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Awareness Regarding Dangerous Signs in Pregnant Women attending BBH Filter Clinic, Rawalpindi

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Abstract

Objective: Maternal health relates to the well-being of a woman during pregnancy, childbirth, and the postpartum period. This study aimed to assess the level of awareness of dangerous signs among pregnant women attending the Filter Clinic in Benazir Bhutto Hospital, Rawalpindi. It was also intended to determine the association of awareness levels among pregnant women during pregnancy with sociodemographic factors and to find out the determinants of awareness of dangerous signs during pregnancy.

Methods: A cross-sectional study was carried out at Benazir Bhutto Hospital filter clinic in Rawalpindi city. A total of 366 pregnant women were selected through non-probability consecutive sampling. Data was collected using a validated tool, Johns Hopkins Program for International Education in Gynaecology and Obstetrics (JHPIEGO's) (MeSH) Maternal and Neonatal Program. Pearson's chi-squared test of Independence and binary logistic regression were applied for univariate and multivariate analysis, respectively.

Results: Among the 366 respondents, the majority them were in the age bracket of 31-40 years (n= 156). Results of the present study showed that slightly more than half of the respondents reported poor awareness regarding danger signs during pregnancy (n= 190). Moreover, major determinants of awareness level among respondents were the education level of women and monthly family income (p value<0.05).

Conclusion: The present study indicated that, on the whole, the population revealed somewhat poor awareness regarding dangerous signs. Women's education and monthly family income play important roles in determining the awareness level among pregnant women regarding dangerous signs.

Keywords: Awareness, Pregnancy, Women, Pakistan.

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Introduction

Maternal mortality is a critical problem in low and middle-income countries despite setting goals to reduce the maternal mortality rate and improve the well-being of women in the Millennium Development Goals (MDGs) and Sustainable Development Goals (SDGs). Pregnancy is a significant period of a woman's life. Negligence in care during this period and postpartum can lead to various life-long morbidities and increased risk of maternal mortality. The World Health Organisation (WHO) reported that in 2017, nearly 295,000 women died due to pregnancy-related complications [1]. These complications are accompanied by various dangerous signs that indicate an abnormality during pregnancy. Primary dangerous signs during the period of pregnancy include increased vaginal bleeding, severe headache, preterm labor, rupture of membrane before onset of labor, epigastric pain, severe abdominal pain, convulsions, blurred vision, and fever.[2]

To reduce the risk of maternal morbidity and mortality during pregnancy, women must be aware of these dangerous signs. Lack of awareness or insufficient knowledge leads to exacerbation of the complications and eventually results in poor maternal and neonatal health.[3,4] Previous research identified a lack of risk awareness, poor infrastructure and transportation facilities, inadequate medical care, and a lack of financial independence as major obstacles to achieving good obstetric care.[5] The prevalence of awareness among women related to danger signs of pregnancy varies in different regions.

A study conducted in Pakistan revealed that 62% of Pakistani women are moderately aware of these danger signs, while good awareness was found in nearly 20% of women [6]

Telemedicine is crucial in low-income countries like Pakistan, where 63% of the population lives in rural areas. It offers cost-effective, convenient healthcare, reducing travel expenses and saving time. This encourages rural patients to seek timely care. In urban areas, it also eases pressure on healthcare facilities by allowing remote consultations. In Pakistan, rural patients travel long distances for healthcare, risking maternal and fetal health. Digital health services connect them to doctors online, reducing delays. Studies show telemedicine has saved many lives in LMICs by preventing fatal treatment delays.[7]

Various factors influence the awareness of women related to dangerous signs of pregnancy. These include age of the mother, profession of the woman, educational background, marital status, education status and profession of the husband, family's social status and income, place of living, total number of family members, gravidity, parity, antenatal care (ANC) visit and number of ANC, place of delivery, attitude of attendants during previous delivery if any, walking distance from health facility, health education, and source of information.[8,9] It is important to impart and enhance awareness regarding dangerous signs of pregnancy to improve the quality of life of women and eventually help us move closer to achieving the SDGs. The current study was carried out to determine the level of awareness of the danger signs of pregnancy among Pakistani women. It has also uncovered some important determinants of the awareness level.

Materials And Methods

It was a quantitative cross-sectional study, carried out at the BBH filter clinic. The study included a total of 366 pregnant women visiting the health facility. It was carried out for a duration of six months from September 2023 to February 2024. In this study, those women were included who were pregnant during the study or within six weeks after giving birth. All women were above 18 years of age. Moreover, women who were experiencing any of the severe health conditions that hindered their ability to participate in this study were excluded. The sample size was calculated using the proportion formula for sample size calculation in the Open-Epi menu, Version 3.01 software. The previous prevalence of knowledge regarding adverse pregnancy outcomes in India was taken as 61%.[10] The calculated sample size was 366 with a 95% confidence interval (CI) and 5% margin of error. The desired data was collected using a non-probability consecutive sampling strategy. Data was gathered using a questionnaire adapted from a previous study. A structured form was designed to collect information on the sociodemographic characteristics of pregnant women, along with questions about warning signs during pregnancy. Awareness of these warning signs was evaluated using a modified questionnaire from JHPIEGO's Maternal and Neonatal Program.[11] The questionnaire was divided into two parts: the first part consisted of sociodemographic characteristics, while the second part was designed to determine the awareness level about dangerous signs. It was comprised of seventeen questions. A score below eight indicated poor awareness, while a score above eight denoted good awareness. The study was carried out after performing pilot testing with 10% of the original sample size. It was done to determine the reliability and validity of the data collection tool and helped in assessing the feasibility of the study. After that, data collection was performed, and data were entered and analysed using SPSS version 26. Descriptive analysis was done using frequencies and percentages and displayed in the form of tables, pie charts, and bar graphs. While the Pearson Chi Square test of Independence was used to determine the association between outcome variables and socio-demographic characteristics of the respondents, binary logistic regression was used to identify the main predictors of awareness of dangerous signs in pregnancy. The study was conducted after getting permission from the Ethical Committee of the hospital. Respondents were also duly informed, and their consent was taken before including in the study. All study data was kept strictly secret and used for study purposes only.

Results

The study included 366 pregnant women visiting the BBH filter clinic. It was noted that 43% of the women were in the age bracket of 31-40 years (n=156). Similarly, 42% of women (n= 153) were matric pass while only 41% (n= 150) were employed. A summary of the sociodemographic variables of women is given in Table 1. The study's results revealed that awareness of dangerous signs in pregnancy was slightly poor among the study population. Figure 1 represents the responses of the respondents regarding awareness of dangerous signs. Overall awareness level among the study population was comparatively poor, as shown in Figure 2

The respondents were also asked about their source of awareness of dangerous signs in pregnancy and to whom they consulted in case of any dangerous signs. Most of the women responded that their family member or friend gave them information regarding any dangerous signs. While the majority of the respondents reported that they visited the hospital in case of any dangerous signs. Moreover, the current study also showed the determinants of awareness among pregnant women. For this purpose, Pearson Chi Chi-Square and Binary Logistic Regression were used for univariate and multivariate analysis, respectively. All p-values below 0.05 were considered statistically significant. Results of the chi-square test revealed that awareness of women was significantly associated with the education and occupation of the women, along with the monthly income level. It was observed that illiterate women reported poor awareness as compared to literate women, with an ascending trend with education level (p-0.003). Similarly,

working women reported relatively good awareness as compared to non-working women (p 0.044). In the same manner, women with greater than 50,000 monthly income reported a good awareness score as compared to others (p= 0.002). Detailed results are given in Table 2.

Table 1: **Sociodemographic characteristics of the respondents**

S. No	Variable	Frequency (n)	Percentage (%)
1.	**Age**		
	20-30 years	146	40
	31-40 years	156	43
	41-50 years	64	18
2.	**Women's Education**		
	Illiterate Matric Intermediate	87	24
	Bachelors	153	42
		78	21
		48	13
3.	**Women's Occupation**		
	Non-working Working	216	59
		150	41
1.	**Husband's Occupation**		
	Labour, White collar, Business	91	25
		132	36
		143	39
2.	**Education of Husband**		
	Illiterate	70	19
	Matric	134	37
	Intermediate	85	23
	Bachelors	77	21
3.	**Monthly Income**		
	Less than 50,000 PKR	162	44
	More than 50,000 PKR	204	56
4.	**Total no. of Children**		
	None	153	41
	Less than 3	72	20
	More than 3	141	39
5.	**Ethnicity**		
	Punjabi	160	44
	Pathan	113	31
	Sindhi	65	18
	Muhajir	28	7

Similarly, results of logistic regression analysis showed that the full model containing all predictors was statistically significant (p = 0.0001), indicating that the model was able to distinguish between respondents who reported good and poor awareness levels. Model summary, which included the results of Negelkerke R square and Cox & Snell R square test, showed that these variables can cause a deviation in awareness level in the range of 16-18%. It was observed that women with higher education levels were more likely to have greater awareness levels regarding danger signs. It was noted that women who had a bachelor's, were nearly 4 times more aware of danger signs as compared to illiterate women (p= 0.003). Similarly, the monthly income of the women was also found to be a main determinant of awareness level. It was found that women with more than 50,000 PKR monthly income were almost 3 times more likely to have good awareness as compared to those with less monthly income (p= 0.044). Results are given in Table 3.

Table.2 Association of Awareness Level of Dangerous Signs with Sociodemographic Characteristics of the Respondents

Sr. No.	Sociodemographic characters	Awareness		X^2 (df)	P value
		Poor n (%)	Good n (%)		
1	**Age**				
	20-30 years	74 (40)	72 (41)	0.099 (2)	0.753
	31-40 years	74 (42)	82 (42)		
	41-50 years	34 (18)	30 (17)		
2	**Women's Education**				
	Illiterate	46 (26)	41 (22)		
	Matric	70 (39)	83 (43)	4.33 (3)	**0.003**
	Intermediate	37 (23)	41 (22)		
	Bachelors	23 (12)	25 (13)		
3	**Women's Occupation**				
	Working	117 (62)	97 (56)	1.44 (1)	**0.044**
	Non-working	73 (38)	77 (44)		
4	**Husband's Education**				
	Illiterate	42 (22)	28 (16)		
	Matric	68 (36)	66 (38)		
	Intermediate	45 (24)	40 (23)	4.33 (3)	0.050
	Bachelors	35 (18)	42 (23)		
5	**Husband's Occupation**				
	Labor	43 (23)	48 (27)	1.30 (2)	0.728
	White Collar Job	71 (37)	61 (35)		
	Business	76 (40)	67 (38)		
6	**Monthly Income**			8.98 (1)	**0.002**
	Less than 50,000	84 (44)	78 (39)		
	More than 50,000	98 (56)	105 (61)		
7	**Number of Children**				
	Less than 3	75 (40)	66 (38)	2.035 (2)	0.361
	More than 3	32 (17)	40 (22)		

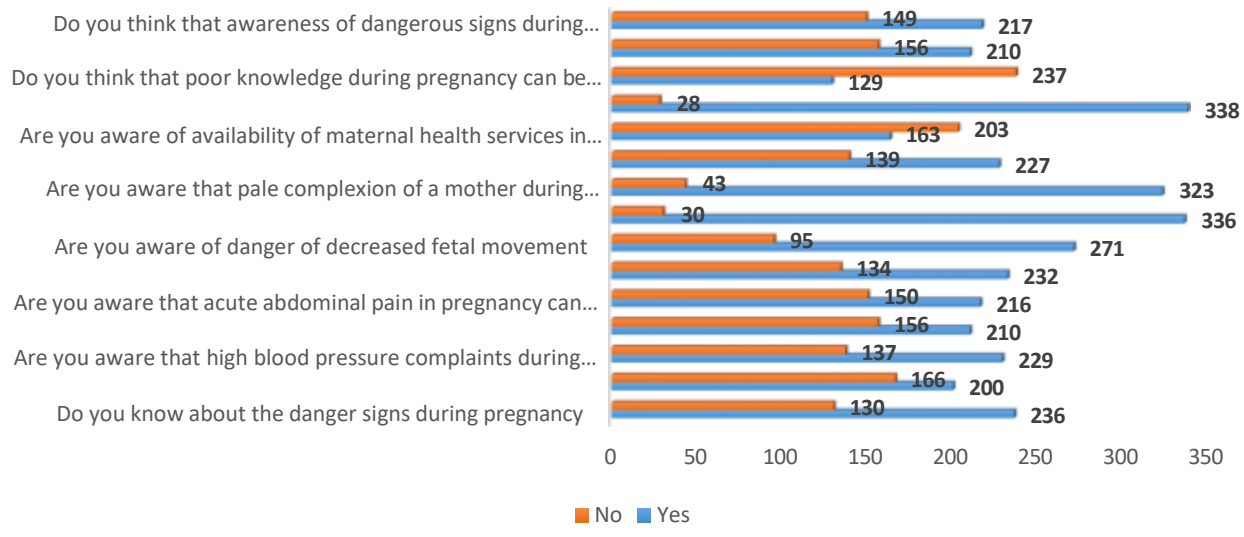

Figure 1: **Awareness of dangerous signs**

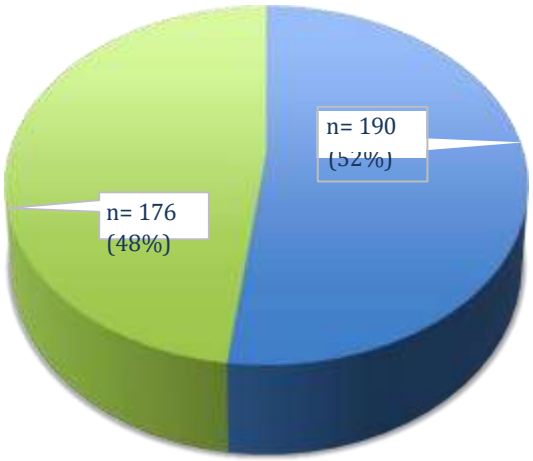

Figure 2: Total Awareness level among the study population regarding dangerous signs

Table 3: Determinants of Awareness of Danger Signs During Pregnancy

Variables	AOR	P-value	95% C.I.	
			Lower	Upper
Women's Education				
Illiterate	1			
Matric	1.125		0.444	2.849
Intermediate	1.536	**0.003**	0.187	1.542
Bachelors	4.224		0.057	0.877
Women's Occupation				
Working	1			
Non-working	0.310	0.078	0.133	0.720
Monthly Income				
<50,000	1			
>50,000	2.979	**0.044**	0.354	2.710

Discussion

In the present study, awareness of women regarding danger signs in pregnancy was determined, and it was observed that slightly more than half of the respondents reported poor awareness (n= 190, 52%). Similarly, 51% of the women (n= 185) reported poor practices during pregnancy. Previous literature showed mixed results regarding awareness levels among women. A previous study conducted in Ethiopia revealed that 68% of respondents reported good awareness about the danger signs of pregnancy.[12] Similarly, another study showed that only 26% of respondents had good knowledge about danger signs.[13] Additionally, another study reported that only 24% of women had good practices during pregnancy. This could be attributed to different sociodemographic characteristics and surrounding influences, including family, media, and friends, that affect the awareness level and practices of women. Moreover, various factors have been tested to find the determinants of the awareness level and practices of women during pregnancy. It was noted that the education of women and their monthly income are the main determinants of their awareness regarding the dangerous signs of pregnancy.Current results showed that the education of women is a major determining factor of their awareness level. Findings revealed that with increasing education level, awareness also increases. Women who had a bachelor's, were nearly 4 times more aware of danger signs as compared to illiterate women (p= 0.003). Similar findings are observed in a previous study, which shows that women with higher education were 6 times more likely to have a good awareness level (AOR: 6.06, C.I.: 3.08–11.94) (11). Similarly, another study also confirms that a higher education level increases awareness about the dangerous signs of pregnancy (AOR: 1.21, C.I.: 0.59, 2.50).[13] Another study found that approximately 56.5% of women had good knowledge of danger signs. Knowledge was significantly higher among women over 25 years of age, those who were literate, and those who received counselling during antenatal (ANC) and postnatal care (PNC).[14] The reason could be that an increasing education level is directly associated with greater knowledge and exposure to informational sources. Moreover, this is also associated with decreasing biases and myths regarding pregnancy. The current findings also suggest that income level is a main determinant of awareness level among women regarding danger signs of pregnancy. It was found that women with more than 50,000 PKR monthly income were almost 3 times more likely to have good awareness as compared to those with less monthly income (p 0.044). Similar findings are also observed in a previous study conducted in North-West Ethiopia. The findings suggest that income level directly influenced the awareness level, with women having higher monthly income having good awareness levels (AOR: 1.1, C.I.: 0.3-1.8).[15] Similar findings are also reported in another study (AOR: 1.99, C.I.: 1.22-3.33) (11). The possible reason could be improved access to better resources and informational sources in a strong economic situation. This, in turn improves the awareness level of the women regarding danger signs of pregnancy. Based on the study results, it is recommended that a comprehensive strategy should be devised to impart knowledge about danger signs in pregnancy through media, and healthcare personnel. Education level enhances awareness level, so it is also suggested that more focus should be given to improving education status, especially for women. Financial security and improved income resources also help the women to approach better health facilities; improving their awareness level.

Conclusions

Several factors influence awareness about dangerous signs during pregnancy. The current study revealed that the population reported slightly poor practices and awareness about danger signs. The main determinants of awareness about danger signs are the education of women and their monthly income level.

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