

Assessment of knowledge of obstetric danger signs among pregnant women attending a teaching hospital

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ABSTRACT

Introduction: Knowledge of obstetric danger signs among pregnant women is of paramount importance in improving maternal, and fetal health outcomes. This study aims to determine the knowledge of danger signs among pregnant women seeking antenatal care in a teaching hospital. **Materials and Methods:** A cross-sectional study was carried out for two months among pregnant women who visited the antenatal clinic of a teaching hospital. A pre-tested and pre-designed proforma was used. Mean knowledge scores were computed and knowledge was classified into adequate and inadequate. **Results:** A total of 170 pregnant women fulfilling the inclusion criteria were included. Mean age of the study participants was found to be 26.40 ± 4.14 years. Nearly 67.10% were aware of bleeding per vagina being a danger sign, 50.0% stated excessive vomiting as a danger sign, 23.50% knew that blurring of vision was a danger, while a mere 20.0% reported that convulsions were a danger sign. Overall, adequate knowledge (total knowledge score of 5 and above) was observed in 54.70% of the participants. **Conclusion:** Majority of the study participants had adequate knowledge of danger signs in pregnancy. However, when knowledge about specific individual danger signs were further assessed, a high proportion had very poor knowledge. The mean knowledge scores were found to be low.

Keywords: Danger signs, pregnant women, teaching hospital

Introduction

In a woman's life, pregnancy is regarded as a normal phenomenon. However, around 40% of pregnancies are said to be high risk, which could lead to adverse maternal and foetal outcomes.^[1] Screening for high risk conditions in pregnancies, known as the risk approach, which is a managerial tool and is an integral component of antenatal primary health care.^[2] This risk approach involves early detection of high risk pregnancies to ensure prevention of obstetric complications.^[1] Risk approach also includes prompt identification of 'danger signs' like bleeding per vagina, premature rupture of membrane, convulsions, swelling of leg, headache during pregnancy, reduced fetal movements, and fever.^[3]

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If women and their families recognize these obstetric danger signs and seek timely health care, maternal morbidity and mortality may be significantly reduced. Furthermore, there is evidence suggesting that improvement in knowledge about obstetric danger signs will facilitate early detection of problems and improve the decision making to access appropriate health care.^[4] Besides, these danger signs may be easily identified by non-specialist health workers who form the backbone of primary health care, and may help to counter the lack of skilled birth attendants and emergency obstetric services. Thus, empowering women to identify danger signs will go a long way in strengthening primary health care.^[3]

However, little is known about the current knowledge and influencing factors in the study area. Therefore, this study aims to fill this gap by assessing the knowledge and determinants of

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danger signs among pregnant women seeking obstetric care in a teaching hospital.

Objectives

1. To determine the knowledge about obstetric danger signs among pregnant women attending a teaching hospital
2. To analyse the factors associated with awareness of danger signs in pregnancy among the study participants.

Materials and Methods

A cross-sectional study was conducted in the Outpatient Department (OPD), run by the Department of Obstetrics and Gynaecology (OBG) in a tertiary care, teaching hospital. The hospital has a capacity of 1,030 beds and is attached to a medical college in Dakshina Kannada district, Karnataka. The study was carried out for two months from May-June, 2017. The study participants were pregnant women who visited the hospital for their routine antenatal care as outpatients during the study period. Pregnant women, regardless of their gestational age were included and those unable to verbally communicate with the investigators and those with diagnosed psychiatric illness were excluded. The sample size was estimated by using the formula $n = Z^2 * p * q / e^2$. Here n is the required sample size, Z is the standard normal deviate, which is equal to 1.96 at 5% significance level. Adequate knowledge of danger signs among pregnant women was taken as 40.0% (p).^[5] The sample size calculated was 170. Systematic random sampling was used to select the study participants.

A pre-designed and pre-tested interview schedule was used to collect the appropriate information. The interview schedule included information pertaining to the socio-demographic profile of the participants like age, education, occupation, socio-economic status, and marital status. There were details like last menstrual period, expected date of delivery, gestational age in weeks, and number of pregnancies were enquired. Thereafter, the participants' awareness about 13 obstetric danger signs like convulsions, headache, blurring of vision, excessive vomiting, high fever, breathing difficulty, epigastric pain, anaemia, high blood pressure, vaginal bleeding, decreased/no fetal movements, and swelling of feet was determined. If the participant answered "yes", it was considered as correct response, while answers "no" or "don't know" were considered as incorrect response. The total knowledge scores were computed, with one point given to every correct response and no point given to incorrect response. The mean knowledge scores were calculated. This mean score was used to categorize the knowledge level of the participants into two groups, namely, adequate and inadequate knowledge. Participants who scored mean (5.02), and above the mean score of the correct responses were regarded as adequate knowledge, less than mean score of the correct answers was classified as inadequate knowledge. Thus, a score of 0-4 was considered as inadequate knowledge, while scores ranging from 5-13 were considered as adequate knowledge.

Ethics

Clearance from the Institutional Ethics Committee was obtained before conducting the study (YUEC 2017/103). There was also a written informed consent that was obtained from the study participants. Anonymity of the participants and strict confidentiality of the information collected was maintained.

Statistical analysis

Data was compiled and analysed using the International Business Machine Statistical Package for Social Sciences (IBM SPSS) Statistics for Windows, Version 23.0 Armonk, New York: IBM Corp. The continuous variables were expressed in terms of means and standard deviations. Proportions and percentages were used to express categorical variables. Chi-square test was applied to find out the association between knowledge of obstetric danger signs (categorized as adequate and inadequate) with variables like age (categorized as age ≤ 30 years and age > 30 years), education (up to grade 10 and beyond grade 10), occupation (housewife and employed), gravidity (primigravidae and multigravidae) and trimester (first + second and third). A $P < 0.05$ was considered as the criterion for statistical significance.

Results

A total of 170 pregnant women fulfilling the inclusion criteria were included in the study. The mean age of the study participants was found to be 26.40 ± 4.14 years. Majority of the participants (74.70%) were educated up to grade 10. Socio-demographic and obstetric profile details of the study participants are presented in Table 1.

More than half of the study participants had knowledge about vaginal bleeding (67.10%) and anaemia (51.20%) as danger signs. There were merely 20.0% of the study participants who reported convulsions as a danger sign in pregnancy [Table 2].

On calculation of knowledge scores, a total of 77 (45.30%) had inadequate knowledge (scores ranging from 0-4) and 93 (54.70%) had adequate knowledge (scores of 5 and above).

When the factors associated with knowledge of obstetric danger signs overall among the study participants was analysed, it was found that 65.10% of participants educated beyond grade 10. In comparison, 51.20% of the participants who had received education till grade 10 had adequate knowledge of obstetric danger signs. However, a statistically significant association was not found ($P = 0.113$). The proportion of adequate knowledge was higher among multigravidae (59.20%) when compared to primiparous women (44.0%). But this was not statistically significant ($P = 0.07$) [Table 3].

Discussion

Our study is relevant to primary care physicians as it focuses on obstetric danger signs, which is an integral part of the Mother

Table 1: Socio-demographic characteristics and obstetric profile of the study participants (n=170)

Variable	Numbers (n=170)	Percentage
Age in years		
≤30 years	149	87.60
>30 years	21	12.40
Education		
Upto grade 10	127	74.70
Beyond grade 10	43	25.30
Occupation		
Housewife	156	91.80
Others	14	8.20
Socio-economic Status†		
Class I + Class II	29	17.10
Class III	33	19.40
Class IV + Class V	108	63.50
Trimester		
First	18	10.60
Second	24	14.10
Third	128	75.30
Gravidity		
Primigravidae	50	29.40
Multigravidae	120	70.60
Mother and Child Protection Card		
Available	132	77.60
Not available	38	22.40
Complications in pregnancy		
Present	16	9.40
Absent	154	90.60

†Modified BG Prasad Classification, May 2017

and Child Protection (MCP) card that was introduced in the year 2010 to facilitate comprehensive maternal and child health care.^[6] Obstetric danger sign education is a key component of birth preparedness.^[7] In the Indian primary health care, counselling on key features of birth preparedness including issues like obstetric danger signs is being routinely imparted by non-specialist health workers like Accredited Social Health Workers (ASHAs) at the community level.^[8] Thus, through this study, we determined the knowledge of obstetric danger signs and its associated factors among pregnant women attending a teaching hospital.

It was found that majority of the study participants (54.70%) had adequate knowledge of danger signs in pregnancy. In comparison, a study carried out by Teng *et al.* in Malaysia reported that 83.70% of pregnant women had adequate knowledge of obstetric danger signs.^[9] In another study carried out in Hyderabad, India, nearly 73.50% of pregnant women were aware of danger signs in pregnancy.^[10] On the contrary, studies carried out in countries like Ethiopia, Tansania and Jordan reported the awareness of danger signs in pregnancy to be ranging from 15-30%.^[11-18] This finding was in concordance with the results of studies.^[9,10] This could be attributed to the fact that all the study participants in the present study were literates, with 74.70% being educated up to grade 10 and 25.30% being educated beyond grade 10.

In the present study, knowledge about vaginal bleeding was found to be highest, which was followed by anaemia, excessive vomiting and decreased fetal movements. A similar finding was reported

Table 2: Knowledge of danger signs in pregnancy among the study participants (n=170)

Danger sign	Numbers (n=170)	Percentage
Convulsions		
Aware	34	20.0
Not aware	136	80.0
Headache		
Aware	53	31.20
Not aware	117	68.80
Blurring of vision		
Aware	40	23.50
Not aware	130	76.50
Excessive vomiting		
Aware	85	50.0
Not aware	85	50.0
High fever		
Aware	60	35.30
Not aware	110	64.70
Breathing difficulty		
Aware	45	26.50
Not aware	125	73.50
Epigastric pain		
Aware	73	42.90
Not aware	97	57.10
Anaemia		
Aware	87	51.20
Not aware	83	48.80
High Blood Pressure		
Aware	75	44.10
Not aware	95	55.90
Vaginal bleeding		
Aware	114	67.10
Not aware	56	32.90
Decreased fetal movements		
Aware	83	48.80
Not aware	87	51.20
Swelling of feet		
Aware	54	31.80
Not aware	116	68.20

in a study conducted by Sangal *et al.* in Gorakhpur where 90.5% and 80% of study participants were aware of bleeding/leaking per vagina, decreased fetal movements respectively, as obstetric danger signs.^[5] In few other studies, vaginal bleeding was found to be the most commonly cited danger sign.^[12-14]

In this study, a mere 20.0% of the study participants reported that convulsions was a danger sign. Contrary to this, it was found that in a study conducted by Sangal *et al.* that 78.4% of study participants reported seizures/fits during pregnancy as a danger sign,^[5] while in a study conducted by Sahithi *et al.* in Hyderabad, India, 39% of study participants reported convulsion as danger sign in pregnancy.^[10] This low knowledge of convulsions as a danger sign in the present study, could be due to the reason that only 2% of study participants were suffering from pregnancy induced hypertension, which if uncontrolled could lead to eclampsia, characterized by convulsions as a clinical feature.

In the present study, age, education, occupation, gravidity and trimester were the factors which were studied to find out the

Table 3: Factors Associated with knowledge of danger signs in pregnancy among study participants (n=170)

Study variables	Adequate knowledge (n=93) (%)	Inadequate knowledge (n=77) (%)	Total (n=170)	P [†]
Age				
<30 years	82 (55.0)	67 (45.0)	149	0.819
≥30 years	11 (52.40)	10 (47.60)	21	
Education				
Upto grade 10	65 (51.20)	62 (48.80)	127	0.113
Beyond grade 10	28 (65.10)	15 (34.90)	43	
Occupation				
Housewife	86 (55.10)	70 (44.90)	156	0.712
Employed	7 (50.0)	7 (50.0)	14	
Gravidity				
Primigravidae	22 (44.0)	28 (56.0)	50	0.07
Multigravidae	71 (59.20)	49 (40.80)	120	
Trimester				
First and second	26 (61.90)	16 (38.10)	42	0.227
Third	67 (52.30)	61 (47.70)	128	

[†]Chi-square test

association with knowledge of obstetric danger signs. Adequate knowledge of danger signs was higher among those who were educated beyond grade (65.10%) when compared to those who are educated up to grade (51.20%). However, this association was not statistically significant ($P = 0.113$). Adequate knowledge of danger signs in pregnancy was higher among multigravidae (59.20%), when compared to primigravidae (44.0%). However, a statistically significant association could not be established ($P = 0.07$). Other factors studied were not found to be significantly associated with adequate knowledge of obstetric danger signs among the study participants. Similar finding was observed in a study conducted by Mahalingam *et al.* in Tamil Nadu.^[11] However, in other studies, factors like educational status, place of delivery, age, socio-economic status, working status, and monthly household income of study participants were significantly associated with awareness of danger signs in pregnancy.^[5-10,12,15-21]

Though, more than half of the study participants had adequate knowledge of obstetric danger signs, there was lack of knowledge for some of the important specific danger signs among study participants.

Our study is not devoid of limitations. First of all the present study was conducted among educated women. Thus, generalisation of the findings would be difficult. Further, due to feasibility and time constraints, convenient sampling method was used to select the study participants.

Conclusion

Majority of the study participants, (54.70%), had adequate knowledge of danger signs in pregnancy. When knowledge of specific obstetric danger signs were determined, a high proportion had very poor knowledge of the individual danger signs. Less than half of the study participants had knowledge about important danger signs like convulsions, headache, vaginal bleeding, high blood pressure, decreased fetal movements, and swelling of feet. A high proportion of multigravidae were aware of danger

signs, when compared to primigravidae. However, none of the associated factors were found to be statistically significant.

This very poor knowledge of the specific danger signs in pregnancy may lead to a delay in seeking health care. Hence, it is imperative to educate pregnant women about obstetric danger signs, which could go a long way in improving the maternal and fetal outcomes.

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Conflicts of interest

There are no conflicts of interest.

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