

Full Length Research Paper

Determinants of Birth Preparedness and Complication Readiness Knowledge Among Women in Eastern Nepal

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Birth preparedness and complication readiness (BP/CR) strategy encourage women to be informed of danger signs of obstetric complications and emergencies which will help them to recognize problem and reduce the delay on deciding to seek care, making the care-seeking process more efficient. The objective of this study was to assess the knowledge regarding birth preparedness and complication readiness and its effect on the place of delivery. A descriptive cross sectional study was conducted from November to December, 2012. A total of 93 mothers who gave birth in the last 12 months preceding the survey in Jhorahat VDC of Morang district were interviewed. Data were analyzed using Chi-square test at 0.05 level of significance. Only 45.2% and more than half (58.1%) of the mothers spontaneously mentioned at least three components of BP/CR and three danger signs during pregnancy respectively. Education of mother was significantly associated with knowledge of BP/CR. More than half (58.1%) of the mothers had institutional delivery. Knowledge of BP/CR was associated with place of delivery. Literate mothers were more aware of BP/CR than illiterate. Thus, provision of information, education and communication targeting women, family and the general community on BP/CR are recommended.

Key words: Place of delivery, knowledge of BP/CR, danger signs.

INTRODUCTION

Birth preparedness and complication readiness (BP/CR) is a comprehensive package aimed at promoting timely access to skilled maternal and neonatal services (Markos and Bogale, 2014; Kaso and Addisse, 2014). It includes knowledge of danger signs, planning for a birth attendant and birth location, arranging transportation, identifying a blood donor, and saving money in the case of an obstetric complication (Mbalinda et al., 2014; Urassa and Pembe, 2012).

Birth preparedness has been globally endorsed as an essential component of safe motherhood programs to reduce delays to care-seeking for obstetric emergencies-delay in recognition of problem, delay in seeking care, and delay in receiving care at facility. These delays represent barriers that often result in preventable maternal deaths. The presence of a skilled birth attendant (SBA) at delivery is recognized as essential to preventing maternal mortality (JHPIEGO, 2004b; McPherson et al.,

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2006).

The principle and practice of BP/CR in a third world setting where there is prevailing illiteracy, inefficient infrastructure, poor transport system, and unpredictable access to skilled care provider have the potential of reducing the existing high maternal and neonatal morbidity and mortality rates. BP/CR promotes skilled care for all births and encourages decision making before the onset of labor (Ekabua et al., 2011).

The safe motherhood plan of the Ministry of Health and Population defines a range of complementary interventions to improve maternal and newborn health, one of which is the birth-preparedness package (BPP). The purpose of the package is to encourage pregnant women, their families, and communities to plan for normal pregnancies, deliveries, and postnatal periods and to prepare to deal effectively with emergencies if they occur. The BPP is a demand-creation intervention that promotes key messages and behaviour change via inter-personal communication through community health volunteers (McPherson et al., 2006; DOHS, 2014)

Knowledge on BP/CR improves problem recognition of the problem and reduces the delay in deciding to seek care. It provides information on appropriate sources of care making the care-seeking process more efficient. It also encourages households and communities to set aside money for transport and service fees, avoiding delays in reaching care caused by the search for funds (Ekabua et al., 2011). The majority of pregnant women and their families do not know how to recognize the danger signs of complications and when complications occur they will waste a great deal of time in recognizing the problem, getting organized, getting money, finding transport and reaching the appropriate referral facility (Moore et al., 2002). With the assumption that "every pregnancy faces risks", women should be made aware of danger signs of obstetric complications during pregnancy, delivery and the postpartum. The knowledge will ultimately empower them and their families to make prompt decisions to seek care from skilled birth attendants (Kabakyenga et al., 2011). In this context, it is necessary to evaluate the knowledge on BP/CR and obstetric danger signs.

The objective of this study was to determine knowledge regarding birth preparedness and complication readiness of Eastern Nepalese mothers and to find out the association between knowledge regarding birth preparedness and complication readiness and place of delivery.

METHODOLOGY

A descriptive cross sectional study was conducted from November to December 2012 in Jhorahat Village Development Committee (VDC) of Morang district which was selected randomly. A sampling frame was made enlisting all eligible subjects, that is, mothers who gave birth in the last one year preceding the data collection period. Total mothers meeting the inclusion criteria were 93. So, all the

mothers residing in Jhorahat VDC were taken as sample. Ethical approval was taken from Institutional Ethical Review Board of BP Koirala Institute of Health Sciences, Dharan. Permission from the office of VDC was taken before collecting the data. Informed verbal consent was obtained from each mother after explaining the objectives of the study. Pretested semi structured self-developed interview schedule was used to collect the data. All the mothers were visited door to door and interviewed face to face by investigator herself. All information obtained was kept confidential.

Knowledge regarding birth preparedness and complication readiness (categorized as adequate and inadequate) was taken as dependent variable. In this study, mothers were classified as having adequate knowledge if they were able to answer at least three components of BP/CR and at least three danger signs during pregnancy. Data were collected including several independent variables; age, religion, caste (categorized on the basis of Nepal government system), education of mother and spouse, occupation of mother and spouse, per capita income, parity, number of antenatal visits and place of delivery (categorized as institution and home).

Data were cleaned and entered in Microsoft Excel 2007 sheet for preparing master chart. Entered data were verified and converted in Statistical Package for Social Sciences (SPSS) version 16 for statistical analysis. Descriptive statistics were presented in frequencies, percentage, mean, median and standard deviation. Bivariate analysis (Chi-square test) was used to test the significant association between independent and dependent variables. The significance level was set at $p=0.05$.

RESULTS

Table 1 presents the socio-demographic profile of mothers which showed that 88.2% were aged 20-34 years with mean age 25.23; more than half (54.8%) were Dalit; 31.2% were illiterate; 91.4% were housewife; 88.2% were living below poverty line.

Socio-demographic profile of spouse

Secondary level of education was obtained by 31.2% of the spouse. Almost half (48.4%) of the spouse were daily wage laborers.

Obstetric characteristics

More than half (58.1%) of the mothers were multiparous with mean parity of 1.86 (SD=0.92). Almost all (98.9%) mothers had attended ANC at least once. Among them 76.3% had attended at least four ANC visit. Only 58.1% of the mothers delivered in institution. Majority (88.2%) had spontaneous vaginal delivery.

Knowledge of mother about BP/CR

Table 2 shows that saving of money, clothes for mother and baby and arrangement of transportation were mentioned by 61.3, 52.7 and 49.5% of the mothers, respectively. Only 45.2% of the mothers spontaneously mentioned at least three components of BP/CR.

Table 1. Distribution of socio-demographic profile of mothers.

Variables	Frequency	Percentage
Age group in years		
<19	7	7.5
20-34	82	88.2
≥35	4	4.3
Religion		
Hindu	87	93.5
Christian	6	6.5
Caste		
Dalit	51	54.8
Disadvantaged Janajatis	25	26.9
Disadvantaged non-dalit Terai caste	3	3.2
Relatively advantaged Janajatis	2	2.2
Upper caste	12	12.9
Education		
Illiterate	29	31.2
Read and write	15	16.1
Primary level	13	14.0
Secondary level	27	29.0
Higher secondary and above	9	9.7
Occupation		
Housewife	85	91.4
Service	4	4.3
Business	4	4.3

n=93

Table 2. Birth preparedness and complication readiness mentioned by mothers.

Birth preparedness and complication readiness*	n (%)
Clothes for both mother and baby	49 (52.7)
Selection of institution for delivery	4 (4.3)
Arrangement of transportation	46 (49.5)
Collection/saving of money	57 (61.3)
Arrangement of blood	5 (5.4)
Arrangement of food stuffs	4 (4.3)

*Multiple response.

Knowledge of mother about danger signs during pregnancy

Table 3 illustrates that severe abdominal pain, vaginal bleeding and passage of foul smelling discharge were mentioned as danger signs during pregnancy by 61.3, 60.2 and 44.1 of the mothers, respectively. More than

half (58.1%) of the mothers spontaneously mentioned at least three danger signs during pregnancy.

Table 4 shows that if the respondents were able to answer any of the three components then it was categorized as adequate if they were not able to answer any of the three components then it was categorized as inadequate. Education of the mother was one of the

Table 3. Danger signs during pregnancy mentioned by mothers.

Danger signs during pregnancy*	n (%)
Severe headache	32 (34.4)
Vaginal bleeding	56 (60.2)
Blurring of vision	3 (3.2)
Severe abdominal pain	57 (61.3)
Leaking/Passage of foul smelling discharge	41 (44.1)
Sluggish or absent fetal movement	8 (8.6)

*Multiple response.

Table 4. Association between knowledge regarding BP/CR and socio-demographic characteristics.

Variables	BP/CR		p value
	Adequate n=42 (%)	Inadequate n=51 (%)	
Age group in years			
≤19	2 (28.6)	5 (71.41)	0.451
>19	40 (46.5)	46 (53.5)	
Religion			
Hindu	40 (46.0)	47 (54.0)	0.686
Christian	2 (33.3)	4 (66.7)	
Caste			
Upper caste	6 (50.0)	6 (50.0)	0.718
Others	36 (44.4)	45 (55.6)	
Education			
Illiterate	7 (24.1)	22 (75.9)	0.006*
Literate	35 (54.7)	29 (45.3)	
Occupation			
Housewife	37 (43.5)	48 (56.5)	0.451
Others	5 (62.5)	3 (37.5)	

*Significant p value. n=93.

significant factors ($p=0.006$) which affect the knowledge regarding birth preparedness and complication readiness.

Association between knowledge regarding danger signs during pregnancy and socio-demographic variables

It is also important for a woman to know about abnormal pregnancy besides normal pregnancy. There are some

important danger signs during pregnancy which point towards underlying abnormalities. If the respondents were able to answer any of the three components then it was categorized as adequate if they were not able to answer any of the three components then it was categorized as inadequate. Caste and education of the mothers were found to be significantly associated with the adequacy of knowledge regarding danger signs during pregnancy with $p=0.011$ and $p=0.008$, respectively.

Table 5 shows that there was a significant association

Table 5. Association between knowledge regarding BP/CR and danger signs during pregnancy with place of delivery.

Characteristics	Place of birth		p value
	Home	Institution	
	n=39 (%)	n=54 (%)	
Birth preparedness and complication readiness			
Inadequate	29 (56.9)	22 (43.1)	0.001*
Adequate	10 (23.8)	32 (76.2)	
Danger signs during pregnancy			
Inadequate	24 (61.5)	15 (38.5)	0.001*
Adequate	15 (27.8)	39 (72.2)	

*Significant p value.

between knowledge of BP/CR and place of delivery. Those mothers who had adequate knowledge of BP/CR were more likely to deliver at institution.

DISCUSSION

Age, parity and number of ANC visits were not significant factors in having knowledge of BP/CR and danger signs during pregnancy which is contradictory to the finding in the study done in rural Tanzania (Pembe et al., 2009). This study shows association between education of mothers and knowledge regarding BP/CR and danger signs during pregnancy which is similar to the study done by Pembe et al. (2009). Kabakyenga et al. (2011) also reported that high level of education modify the relationships between knowledge of key dangers signs and birth preparedness in a synergistic direction. This finding suggests the educated are able to better understand the health messages acquired from various sources. Caste was also a significant factor which affects the knowledge of danger signs during pregnancy. This study shows that more than half (54.8%) of the mothers were Dalit. Dalits are more likely to be deprived of education due to the economic status, reducing their level of understanding. This study revealed that occupation was not associated with the knowledge of BP/CR and danger signs during pregnancy which is contradictory to the finding of the study done in Uganda (Mbalinda et al., 2014). As compared to housewife, government employee women were about four times more likely to mention at least three danger signs during labour. This could be explained by the fact that, a woman who has her own income might be autonomous in seeking better health care than housewife who does not have her own income.

Knowledge regarding danger signs of obstetric complications is the first step in the appropriate and timely referral for essential obstetric care (JHPEIGO, 2004a, b). Knowledge of BP/CR and danger signs during pregnancy was associated with place of delivery. Tura et

al. (2014) concluded that women who knew three or more key danger signs during labor were more likely to use skilled care as compared to those who did not know any key danger sign (OR = 1.59; 95%CI: 1.05, 2.43). The study done in Tanzania stated that low awareness may be a cause of failure to recognize the complication when it occurs; thus, delaying the decisions to seek care (Urassa and Pembe, 2012)

Conclusion

Less than half of the mothers had adequate knowledge regarding BP/CR. Women who were literate were more aware of BP/CR and danger signs during pregnancy than illiterate. Education on BP/CR and danger signs is an important factor in increasing utilization of institutional delivery. Delivery at home and low awareness of danger signs are serious bottleneck in the reduction of maternal mortality as home delivery is associated with more delay to get appropriate care when a complication arises. Health professional should give due emphasis on BP/CR to improve the access to skilled obstetric care. Thus, provision of information, education and communication targeting women, family and the general community on BP/CR and obstetric danger signs is recommended.

Conflict of interest

The authors declare that they have no conflict of interests.

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