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Knowledge Of Obstetric Danger Signs Among Pregnant Women

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Abstract:
Background*: Knowledge of obstetric danger signs is the first step in the appropriate and timely referral for essential obstetric care. However, pregnant women's knowledge about the obstetric danger signs is important for improving maternal and child health. Little is known about the current knowledge and influencing factors in India. This study aims to fill the gap by assessing the current level of knowledge among pregnant women in Uttar Pradesh about obstetric danger signs.*
Materials and Methods*: A quantitative, cross-sectional, descriptive study was conducted from August 1st to 31st, 2025, at a government hospital in Lucknow. The study involved 169 pregnant women residing in the district, Lucknow. Purposive sampling was used to select the study subjects. Data on women's socio-demographic characteristics, obstetric characteristics and face-to-face interviews using a structured questionnaire related to knowledge on obstetric danger signs were collected. Data was analysed in descriptive and inferential statistics, presented in tables and interpreted accordingly.*
Results*: The study findings revealed that only 15(8.87%) have adequate knowledge, 44 (26.03%) have moderate knowledge, and 110 (65.09%) have inadequate knowledge on obstetric danger signs.*
Conclusion:
Key Words: *Knowledge; Obstetrics Danger Signs; Pregnant women.*

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I. Introduction

According to WHO 2023 report, each year, approximately 260,000 women die from complications related to pregnancy and childbirth related-problems globally, i.e. 700/day. 92% of these deaths occur in developing countries and most could have been prevented. Maternal mortality ratio in developing regions is thirteen times higher than in developed areas. Sustainable Development Goal (SDG) regions and sub-regions are used here. Sub-Saharan Africa and southern Asia accounted for around 87% (225000) of the estimated global maternal deaths in 2023. Sub-Saharan Africa alone accounted for around 70% of maternal deaths (182000), while southern Asia accounted for around 17% (43000). High levels of perinatal (32 per 1000 births), neonatal (19 per 1000 births) and maternal mortality (93 per 100,000 live births) remain major public health challenges in India.

During pregnancy, knowledge about danger signs is vital for improving maternal and fetal health outcomes. Obstetric danger signs in a pregnant woman are critical warning signs indicating potential complications and requiring urgent medical attention. These signs can occur during pregnancy, birth or postnatally and include symptoms like vaginal bleeding, swelling of face or hands, blurred vision, fever, convulsions, severe abdominal pain, decreased or no fetal movement, rupture of membranes before the onset of labour etc. Knowing the danger signs can save the lives of the mother and baby. Danger signs in pregnancy can warn of maternal health problems.

Women and healthcare providers need to recognize the symptoms to rule out serious complications and initiate immediate treatment. Therefore, this study was conducted to assess the knowledge of obstetric danger signs and to analyse the factors associated with awareness of danger signs among pregnant women.

II. Material And Methods

Study Design: Descriptive cross-sectional study design.
Study Location: Antenatal OPD of Lok Bandhu Raj Narayan Combined Hospital, Lucknow Uttar Pradesh.
Study Population. All purposely selected pregnant women who were registered in antenatal OPD of Lok Bandhu Raj Narayan Combined Hospital, Lucknow, during the study period.
Sample size: 169 pregnant women
Sample size calculation: The sample size was estimated on the basis of a single proportion design. The target population from which we randomly selected our sample was considered 300. We assumed that the confidence

interval of 10% and confidence level of 95%. The sample size actually obtained for this study was 169 pregnant women. We planned to include 16.

Subjects & selection method: The study population was drawn from consecutive pregnant women who visited Lok Bandhu Raj Narayan Combined Hospital Lucknow Uttar Pradesh. Subject were pregnant women initiated between 1st October to 31st October 2025.

Sampling Technique: Purposive sampling technique

Inclusion criteria:

1. Pregnant women who were registered.
2. Pregnant women who understand the language of the questions i.e. Hindi.
3. Willing to participate in the study.
4. Available during the data collection period.

Exclusion criteria:

1. Pregnant women who are not present at the time of the study.
2. Not willing to participate in the study.
3. Admitted in the hospital.
4. Women participated in a similar study.

Procedure methodology

After obtaining written informed consent, self-structured interview schedule was used to collect the data from recruited pregnant women.

The validated tools for data collection were divided into 3 sections as follows:

Section A- Socio-demographical characteristics such as Age, Residence, Religion, Educational status of pregnant women, Educational status of pregnant women's husband, Occupation of pregnant women, type of family, Socio-economic status.

Section B - Obstetrical characteristics such as Gravida, Trimester, Number of antenatal visits done, Complication in previous pregnancy, Complication in present pregnancy, Previous information about danger signs, Source of information.

Section C - Interview schedule consisting of obstetric danger signs such as Excessive vaginal bleeding, Severe abdominal pain, Swelling of hands, face and feet, Blurred vision, Severe headache, Chest pain, Fits, Unconscious, Pre labour rupture of membrane, Preterm labour, Tiredness/fatigue, Excessive vomiting, Decrease fetal movement, High blood pressure, Foul smelling vaginal discharge, Pallor, Prolonged labour, Retained placenta, Fever, Breathing difficulty, Painful breast.

If the participant answered "yes" it was considered as the correct response, while answers "no" were considered as incorrect responses. The total knowledge scores were computed, with one point given to correct response and no point given to an incorrect response.

Scoring Criteria: Adequate=21-30, Moderate=11-20, Inadequate=0-10.

Statistical analysis

Statistical analysis has been performed using MS Office- Excel. The data have been analysed in terms of the objectives of study using descriptive statistics. Chi-square test has been used to demonstrate the difference between study subject characteristics and level of significance selected for this study is $p \leq 0.05$.

III. Result

Section A: Findings related to sociodemographic characteristics of the sample.

Table 1: Frequency and percentage distribution of socio-demographic characteristics among pregnant women, N=169

S. No.	Socio-demographic variables		F	%
1	Age (in years)	19-23 years	45	26.6
		23-27 years	61	36.09
		27-31 years	41	24.26
		31-35years	22	13.01
2	Residence	Urban	112	66.2
		Rural	57	33.7
3	Religion	Hindu	154	91.12
		Muslim	15	8.8
		Sikh	0	0
		Christian	0	0
4		Illiterate	15	8.8

	Educational status of pregnant women	**Primary**	**37**	**21.8**
		Secondary	43	25.4
		Graduation and above	74	43.7
5	Educational status of husband	Illiterate	20	11.8
		Primary	26	15.38
		Higher Secondary	49	28.9
		Graduation and above	74	43.7
6	Occupation of pregnant women	Housemaker	156	92.3
		Employed	11	6.5
		Business	1	0.5
		Labourer	1	0.5
7	Type of family	Joint	125	73.9
		Nuclear	44	26.03
		Extended	0	0
8	Socioeconomic status	10,000-20,000/month	77	69.2
		20,001-30,000/month	37	21.8
		30,001-40,000/month	5	2.95
		> 40,000/month	10	5.9

Section B: Findings related to obstetric characteristics of the sample.

Table 2: Frequency and percentage distribution of obstetrical characteristics among pregnant women, N=169

S. No.	Obstetrics characteristics		F	%
1	Gravida	Primigravida	61	36.09
		Multigravida	108	63.90
2	Trimester	First trimester	35	20.7
		Second trimester	72	42.6
		Third trimester	62	36.6
3	Religion	Hindu	154	91.12
		Muslim	15	8.8
		Sikh	0	0
		Christian	0	0
4	Number of antenatal visits done	1-2	80	47.3
		3-4	**50**	**29.5**
		5-6	16	4.4
		7-8	23	13.6
5	Complication of previous pregnancy	Present	34	20.33
		Absent	77	44.5
6	Complication of present pregnancy	Present	61	36.09
		Absent	108	63.9
7	Prior information about danger signs	Yes	109	64.4
		No	60	35.5
8	Source of information	Health care professional	39	23.07
		Peer group	04	2.3
		Family member	38	22.4
		Mass media	28	16.5

Section C: Findings related to knowledge of Obstetric danger signs among pregnant women

Table 3: Overall Knowledge of Obstetric Danger Signs Among Pregnant Women, N=169

S No.	Criterion Measures	Scoring	Knowledge level	
			F	%
1.	Adequate	21-30	15	8.87
2.	Moderate	11-20	57	33.73
3.	Inadequate	0-10	97	57.39

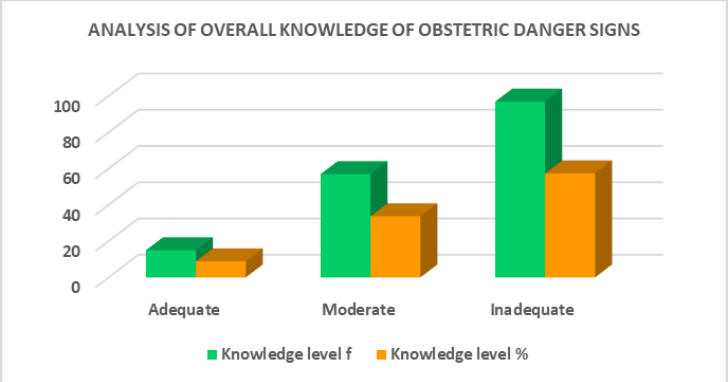

Table 3 depicts the overall knowledge of obstetric danger signs where only 8.87% of the pregnant women had adequate knowledge, 33.73% have moderate knowledge and 57.39% have inadequate knowledge about obstetric danger signs.

Table 4: Knowledge of obstetric danger signs during antenatal, intranatal and postnatal period Among Pregnant Women, N=169

Danger signs	Antenatal		Intranatal		Postnatal	
	f	%	f	%	f	%
Excessive vaginal bleeding	91	53.8	40	23.6	70	41.4
Severe abdominal pain	75	44.37	NA		NA	
Swelling of hands, face, and feet	42	24.8	NA		NA	
Blurred vision	17	10.05	NA		NA	
Severe headache	57	33.7	NA		NA	
Chest pain	6	3.5	NA		NA	
Fits	4	2.3	1	0.5	NA	
Unconsciousness	8	4.7	3	1.7	NA	
Pre-labour rupture of the membrane	69	40.8	NA		NA	
Preterm labor	11	6.5	NA		NA	
Tiredness/Fatigue/Anaemia	20	11.8	9	5.3	13	7.6
Excessive vomiting	85	50.29	NA		NA	
Decrease fetal movement	78	46.15	NA		NA	
High blood pressure	69	40.8	9	5.3	NA	
Foul-smelling vaginal bleeding	10	5.9	3	1.7	52	30.7
Pallor	7	4.14	NA		NA	
Prolonged labour	NA		27	15.9	NA	
Retained placenta	NA		1	0.5	NA	
Fever	NA		NA		11	6.5
Breathing difficulty	NA		NA		7	4.14
Painful breast	NA		NA		3	1.7

Table 4 shows the pregnant women's knowledge of various danger signs during the antenatal, intranatal and postnatal periods. Excessive vaginal bleeding was the most frequently mentioned danger sign in all the three periods (antenatal: 53.8%; intranatal: 23.6%; postnatal: 41.4%). Regarding the danger signs during the antenatal period, excessive vomiting (50.29%) and decreased fetal movement (46.15%) were the second and third most commonly mentioned danger signs, respectively. Similarly, regarding the danger signs during the intra-natal period, prolonged labour (15.9%) and tiredness, fatigue, anaemia and high blood pressure (5.3%) were the second and third most commonly identified danger signs after severe vaginal bleeding. Likewise, regarding the postnatal danger signs, foul-smelling vaginal discharge (30.7%) and tiredness, fatigue, anaemia (7.6%) was identified by the pregnant women after severe vaginal bleeding.

Table 5. Association between Level of Awareness and Socio-demographic, Obstetric Characteristics.

Sociodemographic Variables		**Knowledge level**			**Total**	**Df**	**X*2**	**P**	**Sig.**
		Adequate	**Moderate**	**Inadequate**					
Age in years	19-23	2	13	30	45	6	8.65	12.59	NS
	23-27	4	22	35	61				
	27-31	5	12	24	41				
	31-35	4	10	8	22				
Pregnant women's education	Illiterate	0	1	14	15	6	15.73	12.59	S
	Primary	2	9	26	37				
	Secondary	3	17	23	43				
	Graduation and above	10	30	34	74				
Husband education	Illiterate	0	5	15	20	6	10.36	12.59	NS
	Primary	0	7	19	26				
	Higher secondary	5	17	27	49				
	Graduation and above	10	28	36	74				
Occupation	House maker	13	52	91	156	6	13	12.59	S
	Employed	1	5	5	11				
	Business	1	0	0	1				
	Labourer	0	0	1	1				
Type of family	Joint family	12	41	72	125	4	0.4	9.48	NS
	Nuclear family	3	16	25	44				
	Extended	0	0	0	0				
Gravida	Primigravida	6	22	33	61	2	0.4	5.99	NS
	Multigravida	9	35	64	108				
Trimester	Frist trimester	4	13	18	35	4	1.6	9.48	NS
	Second trimester	5	22	45	72				
	Third trimester	6	22	34	62				

Visits	1-2	6	29	45	80	6	10.67	12.59	NS
	3-4	4	10	36	50				
	5-6	3	9	4	16				
	7-8	2	9	12	23				
Prior information	Yes	13	46	50	109	2	11.4	5.99	S
	No	2	11	47	60				
Source of Information	Health care professional	3	12	24	39	6	10.71	12.59	NS
	Peer group	0	1	3	4				
	Family member	3	11	24	38				
	Mass media	7	5	16	28				

Table 5 shows that there is significant association between pregnant women's education (15.73), occupation (13) and prior information (11.4) with level of awareness on obstetric danger signs at $p<0.005$.

Whereas age, residence, religion, husbands' education, type of family, socio-economic status, gravida, trimester, number of antenatal visits and source of information were not associated with level of awareness on obstetric danger signs.

IV. Discussion

Among total 169 pregnant women who participated in the present study, majority of them were in the age group of 23-27 years (36.09%). Majority of the pregnant women (66.32%) were residing in urban area and most of them belonged to Hinduism (91.12%). About less than half of the pregnant women were graduated (43.78) and more than ninety percentage (92.31%) were home maker. 43% of the husband of pregnant women were graduated. About three-fourth (73.9%) pregnant women were having joint family and about more than two third (69.23%) pregnant women have family income of Rs 10000-20000/month.

In the present study, on knowledge of obstetric danger signs only 8.87% of the respondents had adequate knowledge, 33.73% have moderate knowledge and 57.39% have inadequate knowledge about obstetric danger signs. Similar study was conducted in **2024** by **Muyereka Nyirenda** among pregnant women reported that approximately **65% of participants had inadequate knowledge of obstetric danger signs**, highlighting that a large proportion of women still lack sufficient awareness despite ongoing maternal health programs. Similarly, other recent research in India has emphasised that lack of understanding of danger signs contributes significantly to delays in seeking care and continued maternal morbidity. This indicates a significant gap in awareness regarding obstetric danger signs among pregnant women.

Excessive vaginal bleeding was the most frequently mentioned danger sign in all the three periods (antenatal: 53.8%; intranatal: 23.6%; postnatal: 41.4%). Regarding the danger signs during the antenatal period, excessive vomiting (50.29%) and decreased fetal movement (46.15%) were the second and third most commonly mentioned danger signs, respectively. Similarly, regarding the danger signs during the intra-natal period, prolonged labour (15.9%) and tiredness, fatigue, anaemia and high blood pressure (5.3%) were the second and third most commonly identified danger signs after severe vaginal bleeding. Likewise, regarding the postnatal danger signs, foul-smelling vaginal discharge (30.7%) and tiredness, fatigue, anaemia (7.6%) was identified by the pregnant women after severe vaginal bleeding. A comparable finding was reported in a study conducted by **Hailu Daba et al. (2022)**, where excessive vaginal bleeding was the most frequently recognized danger sign among pregnant women in all stages of pregnancy and childbirth. In their study, other commonly identified antenatal danger signs included severe vomiting and reduced fetal movements, while prolonged labour was commonly reported during the intranatal period. During the postnatal period, foul-smelling vaginal discharge and general weakness were also identified as important warning signs.

V. Conclusion

The study concludes that the majority of pregnant women had inadequate knowledge regarding obstetric danger signs, with only a small proportion demonstrating adequate awareness. Although excessive vaginal bleeding was commonly recognised, knowledge of other critical danger signs remained limited. Significant associations with education, occupation, and prior information highlight the importance of awareness and learning opportunities. Therefore, strengthening antenatal education and counselling is essential to improve early recognition and timely healthcare-seeking behaviour.

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