Proceedings S.Z.M.C. Vol: 38(1): pp. 22-30, 2024. PSZMC-913-38-1-2024

Prevalence of Self Medication in Pregnancy in Secondary and Tertiary Care Hospitals of Pakistan and Factors Contributing Towards this Malpractice

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ABSTRACT

Introduction: Self-medication during pregnancy is of special concern as it can lead to serious maternal and fetal adverse effects. By controlling the factors responsible for this practice, we can promote safer health practices during this critical period of a woman's life.

Aims & Objectives: Comparison of the prevalence of self-medication among pregnant women presenting in secondary and tertiary care hospitals of our country. Exploring the factors that contribute to the practice of self-medication in pregnant women.

Place and Duration of Study: A multi-centric cross-sectional study was performed at the Heavy Industries Taxila Education City Institute of Medical Sciences (HITEC-IMS) for one-year duration i.e from September 2022 to September 2023.

Material & Methods: The study population consisted of 354 pregnant women who were being consulted for antenatal checkups at Gynecology and Obstetrics OPD of Heavy Industries Taxila Hospital (HIT Hospital Taxila) and Tehsil Headquarter Hospital Taxila (THQ Hospital Taxila). Pregnant females of any age and gestation who presented to the OPD for antenatal checkups were included in the study. Any pregnant lady who was unwilling to participate or any of the women who were too critically ill to give a response were excluded from the study. Non-probability convenience sampling was used for the selection of participants. Data was collected using an interviewer-administered structured questionnaire. SPSS software version 25 was used to analyze the data.Results were deemed significant if the P value was less than 0.05.

Results: The prevalence of self-medication in our study came out to be 35.59% in the current pregnancy. There is no significant difference in the prevalence of self-medication in previous and current pregnancies. Prevalence of self-medication in current and previous pregnancies is greater in THQ Hospital than HIT Hospital. Residence, education, monthly income, gestation, gravidity, parity, number of alive children and place of birth are significantly associated with the practice of self-medication in the current pregnancy. Cost and time savings were the two main justifications for self-medication. Headaches were the most frequent complaints treated by self-medication, and leftover medication and drug stores were the most popular sources. Antipyretics and painkillers were the two medications that were most frequently used for self-medication.

Conclusion: The prevalence of self-medication in pregnant women was found to be more in a secondary care hospital as compared to the tertiary care hospital. This concludes that the quality of health care services provided to the patients can significantly impact their attitudes towards the management of their conditions. Thus countries who have lack of tertiary care facilities should try to provide better quality of health care. The factors found responsible should be confronted so that this malpractice can be reduced significantly.

Keywords: Self-Medication, Pregnancy, Contributing factors, Secondary care, Tertiary care.

INTRODUCTION

In healthcare management, self medication, defined as the practice of individuals independently obtaining and using over the counter or prescription medications without professional guidance, looking to treat self-diagnosed symptoms, has gained attention as a subject of concern[1].

Self-medication is common all over the world. Because of the disastrous effects it has, it raises a lot of public health concerns[2]. However, counteracting this practice in pregnancy is even more important as pregnancy is a pivotal phase in a woman's life, marked by many physiological changes and healthcare considerations. Drug administration during this phase requires special concern because

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Submission Date: 1st November2023
1st Revision Date: 15th December 2023
Acceptance Date: 1st January 2024

malpractice of self-medication can lead to serious fetal and maternal complications including low birth weight, fetal malformations, and premature birth[3,4]. Ensuring the well-being of both the mother and the unborn child is of paramount importance during this period. Maternal and child morbidity and mortality are a major burden on healthcare worldwide[5].

Self-medication is prevalent in both developing and developed countries but developing countries have this burden much more as lack of resources and poor healthcare system leave people no choice but to fall for this practice[2,6,7].

In developing countries, there is often poor distribution of all kinds of resources amongst the population. That includes access to proper and well-maintained healthcare facilities. Pakistan has all the modern equipment and latest technology related to healthcare but not everyone in the country can access it due to various reasons. Maternal well-being varies among our different communities[8].

There has been much research documenting the prevalence of self-medication in pregnancy in Pakistan but little is known regarding the comparison of the prevalence of this practice in different levels of hospitals in our country[9].

Our study will compare the prevalence of self-medication in pregnant women in secondary and tertiary care hospitals in Pakistan. As the name indicates secondary care hospitals have a downside as compared to tertiary care hospitals in terms of provision of healthcare. Ultimately, this research explores the factors that lead to maternal self medication and to eventually lessen this trend.Thus contributing to the enhancement of maternal and fetal healthcare and promote safer practices during this critical period of a woman's life in our developing country Pakistan.

MATERIAL AND METHODS

A multi-centric cross-sectional survey was performed at HITEC IMS for a one-year duration i.e. September 2022 to September 2023. IRB clearance number was received from HITEC Ethical Board vide HITEC-IRB-31-2022.The study population consisted of pregnant women who were being consulted for antenatal checkups at gynecology and obstetrics OPD of HIT Hospital Taxila and THQ Hospital Taxila. Pregnant females of any age and gestation who presented to the OPD for antenatal checkups were included in the study. Any pregnant lady who was unwilling to participate and give consent or any of the women who were too critically ill to give a response were excluded from the study.

The total calculated sample size is 354 patients. The sample size is calculated using the WHO calculator by taking a 95% confidence interval and 80% as power of study with an anticipated frequency of 36% in the study group[10] Non-probability convenience sampling was used for the selection of participants. We selected 177 patients from HIT Hospital Taxila (tertiary care hospital) and another 177 patients from THQ Hospital Taxila (secondary care hospital). Data was collected using an interviewer-administered structured questionnaire i.e the questionnaires were filled by doctors in the OPD as they interviewed the patients. The questionnaire was based on a previous article[10], and a few additional changes were made as needed in our study. It was displayed to and validated by the IRB team HITEC IMS Taxila and had three sections i.e. Socio-demographic background of respondents, obstetric history, and Self-medication practice-related questions.

Statistical Analysis:

SPSS software version 25 was used to analyze the data. The frequency of each socio-demographic and obstetric trait of the study group was explained using descriptive studies. Chi-square test was used to find the association between the dependent variable i.e. prevalence of self-medication and the independent variables i.e. all the socio-demographic and obstetric factors. Results were deemed significant if the P value was less than 0.05.

Ethical Consideration:

Confidentiality and privacy of all the participants was ensured. No information was disclosed to anyone except the researchers involved in the study. There were no risks involved as the study was questionnaire based and no intervention was being done. No monetary benefit was given to the subjects.

RESULTS

The study involved 354 patients in total. 177 (50%) patients were from THQ hospital Taxila (secondary care hospital) and another 177 (50%) were from HIT hospital Taxila (tertiary care hospital).

Category		Count	Column Valid N %
Age	Below or equal to 20	32	9.0%
	21-30	241	68.1%
	31-40	79	22.3%
	41 to 50	2	0.6%
	51 or above	0	0.0%
Residence	Rural	110	31.1%
	Urban	244	68.9%
Religion	Muslim	331	93.5%

	Christian	23	6.5%
	Hindu	0	0.0%
	Others	0	0.0%
Ethnicity	Punjabi	275	77.7%
	Pathan	55	15.5%
	Sindhi	9	2.5%
	Seraiki	3	0.8%
	Balochi	0	0.0%
	Others	12	3.4%
Education	Illiterate	59	16.7%
	Elementary school	113	31.9%
	Secondary school	106	29.9%
	Higher education	76	21.5%
Occupation	Working full time	19	5.4%
	Working from home	10	2.8%
	Housewife	314	88.7%
	Others	11	3.1%
Monthly Income	Less than 50k	295	83.3%
	51k to 100k	55	15.5%
	101k to 200k	2	0.6%
	201k to 300k	0	0.0%
	301k to 400k	0	0.0%
	401k to 500k	0	0.0%
	above 500k	2	0.6%
Hukkah	Yes	1	0.3%
	No	353	99.7%
Smoking	Yes	0	0.0%
	No	354	100.0%

Table-1: Socio-demographic characteristics of participants

Most of patients (n=320, 90.4%) were aged between 21 to 40 years. Majority of the females were housewives (n=314, 88.7%). From our study only one patient was using Hukkah and none of the patients were practicing smoking.

Category		Count	Column Valid N %
Gestation	First trimester	62	17.5%
	Second trimester	141	39.8%
	Third trimester	151	42.7%
Gravidity	1.00	52	14.7%
	2.00	75	21.2%
	3.00	89	25.1%
	4.00	59	16.7%
	5.00	45	12.7%
	6.00	21	5.9%
	7.00	7	2.0%
	8.00	6	1.7%
Parity	.00	67	18.9%
	1.00	112	31.6%
	2.00	93	26.3%
	3.00	36	10.2%
	4.00	37	10.5%
	5.00	6	1.7%
	6.00	2	0.6%
	7.00	1	0.3%
Number of children alive	.00	73	20.6%
	1.00	112	31.6%
	2.00	94	26.6%
	3.00	36	10.2%
	4.00	33	9.3%
	5.00	4	1.1%
	6.00	2	0.6%
Stillbirths	.00	339	95.8%
	1.00	11	3.1%
	2.00	3	0.8%
	5.00	1	0.3%
Miscarriages	.00	218	61.6%
	1.00	91	25.7%
	2.00	30	8.5%
	3.00	13	3.7%
	4.00	2	0.6%
ANC visits in previous pregnancies	Not Applicable	52	14.7%
	Yes	279	78.8%
	No	23	6.5%
Delivery of previous babies	Not applicable	52	14.7%
	at home	15	4.2%
	governmental health institution	168	47.5%
	private clinic/hospital	82	23.2%
	some at home, some at healthcare facilities	33	9.3%
	Others	4	1.1%
Delivery of the last baby	Not applicable	52	14.7%
	at home	16	4.5%
	governmental health institution	201	56.8%
	private clinic/hospital	80	22.6%
	Others	3	0.8%
	5.00	2	0.6%
Complica-tions in previous pregnancies	Not applicable	52	14.7%
	Yes	120	33.9%
	No	182	51.4%

Table-2: Obstetric Characteristics of Participants

Category				Count	Column Valid N %
Hospital	HIT	Hospital	HIT	177	100.0%
			THQ Taxila	0	0.0%
		Self-Medication in current pregnancy	Yes	25	14.1%
			No	152	85.9%
		Self-Medication in previous pregnancy	Not applicable	18	10.2%
			YES	27	15.3%
			NO	132	74.6%
	THQ Taxila	Hospital	HIT	0	0.0%
			THQ Taxila	177	100.0%
		Self-Medication in current pregnancy	YES	101	57.1%
			NO	76	42.9%
		Self-Medication in previous pregnancy	Not applicable	34	19.2%
			YES	83	46.9%
			NO	60	33.9%

Table-3: Comparison of Self-medication practice in secondary and tertiary care hospital.

From our study out of 354 patients 52 (15%) were primigravidas and the rest 302 (85%) were multigravidas. 136 (38.4%) patients have had a single or multiple miscarriages in the past. Most patients had their previous babies delivered in a governmental health institution (Table-2).

In the current pregnancy only 14.1% (n=25) from HIT Hospital reported practicing self-medication while 57.1% (n=101) from THQ Hospital reported using self-medication in their pregnancies. On the other hand 85.9% (n= 152) patients from HIT denied practicing self-medication and in THQ 42.9% (n=76) patients denied self-medication. Prevalence of self-medication in previous pregnancies is also greater in THQ than HIT as shown in the Table-3.

Category	Value	df	Asymptotic Significance (2-sided)
Self-Medication in current pregnancy and hospital	71.175a	1	.000
Self-Medication in previous pregnancy and hospital	60.432a	2	.000

Table-4: Association of self-medication practice in previous and current pregnancy with the type of hospital.

There is significant difference in the prevalence of self-medication (current and previous pregnancy) and the type of hospital (secondary vs tertiary) as the p value is 0.00 which is less than 0.05.

Category		Count	Percentage
Self-Medication in current pregnancy	YES	126	35.6%
	NO	228	64.4%
Self-Medication in previous pregnancy	YES	110	36.42%
	NO	192	63.58%

Table-5: Comparison of the prevalence of self-medication in previous and current pregnancies.

There is no significant increase or decrease in the use of self-medication in previous and current pregnancies. While calculating the prevalence in current pregnancy all 354 patients were considered while for prevalence in previous pregnancies 302 patients were considered as the rest of 52 patients were primigravidas.

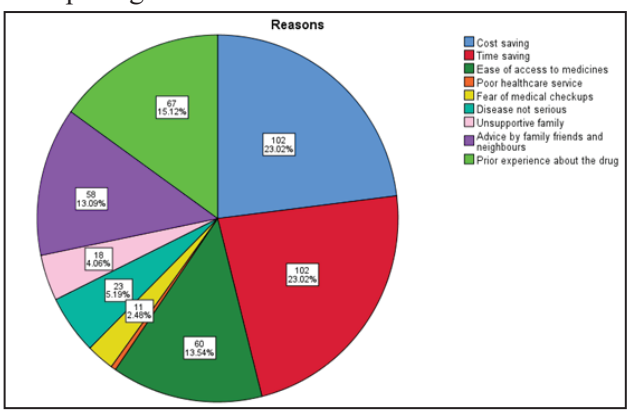

Fig-1: Reasons of Self medication.

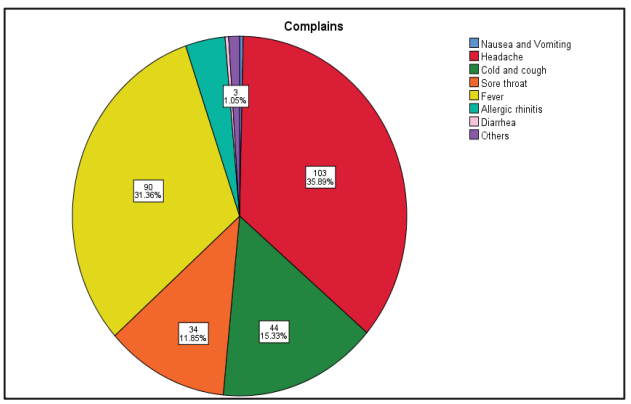

Fig-2: Complaints For Which Self Medication Was Done.

Medicine used in Self Medication	Frequency	Percentage
Antibiotics	9	5.88
Antipyretics	34	22.22
Painkillers	93	60.78
Cough medicines	17	11.11

Table-6: Type of drugs being used in self-medication practice.

Source of Self-Medication	Frequency	Percentage
Pharmacy/Drug Stores	72	33.96
Leftover Medicine	85	40.09
Family, Friends and Neighbors	50	23.58
Others	5	2.3

Table-7: Source of Selfmedication.

Category	X2	Df	P-Value
Hospital	71.175	1	0.000
Age	4.137	3	0.247
Residence	9.496	1	.002
Religion	1.606	1	.205
Ethnicity	7.927	4	.094
Education	37.033	3	.000
Occupation	.672	3	.880
Monthly income	16.330	3	.001
Hukkah	1.815	1	.178
Smoking	-	-	-
Chronic illness	.028	1	.868
Gestation	14.603	2	.001
Gravidity	14.348	7	.045
Parity	22.440	7	.002
Number of alive children	19.590	6	.003
Stillbirths	1.032	3	.794
Miscarriages	2.136	4	.711
Antenatal visits in previous pregnancies	3.059	2	.217
Delivery of last baby	33.222	5	.000
Delivery of previous babies	20.218	5	.001
Complications in previous pregnancies	3.033	2	.220
Taking prescribed medicines	.134	1	.715

Table-8: Factors contributing tothe Self-medication practice.

To determine the relationship between these variables and self-medication during the current pregnancy, the Chi square test was used. Results were taken as significant when the p value was less than 0.05. As shown in the table hospital, residence, education, monthly income, gestation, gravidity, parity, number of alive children and place of birth are significantly linked to the self-medication activity during the present pregnancy.

As discussed before, usage of self-medication is more in THQ hospital as compared to the HIT hospital. As for residence from the rural residents 47% patients practiced self-medication in pregnancy while from the urban residents 30% practiced self-medication in pregnancy. We had only 4 patients in total whose monthly family income was more than 100k Rupees. From patient group with monthly family income of less than 50 thousand,40% were practicing self-medication while patient group with family income between 50 thousand and 100 thousand only 12.7% patients were practicing self-medication. Percentage of pregnant females practicing self-medication was 57.6% in patient group with no formal education, 45% in group with primary school education, 30% in group with secondary school education and only 11.8% in group with higher education. Practice of self-medication was more in second trimester i.e. 47% as compared to the first trimester (29%) and third trimester (27%). Prevalence of self-medication was 33% in patients who delivered their previous babies at home, 39% in patients who delivered in governmental health institution, 19.5% in patients who delivered at private clinics or hospitals and it was 72% in patients who delivered babies in multiple locations. 25% of patients who delivered their last baby at home, 45% of patients who delivered their last baby at governmental health institutions and 20% of people who delivered their last baby at a private clinic or hospital were taking medicines by themselves.

Category		Hospital	
		HIT	THQ Taxila
		Count	Count
Residence	Rural	38	72
	Urban	139	105
Education	Illiterate	17	42
	Elementary School	44	69
	Secondary School	57	49
	Higher Education	59	17
Monthly Income	less than 50k	120	175
	51k to 100k	53	2
	101k to 200k	2	0
	201k to 300k	0	0
	301k to 400k	0	0
	401k to 500k	0	0
	above 500k	2	0
Gestation	First Trimester	39	23
	Second Trimester	42	99
	Third Trimester	96	55

Gravidity	1.00	18	34
	2.00	42	33
	3.00	36	53
	4.00	25	34
	5.00	28	17
	6.00	17	4
	7.00	5	2
	8.00	6	0
Parity	0.00	25	42
	1.00	64	48
	2.00	35	58
	3.00	19	17
	4.00	26	11
	5.00	5	1
	6.00	2	0
	7.00	1	0
Number of children alive	0.00	31	42
	1.00	62	50
	2.00	38	56
	3.00	17	19
	4.00	24	9
	5.00	3	1
	6.00	2	0
Delivery of previous baby	Not applicable	18	34
	At Home	6	9
	Governmental Health Institution	70	98
	private clinic/hospital	74	8
	some at home, some at healthcare facility	5	28
	Others	4	0
Delivery of last baby	Not applicable	18	34
	At Home	6	10
	Governmental Health Institution	76	125
	Private Clinic/Hospital	73	7
	Others	4	1

Table-9: Difference between the characteristics of HIT and THQ hospital Taxila that have significant association with the prevalence of self-medication.

DISCUSSION

The goals of our study were to determine the prevalence of self-medication in pregnant women, the factors that contribute to self-medication, and the difference between self-medication practice between pregnant women presenting to the OPD of secondary and tertiary care hospitals.

One of the biggest strains on a developing country's health care system is maternal and fetal health issues[11]. Self-medication can have detrimental impacts on a mother's health and the baby's health, both and thus will affect the health care system overall[12,13,14]. By finding out the factors responsible we can take actions to eliminate them and thus the health care resources can be utilized for other major health issues. By comparing the prevalence of self-medication in secondary and tertiary hospital we can have an assessment of how the distribution of resources and access to healthcare can effect patients' behavior during their pregnancies.

Self-medication prevalence in our study came out to be 35.59% (126 out of 354 patients) in the current pregnancy. This is in accordance with the studies conducted in Brazil i.e. 36%[15] and Hyderabad Pakistan i.e. 37.9%[16]. However the prevalence was found to be much more in countries like Congo 59.9%[17], India 60%[2] Nigeria i.e. 72.4%[18], 63.8%[19], 85%[20], and Ethiopia i.e. 40.8%[10], 69.7%[13]. The self-medication prevalence in Europe was documented as 62.73% in a meta-analysis[21]. However, in research conducted in other countries, low prevalence rates were discovered i.e Peru (10.2%), Portugal (1.3%) and Netherlands (12.5%)[22,23,24]. These variations could be because of differences in availability of resources, demographic and cultural differences among different countries.

Hospital, residence, education, monthly income, gestation, gravidity, parity, the number of alive children and birth place are significantly related with the practice of self-medication in the current pregnancy as concluded in our study, however in Netherlands self-medication practice was most likely if the woman used prescription drugs, was nulliparous, had her first pregnancy, had a BMI between 26–30 kg/m2 or had health complaints during pregnancy[23]. Women presenting to secondary care hospital, having rural residence, lower educational status, lower family income, being in second trimester and delivering in governmental health institution are more likely to practice self-medication. The results are consistent with previous study showing positive association of self-medication and lower educational status[25] , however it is in contrast to a study showing link between higher education status and self-medication[15]. In multiple previous studies this practice was most frequent in first trimester[15,26] which is in contrast to our study concluding the second trimester as the one in which self-medication occurs most frequently.

In the current pregnancy only 14.1% from HIT Hospital reported practicing self-medication while 57.1% from THQ Hospital reported using self-medication in their pregnancies. Self-medication prevalence in the current and previous pregnancies is greater in THQ than HIT. By comparing the factors that affect self-medication, we came to know that there were more urban patients in HIT and more rural patients in THQ as compared to the other one. Patients presenting to HIT had better incomes and educational status than THQ. Most of the patients presenting to THQ were in their second trimester

and the prevalence was more in second trimester as compared to the first and third trimester. More primigravidas were in THQ as compared to HIT. More percentage of patients in HIT had one child. Majority of patients presenting to both hospitals had one or two children but patients with four or more children were presenting more in the HIT. Majority of patients presenting to THQ had their last and previous babies in the governmental health institutions but majority of patients presenting to HIT had their last and previous babies in both the governmental health institutions and private clinics with almost equal frequency.

Thus we can interpret that the reason of greater prevalence of self-medication in THQ is that the factors that are significantly associated with self-medication are more prevalent in a secondary care hospital. As people belonging to rural areas, having low family income and not having access to higher education may not be necessarily aware of the potential risks and hazards of this practice. As more primigravidas were in THQ, they may not have the knowledge and experience that can lead them to healthy medication practice. People who can afford to do so, deliver in private clinics and they have lower prevalence of this practice. This is because many governmental health institutions in a developing country are overburdened by the number of patients, and they lack resources to fulfill the needs of their patients.

In our research there was no significant difference between the prevalence of self-medication in previous and current pregnancies. This implies that the incidence of self-medication in pregnant women is not increasing or decreasing significantly but it is in contrast to a previous study by Fentaw Girma et al which has documented that the incidence of self-medication is increasing[27]. In another study 44.8% patients practiced self-medication and one-third of the individuals had used self-medication in the past[28].

In our study most prevalent reason of self-medication was cost and time saving. Second commonest reason being prior experience about the drug. A significant majority also received advice from family, friends and neighbours. However other studies showed that the frequent reason for self-medication was prior experience with the drug[29], easy access to the medicines[26] and simplicity of the disease condition[30].

Most prevalent complaintsfor which self-medication was done was headache, fever and cold and cough. In previous studies headache[30,15] fever and pain[18] malaria, morning sickness[31] were the most frequent complaints.

The commonest self-medication sources were pharmacy/drug stores and leftover medicine in our research. Community drug retail outlets[13] and pharmacies[32] were the main source in some of the previous studies.

Our results concluded that the drugs most frequently utilized in self-medication practice were antipyretics and painkillers. This is in accordance with the previous studies that documented antipyretic and analgesics as one of the most widely used medicines used in self-medication[15,19,18].

This research has a few limitations. First being that it was conducted in a specific area of Punjab, Pakistan and as it is not the representative of whole population, it may not be appropriate to generalize our results on the whole population. Secondly as our research is a cross sectional study, we cannot establish an authentic cause and effect relationship.

CONCLUSION

The prevalence of self-medication in pregnant women was more in a secondary care hospital as compared to the tertiary care hospital. This concludes that the quality of health care services provided to the patients can significantly impact their attitudes towards the management of their conditions. Thus, countries who have lack of tertiary care facilities should try to provide better quality of health care. The factors responsible should be confronted so that this malpractice can be reduced significantly.

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