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Knowledge and Prevalence of Warning Signs in Pregnancy Among Pregnant Women in Selected Rural Health Centers of Cachar District, Assam

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Abstract

Warning signs in pregnancy are the symptoms that indicate a life-threatening condition for the mother and foetus. The warning signs in pregnancy include vaginal bleeding, amniotic fluid leakage, changes in fetal movement, severe headache, blurred vision, abdominal pain, fever and swelling of limbs. Timely recognition of pregnancy warning signs is crucial in preventing maternal complications. **Objectives:** To assess the knowledge of warning signs in pregnancy, to assess the prevalence of warning signs in pregnancy, to find out the association between knowledge of warning signs and the selected socio-demographic variables, to find out the association between prevalence of warning signs and selected socio-demographic variables and to find out the association between knowledge of pregnant women regarding warning signs and the prevalence of warning signs. **Methodology:** A quantitative research approach with descriptive cross-sectional research design was adopted for the study. 146 subjects were selected by multistage random sampling technique from the selected rural health centers under Sonai Block Primary Health Center, Cachar, Assam. The data was collected through structured interview schedule where self-structured questionnaire was used for knowledge assessment and checklist was used for assessing prevalence. **Analysis:** Both descriptive and inferential statistics were used for data analysis. **Result:** Majority of the pregnant women i.e. 54.11% had moderately adequate knowledge which was significantly associated with educational status, occupation, monthly family income and previous knowledge of the pregnant women. In case of prevalence of warning signs majority i.e. 34.93% were experiencing blurring of vision during pregnancy. There was significant association found between prevalence of blurring of vision in pregnancy and educational status, prevalence of decreased foetal movement and previous knowledge, prevalence of foul smelling vaginal discharge and dietary pattern, prevalence of swelling of face and occupation, prevalence of swelling of legs and source of information, prevalence of leakage of watery fluid from vagina with dietary pattern and source of information. There was significant association found between knowledge of pregnant women regarding warning signs with the prevalence of blurring of vision and swelling of legs in pregnancy. **Conclusion:** It is necessary to conduct health education using familiar terms by the health workers during antenatal checkup and follow up of the pregnant women.

Keywords: Knowledge, prevalence, pregnant women, warning sign.

INTRODUCTION

Pregnancy is the most valuable yet delicate phase of a woman's life. There are multiple warning signs that can arise during pregnancy which may hamper both mother and foetus in future if remain unnoticed. Most of the maternal death occurs as a result of pregnancy complications, often results from delayed attention to warning signs.

The World Health Organization (WHO) reports that approximately 2,87,000 women die annually from preventable pregnancy and childbirth complications, with 99% of these deaths occurring in developing countries.[1] Around 800 women die everyday from preventable causes related to pregnancy and childbirth, which means 1 maternal death occurs almost every 2 minutes.[2]

According to the National Health Mission's (NHM) 2021-22 report, Cachar district in Assam has shown significant improvement with an MMR of 89. This progress is encouraging, especially considering that Assam has one of the highest MMRs in India.[3]

Therefore, this study aims to fill the gap by assessing the knowledge of warning signs in pregnancy among pregnant women and also focuses on assessing the prevalence of pregnancy warning signs in pregnant women seeking obstetric care in rural health centers.

OBJECTIVES OF THE STUDY

a) To assess the knowledge of warning signs in pregnancy among pregnant women in selected rural health centers of Cachar District, Assam.
b) To assess the prevalence of warning signs in pregnancy among pregnant women in selected rural health centers of Cachar District, Assam.
c) To find out the association between knowledge of warning signs in pregnancy among pregnant women and selected socio-demographic variables in selected rural health centers of Cachar District, Assam.
d) To find out the association between prevalence of warning signs in pregnancy among pregnant women and selected socio-demographic variables in selected rural health centers of Cachar District, Assam.
e) To find out the association between knowledge of pregnant women regarding warning signs in pregnancy and prevalence of warning signs in pregnancy in selected rural health centers of Cachar District, Assam.

HYPOTHESIS

a. **H_1 –** There is a significant association between knowledge of warning signs in pregnancy among pregnant women and selected socio-demographic variables.
b. **H_2 –** There is a significant association between prevalence of warning signs in pregnancy among pregnant women and selected socio-demographic variables.
c. **H_3 –** There is a significant association between knowledge of pregnant women regarding warning signs in pregnancy and prevalence of warning signs in pregnancy among pregnant women.

METHODOLOGY

Reseach approach and design: A quantitative research approach and descriptive cross-sectional research design.

Research setting and participants: The study sample were 146 pregnant women between (18-49) years

of age including both primigravida and multigravida from the selected rural health centers under Sonai Block PHC, Cachar District, Assam.

Data collection tool: The tool used for collection of data consists of 3 sections.

Section-A: Information on socio-demographic variables which includes: age, religion, education, occupation, gravid state, dietary pattern, family type, monthly family income, previous knowledge and source of information.

Section-B: Self structured questionnaire to assess knowledge of warning signs in pregnancy, its symptoms and diagnosis.

Section-C: Self structured checklist to assess the prevalence of warning signs in pregnancy.

Technique of data collection: The technique used for data collection was interview method.

Data analysis: Descriptive and inferential statistics was used for data analysis.

Ethical consideration: Permission was obtained from the Institutional Ethics Committee. Administrative approval was taken. Consent from the study participants obtained assuring maintenance of their confidentiality and anonymity.

RESULTS

Section A: Frequency and percentage distribution of pregnant women according to selected socio-demographic variables

Table 1: Frequency and percentage distribution of pregnant women on the basis of selected socio-demographic variables n=146

Demographic variable		Frequency (n)	Percentage(%)
Age (in years)	18-25	75	51.37
	26-33	57	39.04
	34-41	14	9.59
Religion	Hinduism	47	32.19
	Islam	97	66.44
	Christian	2	1.37
Educational status	No formal education	5	3.43
	Primary education	80	54.79
	High school education	55	37.67
	Graduate & above	6	4.11
Occupation	Government service	10	6.85
	Private service	12	8.22
	Self employed	4	2.74
	Home maker	120	82.19
Gravid state	Primigravida	67	45.89
	Multigravida	79	54.11
Dietary pattern	Vegetarian	9	6.16
	Non-vegetarian	137	93.84
Family type	Nuclear family	67	45.89
	Joint family	79	54.11
Monthly family income	≤ 10,000	46	31.51

(rupees)	10,001-15,000	61	41.78
	15,001-20,000	25	17.12
	≥ 20,001	14	9.59
Previous knowledge regarding warning signs in pregnancy	Yes	112	76.7
	No	34	23.3
Source of information	Family	18	16.07
	Friends	15	13.4
	Health personnel	74	66.07
	Mass media	5	4.46

Table 1 depicts that majority of the pregnant women i.e. 75 (51.37%) were between age group of 18-25 years, 97 (66.44%) belong to Islam religion, 80 (54.79%) of them had educational status up to primary education, 120 (82.19%) were home maker, 79 (54.11%) were multigravida women, 137 (93.84%) were non-vegetarian, 79 (54.11%) were from joint family, 61 (41.78%) had monthly family income between Rs. 10,001-15,000, 112 (76.7%) of them had previous knowledge regarding warning signs in pregnancy and 74 (66. 07%) got the information about warning signs in pregnancy from health personnel.

Section B: Percentage distribution of level of knowledge regarding warning signs in pregnancy n=146

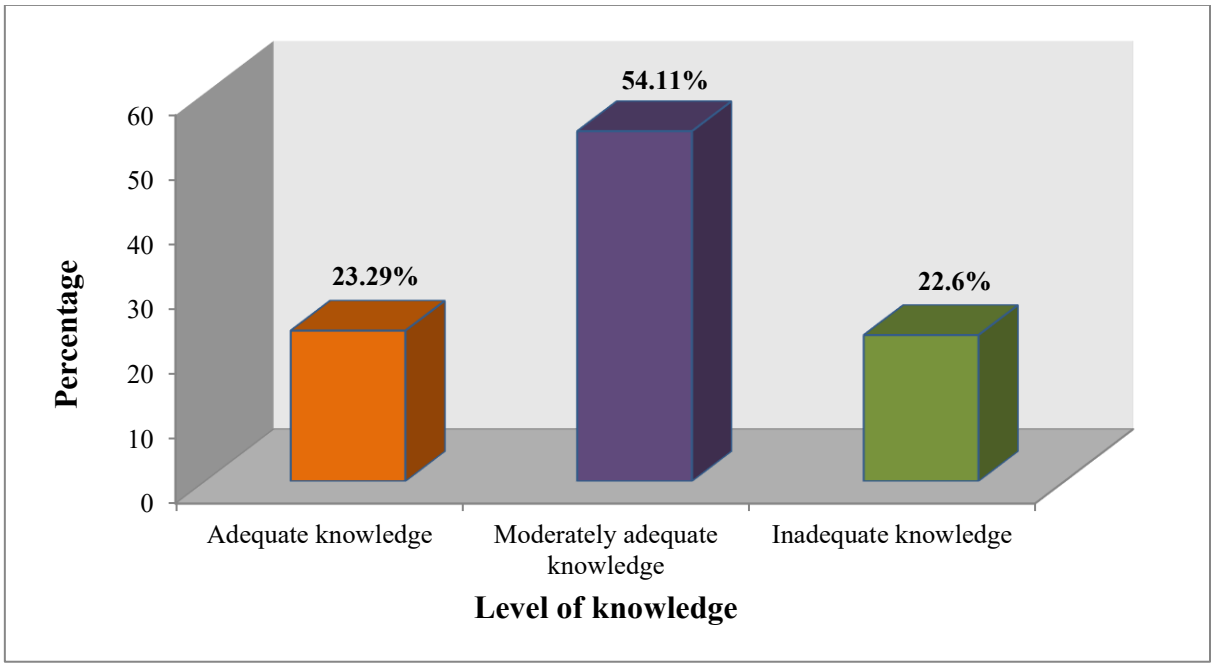

Figure 1: 3-D bar graph displaying percentage distribution of pregnant women on the basis of level of knowledge regarding warning signs in pregnancy

Figure 1 depicts that out of 146 pregnant women majority that is 54.11% had moderately adequate knowledge followed by 23.29% had adequate knowledge and 22.6% had inadequate knowledge which implies that the pregnant women had moderately adequate knowledge regarding warning signs in pregnancy.

Section C: Percentage distribution of prevalence of warning signs in pregnancy among pregnant women n=146

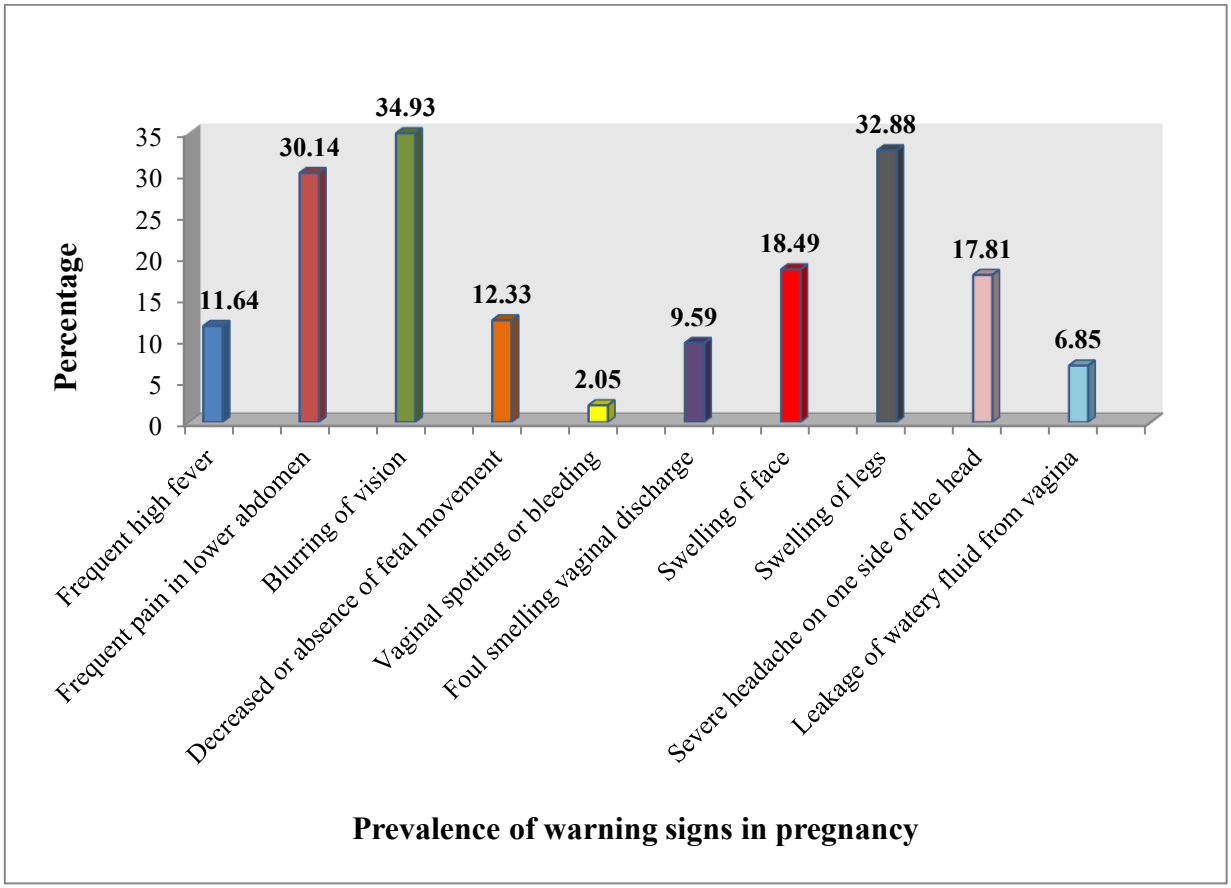

Figure 2: 3-D bar diagram showing percentage distribution of prevalence of warning signs in pregnancy among pregnant women

Figure 2 depicts that out of 146 pregnant women 34.93% experiences blurring of vision followed by 32.88% experiences swelling of legs, 30.14% experiences frequent pain in lower abdomen, 18.49% experiences swelling of face, 17.81% experiences severe headache on one side of head, 12.33% experiences decreased or absence of fetal movement, 11.64% experiences frequent high fever, 9.59% experiences foul smelling vaginal discharge, 6.85% experiences leakage of watery fluid from vagina and 2.05% experiences vaginal spotting or bleeding.

Section D: Association between knowledge of pregnant women regarding warning signs in pregnancy and selected socio demographic variables

Table 2: Association between knowledge of pregnant women regarding warning signs in pregnancy and selected socio demographic variables n=146

Sl No	Socio-demographic variables	Level of knowledge			χ^2/ Fisher's exact test value	df	p value
		Adequate	Moderately adequate	Inadequate			
	Age (in years)						

1	18-25 26-33 34-41	15 16 3	43 27 9	17 14 2	2.25	4	.704^{NS}
2	**Religion** Hinduism Islam Christian	 13 21 0	 26 51 2	 8 25 0	2.59	4	.615^{NS}
3	**Education** No formal education Primary education High school education Graduate & above	 0 10 20 4	 2 45 30 2	 3 25 5 0	24.22	6	.0001*
4	**Occupation** Government service Private service Self employed Home maker	 5 5 3 21	 3 7 1 68	 2 0 0 31	15.32	6	.006*
5	**Gravid state** Primi gravida Multi gravida	 15 19	 36 43	 16 17	.136	2	.934^{NS}
6	**Dietary pattern** Vegetarian Non-vegetarian	 5 29	 3 76	 1 32	4.592	2	.066^{NS}
7	**Family type** Nuclear family Joint family	 18 16	 33 46	 16 17	1.31	2	.52^{NS}
8	**Monthly family income (rupees)** ≤ 10,000 10,000-15,000 15,000-20,000 ≥20,000	 20 8 5 1	 22 37 14 6	 4 16 6 7	22.57	6	.001*
9	**Previous knowledge** Yes No	 32	 61	 19	12.54	2	.002*

		2	18	14			
9(i)	**Source of information** Family Friends Health personnel Mass media	 8 6 15 3	 7 6 46 2	 3 3 13 0	8.72	6	.185^{NS}

***p value < 0.05 level of significance** **NS- Non significant**

Table 2 displays the relationship between pregnant women's knowledge regarding warning signs and selected socio-demographic variables. Chi-square testing was employed, and Fisher's Exact test was also utilized ($p<0.05$) to account for low expected counts.

The above mentioned data shows that there is a significant association found between knowledge of pregnant women regarding warning signs in pregnancy with the selected socio-demographic variables such as mother's education [Fisher's exact test= 24.22, df=6, p= .0001], occupation [Fisher's exact test= 15.32, df=6, p= .006], monthly family income (in rupees) [Chi Sq= 22.57, df=6, p= .001] and previous knowledge regarding warning signs in pregnancy [Chi Sq= 12.54, df=2, p=.002] at 0.05 level of significance.

Section E: Association between prevalence of warning signs in pregnancy and selected socio demographic variables

The result of Chi square test/ Fisher's exact test revealed that there is statistically significant association found between-

- Prevalence of blurring of vision in pregnancy and educational status of the pregnant women [Fisher's exact test = 10.44, df=2, p= .01]
- Prevalence of decreased or absence of fetal movement in pregnancy and previous knowledge of the pregnant women [Chi Sq=8.2, df=1, p= .004]
- Prevalence of foul smelling vaginal discharge in pregnancy and dietary pattern of the pregnant women [Fisher's exact test = 6.237, df=2, p= .013]
- Prevalence of swelling of face in pregnancy and pregnant women's occupation [Fisher's exact test = 8.093, df=2, p= .029]
- Prevalence of swelling of legs in pregnancy and source of information of the pregnant women [Chi Sq = 7.958, df=2, p= .047]
- Prevalence of leakage of watery fluid from vagina in pregnancy with dietary pattern [Fisher's exact test = 10.544, df=2, p= .001] and source of information [Fisher's exact test = 13.812, df=2, p= .002] of the pregnant women at 0.05 level of significance.

Section F: Association between knowledge of pregnant women regarding warning signs in pregnancy and prevalence of warning signs in pregnancy among pregnant women

Table 3: Association between knowledge of pregnant women regarding warning signs in pregnancy and prevalence of warning signs in pregnancy among pregnant women n=146

Sl. No.	Warning signs in pregnancy		Level of knowledge			χ^2/ Fisher's exact test value	df	P value
			Adequate Knowledge	Moderately adequate knowledge	Inadequate knowledge			
1	Frequent high fever	Yes	4	9	4	.131	2	1^{NS}
		No	30	70	29			
2	Frequent pain in lower abdomen	Yes	7	23	14	3.878	2	$.144^{NS}$
		No	27	56	19			
3	Blurring of vision	Yes	7	26	18	8.804	2	$.012^{*}$
		No	27	53	15			
4	Decreased or absence of foetal movement	Yes	2	11	5	1.736	2	$.42^{NS}$
		No	32	68	28			
5	Vaginal spotting or bleeding	Yes	1	2	0	.885	2	1^{NS}
		No	33	77	33			
6	Foul smelling vaginal discharge	Yes	2	9	3	.709	2	$.703^{NS}$
		No	32	70	30			

7	Swelling of face	Yes	11	11	5	5.671	2	.058^{NS}
		No	23	68	28			
8	Swelling of legs	Yes	19	20	9	10.67	2	.005*
		No	15	59	24			
9	Severe headache on one side of the head	Yes	6	17	3	2.457	2	.292^{NS}
		No	28	62	90			
10	Leakage of watery fluid from vagina	Yes	5	3	2	4.085	2	.107^{NS}
		No	29	76	31			

***p value < 0.05 level of significance** **NS - Non significant**

Table 3 depicts that there is a significant association found between knowledge of pregnant women regarding warning signs in pregnancy with the prevalence of blurring of vision in pregnancy [Chi Sq= 8.804, df=2, p= .012] and with the prevalence of swelling of legs in pregnancy[Chi Sq = 10.670, df=2, p= .005] at o.o5 level of significance.

DISCUSSION

Discussion on findings related to knowledge of warning signs in pregnancy among pregnant women

The knowledge score of the present study shows that majority of the pregnant women under the study i.e. 79 (54.11%) had moderately adequate knowledge followed by 34 (23.29%) had adequate knowledge and 33 (22.6%) had inadequate knowledge on warning signs in pregnancy. The overall mean was 6.945 which imply that the pregnant women had moderately adequate knowledge on warning signs in pregnancy.

The findings of the present study was supported by another study conducted by **Wagh L, Gaikwad K, Gardade P and Ghare P (2018)** where majority of the pregnant women i.e. 48% had average knowledge followed by 34% had good knowledge and 18% had poor knowledge.[4]

The present study findings was supported by another study conducted by **Tamang ST, Dorji T, Yoezer**

S, Phuntsho T and Dorji P (2021) where most of the pregnant women i.e. 245 (58.1%) had 'satisfactory' knowledge on obstetric danger signs followed by 157 (37.2%) had 'poor' knowledge and 20 (4.7%) had 'good' knowledge.[5]

Discussion on findings related to prevalence of warning signs in pregnancy among pregnant women

The present study findings revealed that majority of the pregnant women i.e. 34.93% were experiencing blurring of vision followed by swelling of legs (32.88%), frequent pain in lower abdomen (30.14%), swelling of face (18.49%), severe headache on one side of head (17.81%), decreased or absence of fetal movement (12.33%), frequent high fever (11.64%), foul smelling vaginal discharge (9.59%), leakage of watery fluid from vagina (6.85%) and vaginal spotting or bleeding (2.05%).

In support to the findings of the present study, another study was conducted by **Bolanko A, Namo H, Minsamo K, Addisu N and Gebre M (2021)** also revealed that majority of the pregnant women i.e. 77.1% had experienced blurring of vision in pregnancy followed by severe abdominal pain (65%), severe vaginal bleeding (64.8%), severe headache (63%) and high fever (52.7%).[6]

Discussion on findings related to association between knowledge of warning signs in pregnancy among pregnant women and selected socio demographic variables

The present study findings explained that, statistically significant association was found between knowledge of warning signs in pregnancy among pregnant women with their educational status, occupation, monthly family income (in rupees) and previous knowledge but no significant association was found between age of mother, religion, gravid state, dietary pattern, family type and source of information.

The findings of the present study was supported by a similar study conducted by **Getachew D, Getachew T, Debella A, Eyeberu A, Atnafe G and Assefa N (2022)** where educational status, occupation and monthly income of the pregnant women were significantly associated with knowledge of pregnancy danger signs.[7]

The current study's findings are supported by **Bolanko A, Namo H, Minsamo K, Addisu N and Gebre M (2021)**, who found significant association between monthly income, maternal occupation, and knowledge of obstetric danger signs.[6]

LIMITATIONS OF THE STUDY

a. The sample drawn from the selected rural health centers cannot represent the population from other geographical location.
b. The tool was self structured and consisted close ended questions, hence responses were limited.

CONCLUSION

The study concludes that the knowledge of pregnant women regarding warning signs in pregnancy is not adequate which will make them more susceptible to develop warning signs and further complications in future. Therefore, a suitable plan of action is required to improve the knowledge of pregnant women regarding warning signs in pregnancy and also to lower the prevalence of warning signs in pregnancy in the selected study setting. The study also highlights the need to conduct health education using local or familiar terms by the health care professionals during antenatal checkup and follow up of the pregnant women so that the woman, her family and others in the community can recognize them if they occur, and to ensure that they know where to go in case of an emergency to take immediate medical attention.

IMPLICATIONS OF THE STUDY IN NURSING

- Nurses can organize a health education program on warning signs in pregnancy for the health professionals working in rural settings so that they can also sensitize the pregnant women during their antenatal checkup and follow up.
- The findings of the present study will help the nurses or other health professionals who are working in the community to develop understanding about the need of awareness program in their practice to nurture the health of the pregnant women.
- Dissemination of the findings through conference and publication and also communicating with various organization will help in creating awareness among the health professionals as well as in the community in a better way.

RECOMMENDATIONS FOR THE STUDY

On the basis of the present study, the following recommendations have been made for further studies:

a. Future research can investigate the relationship between knowledge and prevalence of pregnancy warning signs among pregnant women, examining whether increased awareness impacts occurrence.
b. Studies can be conducted focusing on prevalence of warning signs in pregnancy among pregnant women and its associated factors.
c. A Study may be conducted with a view to develop an information booklet regarding warning signs in pregnancy.
d. An identical study can be replicated on larger sample where findings can be generalized.
e. The focus should be established on organizing various teaching program among the health professionals and creating awareness among the pregnant women regarding warning signs in pregnancy.

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