DOI: https://dx.doi.org/10.18203/2319-2003.ijbcp20222138

Original Research Article

Assessment of knowledge and awareness among the pregnant women about their medication use in a tertiary care hospital

Kuruvilla P. Chacko¹, Romy Susan Thomas^{2*}, Ashely Varghese², Hanna Maria Baiju², Philip Jacob², Abel Abraham Thomas²

¹Department of Obstetrics and Gynaecology, Believers Church Medical College Hospital, Thiruvalla, Kerala, India ²Department of Pharmacy Practice, Nazareth College of Pharmacy, Thiruvalla, Kerala, India

Received: 12 July 2022 Revised: 01 August 2022 Accepted: 02 August 2022

*Correspondence: Romy Susan Thomas, Email: romysusan19@gmail.com

Copyright: © the author(s), publisher and licensee Medip Academy. This is an open-access article distributed under the terms of the Creative Commons Attribution Non-Commercial License, which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

ABSTRACT

Background: Pregnancy is a physiological state where drug therapy is of particular concern. The pertinent use of drugs during pregnancy is beneficial as it affects not only the health of the pregnant woman but also the developing fetus. The study was carried out to access the knowledge and awareness regarding the drug use among pregnant women.

Methods: Cross sectional descriptive study was conducted among 150 pregnant women for six-month duration. All the information was acquired through direct interview with the subjects and from treatment chart of subjects which were then recorded in a data collection form.

Results: Majority of the subjects were under the age group of 18-28 years (50%). Most of the subjects predominantly has tertiary level of education (69%). Furthermore, 57% of the subjects were at the third trimester of their pregnancy. Knowledge regarding use of their own medications were significantly high (95%), which suggest that the subjects were well aware of their medications. Besides, 82% of the subjects had knowledge about the medications that were not to be consumed during pregnancy. In addition, 89% of the pregnant women did not take any over the counter medications and about 92% of the subjects did not treat themselves with any ayurvedic or homeopathic medications. **Conclusions:** Significant number of subjects were aware about their medication use. They ensured themselves and their developing fetus a better health.

Keywords: Knowledge and awareness, Pregnancy, Over the counter medications, Ayurvedic or homeopathic

INTRODUCTION

Pregnancy is the term used to describe the period in which a fetus develops inside a woman's womb or uterus.¹ Gestation period consists of 40 weeks. Medical scientist has divided this period into three trimesters. The first trimesters comprise of 1-12 weeks, followed by the second, which comprise of 13-28 week and the

third for 29-40 weeks.¹⁻³ Appropriate use of medications during pregnancy is an essential part of antenatal care, since it affects not only the health of the pregnant woman but also the developing fetus, who is exposed to a wide range of adverse effects.⁴ The current knowledge on practice of drug use, all through gestation is deficient, as pregnant women are infrequently included in clinical trials. Thus, data attained on medication use in clinical practice opens an

opportunity to identify drugs with unknown risks that are used in pregnant populations and therefore for which extended study is essential.⁵

Cautious use of drugs, adequate knowledge, positive approach and awareness towards the medication use are necessary requirements for good maternal and child health.⁶ More than 50% of pregnant women consume prescription or non-prescription drugs or use social drugs like tobacco and alcohol or illicit drugs at some time of perinatal period. Drugs taken by a pregnant woman reach the fetus primarily by crossing the placenta, the same route taken by oxygen and nutrients, which are needed for the fetus's growth and development.7 Drug that acts during foetal or embryonic development to create a permanent alteration of form or function is known as a teratogen.⁸ Pregnant women used to self-medicate various symptoms of pregnancy such as back pain, headache, heartburn, nausea, vomiting, and haemorrhoids.9 Furthermore, use of other systems of medicine like, ayurvedic or homeopathic as well as self-treatment with household remedies may take place during pregnancy. The prevalence of herbal medicine utilization in pregnancy ranges between 7% and 55% in different geographical, social and cultural settings, ethnic groups. Medications, herbs, and and supplements should be used with extreme caution during pregnancy.¹⁰ Presently, the pregnant women have insufficient awareness and knowledge regarding the effect of the drugs on the health of their fetus.¹¹ A general perception is that drugs are not safe in pregnancy, even though fewer than 30 drugs are revealed to cause significant malformations in humans. Refraining from unwarranted use of drugs, understanding the knowledge and awareness of care providers and pregnant women concerning the harmful effect of drugs, is of great significance.¹² Moreover, in India, owing to undemanding availability of drugs coupled with inadequate health services, has increased the proportions of drugs being used as self-medication when compared to the prescribed drugs.¹³ The objective of the current study is to assess the knowledge and awareness of the pregnant women about their medication use.

This study is done because a large number of drugs are available as OTC (over the counter) medicines and the availability of other systems like ayurvedic or homeopathy treatments is widely prevalent in Kerala. As a result of conducting this study, educational programs could be planned, which would bring awareness among the pregnant women. In addition, care professionals can update health their understanding of how well the pregnant women are aware on medication use. In this way, studies would help in evaluating the awareness and knowledge among the pregnant women as well as, medical personnel would ensure that, pregnant women are well aware of medication use.

METHODS

A cross sectional descriptive study was conducted among IP (inpatient) and OP (outpatient) admissions of pregnant women in the Department of Obstetrics and Gynaecology (OBG) at Believers Church Medical College Hospital (BCMCH), Thiruvalla using a data collection form. The number of study subjects were 150 pregnant women the study duration was of 6-month duration (March 2021 to August 2021). All subjects who met the inclusion and exclusion criteria were included.

Inclusion and exclusion criteria

Inclusion criteria was, pregnant women who visited IP and OP department of OBG. Exclusion criteria was pregnant women who were unwilling to participate and who provided with incomplete information.

Source of data and study procedure

Patient records were taken from current case sheet and by interviewing the inpatients as well as the outpatients. Subjects were enrolled into the study, after taking their prior consent (in local language) and also by considering inclusion and exclusion criteria. All the necessary and relevant baseline information was collected on a data collection form (in local language), which includes the following: basic socio-demographic details such as age, education, occupation, place of residence, abortions, regular antenatal visits, child bearing trimester then information on medical history and medication history. Information regarding their knowledge and awareness on the safety of use of medications during pregnancy was obtained along with their practice of purchasing over the counter (OTC) drugs and use of herbal or homeopathic products.

Statistical analysis

The results were statistical analysed using MS Excel and were reported in the form of tables and charts.

RESULTS

The present study comprises a total of 150 pregnant women, with involvement from all the three trimesters, passing the inclusion criteria and gave informed consent to participate during their visit to the hospital and when on admission. It is evident that majority of the subjects belonged to the age group of 18-28 years (50%) followed by 29-38 years (49%) and 1% of the subjects belonged to the age group of 39-48 years. When comprehending the family type, most of them were from nuclear family (73%) and the remaining of the pregnant subjects were from Joint family (27%) (Table 1). On the whole, majority of the respondents had tertiary level of education (69%) and the remaining respondents had secondary level of education (31%). There were no respondents who were primary educated. Major proportion of the subjects reside in urban areas (65%), while the remaining 35% of the subjects resides in the rural areas. Nearly every pregnant woman was working (95%) and only 5% of them were housewife. Only few of the subjects were multigravida (17%), followed by 38% were secundigravida.

Table 1: Patient demographic data and present pregnancy status.

Variables	Number (%)
Age group (years)	
18-28	75 (50)
29-38	73 (49)
39-48	2(1)
Type of family	
Joint	40 (27)
Nuclear	110 (73)
Literacy	
Primary education	0
Secondary education	47 (31)
Tertiary education	103 (69)
Employment status	
Working women	143 (95)
Housewife	7 (5)
Place of residence	
Rural	53 (35)
Urban	97 (65)
Gravida	
Primigravida	68 (45)
Secundigravida	57 (38)
Multigravida	25 (17)
Trimester	
First	35 (23)
Second	30 (20)
Third	85 (57)
Abortion history	
Yes	30 (20)
No	120 (80)

Most of them were primigravida (45%). Mainly 57% of the pregnant women were in their third trimester of pregnancy, followed by 23% of pregnant women were in their first trimester and 20% were in their second trimester. When coming across abortion history, 80% were without a history of abortion and the remaining 20% of pregnant subjects had a history of abortion (Table 1). An account of medical history was followed up in which 42 % (63 subjects) of the subjects had no medical history. From pregnant subjects with medical history, 16% had Thyroid disorder followed by 12% with history of gestational diabetes, 5.8% with diabetes mellitus, 5% with PCOD, 3.7% with hypertension, UTI, migraine, 3.1% with anaemia, 2.1% with pregnancy thyroid and asthma, 1.5% with skin disorders, 1% with allergy, DLP and hypothyroidism and the remaining 0.5% pregnant subjects had history of nephrotic syndrome, scoliosis, sinusitis, gestational thrombocytopenia, Behcet's disease, allergic bronchitis, pre-eclampsia, trigeminal neuralgia, TDS and hypotension. Regarding the medication history

(with medical history) majority of the pregnant subjects had taken thyroxine (40.2%), followed by 22% had metformin, 9.1% had insulin, 5% had aspirin and iron supplements, 2.2% had progesterone, antibiotics, nifedipine and furosemide, 1.1% had atenolol, carbimazole, nasal inhaler, nasal spray, nitrofurantoin, labetalol, prednisolone and flunarizine. All the pregnant subjects meet their doctors at the appointed time (100%) and reasons mainly were Pregnancy (91%) followed by 7% of them for delivery and remaining 2% for comorbid conditions. Preponderance of the pregnant women ate 3 times a day (37%), followed by 35% of pregnant women ate more often, 22% of the subjects ate 4 times a day and 6% of the subjects ate 2 times a day (Figure 1).



Figure 1: Time duration of subject's food intake.

 Table 2: Assessment of Knowledge and awareness among the subject with regard to medications.

Assessment of knowledge and awareness among the subject with regard to medications	Number (%)	
Knowledge and awareness about their medications		
Yes	143 (95)	
No	7 (5)	
Knowledge and awareness regarding the medication		
to be avoided during pregnancy		
Yes	123 (82)	
No	27 (18)	

When asked about the medium by which they consumed medication, every pregnant subjects took medicine along with water (99%), except 1% with tea. None of them took their medicines along with juice or coffee. All (100%) the subjects had their medicines after food except for those that were needed to be taken on an empty stomach (Table 5). Most importantly, majority of the pregnant subjects had knowledge about their medicine (95%) and the remaining 5%, had no knowledge about their medicine. Furthermore, may of the pregnant subjects were aware about the medication that are not to be taken during pregnancy (82%) and the remaining 18% of pregnant subjects had no awareness about the medication that are not to be taken during pregnancy (Table 2).



Figure 2: Response of subjects regarding the intake of over-the-counter medication (OTC) medication during pregnancy.

Table 3: Specification of OTC medications.

Drugs	Number (%)
Cetirizine	2 (11.7)
Paracetamol	12 (70.3)
Ranitidine	2 (11.7)
Nimesulide	1 (5.8)

Majority of pregnant women were not using ayurvedic or homeopathic remedies (92%) and the remaining 8% of pregnant women were using ayurvedic or homeopathic remedies (Table 4).

Table 4: Use of ayuvedic or homeopathic remedies by
the subjects.

Response (yes or no)	Number (%)	
Yes	12 (8)	
No	138 (92)	
Indication of use from response with yes		
Therapeutic	10 (83)	
Prophylactic	0 (0)	
Supplement	2 (17)	

Most of subjects have used ayurvedic or homeopathic remedies for therapeutic purposes (83%) and the remaining 17% of subjects used it as supplements. There were no subjects who took it for prophylactic purposes.

Table 5: Time of food intake and the medium used to
consume food.

Time of food intake and the medium used to consume food	Number (%)
Time	
Before Food	0 (0)
After Food	150 (100)
Medium	
Water	149 (99)
Tea	1 (1)
Coffee	0 (0)
Juice	0 (0)

Most of the subjects ensured that they did not consume OTC medications (89%), whereas 11% of the subjects consumed OTC medications during their pregnancy (Figure 2). From the 11% of OTC medication users, the most widely used OTC drugs was paracetamol, about 64.6% of study subjects, followed by the use of cetirizine (11.7%) and ranitidine (11.7%). Nimesulide was used by 5.8% of study subjects (Table 3).

DISCUSSION

Awareness and knowledge of the pregnant subjects were evaluated regarding drug use and found to be substantially at higher rates. It is evident that awareness on drug use among pregnant women varies over different places. With regard to age group, the present study is similar to the study done by Rahiman who states the increase in number of pregnancies between the age group of 21-25 years (32.5%).¹⁴

Decrease in the number of pregnant subjects, as the age increases gives us an insight that there would be manifold complications during pregnancy and at times the health of the child may be at stake. In this study majority of the pregnant subjects were within the reproductive age. Number of nuclear family were found to be more (73%) than joint family (27%), which is contradictory to the study done by Binu et al where only 25.97% were nuclear family and 57.28% were joint family.¹⁵ So, nowadays the number of joint family is declining were it used to be more in the past. Increase in number of family members may increase the further burden for lack of nutrition, development of stress and exposure to other diseases. Be it a joint or a nuclear family the care given to most of the pregnant women is same. Moreover, Kerala is a state which looks forward to developments and improvisation thus the family type has descended into more solitary confinements. Status of literacy in this study is paradoxical to the study done by Manoj et al where most of the subjects have primary education than tertiary education.¹⁶ The literacy rate in Kerala is high thus for which most of the subjects were well aware of the treatment they were given. In a study done by Selvaraj et al most of the pregnant subjects were housewife and few of them went for regular jobs.¹⁷ As of now, pregnant subjects have focused on seeking job during their pregnancy time, for which more employed women are seen in the present study. They were all willing to work during their pregnancy time. Place of residence among the pregnant subjects were in line with the study done by Mary et al where subjects living in urban is more (92.8%) compared to in rural area (7.2%).¹⁸ The added availability of resources may have permitted the pregnant subjects to live in urban places were the hospitals are near as well as accessibility of all the requirements. Thus, the hospital been situated in urban area may have prompted people from different sectors to be consulted. Total number of both the secundigravidae and multigravidae in the present study gives a similar status among the pregnant subjects in the study of Kumarjit.¹⁹ At this juncture, mainly the

subjects who were pregnant more than once is observed, possibly due to abortions which may have resulted in multiple pregnancies or the want of more than one child. With regard to trimester, the present study is in accordance with the study done by Abubakar where number of pregnant subjects was more (41.9%) in third trimester and 34.4% in the second trimester.²⁰ And 9.1% of the subjects visited during the first trimester. Generally, most of the visits are done in third trimester as it approaches to the time of delivery. Health of both the mother and the developing child is to be considered. Moreover, most of the complications could happen at this time and the drugs taken during this period should also be monitored. A study done by Bala et al showed the same status of abortion history where large number of the pregnant subjects were without a history of abortion (70.11%) and 29.89% with history of abortion.²¹ Mainly the history of abortion is due to the pregnant subject's comorbid conditions or complications and in rare cases due to drugs. There was no study done so far to compare the medical history, medication history and family history among pregnant subjects. In the present study 33.33% of the pregnant subjects were without a medical history. Medical history of thyroid disorder was the most, followed by diabetes mellitus and gestational diabetes. Along with that medication history of thyroxine was most as of the medical history followed by Metformin and Insulin.

Every pregnant subject met their doctor at the appointed time and there were no subjects who missed or avoided the visits in the present study, which clearly states that they have followed a correct schedule for meeting the doctor ensuring good health for both lives. According to a study done by Shuma et al 82% of the subjects had their regular check-ups and only 18 % of the subjects didn't regularly met their doctors.²² This gives us further information on knowledge of pregnant subjects, attitude during their pregnancy and knowing it is important to visit doctors on the appointed time. The present study states that most of the pregnant subjects had food intake in a normal manner i.e., three times a day, (37%). 35% of the subjects consumed food more frequently, followed by 22% of them four times a day and only 6% of the subjects had food two times a day. In a study done by Bornhauser based on a health survey, food intake during pregnancy is divided based on the proportion of each individual items like meat, milk, fish and intake of vegetables and fruits.²³ Where 1-2 fruits were taken more on daily basis (39.8%). Wherein, in this study frequency of food intake (it also includes intake of fresh fruits and vegetables) was evaluated. All the pregnant subjects had healthy consumption. In a study done by Devkota it was seen that 21.8% had the knowledge of the use of prescribed medicines, 71.6% had the knowledge that unnecessary medicines could harm mother and foetus and 30.6% knew that unwanted medication during pregnancy could affect foetal organogenesis.²⁴ Knowledge and awareness of medication in the present study varies to a larger extend from the study done by Devkota et al and team. Thus, in

Kerala due to the increased educational status, most of the subjects knew about their mediation and those that are not to be used during pregnancy. When they came up with doubts regarding the medications, the subjects used to ask their doctor, nurses, pharmacist or close relatives who were medical personnel. A study done by Verstappen et al showed similar status to the present study where, only 12.5% of the subjects took the OTC medication and the most commonly reported medications were analgesics (27.3%), followed by vitamins and medication for gastrointestinal tract (26.7%).²⁵ Total avoidance of the OTC medication is not possible, as for minor aliments the subjects may consume them. Most of the subjects were educated for which when asked about their OTC medications, was proficient in it. The ones who knew about OTC medication, tried to avoid it as much as possible as they care for their health and the developing foetus. Thus, the most common medication taken as OTC during pregnancy was analgesic and gastro intestinal agents which had no serious side effects. When comparing intake of ayurvedic or homeopathic remedies with the study done by Banzal et al which showed only 1% of the pregnant subject consuming ayurvedic or homeopathic remedies the use of this type of treatment significantly increases in the present study.²⁶ This indicates that there is a wide variety system of treatments widely prevalent in Kerala other than allopathy treatment. Which further put interest in trying out the different system of treatment available.

Limitations

Limitations of current study were comprehensive post session counselling were not achieved due to COVID-19 pandemic and understanding about the subject's food intake was difficult as majority of the patients were reluctant to discuss about it. Therefore, in-depth information could not be collected.

CONCLUSION

Knowledge and awareness among pregnant women about their medication use varies. To understand this concern, research studies on this topic is of much importance. Most of the subjects were well aware about medications and the study has helped to bring out the fundamental aspect of the objective. This study has also allowed to understand different level of treatments taken by pregnant subjects and their notions on drug use. Apart from that, it has also added further knowledge into clinicians concerning how well the pregnant women are aware with their medications. Moreover, few studies are done, evaluating the knowledge and awareness of drug use among pregnant women. Thus, this information would have a better impact on the developing world, which would further put more concern into research on pregnant women.

Funding: No funding sources Conflict of interest: None declared Ethical approval: The study was approved by the Institutional Ethics Committee

REFERENCES

- 1. Fact sheet: about pregnancy, 2017. Available at: https://www.nichd.nih.gov/health/topics/pregnancy/co nditioninfo. Accessed on 20 October 2021.
- Valsamakis G, Chrousos G, Mastorakos G. Stress, female reproduction and pregnancy. Psychoneuroendocrinology.2019;100:48-57.
- Satish Kumar BP, Abraham LE, Thomas AA, Wagle L. Drug prescribing pattern among pregnant women in obstetrics and gynaecology department in a rural tertiary care teaching hospital. World J Pharm Res. 2016;5(6):122-5.
- 4. Atolagbe O, Kanu JS and Jalloh MB, W BJ, A BJ Beckley, Abiri TO. Evaluation of medicines prescribing pattern among pregnant women at the Princess Christian maternity hospital in Freetown, Sierra Leone. International J Modern Pharmal Res. 2020;4(5):1-8.
- 5. Farooq MO, Reddy SK. Prescription pattern of the drugs among pregnant inpatients in tertiary care hospital. J Pharm Res. 2014;8(7):981-5.
- 6. Etefa K, Kahissay MH. Assessment of drug prescribing pattern among pregnant women attending antenatal care in health centers found in Arada Subcity, Addis Ababa, Ethiopia. J Pharm Sci Biosci Res. 2015;5(4):347-62.
- Sachdeva P, Patel BG, Patel BK. Drug use in pregnancy; a point to ponder. Indian J Pharm Sci. 2009;71(1):1.
- 8. Thacker KB, Chaudhari V, Patel S, Dikshit RK. A drug utilization study in pregnancy at a tertiary care teaching hospital. Natl J Physiol Pharm Pharmacol. (2021);11(3):308-14.
- Lupattelli A. Medication use in pregnancy: a crosssectional, multinational web-based study. BMJ. 2014; 4(2):e004365.
- John L J, Shanthakumari N. Herbal medicine use during pregnancy: a review from the middle east. Oman Med J. 2015.
- 11. Tefera YG, Gebresillassie BM, Getnet Mersha A, Belachew SA. Beliefs and risk awareness on medications among pregnant women attending the antenatal care unit in Ethiopia university hospital. Overestimating the risks is another dread. Front Public Health. 2020;8:28.
- Zaki NM, Albarraq AA. Use, attitudes and knowledge of medications among pregnant women: A Saudi study. Saudi Pharma J. 2014;22:419-28.
- 13. Sharma R, Kapoor B, Verma U. Drug utilization pattern during pregnancy in North India. Indian J Med Sci. 2006;60(7):23-8.
- Om FR, Kumar P. Prescription pattern analysis during pregnancy in a tertiary care teaching hospital. Int J Pharmacol. 2008;5(4):212-7.
- 15. Binu KM, Pavani AL, Sujatha D, Pavani V, Doddayya H, Kodliwadmath SM. A prospective cohort study on

use of medications prescribing during pregnancy and lactation. World J Pharma Res. 2005;5(9):891-901.

- Saurabh MK, Kumar S, Maharshi V. Evaluation of medicine exposure during pregnancy at a tertiary center of an indian state. Maedica. 2020;15(4):503-12.
- Selvaraj N, Sekar A, Gandhi R, Jayabalan N, Ganesan S, Mohammad MA. Drug utilization pattern in pregnancy at a tertiary care hospital in Puducherry. Int J Basic Clin Pharmacol. 2018;7(5): 900-5.
- Varghese BM, Banu R. Assessment of drug usage pattern during pregnancy at a tertiary care teaching hospital in Visveswarapura institute of pharmaceutical science, Bangalore. Int J Med Public Health. 2016; 6(3):130-5.
- Kumarjit S, Manjunath GN, Dhananjaya BS, Lohit K. Prescription pattern of drugs during pregnancy in a tertiary care centre: A retrospective study. Journal of international medicine and dentistry 2015;2(1): 30-5.
- 20. Abubakar K, Abdulkadir R, Abubakar SB, Jimoh AO, Ugwah-Oguejiofor JC, Danzaki AM. Drug utilization pattern in pregnancy in a tertiary hospital in Sokoto, North West. J Heal Sci. 2014; 4(4):99-104.
- Bala K, Era N, Mukherjee S, Bordolai SK. Drug usage in pregnancy in an out patient department in tertiary care hospital in Bihar. European J Biomed. 2019; 6(11):350-7.
- 22. Shuma ML, Azad AK, Muhit A, Halder S. Prescription pattern for pregnant and lactating mothers, and attitude towards the safety of medicines in a tertiary hospital in Bangladesh. Int J Sci Rep. 2021;7(3):159-66.
- 23. Bornhauser CB, Quack Lötscher KC, Seifert B, Simões-Wüst AP. Diet, medication use and drug intake during pregnancy: data from the consecutive Swiss Health Surveys of 2007 and 2012. Swiss Med. 2017:147-w14572.
- 24. Devkota R, Khan GM, Alam K, Sapkota B, Devkota D. Impacts of counseling on knowledge, attitude and practice of medication use during pregnancy. BMC Preg Childbirth. 2017;17(1):1-7.
- 25. Verstappen GM, Smolders EJ, Munster JM, Aarnoudse JG, Hak E. Prevalence and predictors of over-the-counter medication use among pregnant women: a cross-sectional study in the Netherlands. BMC Public Health. 2013;13(1):1-9.
- 26. Banzal N, Saxena K, Dalal M, Srivastava SK. A study to assess awareness amongst pregnant women about the effects of drugs on the fetus and self-medication. Int J Basic Clin Pharmacol. 2017;6:924-7.

Cite this article as: Chacko KP, Thomas RS, Varghese A, Baiju HM, Jacob P, Thomas AA. Assessment of knowledge and awareness among the pregnant women about their medication use in a tertiary care hospital. Int J Basic Clin Pharmacol 2022;11:425-30.