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Level of Birth Preparedness and Complication Readiness among Pregnant Women Residing In Urban Slums of Shivamogga City, India

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ABSTRACT

Background: Safe motherhood is about informing and educating woman about danger signs in pregnancy, how to identify and seek advice from health personnel and prepare for safe confinement. BPACR is a tool which assesses, how well the pregnant women are prepared for the challenges in pregnancy.

Aim& Objective: To ascertain the level of awareness of Birth Preparedness and Complication Readiness (BPACR) among antenatal mothers residing in urban slums.

Methodology: A community based cross-sectional study was conducted among pregnant women residing in urban slums of Shivamogga, Karnataka. Data was collected using pre-designed questionnaire, "Monitoring BP/CR-tools and indicators for maternal and new born health" of the "JHPIEGO". Data was analysed and results were tabulated.

Results: In this study, only 42% of pregnant women knew about the term 'Birth preparedness' while the rest 58% pregnant women did not know it. Education status and complication experienced during present or previous pregnancy were found to have significant association with BPACR. Identification of blood donor and skilled birth provider were less among study group.

Conclusions: Awareness of danger signs and complication readiness was found to be good in our study.

Key Words: Birth preparedness, ASHA, BPACR, danger signals, Childbirth, Antenatal period

INTRODUCTION

Maternal mortality refers to death of a woman due to complications from pregnancy and childbirth. According to Sustainable Development Goal (SDG) 2025, to attain a maternal mortality rate of 70 per lakh live births the annual rate of reduction should be 6.4 percent.[1] While, the current rate of reduction is just 2.9 percent.[1] Sub-Saharan Africa and South Asia account for 86 percent of maternal deaths worldwide and South Asia alone accounts for 19 percent of the global total.[1] The lifetime risk of maternal death ranges from 1 in 5400 in high income countries to 1 in 45 in low-income countries.[1]

In many societies in the world, cultural beliefs and lack of awareness inhibit preparation in advance for delivery and expected baby. Majority of pregnant women and their families do not know how to recognize the danger signs of complications. When complications occur, the unprepared family wastes a great deal of time in recognizing the problem, getting organized, getting money, finding transport and reaching the facility.[2] Birth Preparedness and Com-

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plication Readiness (BPACR) include many elements like registration of pregnancy, knowledge of danger signs, plan for where to give birth, plan for skilled birth attendant, plan for transportation, a birth companion and identification of compatible blood donors in case of emergency. BPACR is a key component of globally accepted safe motherhood programs.[2]

Studies conducted in many parts of the world indicate varying levels of knowledge of danger signs and their preparedness.[3,5,6,7] Slum and peri-urban slums in urban cities are deprived of basic reproductive health care facilities. High-tech hospitals which provide secondary and tertiary level of care are costly and not within the reach. Ignorance and illiteracy also add up to decreased utilization of health facilities by them. It is the Accredited Social Health Activist (ASHA), who motivates and escorts the pregnant women for institutional delivery. Knowledge of danger signs was surprisingly found to be low[2] and the particular reasons for this couldn't be traced out. So, with this background a study was conducted to know the Birth Preparedness and Complication Readiness (BPACR) level among the ante-natal women and also the factors associated with it.

OBJECTIVE

The study was conducted to estimate the level of Birth Preparedness and Complication Readiness (BPACR) status among pregnant women of urban slums of Shivamogga city.

MATERIALS AND METHODS

On pilot testing, the awareness level of birth preparedness was found to be 30%, taking the absolute precision of 6%, we use the formula $N= 4pq/d^2$ and calculate the required sample size. The sample size works out to be 232 and considering the non-response rate of 10%, we estimated the sample size of 252. Here p=30%, q= 1-p = 70% and allowable error d = 6%.

There are seven urban primary health centres (UPHC) in Shivamogga city, each catering health services to slums and peri-urban slums population. We selected three UPHC randomly and from the ANC register available with the ANM of that PHC we located the house of each pregnant woman and visited. In each UPHC area we interviewed around 75 pregnant women. During the home visits those who were present in the house at the time of visit and willing to share the information were interviewed. Pregnant women who were not there in house at the time of visit were refrained from the study. Study was conducted over a period of 2 months.

Data was collected using the questionnaire developed by John Hopkins Bloomberg school of public health[4], those who cannot understand English, a Kannada translated version of the questionnaire was used which has also good validity and reproducibility. Questions were regarding identification of mode of transport, financial arrangements, awareness of blood group and blood donor if need arises, husband involvement in decision making etc Data was entered into excel, results were tabulated and descriptive statistics like mean, percentages and proportions were used. Chi square test was used to see significance of association between two variables.

RESULTS

From our studies, it was gathered that, 66% of the women were in the age group of 20-25 years, 26% were more than 25 years old and 8% women were under 20 years of age, it was noted that 23% women had been to higher primary schools, 58% women completed their secondary education, 10% were graduates and remaining 9% were illiterates.

In our study, majority (49%) women were primigravida. 35% women's pregnancy status was gravida 2 and rest 16% were multigravida. Majority of women (87%) were in the third trimester of pregnancy and remaining 13% were in first and second trimester of pregnancy. Study revealed that 65% seemed to have knowledge about birth spacing and 35% of the women had given birth to the next child within three years.

Table 1: BPACR status

Awareness about birth preparedness	Women(%)
Identify the mode of transport	135 (54)
Identify blood donor	82 (33)
Identify hospital for delivery	211 (84)
Identify skilled provider	40 (16)
Saved money	111 (44)
Know the blood group	190 (75)
Necessary that husband/partner to accompany	153 (61)

Table 2: Awareness of danger signs & birth preparedness by scores

Awareness	Women (n=252) (%)
Awareness of danger signs	
No knowledge (0)	20(8)
Inadequate knowledge (1-5)	154(61)
Adequate & complete knowledge (>6)	78(31)
Awareness of birth preparedness	
No knowledge (0)	7(3)
Inadequate knowledge (1-3)	110(44)
Adequate & complete knowledge (>3)	135(53)

Table 3: Association between education status and awareness of danger signs during pregnancy (n=252)

Education status	Awareness level about danger signs		
	No knowledge (score =0)	Inadequate knowledge (score=1 to 5)	Adequate & complete knowledge (score > 6)
Illiterate	5(23.8)	8(38.1)	8(38.1)
Literates	15(6.5)	146(63.2)	70(30.3)

*P value 0.008 - Significant at p<0.05
Figure in parenthesis indicate percentage

Table 4: Association between education status and birth preparedness level (n=252)

	Birth preparedness level			P value
	No knowledge (score = 0) (%)	Inadequate knowledge (score = 1 to 3) (%)	Adequate & complete Knowledge (score > 3) (%)	
Education status				
Illiterate	03(14.2)	08(38.0)	10(47.6)	0.0036
Literates	04(1.7)	102(44.2)	125(54.1)	
Gestational age				
First &second trimester	06(6.5)	42(45.6)	44(47.8)	0.0154
Third trimester	01(0.6)	68(42.5)	91(56.8)	

*Significant at p<0.05

Our analysis clearly shows that 69% of the total women were unaware about the complications that can happen during pregnancy and rest 31% were aware of the complications during pregnancy.

According to our study, 66% of the women knew that severe abdominal pain is a warning sign, 58% were aware about severe weakness, 45% were aware about severe headache and high fever. Only 16% think that water breaks without labour is a danger sign.

Our study inferred that 58% did not know about the term 'Birth preparedness' while the rest 42% knew about the term.

According to the data we collected (Table 1), 84% have identified the hospital for delivery, 75% knew their blood group, 61% of them think that their husband must accompany them during their antenatal visits. 54% had identified the mode of transport in emergency. 33% had identified a potential blood donor who could donate blood to them in emergency.

(Table 2) It was observed that 69% (nearly 2/3rd) of the women had no knowledge or inadequate knowledge about danger signs of pregnancy and 47% had no or inadequate knowledge birth preparedness. It was also observed that only 42% knew about the term 'birth preparedness'.

(Table 3) To look for association between education status of pregnant woman and awareness about danger signs of pregnancy chi-square test was applied. It was observed that, pregnant women who are educated up to secondary level and above are more aware about the danger signs of pregnancy (score 6 and above) compared those who are less educated and the difference was statistically significant.

In our study, women who are adequately and completely knowledgeable about the danger signs encountered less problems during pregnancy compared to those who didn't encounter any problems during their present or past pregnancy.

(Table 4) There was a direct association between education status and birth preparedness of pregnant woman, pregnant women who are educated up to secondary level and above are found to have adequate and complete knowledge of birth preparedness (score >3) compared to those who are less educated and the difference was statistically significant.

Women in their third trimester are more knowledgeable regarding birth preparedness compared to those who were in the first and second trimester, this is because as the pregnancy advance they will be more receptive towards the health advice and are more adequately prepared.

DISCUSSION

Birth preparedness and complication readiness (BPCR) is very essential part of antenatal care. BPCR is the combined responsibility of pregnant mothers, her family and local health care providers. It is very essential for the child survival and safe motherhood.

The mean age of the respondents was 24.2 years (standard deviation, SD 3.64) with nearly equal numbers (37.2% and 37.4 %) in 20-24 years and 25-29 years age-group respectively.[2] In a study conducted in Delhi, by Bhilwar et al, it was observed that mean age of respondents was 24.77 (±3.45 SD) years.[11] Our study results are comparable to a community-based study conducted at 17 villages near Bangalore by Sulekha T et. al, where 73% women were in the age group 20 to 24 yrs.[8] Less number of women in 20-24 years age bracket in our study compared to Sulekha T et. al study could be because, our study was done in urban area where couple usually delay the birth of their first child. Educational status of our study participants was also comparable to Sulekha T et al study where, more than half i.e., 58% had secondary level of education.[8] We found that 95% of participants were educated and remaining 5% were illiterate. The illiteracy rate was much lower in our participants compared to the study conducted by Shukla M et al in Uttar Pradesh, where they have reported the same as 44%.[12]

Overall knowledge of danger signs in pregnancy was found to be 31% in our study, whereas same is 18% in the study conducted by Sulekha T et al. [8] Various other studies conducted across the country reported varying levels of knowledge about danger signs in pregnancy, in a study conducted at Delhi by Acharya A S et al reported 27.8% of awareness level.[2] In another study conducted by Bhilwar M et al reported that 58% were unaware of any danger sign during pregnancy.[11] Similarly, studies conducted at Ganjam block, Odisha and Rural area of Bangalore, Karnataka reported that 73% and 34% of their study partici-

pants were unaware of any danger sign during pregnancy respectively.[16,8]

Knowledge of danger signs in pregnancy in our study is better compared to other studies, which emphasize the importance of mass media like TV, Radio, Newspaper and Internet in creating awareness of at-risk pregnancy in urban areas.

The BPACR practice was found to be 38% and only 4% had identified and arranged a suitable blood donor. Which is very less compared to the study conducted by Vasundara K et al in Hyderabad Telangana, where around 11% of women had identified suitable blood donor proactively.[9] Around 84% of the women in our study had identified the place of delivery, similarly in the study conducted by Gurung et al in Udupi district, India had reported 99% of their study participants had recognized the place for delivery.[10]

We have found direct association between education status and birth preparedness. Studies conducted by Bhilwar et al and Sulekha et al also reported direct positive association between education status and birth preparedness and complication readiness practice.[11,8] In contrast to this no association was reported between education status and birth preparedness in the studies conducted by Akshaya KM et al[13] and other studies conducted worldwide.[14,15] Educated women are more knowledgeable about health and especially about reproductive and child health, which was observed in our study.

In the present study 44% of participants had saved money for the delivery, similarly in a study conducted at South Karnataka, India reported that 50% of their participants had saved money for delivery.[8]

CONCLUSION

Awareness of danger signs in pregnancy was found to be poor, only 31% (less than average of 50%) in our study. Among the BPCAR need for identified blood donor and skilled birth provider was found to be less among all other birth preparedness issues with 33% and 16% respectively. Education status of pregnant woman has significant impact on the awareness of danger signs.

RECOMMENDATION

Knowing the awareness level of danger signs of pregnancy and prompt preparedness by the expecting mothers will help in improving the pregnancy outcomes. So, we recommend the Medical officer incharge of PHC to undertake such surveys and facilitate ASHA to increase her capabilities which can improve the quality of maternal and child health services in their practice area.

LIMITATION OF THE STUDY

Cross sectional study cannot clearly identify all reasons for low awareness of danger signs of pregnancy. so**,** Community based in-depth interviews and focus group discussions are required to understand the problems with worst pregnancy outcomes.

RELEVANCE OF THE STUDY

In view of improving the maternal and child health services to the unorganized sector of the community especially the slum and peri urban slums, the present study is very much relevant and adds strength to the ongoing public health activity.

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