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Prevalence and risk factors of self-medication in pregnancy: A cross-sectional study from a tertiary care hospital in Eastern India

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ABSTRACT

Background: Self-medication in pregnancy is a common but unsafe practice. There is a possibility of surreptitious exposure of the developing fetus to the teratogenic and abortifacient effects of the drugs. **Aims and Objectives:** In this study, we assessed the prevalence and risk factors of self-medication in pregnant mothers visiting the antenatal clinic in our hospital. **Materials and Methods:** A standard questionnaire seeking information on the socio-demographic profile, clinical characteristics, laboratory data, and knowledge and habits was administered to the pregnant mothers (n = 190). The risk factors of self-medication were determined using Fischer's exact test. $P < 0.05$ was deemed statistically significant. **Results:** The prevalence of self-medication in pregnancy was found to be 6.3%. Low education level ($P < 0.027$), employed women ($P < 0.031$), and history of miscarriage ($P < 0.036$) in the previous pregnancy were the main determinants of self-medication in the present pregnancy. **Conclusion:** The prevalence of self-medication in the study sample was low as compared to contemporary studies. High literacy (94.2%) and easy availability of health facility (98%) may be the possible reasons. Further studies are warranted to confirm the prevalence and risk factors of self-medication in this part of the country.

Key words: Low education level; Pregnancy; Prevalence; Risk factors; Self-medication

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INTRODUCTION

Self-medication is the practice of self-administration of drugs for therapeutic purpose by individuals lacking statutory expertise for the same. The effects, whether beneficial or harmful, are unpredictable, the practice by itself is unscientific and should be discouraged.[1] The implication is, however, altogether different in pregnancy where self-medication is a dangerous practice because it exposes the fetus to the teratogenic and abortifacient effects of the drugs.[2] Teratogenicity refers the capacity of a drug to cause fetal abnormalities when administered to the pregnant mother. The placenta does not provide strict barrier and drugs can come to fetal circulation in greater or lesser extent and may cause harm.[3] Giving birth to an abnormal child may lead to severe and lasting family and social problems. Medications prescribed during pregnancy are normally based on evaluation of their harm to the mother and fetus. In most of the cases, the first choice for treatment of a condition during pregnancy differs from treatment in nonpregnant women. Pregnant women must use the lowest therapeutic dose of medications.[4] The awareness of the risk of self-medication and the prevalence of self-medication in pregnancy, therefore, assumes huge importance in maternal and child health.[2] The prevalence of self-medication in this special population varies with

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respect to the geographical, social, and political conditions prevailing in the different parts of the world.[5] In India, the geo-political structure is variegated across the vast country and social and cultural practices are also diverse.[6] In this study, we have evaluated the prevalence and the indigenous socio-economic factors affecting self-medication in pregnant women visiting the ante-natal department of our hospital situated in a peripheral district in West Bengal.

Aims and objectives

The aims of the study were to estimate the prevalence and determine the risk factors of self-medication in pregnant mothers visiting the antenatal clinic in our hospital.

MATERIALS AND METHODS

Study design

The study was a cross-sectional, observational single center study conducted in pregnant mothers attending antenatal clinic of our institution to estimate the prevalence rate of self-medication in this special population.

Ethical consideration

The study was approved by the ethical committee of the institute. Informed consent was obtained from all patients.

Sample size

Using an expected prevalence of 15% from previous literature, the sample size to estimate the prevalence of self-medication in our population, with 95% confidence and a precision of 5%, was found to be 196.

Data collection and analysis

The pregnant mothers who voluntarily participated and provided written informed consent were interviewed and data on self-medication, demographic, clinical characteristics, and available laboratory investigations were collected. Microsoft Excel was used for data preservation and storage. As per convention, continuous and categorical data were expressed as mean (standard deviation) and percentage/proportion, respectively. Fischer's exact test was used to study the factors associated with the practice of self-medication in the pregnant mothers. The study was conducted in November and December 2018.

RESULTS

190 pregnant mothers participated in the study. The mean age was 23.7±4.8 years. The mean weight and height were 55.2±10.2 kg and 149.5±6.0 cm, respectively. Although 179 of the 190 women were literate (Primary school-52, Middle school-4, High School-21, Senior secondary-79, Graduate-21, and Post-graduate-2), only 12 were working women; while the rest (178) were homemakers. The number of women in the different education groups and the corresponding number of self-medications is shown in Table 1.

The median monthly family income was Rs.7000 (interquartile range - 5000–10000). Data on screening for HIV and hepatitis were available for 144 of the 190 women at the time of interview. None of the women were reactive/positive for the two conditions. 68 women were anemic (Mild anemia-60 and Moderate anemia-8) but none had cyanosis or jaundice. Clubbing and bilateral pedal edema were observed in 19 and 42 women respectively. 106 women were primigravida. The number of women in the first, second, and third trimester at the time of interview was 3, 56, and 131, respectively. 22 women had history of miscarriage. Laboratory data on hemoglobin, total leukocyte count, fasting blood sugar, post-prandial blood sugar, urea, and creatinine were available for 144, 91, 112, 92, 38, and 38 patients, respectively, and the corresponding mean (SD) values were 11.08±1.18 gm %, 7427.66±1934.9 cell/mm^3, 91.84±7.7 mg/dl, 113.28±28.7 mg/dl, 16.98±3.3 mg/dl, and 0.71±0.1 mg/dl. 58 women were aware that self-medication may have harmful effects on the fetus. 5 of them were aware that the practice poses maximum risk in the first trimester. One participant had the perception that third trimester is the most vulnerable period. The total number of women who took self-medication during the present pregnancy was 12. Nine of them belonged to the group of women who were ignorant of the dangers of self-medication. The most common reason for taking self-medication was pain abdomen (06); one woman each took medication for fever and weakness. One woman took vitamin supplements with the belief that vitamins would improve the health of the newborn. Three women took self-medication for non-specific reasons. The medication for pain abdomen comprised of analgesics (03), antacids (02), and proton pump inhibitor (01). About 97.9% (186) of the women were able to avail health-care facility during

Table 1: Level of education and frequency of self-medication

Education	Self-medication		Total (%)
	No (%)	Yes (%)	
Illiterate	10 (5.6)	1 (8.3)	11 (5.8)
Primary school	46 (25.8)	6 (50)	52 (27.4)
Middle school	3 (1.7)	1 (8.3)	4 (2.1)
High school	21 (11.8)	0 (0)	21 (11.1)
Senior secondary	77 (43.3)	2 (16.7)	79 (41.6)
Graduate	20 (11.2)	1 (8.3)	21 (11.1)
Post graduate	1 (0.6)	1 (8.3)	2 (1.1)
Total	178 (100)	12 (100)	190 (100)

Values are expressed as numbers and percentages. Education up to the level of high school was taken as cutoff to dichotomize education level for association with self-medication.

the period of their pregnancy. The mean distance of the facility from the place of residence was 15.7±13.2 km. The factors associated with self-medication in the pregnant mothers are shown in Table 2.

DISCUSSION

In our study, though the majority of women (69.5%) were unaware of the dangers of self-medication in pregnancy, the prevalence of self-medication in the sample was found to be only 6.3%. The figure is on the lower ladder when compared to similar studies (Country, year of publication, and prevalence in percentage) - Mexico, 2018, 21.9%;[7] Tanzania, 2018, 46.24%;[8] Ethiopia, 2018, 15.5%;[9] Malaysia, 2020, 81.4%;[2] Ghana, 2020, 69%;[10] France, 2020, 72%;[11] Brazil, 2020, 27.7%;[12] Nigeria, 2012, 72.4%;[13] and Australia, 2000, 97%.[14] A meta-analysis of 13 studies conducted in 2018 estimated the overall prevalence of self-medication using the random effect model as 32% (95% CI, 22–44%).[5] Our study was not designed to explore the causative factors of the low prevalence of self-medication in pregnant mothers. However, we speculate that the easy availability of hospital (98%), distance of referral hospital <15 km (71%), and high literacy (94.2%) were the possible reasons for the lower prevalence.

About 30% of the participants were aware of the potential harm to the fetus with unsupervised medication. Majority of the women who took self-medication (75%) belonged to the remaining part of the sample who were unaware of the dangers of self-medication. Alani et al., in an observational, cross-sectional study involving a total of 447 pregnant women found that about 82.6% of the women lacked knowledge about the risks of self-medication in pregnancy.[2] The ignorance about the possible harm associated with indiscriminate use of medicines during pregnancy is one of the main reasons behind the high prevalence of self-medication in this vulnerable group. The situation is aggravated in underdeveloped societies where lack of basic health-care facilities, illiteracy, poverty, and traditional beliefs prompts the indigenous communities to seek and resort to unscientific and unsafe practices.[13] While the aim of "Health for all" is an utopia which still remains to be implemented in large underprivileged geographical limits of the world, there is a simultaneous urgent necessity of inculcating habit-based safe health practices through awareness programs and public outreach.[15]

Studies available in the literature have identified numerous factors associated with self-medication in pregnancy. The important ones are - low income, lack of health-care facility, unaffordable medical service, illiteracy, ignorance, and easily available over the counter medicines.[5,7,14] In our study, we

Table 2: Factors associated with the practice of self-medication in pregnant women

S. No.	Factor	Factor category	Self-medication	No self-medication	P value
1.	Education	Education below high school	8	59	0.027
		Education high school and above	4	119	
2.	Employment	Employed	3	9	0.031
		House wife	9	169	
3.	History of miscarriage	Yes	4	18	0.036
		No	8	160	
4.	Age	≤24	6	111	0.541
		>24	6	67	
5.	Religion	Religion 1	10	150	1.00
		Religion 2	2	28	
6.	Monthly income in rupees	≤7000	7	96	1.00
		>7000	5	82	
7.	Medication due to chronic illness	Yes	2	20	0.634
		No	10	158	
8.	Primigravida	Yes	6	100	0.768
		No	6	78	
9.	Number of living children	≤2	11	175	0.231
		>2	1	3	
10.	History of allergy with drugs/food	Yes	4	53	0.754
		No	8	125	
11.	Knowledge of possible harm to child due to self-medication	Yes	4	54	0.758
		No	8	124	
12.	Birth of abnormal baby in previous pregnancy	Yes	2	5	0.064
		No	10	173	
13.	Distance of nearest health facility in Kilometers	≤16	8	127	0.747
		>16	4	51	
14.	Number of days of availability of health facility	≤4	2	14	0.267
		>4	10	164	

Frequency is expressed as counts. Fischer's exact test is used to find association between self-medication and the tested variables. P<0.05 was considered statistically significant.

found that education below high school, employment, and history of miscarriage in the previous pregnancy were associated with higher chances of self-medication in pregnancy (P<0.05). While low education level and ignorance have also been shown to be important determinants of self-medication in pregnancy in the previous studies, the observation that employed women are more likely to resort to self-medication is being newly reported. The possible explanation is that the increased demand of work-life balance may have deprived working women in seeking proper medical advice.[16] Moreover, availability of easy information over World Wide Web may have prompted some of the participants to indulge in the practice of self-medication.[17]

In the past two decades, information technology has penetrated even the remote corners of the Indian society. The dynamics of self-medication and the repercussions thereof are changing with the evolving scenario. A holistic surveillance to ascertain the prevalence, outcomes and the associated factors, is required to judge the true picture of the magnitude of the problem and its remedies.

Limitations of the study

Although the sample size in the study (190) was very close to the estimated sample size (196) to determine the prevalence of self-medication, the event rate of self-medication was not sufficient enough to study the causal factors using Chi-square test or logistic regression. Therefore, the possible risk factors were analyzed using Fischer's exact test. With the existing prevalence of self-medication, a larger sample size will be required to study the determinants of self-medication in pregnancy with greater statistical confidence.

CONCLUSION

The prevalence of self-medication in the study population was 6.3%. Low education level and employment were the two important determinants of self-medication in pregnancy. Further studies are required to corroborate the findings of the study.

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