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Original Article

Pharmacology Section

Knowledge, Attitude and Practice Regarding Medication use among Pregnant Women Attending Antenatal Clinic: A Cross-sectional Study

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ABSTRACT

Introduction: Medication use during pregnancy is a major concern in India and poor awareness is driven by non scientific information sources. Primary care providers play a role in providing information on risk of teratogenic and folate deficiency birth defects.

Aim: To assess Knowledge, Attitude and Practice (KAP) of pregnant women attending antenatal clinic regarding medication use and self-medication during pregnancy.

Materials and Methods: This cross-sectional study was conducted on 100 pregnant women attending the antenatal clinic in a tertiary care teaching hospital of Eastern India from August to October 2021. The study looked at sources of drug information, attitudes regarding medication use and practice of medication use and self-medication among pregnant mothers attending antenatal clinic of the hospital. Consenting women were enrolled in the study and the qualitative data gathered from the women were analysed using tools of descriptive statistics.

Results: This study included 100 pregnant women with mean age of 22±2.0 years of which 42% were primigravida. Of the participants 80% had atleast high school education. Two third of the mothers 66% cited their family members as source of their drug information and 76% were aware of the risks of self-medication during pregnancy. Self medication practice was seen in 25% pregnant women mainly with Paracetamol use for pain or over-the-counter drugs to control acid reflux and morning sickness symptoms. All the participants (100%) took their iron and folic acid supplements as advised.

Conclusion: The pregnant women attending the hospital showed adequate knowledge and satisfactory practices regarding medication use. Counselling of the mothers attending the clinic regarding drug use and possible harms to the mother and baby can help reduce long-term risks.

Keywords: Birth defects, Pregnancy, Self-medication, Teratogenicity

INTRODUCTION

A worldwide effort was launched by the World Health Organisation in 1987 known as Safe Motherhood Initiatives, which aimed to reduce maternal mortality and improve maternal health [1]. Improving maternal health is one of the eight-millennium development goals (MDGs) [2]. Since 1990, maternal deaths worldwide have dropped by 49%. Under MDG5, countries committed to reducing maternal mortality by three-quarters between 1990 and 2015 [2]. One of the main tenets to achieve this goals is to improve antenatal care and studies have shown time and again that better antenatal care can improve pregnancy outcome to a great extent and lead to healthier babies [2].

Medication use during pregnancy is a major concern in India and poor awareness is driven by non-scientific information sources [3]. Primary care providers play a role in providing information on risk of teratogenic and folate deficiency birth defects. Around the world medication use during pregnancy remains a cause for concern. Teratogenic drugs are labelled according to their risk of causing foetal harm and those with labels D or X are contraindicated or to be used with extreme caution in pregnant women. Several drugs including some antihypertensives, antiseizure medications and even common over the counter drugs could lead to foetal harm. Timing and rate of exposure to such drugs determine the extent of harm that can be brought about by them [3].

To improve maternal health, barriers that limit access to quality maternal health services must be identified and addressed at all levels of the health system. Health awareness is an important element to enable women to have a more uneventful pregnancy [4-6]. A study from Maharashtra looked into the health related knowledge awareness and practices among pregnant women. One of the aspects they studied was self-medication but source of information regarding drug use during pregnancy had not been studied [4]. There were no similar studies on pregnant mothers from Bengal and adjacent areas. Hence present study aimed to fill the knowledge gap regarding awareness for medication use during pregnancy among urban and semi-urban mothers of Eastern India attending a tertiary care Government hospital.

This study was conducted to assess knowledge, attitudes and practice of pregnant women attending the antenatal clinic of a tertiary care teaching hospital towards medication use and self-medication.

MATERIALS AND METHODS

This cross-sectional study was conducted in a Tertiary Care teaching Hospital, Kolkata, west Bangal, Eastern India from August 2021 to October 2021. Approval was obtained from the Institutional Ethics Committee before commencing the study and the participants were at less than minimal risk. The participants were assured of confidentiality and anonymity. A sample size of 100 was calculated considering a confidence level of 95% in 50% population prevalence.

Inclusion criteria: All pregnant women attending the antenatal clinic who consented to participate in the study were included.

Exclusion criteria: Those who did not consent were excluded from the study.

Questionnaire

The data were collected by interviewing all the eligible subjects willing to participate in the study. A questionnaire was framed by the researchers as per requirement of the study from several studies [4-6] and it was validated by subject experts who were not associated with the study. The questionnaire was translated in Hindi and Bengali and the interviewer assisted the mothers in filling up the questionnaire if they needed [Annexure-1]. There were four questions on the patient demographics and three each regarding knowledge and attitude. For practice area, five questions were framed. Most of the answers were close ended with "yes or no" answers (7 questions) or multiple choice questions (2 questions) and one question was open ended. A blank table was provided for the list of medications and their indications which the patients took without prescription from the antenatal clinic. The interviewer helped the mothers to recall and filled in the list of drugs on the form. Tools of descriptive statistics were used to calculate the data obtained in the questionnaire.

STATISTICAL ANALYSIS

Microsoft Excel version 2010 was used for analysis and data handling. For analysis of the data obtained from the questionnaire, tools of descriptive statistics including average and percentage were used. Bar and pie-charts were used to depict the collected and analysed data.

RESULTS

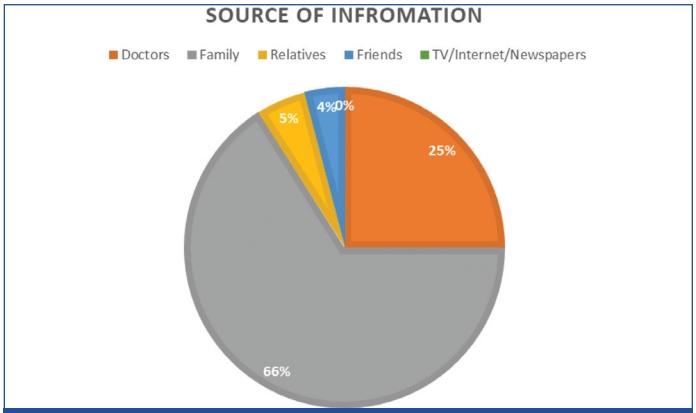
In this study, the age range of study subjects ranged from 18 to 39 years with mean age of 22±2.0 years. Out of 100 pregnant women, 42% (42) were primi gravida and 17 (17%) had history of miscarriage or stillbirth. 80% participants had atleast high school education while 20% participants (20) had university level education. No illiterate mothers were encountered in this study population [Table/Fig-1].

Parameter		Rate of Self medication prevalence
Mean age (years)	22 (±2.0)	-
Mean gestestional age (weeks)	17.5±4	First trimester-15/30
		Second trimester-11/30
		Third trimester-4/30
Primipara	56%	16/ 56
Primigravida	42%	3/42
Cause of pregnancy loss (17%)		1/17
Congenital anomaly	1%	-
Still birth	6%	-
Medical termination of pregnancy	7%	1
Others/unknown cause	3%	-
Education level		
High school	80%	21/80
Graduation	20%	9/20

[Table/Fig-1]: Demographic profile of the participants of the study.

Out of 100 subjects, 66% (66) women got their information from family members, 25% (25) from local doctors in suburban areas and hospital doctors in urban areas. A total of 5% (5) women got the information from relatives and 4% (4) from their female friends as reported by the participants. Surprisingly none of the participants agreed to have obtained drug related information from TV, internet or news papers [Table/Fig-2].

All the mothers attending the antenatal clinic were provided with free of cost folic acid supplementation throughout pregnancy and iron supplementation from their second trimester. During their antenatal visits they were counselled regarding medication use during pregnancy and also advised to take their iron and folic acid supplements regularly. Mothers participating in this study were asked about their beliefs and



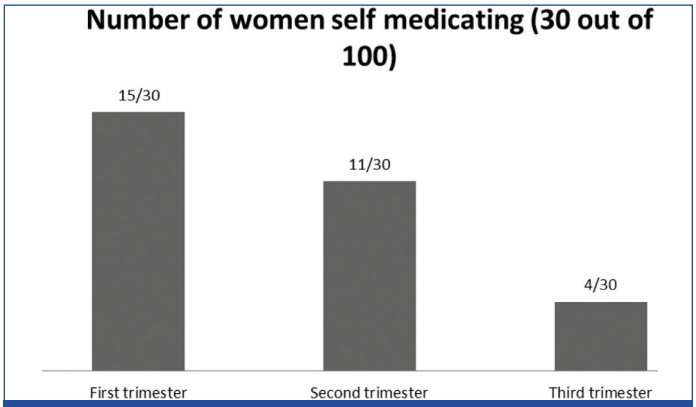
[Table/Fig-2]: Sources of information regarding medication use during pregnancy.

faiths regarding Iron and Folic Acid supplementation during pregnancy and if it would benefit their babies. All the participants (100%; 100) believed that the iron folic acid supplements that they were provided would benefit their babies and they adhered to the advice regarding these supplements from the antenatal clinic.

Most of the participants, 76% were found to be aware of risks of self-medication and also the harm that can occur to themselves and their unborn babies if they took medications without advice from the antenatal clinics. "History of addictions (mainly chewing tobacco) was reported in 17% (17) participants of which only 5 participants reported to have abstained from their addiction on account of their pregnancy. No history of alcohol use was elicited from the participants This was obtained on interview (Question 3 Part E)".

When asked related to what they considered to be the best and most reliable source of information regarding drug use during pregnancy, all of the women (100%) stated that doctors and healthcare professionals are the most reliable source of drug information.

All the participants adhered to the prescriptions from the antenatal clinic (100%; 100). 30% participants confessed to have self-medicated themselves at some point during their pregnancy. Practice of self-medication was found to be minimum among the 42% primigravida mothers and the 17% mothers with history of pregnancy loss compared to others. Participants were most likely to take medicines without prescriptions during their first trimester of pregnancy 15 (50%) of 30 mothers) compared to their second and third trimesters 11 (36.66%) and 4 (13.33%) mothers respectively [Table/Fig-3].



[Table/Fig-3]: Self- medication practice among participants according to trimester (n=30 women who were self-medicating).

Most common cause for self medication was use of over the counter Paracetamol for fever or pain (in 25% mothers). Other reasons for self-medication were gastrointestinal discomfort such as acid reflux and morning sickness. It was noted that 9% and 8% women respectively were consuming unidentified Ayurvedic, Herbal or Homeopathic medicines respectively for self-identified anemia or weakness and fatigue. Details of the medications commonly used without prescriptions among the participants along with their cited reasons is shown in [Table/Fig-4].

Self-recognized illness or discomfort	Type of medication	Percentage
Fever/Pain	Paracetamol (650 mg)	25%
Acid Reflux, gastritis	Aluminium hydroxide and Magnesium hydroxide	5%
	Pantoprazole (40 mg)	3%
	Ranitidine (150 mg)	2%
Morning Sickness, nausea, vomiting	Doxylamine succinate (10 mg)	2%
	Domperidone (10 mg)	3%
Anemia, weakness and fatigue	Ayurvedic medication unidentified	9%
	Homeopathic and Herbal medicines unidentified	8%

[Table/Fig-4]: Medication use during pregnancy based on self-recognized illness or discomfort.

DISCUSSION

This study reveals that almost one in three women (30%) have used medications without prescriptions during their pregnancy. Self medication during pregnancy is cause for concern and several studies have reported on attitudes towards medication use among pregnant women [7-12]. This is one finding that is cause for concern. Studies from around the world have shown that overall prevalence of self medication among pregnant women is around 32% [10]. In yet another report [13], globally 81.2% women have been found to take some medication (either prescribed or over-the-counter) during their pregnancy with 65% resorting to self-medication atleast once during their pregnancy. The significance of high rates of self-medication especially accompanied by a lack of awareness regarding the possible harm of self-medication and un-advised medicine use during pregnancy, could mean significant risk to both the mother and the baby.

This study population included women of an average age of 22 years and this was similar in two other studies reported earlier by Sanjel S et al., [7] and Patel BB et al., [4] in AFMC Pune. A younger age as well a lack of higher education predisposes a pregnant mother to rely upon advise from family members and knowledge regarding medication use during pregnancy may be inadequate. The current study population had 80% mothers with atleast high school education. Rangwala PP et al., [14] conducted a similar study on self-medication among pregnant mothers in Gujarat. They noted that younger, illiterate and multigravida were more likely to self-medicate during pregnancy than those who were older, had atleast secondary education or were primi gravida. In their study they found that only 15.4% mothers with minimum education self-medicated. Since the current study population was semi urban and mostly educated, the number of women self medicating was significantly higher.

This study showed that source of information regarding medication use in two thirds of the participants was from family members and only one in four mothers relied upon doctors for information regarding drug use. Rangwala PP et al., [14] working with a sample of pregnant women from Gujarat found that almost 75% depended upon the doctors or pharmacists for drug information. Banzal N et al., [15], in their study on women from Gujarat found only 8.5% women self-medicating. They noted that of these 3% relied upon chemists for drug information. This was a significant finding in this current study for which the participants were counselled. They were urged to seek out authentic sources of drug information.

Banzal N et al., [15] reported that only 9% of their study population of 200 women were aware of the effects of medications taken during pregnancy on the unborn foetus. Rangwala PP et al., [14] found that only 4.3% of their population of 303 mothers were aware of the harmful effects of drugs on the foetus. This current study however showed that 76% of the mothers knew that taking medicines without prescription during pregnancy could harm their unborn babies. One of the reasons for this deviation from earlier studies could be the setting of this study where most of the women have atleast high school education and live in an urban metropolitan city.

In their study on self medication practices and attitudes among pregnant mothers, Atmadani RN et al., [16] reported various levels of awareness and attitudes regarding self medication among pregnant women. They found 61.5% of their study population believed that women should refrain from medication use during pregnancy to protect their unborn babies. On the other hand 63.1% mothers also believed that not taking medicines for an illness during pregnancy and the untreated illness could also damage the pregnancy. A further 56.5% mothers disagreed with the fact that all medicines can cause harm to the foetus. In our study all the participating mothers believed that the medications and supplements prescribed from the antenatal clinic would benefit their babies and thus they adhered to the advice given by the health care professionals. Devkota R et al., [5] in Pokhara report a similar study on medication use among pregnant mothers. They reported in their study that with rise in health awareness the adherence to folic acid supplementation and adherence to prescribed medication also improved.

Medication use during pregnancy plays a role in outcomes of pregnancy as is seen in different studies from around the world [8-11]. In eastern India however we did not find studies looking in depth into attitudes and practices of self-medication during pregnancy especially with use of indigenous medication. Beyond the common taboos which women are susceptible to, during their pregnancy most women are not very well aware of drug use and the harm it could cause during pregnancy [12].

Rangwala PP et al., [14] working with a sample of pregnant women from Gujarat found that most women self-medicated for headache, fever, common cold, cough, nausea, vomiting, body ache etc. The current study also noted that fever, pain, acid reflux, morning sickness were common conditions for which the women self-medicated. Atmadani RN et al., [16] in their study on 333 pregnant women from Malang, Indonesia also reported common ailments for which treatment sought included nausea, vomiting, common cold, fever, pain etc. They reported that 10.3% of their study population took the medication during their first trimester. Several other studies looking into self-medication during pregnancy reported similar findings [17-18].

The current study showed that 50% of the self-medication took place during first trimester. This study also identified 9% and 8% use of Ayurvedic, herbal and Homeopathic medications. Banzal N et al., [15] in their study reported 1% women self-medicating with Ayurvedic medication. Other studies have not commented on the use of alternate systems of medication. It was noted that 17 participants were addicted to tobacco and 5 of them did not attempt to abstain during pregnancy. Studies have shown a global prevalence of tobacco use during pregnancy is 2.6% (95% CI 1.8-3.6) with highest prevalence in South East Asian region (5.1%; 1.3-10.9%) [19]. The findings from the current study corroborate with these results.

Limitation(s)

Findings of the study can only be applied on suburban and urban women, attending antenatal services, and there is a possibility of recall bias among study participant.

CONCLUSION(S)

Baseline KAP study of medication use among pregnant women showed adequate knowledge and satisfactory practices regarding medication use. Thirty participants (30%) had self-medicated themselves at some point during their pregnancy in present study. Counselling of the mothers attending the ANC regarding drug use and possible harms to the mother and baby could help reduce long-term

risks. However, this study may act as a preliminary survey due to the scarcity of published data regarding the ANC care and self-medication among pregnant women from Eastern India.

Future studies with larger sample size and specific intervention program need to be planned and conducted to improve the maternal health practices and eventually improve the health status of mother and baby.

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ANNEXURE 1

K.A.P Study in A.N.C for medicines use during Pregnancy

Patient initials: Age:

Pregnancy: G _ P _

Any pregnancy loss: Y / N If any, _____ (No:)

Notable Obstetric History (If any): Abortion ___ / Still Birth ___ / Congenital Anomaly_____
Other.....

1. A. Do you have any information regarding medication use in pregnancy?
   B. Are you aware of any possible consequences of medication use during pregnancy? Y / N
   C. Source of Information regarding medicine use:
      a) Family / Relatives / Friends
      b) Television / Radio / Newspaper / Internet
      c) Doctor (Local/Hospital) / Healthcare Worker
2. A. What is your opinion regarding medication use during pregnancy? Should be taken (Y) / should not be taken (N)
   B. Do you think medicines can harm the baby?
   C. What do you think is a good source of information regarding medication use during pregnancy?
      a) Family / Relatives / Friends
      b) Television / Radio / Newspaper / Internet
      c) Doctor (Local/Hospital) /Healthcare Worker
3. A. Any history of self-medication during pregnancy? Y / N
   B. Do you take all medicines prescribed from the antenatal clinic?
   C. If not why?
   D. List of medicines you have taken & the reason & time of pregnancy

Name (Generic or brand) of medicine	Reason & period of pregnancy when taken

E. Any history of Addiction? Y / N Any attempts of avoidance? Y / N

Thank You