarding safe medication use during pregnancy.

Multiple regression analysis identified significant associations between self-medication and various demographic and obstetric factors, including maternal age, educational level, employment status, and gestational trimester. Older pregnant women were more likely to self-medicate, possibly due to increased confidence or previous pregnancy experiences. Higher education levels were also associated with increased self-medication, which may reflect greater access to information and a sense of autonomy in health-related decisions (Abdulwuhab et al., 2018). Employed women, particularly those in healthcare, were more prone to self-medication, potentially due to easier access to medications and medical knowledge. Women in the second trimester were more likely to self-medicate, possibly due to the perception that this period is safer for medication use.

These findings underscore the need for targeted interventions to address self-medication practices among pregnant

women. Healthcare providers should prioritize counseling on the risks of self-medication and the importance of consulting healthcare professionals before taking any medication. Pharmacists should also be engaged in educational efforts, given their influential role in advising pregnant women.

The study's limitations include its cross-sectional design, which precludes causal inferences, and reliance on self-reported data, which may be subject to recall bias. Additionally, the study was conducted in a single hospital, limiting the generalizability of the findings.

In conclusion, self-prescribed medication use is highly prevalent among pregnant women at King Abdulaziz Hospital in Al-Ahsa, with significant associations identified between self-medication and various demographic and obstetric factors. These findings highlight the urgent need for comprehensive educational and regulatory strategies to promote safe medication practices during pregnancy.

Conclusion

Answered research aim and question

This study provides valuable insights into the patterns of self-medication practices and predictors variables among pregnant women in Saudi Arabia. The findings confirm that self-medication is a widespread behavior, influenced by various socio-demographic, cultural, and health-related factors. While medications like paracetamol are commonly used due to their perceived safety, a significant number of participants experienced adverse effects, highlighting the potential risks of unsupervised drug use during pregnancy. These results underscore the need for increased awareness, accessible healthcare services, and tailored educational interventions to ensure the safe use of medications among pregnant women. Ultimately, promoting responsible self-care and strengthening the role of healthcare professionals in guiding medication use during pregnancy is essential for improving maternal and fetal health outcomes.

Recommendations

1. **Integrate Targeted Health Education into Antenatal Care:** Educational initiatives should be embedded into routine prenatal visits, focusing on the safe use of medications, potential risks of self-medication, and when to seek medical advice.
2. **Enhance Access to Reliable Information:** Development of culturally appropriate and evidence-based resources (e.g., brochures, mobile applications, and community workshops) can empower pregnant women with the knowledge to make informed decisions.
3. **Further Research:** More in-depth qualitative and longitudinal studies are recommended to explore the motivations behind self-medication and assess its long-term impact on maternal and neonatal outcomes.

Limitations

While this study offers important contributions, several limitations must be acknowledged:

- **Self-Reported Data:** The reliance on self-reported information introduces the possibility of recall bias and social desirability bias, which may have influenced participants' responses.
- **Cross-Sectional Design:** The study's design limits the ability to infer causal relationships between self-medication and pregnancy outcomes.
- **Sample Representativeness:** Although efforts were made to include a diverse sample, the findings may not be fully generalizable to all regions of Saudi

Arabia, especially rural or underserved communities.

- **Medication Specificity:** The study focused on the types and general effects of self-prescribed medications but did not assess dosage, frequency, or timing of use, which are critical to evaluating safety and outcomes.

Despite these limitations, the study provides a meaningful foundation for future research and intervention development aimed at promoting safer medication practices during pregnancy.

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