ORIGINAL RESEARCH ARTICLE
pISSN 0976 3325 | eISSN 2229 6816
Open Access Article
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Assessment of Knowledge of Obstetric Danger Signs among Pregnant Women Attending a Tertiary Care Hospital

Mubeena H[1], Pracheth Raghuveer[2], Kiran R[3], Mohammed Ibrahim M[3], Mohammed Ibrahim Sherief A[3], Mazina Mohammed[3]

Financial Support: None declared
Conflict of Interest: None declared

How to cite this article:
Mubeena H, Raghuveer P, Kiran R, Ibrahim MM, Ibrahim SA, Mohammed M. Assessment of Knowledge of Obstetric Danger Signs among Pregnant Women Attending a Tertiary Care Hospital. Natl J Community Med 2019;10(8):451-455

Author's Affiliation:
[1]Postgraduate Tutor; [2]Assistant Professor; [3]Undergraduate Student, Dept. Of Community & Medicine, Yenepoya Medical College, Mangalore

Correspondence
Dr. Pracheth R.
prach1986@gmail.com

Date of Submission: June 01, 2019
Date of Acceptance: Aug 30, 2019
Date of Publication: Aug 31, 2019

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 tertiary care hospital.

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 poor knowledge. The mean knowledge scores were found to be low.

Keywords: danger signs, pregnant women, tertiary 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. Most of the complications which are associated with high risk pregnancies can be prevented through early detection.[1] For early detection of high risk conditions, it is important to identify 'danger signs' like bleeding per vagina, premature rupture of membrane, convulsions, swelling of leg, headache during pregnancy, reduced fetal movements and fever.[2]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.[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 danger signs among pregnant women seeking obstetric

care in a tertiary care hospital.

OBJECTIVES

The objectives of the study were to determine the knowledge about obstetric danger signs among pregnant women attending a tertiary care hospital and to analyse the factors associated with awareness of danger signs in pregnancy among the study participants.

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).[4] 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, socioeconomic status and marital status. Details like last menstrual period, expected date of delivery, gestational age in weeks and number of pregnancies were enquired. Thereafter, the participants' awareness about thirteen 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. 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). Written informed consent 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. 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 (upto grade 10 and beyond grade 10), occupation (housewife and employed), gravidity (primigravidae and multigraividae) 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 upto grade 10. Sociodemographic 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. Merely 20.0% of the study participants 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).

Table 1: Socio-demographic characteristics and obstetric profile of the study participants

Variable	Case (N=170) (%)
Age in years	
≤30 years	149 (87.6)
> 30 years	21 (12.4)
Education	
Upto grade 10	127 (74.7)
Beyond grade 10	43 (25.3)
Occupation	
Housewife	156 (91.8)
Others	14 (8.2)
Socio-economic Status†	
Class I+ Class II	29 (17.1)
Class III	33 (19.4)
Class IV+ Class V	108 (63.5)
Trimester	
First	18 (10.6)
Second	24 (14.1)
Third	128 (75.3)
Gravidity	
Primigravidae	50 (29.4)
Multigravidae	120 (70.6)
Mother and Child Protection Card	
Available	132 (77.6)
Not available	38 (22.4)
Complications in pregnancy	
Present	16 (9.4)
Absent	154 (90.6)

†Modified BG Prasad Classification, May 2017

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).

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

Danger sign	N (%)
Convulsions	
Aware	34 (20)
Not aware	136 (80)
Headache	
Aware	53 (31.2)
Not aware	117 (68.8)
Blurring of vision	
Aware	40 (23.5)
Not aware	130 (76.5)
Excessive vomiting	
Aware	85 (50)
Not aware	85 (50)
High fever	
Aware	60 (35.3)
Not aware	110 (64.7)
Breathing difficulty	
Aware	45 (26.5)
Not aware	125 (73.5)
Epigastric pain	
Aware	73 (42.9)
Not aware	97 (57.1)
Anaemia	
Aware	87 (51.2)
Not aware	83 (48.8)
High Blood Pressure	
Aware	75 (44.1)
Not aware	95 (55.9)
Vaginal bleeding	
Aware	114 (67.1)
Not aware	56 (32.9)
Decreased fetal movements	
Aware	83 (48.8)
Not aware	87 (51.2)
Swelling of feet	
Aware	54 (31.8)
Not aware	116 (68.2)

Table 3: Factors Associated with knowledge of danger signs in pregnancy among study participants

Study variables	Adequate knowledge (n=93) (%)	Inadequate knowledge (n=77) (%)	Total (N=170)	p value † (Chi-square test)
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	

DISCUSSION

The present study determined the knowledge of obstetric danger signs and its associated factors among pregnant women attending a tertiary care 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.[5] In another study carried out in Hyderabad, India, nearly 73.50% of pregnant women were aware of danger signs in pregnancy.[6] 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%.[7-14]This finding was in concordance with the results of studies.[5,6] 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 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.[4]In few other studies, vaginal bleeding was found to be the most commonly cited danger sign.[8,9,10]

In this study, a mere 20.0% of the study participants reported that convulsion 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,[4]while in a study conducted by Sahithi et al in Hyderabad, India, 39% of study participants reported convulsion as danger sign in pregnancy.[6] 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 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 upto 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.[7] However, in other studies, factors like educational status, place of delivery, age, socioeconomic status, working status and monthly household income of study participants were significantly associated with awareness of danger signs in pregnancy.[4-6,8,11-17]

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

This 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.

ACKNOWLEDGEMENTS

We would like to thank Lena Abdushukur, Katherine Davis, Jithin Darwin, Joe Paul, Juma Rashid, Midhun Dev and Lebin P for their immense help in data collection. We acknowledge all the study participants for participating in the study.

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