

# Hospital based study on factors affecting birth preparedness in a tertiary care centre

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## Abstract

**Background:** Reducing maternal mortality and morbidity is still a challenge in developing countries. A lot of sociocultural factors play significant role in availing health facilities. The low utilization of maternal health services is frequently analyzed with the Three Delays Model developed by Thaddeus and Maine (1994), which identifies three phases of delay: delay in seeking care, delay in reaching care and delay in receiving adequate care when reaching a health facility. Better knowledge of danger signs means that the predictable elements of the three phases of delay can be anticipated and prepared for with a birth plan for each pregnancy. Birth preparedness and complication readiness (BP/CR) is a process of planning for birth and anticipating actions needed in case of an emergency.

**Methods:** A Cross sectional study was undertaken in the tertiary hospital at HSK Hospital. The participants were women attending the ANC clinic in third trimester and patients who had delivered in our hospital. The total sample size was 171. Data was collected and analysis made after entering to MS Excel sheet.

**Results:** In our study, the first antenatal visit less than 12 weeks is about 80.8 percent. As evident from earlier research, pregnant women receiving four or more ANCs were more likely to have skilled attendance at birth. At least one danger sign can be identified during pregnancy, labour and postpartum period which is corresponding to 29.7%, 60.5% and 52.9%.

**Conclusion:** Antenatal period is the time to sensitize the pregnant lady and the family about birth preparedness and any complications that may lead to maternal morbidity and mortality.

**Keywords:** birth preparedness; maternal morbidity; tertiary care

## Introduction

Despite a global decrease of maternal mortality by 44% in the past two decades, 99% of the global 830 women that die daily from preventable causes related to pregnancy and childbirth still occur in poor and rural communities in developing countries<sup>[1]</sup>. Fortunately, the risk of death from a birth complication can be detected early and averted if a woman attends the minimum four quality antenatal clinic (ANC) visits often referred to as focused antenatal care (FANC)<sup>[2]</sup>.

Three core health sector strategies are identified within the maternal health community as critical for reducing maternal and early neonatal deaths. These include comprehensive reproductive health care; skilled care for all pregnant women, especially during delivery; and emergency obstetric care for all women

and infants with life threatening complications<sup>[3]</sup>.

Antenatal care (ANC) visits constitute one of the few times women in many resource-poor settings seek care for their own health<sup>[4]</sup>, and, represent an important opportunity to help women best prepare for birth, as well as inform them about pregnancy-related complications, and the advantages of skilled delivery care<sup>[5,6]</sup>. Several studies show that women who attend ANC are more likely to seek skilled delivery care<sup>[7-10]</sup>.

Three delays contribute to the high maternal mortality in developing countries: delay in seeking care, delay in reaching care and delay in receiving care<sup>[11]</sup>. Overcoming these delays requires interventions at both the supply and demand sides of health provision<sup>[12]</sup>. Birth preparedness and complication readiness are promoted to reduce these delays so that women

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with pregnancy related life threatening complication receive appropriate care promptly<sup>[13]</sup>. Although the risk-based approach in ANC has not been proven reliable in predicting women likely to develop life threatening conditions, pregnant women are motivated to decrease the risk to their unborn babies.

Better knowledge of danger signs means that the predictable elements of the three phases of delay can be anticipated and prepared for with a birth plan for each pregnancy. Birth preparedness and complication readiness (BP/CR) is a process of planning for birth and anticipating actions needed in case of an emergency<sup>[14]</sup>.

It is hypothesized that implementation of BP/CR concepts that focus on individuals, families and communities could reduce at least the first two phases of delay. An operational BP/CR matrix means prepared health facilities that are able to handle childbirths and complications, thus contributing to a reduction of the third phase of delay.

BP/CR is included in the new World Health Organization (WHO) model for antenatal care as part of antenatal care education. Several countries have adopted this new model to fit the local context<sup>[15-17]</sup>.

WHO model proposes that antenatal care attendance should result in all pregnant women being aware of the need for skilled birth attendance as well as increased knowledge of how and when to access skilled birth attendants.

### Material and Methods

A Cross Sectional Study was done in the Department of OBG, S N Medical College, for a period of two months. Study subjects comprised of women currently pregnant in their second/third trimester and women who had delivered recently, that is, within the last 12 months.

As published data on BPCR in this part of the country were scarce, assuming the prevalence of 50%, 95% confidence level, 7.5% absolute precision, sample size was 171.

After taking informed consent, socio-demographic information like age in years, caste, religion, duration of formal education, occupation, total family income, parity, distance from nearest delivery hub (24 × 7) were collected with a structured questionnaire.

Severe vaginal bleeding, swollen hands/face, blurred vision, convulsions, decreased foetal movements, PV leak were considered as key danger signs of pregnancy. Severe vaginal bleeding, prolonged labor, convulsions, and retained placenta were considered as key danger

signs of labor. Severe vaginal bleeding, foul smelling vaginal discharge, and high fever during first 7 days after childbirth were considered as key danger signs of postpartum period<sup>[18]</sup>. Key danger signs of neonates were convulsion, difficult/fast breathing, very small baby, lethargy/unconsciousness, and unable to suck/drink during first 7 days of life<sup>[19]</sup>.

Data were entered in MS Excel spreadsheet and Data analyzed in SPSS V21. Descriptive statistics were represented with frequencies, percentages. Chi-square test was applied to find significance. P<0.05 was considered as statistically significant.

### Results

In the present study, 29.7% of the women were in age group of 21 to 24 years, 26.7% in the age group of 18 to 20 years, 25% in the age group of 25 to 27 years, 14% between age group of 28 to 30 years, 4.7% who were above 30 years. 86.6% of the women in our study were homemakers and 10.5% were farmers by occupation.

In our study, 30.8% of study participants had more than five years of schooling, 29% more than ten years of schooling, 31.4% of women had completed degree and 7.6% were illiterate. 40% of the women lived in semiurban region, 36.6% of women in rural region and 23% in urban area.

The distribution of participants based on religion, 72.7% were hindus and 27.3% were muslims. 69.2% of women had family size more than five members. 75.6% of the women had four or more antenatal visits. 80.8% of the study participants had first antenatal visit within 12 weeks.

Time taken to travel the distance between home to the hospital was less than 30 minutes in 66% of the study participants. 76% of the study participants had planned about the place of delivery. 88% of women had made arrangements for emergency transport facilities. 66% of women had kept money aside for delivery. 56% of the study participants were of the opinion that a blood donor is needed.

91.7% of women in the age group of 28 to 30 years were able to identify atleast one danger sign during pregnancy. 88.4% of women in the age group of 25 to 27 years were able to identify atleast one danger sign during labour, among them 77.9% were primigravida and 26.3% of gravida 2 and about 50% of gravida 3.

70.6% of women in age group of 25 to 27 years were able to identify atleast one danger sign in postpartum. 55.9% of the primigravida, 84.2% of gravida 2 were able to identify atleast one danger sign in the newborn.

Educational status of the participants was a crucial factor in determining the birth preparedness. Among the participants who had at least five years of schooling were better prepared. Higher the economic status of the family, more women availed antenatal services. With increasing family size, 92.4% of women who had five or more than five members of family had taken measures for arrangement of emergency transport.

## Discussion

Pregnancy and Childbirth is an important phase during a woman's life. Utmost importance is given for healthcare during that period. Women are more vulnerable during this time. The decision making and attending antenatal visits is influenced by the Socio Economic factors and also various cultural factors. Educating the woman comes a long way in preventing maternal morbidity and mortality. Along with the mother there is also the neonate who should be taken care, so that the child grows to be healthy.

BPCR is considered by the world community as an important strategy to avert maternal and perinatal death. The concept of BPCR is yet to spread its root in Indian socio-cultural setting<sup>[20,21]</sup>. Both quantitative and qualitative surveys revealed that birth planning was a neglected issue. Scientific evidences were there to propose first ANC within first trimester in order to make pregnancy safer<sup>[22,23]</sup>.

In our study, the first antenatal visit less than 12 weeks is about 80.8 percent. The corresponding figure in Rewa, north Ethiopia also was far less<sup>[24]</sup>. As evident from earlier research, pregnant women receiving four or more ANCs were more likely to have skilled attendants at birth<sup>[25-27]</sup>. However, only around one-third participants in the study by Mukhopadhyay, et al.: Status of BPCR in Uttar Dinajpur, West Bengal received four or more ANCs. In our study about 75 percent of the women had four or more ANC visits which is comparable to the study conducted in Ethiopia<sup>[28]</sup>. Coverage of three or more ANCs was better than the figures reported in DLHS-3 for Uttar Dinajpur and West Bengal as well as by Agarwal *et al.*

Lack of liquid cash in resource constrained setting and availability of vehicle especially in remotest areas in emergencies are a major hindrance to access skilled care. Therefore, saving money to meet the cost of accessing skilled healthcare and arrangement of a vehicle for emergency transportation are two vital steps in BPCR. However, less than half of the study population had saved money or identified a vehicle for transportation in emergency in study by

Mukhopadhyay et al: Status of BPCR in Uttar Dinajpur, West Bengal<sup>[29]</sup>. Comparable proportion of women in Rewa saved money, but the figures were better in Indore and Burkina Faso. In our study 65.7 percent of the participants saved money for the delivery. Identifying a vehicle beforehand was better in Rewa, Burkina Faso, and Kenya but comparable in Indore.

Knowledge of the danger signs of obstetric complications is the first step to seek timely care at appropriate health facility. In the study by Mukhopadhyay et al, proportion of women aware of at least one key danger sign each of pregnancy, labor, postpartum, and newborn ranged from as low as 12.1% to 37.2%. Condition was far better in all other previous studies. In our study it ranged from 29.7% to 62.2%.

Identification of a blood donor for obstetric emergency did not seem to be an important issue to the respondents. The corresponding figures from north Ethiopia were far less; whereas that of Kenya was much better. In our study about 55.8% of the participants thought identifying blood donor was important.

**Conclusion:** There are not many studies in India about BPCR, and the studies which are done on community based. It is therefore important that more studies in this regard to be done as it directly reflects the healthcare which is utilised. Educational status of the women makes them more receptive of the facilities available and seeking antenatal care. It also helps for involving the family members to get better outcome for both the mother and child.

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