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Awareness on birth preparedness and complications readiness among woman with term pregnancy (>36 weeks) attending antenatal clinic of Patan Hospital

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Abstract
Background: *Birth preparedness and complication readiness is a key component of safe motherhood programs that can reduce the number of maternal and neonatal morbidity and mortality. Objective of this study was to assess the awareness on birth preparedness and complications readiness among women with term pregnancy (>36 weeks).*
Materials and Methods:*A descriptive cross sectional study design was used to assess the level of awareness regarding birth preparedness and complication readiness among women attending antenatal OPD of Patan hospital, Lalitpur.Nepal. Total 332 antenatal mothers who completed 36 week of gestation were selected using non probability purposive sampling technique. Data was analyzed by descriptive analysis frequency, percentage, mean, standard deviation and inferential statistics by chi-square.*
Results: *The mean age of antenatal mother was 27.4year.Majority of respondents' were secondary level of education, more than half of the respondents ware primipara and nearly three fifth had completed ≥4 ANC visit. The study found out that 37.3% respondent had good knowledge, 10.2% had moderate knowledge and 52.4% had poor knowledge regarding birth preparedness and complication readiness among respondents. There was no association between socio demographic variable and obstetric characteristics with awareness regarding birth preparedness and complications readiness.*
Conclusions: *This study only (37.3% of respondents had good knowledge regarding BP/CR. Low awareness of BP/CR in this study calls for strengthened efforts from policymakers and healthcare providers to design effective programs geared towards educating women onthe importance of BP/CR that will reduce the delays of seeking care, hence reducing maternal and neonatal deaths. Thus provision of information education and communication to targeting women, family and the general community people on important of BPACR*
Key Words: *Awareness, birth preparedness and complication readiness, women with term pregnancy (>36 weeks).*

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I. Introduction

Birth preparedness and complications readiness (BPACR) is the process of planning for normal birth and anticipating the actions needed in case of an emergency. A birth preparedness plan includes identification of skilled birth attendants; location of the closest appropriate care facility; funds for birth-related emergency expenses; transportation to a health facility in case of emergency; and identification of compatible blood donors[1,2]An estimated 303 000 maternal deaths will occur globally in 2015, The global lifetime maternal mortality is approximately 1 in 180 ,developing regions is 239, which is roughly 20 times higher than that of developed regions, where it is just 12 for 2015[3].

The WHO estimates that 300 million women in the developing world suffer from short- or long-term morbidities brought about by pregnancy and childbirth.[4]Government of Nepal is adopting major strategies by promoting birth preparedness and complication readiness by promoting awareness on saving funds, transportation options, and arrangement of blood supplies to reduce the risks during pregnancy and childbirth, and address factors associated with mortality and morbidity.[5]Study on the knowledge and practice regarding birth preparedness and complication readiness (BPACR) among antenatal mothers shows that only50% had moderate knowledge and 83.33% had poor practice of preparation for birth and its complication.[6]

Birth preparedness and complications readiness (BPACR) is one of the key interventions to promote optimal utilization of health services and promote maternal & neonatal health status. However, different studies conducted in Nepal found different results regarding birth preparedness and complication readiness. For instance; studies conducted in eastern region and western region found low level of birth preparedness [7, 8]. But another study conducted in western region found that 65% of respondents had high level of birth preparedness.[8]similarly, in a secondary analysis of NDHS data of 2011 it was found that only 32% of women were prepared for their birth[9].Regarding BPACR only 45.2% of respondents mentioned only three components[7].However, to be ready with BPACR pregnant women should be aware of all six components. BPACR 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.

II. Material And Methods

A descriptive cross sectional study design was used to assess the level of awareness regarding birth preparedness and complication readiness among women attending antenatal OPD of Patan hospital, Lalitpur.Nepal

Study duration

This study was conducted from August to May 2020

Study population

The target population waspregnant women who were at more than 36weeks of pregnancy attending antenatal clinic of semi government hospital in lalitpurdistrict,Nepal

Inclusion criteria:

All antenatal woman of more than 36 weeks of gestation attending antenatal OPD of Patan Hospital and willing to participate in the study were included.

Exclusion criteria:

Women attending ANC visit for first time

Sampling Technique:

The non-probability purposive sampling technique was used to select the study population. Therefore, any pregnant woman who was eligible and willing to participate was included. The sample size was obtained using the Cochran's formula

Where n = sample size, 95% confidence level with 5% allowable error (e).

Cochran's formula

$N_0 = \frac{z^2pq}{e^2}$

P= 0.71

Q= 1-p

E2=0.05

Z=(1.96)

Q= 1-0.71=0.29$N_0 = \frac{z^2pq}{e^2}$

$N_0= \frac{(1.96)^2x0.71x0.29}{(0.05)^2}$

$N_0= \frac{0.790656}{0.0025}$

N_0= 316.26 (total316 antenatal mothers)

Total sample size 316

Add 5% allowable error =332,

So total sample size will be 332[6]

Sample size was 332 women.

Formal permission was taken from the concern department before data collection. The purpose of the study was explained and written consent was taken from each respondent before data collection. Anonymity was assured through mentioning respondents as code number and hiding the identification of respondents' .Confidentiality was maintained by assuring that provided information was used only for study purpose. The proposal was approved from IRC of Patan Academy of Health Sciences, (PAHS), The data was collected after ethical approval from IRC, PAHS.

Data Collection Instrument

The development of research instrument was based on literature review to meet the objective of the study. The data was collected by means of semi- structured questionnaire using face to face interview schedule.

A data collection instrument consists of three parts:

Part I socio-demographic information (age and education) of antenatal women. Which consist of 2 questions.
Part II Obstetrical characteristics of antenatal women. Which consist of 4questions.
Part III Knowledge related questions regarding birth preparedness and complications which consists of total 6 multi response questions.
For knowledge scoring on BPACR each score of 'one' was given for each response and a score 'zero' was given for not response. Total score ranges from o to 6 the knowledge was categorized in three categories.
Poor knowledge: (score<4)
Moderate knowledge: (score 4)
Good knowledge: (score >4)
The women were grouped as "prepared" and "unprepared". Women were considered "prepared" if score more than 4 and unprepared if score 4 or less than 4 of these six aspects of BPCR (Arrangement for transportation ,Identifying the decision maker ,Identification of compatible blood donor ,Identify labor& birth companion(Supporting person),Saved funds for birth/complications and location of the closest facility of birth)[10].
The content validity of the instrument was established by seeking opinion of the content expert. Pre-testing among 10% of the total size that similar women meeting the inclusion criteria in a similar setting. Necessary modifications in questions were done accordingly.
All the data were checked immediate for completeness. The data was analyzed using SPSS 16 version. Descriptive statistics (frequency, percentage, standard deviation and mean) was used to describe the demographic data, danger sign during pregnancy,& postnatal period.Infrential statistics(chi-square test and Fisher's exact test)was used to find out the association between demographic variables(age, education, no of ANC visit and parity) and awareness on birth preparedness and complications readiness.

III. Result

Part I Socio Demographic Characteristics of respondents

Table 1showthat, out of 332 respondents, majority (64.5%)of respondents belonged to age 21-29 years of age. Majority (60.2%) of the respondents were passed secondarylevel of education.

Table 1. Socio Demographic Characteristics

N=332

Characteristic	Frequency	Percentage
Age		
≤ 20 Year	19	5.7
21-29 Year	214	64.5
≥30 Year Mean age 27.4 SD ±4.5	99	29.8
Education		
Read and Write	4	1.2
Primary Education	16	4.8
Secondary Education	200	60.2
Above Secondary	112	33.7

Part II obstetric Characteristics of respondents

More than half of the respondents were primi gravid and majority 70.5% of respondents attended ANC visit more than four times.

Table 2. Respondents obstetric Characteristics

N=332

Obstetrical characteristics		
Parity	**Frequency**	**Percentage**
Primi Parity	199	59.9
Multi Parity	133	40.0
ANC visit		
≤ 4 time visit	98	29.5
≥ 4time visit	234	70.5

Part III Awareness regarding birth preparedness and complications readiness

Table 3 shows that nearly 80% respondents aware on saved fund for birth and complication management. Only 37.9% of respondents aware on identifying the decision maker. Similarly53.6% and45.2 % of respondents aware on location of the closest facility of birth and identify labor& birth companion respectively. More than three fourth (77.4%) of respondents aware on arrangement for transportation and more than two third (65.1%) of respondents aware on identification of compatible blood donor.

Table3. Awareness on components of birth preparedness and complications readiness

N=332

Components of BPCR	Yes		NO	
	Frequency	(%)	Frequency	(%)
Saved funds for birth/complications	263	79.2	69	20.8
Arrangement for transportation	257	77.4	75	22.6
Identification of compatible blood donor	216	65.1	116	34.9
Location of the closest facility of birth	178	53.6	154	46.4
Identify labor& birth companion	150	45.2	182	54.8
Identifying the decision maker	126	37.9	206	62.0

Table 4 shows that majority (87.7%) of the respondents aware on visualize blood from vagina(PV bleeding) is danger sign for pregnancy. More than three fifth (67.5%)of respondents and more than half (58.7%) of respondents aware on water leakage from vagina (leaking from vagina) and less than 10 times featal movement per day as a danger sign for pregnancy respectively, only 31.3% aware for shaking body (convulsion) is danger sign for pregnancy. More than half (52.7%) of respondents have no aware on high temperature is danger sign during pregnancy. similarly more than three fifth (65.1%) and (63.3%) of respondents have no aware on swollen hand/feet/face and blurred vision is a danger sign for pregnancy respectively.

Table 4. Awarness on danger sign during pregnancy

N=332

Danger signs during pregnancy	Yes		No	
	Frequency	(%)	Frequency	(%)
Visualize blood from the vagina	291	87.7	41	12.3
Water leakage from vagina	224	67.5	108	32.5
Less than 10 times fetal movement per day	195	58.7	137	41.3
Temperature more than 100 F	157	47.3	175	52.7
Swollen hand/feet/face	116	34.9	216	65.1
Blurred vision	122	36.7	210	63.3
Shaking of body	104	31.3	228	68.7

Table 5 shows that almost all (94.6%) of respondents aware on cloth for newborn should bring to health facility for birthand similarly 87.3% of respondents know that cash for payment should bring to health facility for birth. Nearly one third (29.5%) of respondents do not know that antenatal visit card should bring to health facility for birth.

Table 5. Awareness on materials that should bring to health facility for birth

N=332

Material for birth	Yes		No	
	Frequency	(%)	Frequency	(%)
Required cloth for newborn	314	94.6	18	5.4
Required cloth for mother	302	91.0	30	9.0
Cash for payment	290	87.3	42	12.7
Document of antenatal visit	234	70.5	98	29.5

Table 6 shows as p-valueis greater than level of significance=0.05, so there is no significant association betweendemographic and obstetric characteristics with level of awareness in BPCR

Table 6. Asssociation between demographic variables/ obstetric characteristics and level of awareness in BPCR

N=332

Demographic Variables/obstetrical characteristics	Level of Awareness in BPCR				p-value
	Poor	Moderate	Good	Total	
	N (%)	N (%)	N (%)	N (%)	
Age					
≤ 20 Year	9 (5.1)	1 (2.9)	9 (7.2)	19 (5.7)	0.688
21-29 Year	113 (64.9)	2 5(73.5)	76(61.2)	214(64.4)	
≥ 30 Year **Mean age27.4 SD ±4.54**	52(29.8)	8(23.5)	39(31.4)	99(29.8)	
Education					
Read and Write	1(0.6)	1(2.9)	2(1.6)	4(1.2)	0.235
Primary Education	12(6.9)	0(0)	4(3.2)	16(4.8)	
Secondary Education	103(59.2)	25(73.5)	72(58.1)	200(6.2)	
Above Secondary	58(33.3)	8(23.5)	46(37.1)	112(33.7)	
	ANC visit				
≤ 4 time ANC visit	54(31.0)	15(44.1)	29(23.3)	98(29.5)	0.052
> 4 time ANC visit	120(69.0)	19(55.9)	95(76.6)	234(70.5)	
Gravity					
Primi Gravid	102(58.6)	21(61.7)	76(61.2)	199(59.9)	0.875
Multi Gravid	72(41.3)	13(38.2)	48(38.7)	133(40.0)	

Table 7shows the level of knowledge regarding birth preparedness and complications readiness. The result indicate that more than half (52.4%) of respondents have poor knowledge,few (10.2%)of respondents have moderate knowledge. Only 37.3% of respondents have good knowledge (score>4) are 'prepared' for birth preparedness and complications readiness

Table 7. Level of awareness on birth preparedness and complications readiness

N=332

Level of Awareness in BPCR	Frequency	Percentage
Poor knowledge	174	52.4
Moderate knowledge	34	10.2
Goodknowledge	124	37.3

IV. Discussion

This is a hospital based cross-sectional study conducted to assess awareness regarding birth preparedness and complication readiness among women attending antenatal OPD. Total 332 women were interviewed, mean age was 27.4 years. Three fifth (60.2%) of the respondents had received secondary education, more than half (59.95%) of the respondents were primi Para and nearly three fifth(70.5%) had completed ≥4 ANC visit. The present study found out that 37.3% respondent had good knowledge, 10.2% had moderate knowledge and 52.4% had poor knowledge regarding birth preparedness and complication readiness. Thisfinding is similar to the study done in Birgunj, Nepal in which 21.6% had adequate knowledge, 50.0% had moderate and 28.3% had inadequate knowledge on birth preparedness and complication readiness [6]. Similarities in result might be due to similar characteristics of respondents and setting.

In this present study ,there is no significant difference in socio demographic variable / obstetric characteristics with level of awareness on birth preparedness and complications readiness among antenatal women. Contrast to this finding of study conducted in eastern part of Nepal found education of the mother was one of the significant factors which affect the knowledge regarding birth preparedness and complication

readiness [7]. The variation in finding might be due to the difference in the educational level of the respondents. Similar study done in Biratnagar, Nepal also showed contrast result where gravidaof mother wassignificantly associated with BPCR [11].

WHO identified Birth Preparedness and Complication Readiness (BPCR) as a key component of safe motherhood programmes and a comprehensive strategy is aimed at reducing delays around care-seeking, reaching and receiving care during birth, and promoting skilled care at delivery and in the immediate postnatal period[3]In this study, regarding knowledge on components of BPCR, the present study noted that saving funds for birth complication,arrangement for transportation, identification of compatible blood donor and identification of closest facility for birth were reported by (79.2%), (77.4%), (65.1%) and (53.6%) respectively. This findings are supported with a similar study conducted in Biratnagar, Nepal,which observed knowledge of mother on BPCR were saving money (91.3%), identification of place of delivery (78.7%), identify mode of transportation and arranging blood donor (34.7%)[11] . These similarities could be due to the resemblance in the study setting as both studies were conducted in urban setting where women are more educated and usually have better health information; they also have access to health services. The study conducted inlekhnath Municipality ,Pokharadisclosed high knowledge on component of BPACR were saving fund for birth complications, arrangement for transportation, identification of compatible blood donor and identification of closest facility for birth were reported (98.0%),(91.3%),(69.7%)and(88.4%) respectively. High knowledge shown in this study finding might be due to the difference in study populationas this study wasdone among postnatal mothersin community setting[12]. Likewise, another study conducted in Nigeria showed higher knowledge level wheremajority of the respondents have identified place of delivery (94.4%), transportation arrangement in advance (89.3%), saving money towards the delivery (92.4%) and (60.8%) arrangement for blood donor[13].

However, the result of this study was found to be higher than a study carried out in Morang District, Nepal which revealed that the knowledge on components of BPCR were saving of money, arrangement of transportation, arrangement of blood and selection of institution for deliverywere (61.3%), (49.5%), (5.4%) and (4.3%) respectively[7].This disparity in result might be due to variation in study setting and difference in educational status of women. As the present study was conducted in a tertiary level hospital, participants came from urban area and they were more likely to have access to information, media, and health care services than those women living in rural areas. Furthermore, this discrepancy might have resulted due to difference in socio-demographic characteristics of the respondents.

Knowledge about recognition of obstetric danger signs is very essential for mothers and their newborns, as it reduces delays associated with care-seeking for obstetric emergencies that contribute to prevent the majority of maternal and neonatal deaths. The awareness of respondents in this study about danger signs during pregnancywas majority (87.7%) who were aware that bleeding from vagina (PV bleeding)is danger sign for pregnancy. More than three fifth (67.5%)of respondents aware on water leakage from vagina and more than half (58.7%) of respondents were aware on less than 10 times fetal movement per day as a danger sign for pregnancy , only 31.3% aware for shaking body (convulsion) as a danger sign for pregnancy. Nearly half (47.3%) of respondents were aware about high temperature as danger sign during pregnancy. Only (34.9 %) and (36.7%)of respondents were aware that swollen hand/feet/face and blurred vision were danger sign for pregnancy respectively.This finding is higher than the study conducted in rural Government Medical College, Ambajogai District, India, in which mother mentioned reduced fetal movement (56%), severe vaginal bleeding (30%) and leakage from vagina (30%)[14]. Contrast with present study findings another study done in Bamenda health district,Cameroonrevealed respondents were aware that vaginal bleeding (73.9%),high fever (21.2%),abnormal
fatalmovement(17.4%),leaking(15.7%),swollenhands/face/feet(6.7%),convulsion(5.2%),blurred
vision(0.9%),and severe weakness(6.1%) were danger signs during pregnancy[10]. Differences in the educational status, socioeconomic status and urban setting of the study could be the reasons for varied result.Comparable results were seen in a study done among Antenatal women in Vijra hospital Thailand whichshows that women were aware that vaginal bleeding (74.6%), swollen hand/face (68.9%), and Blurred vision (68.9%) were danger signs of Pregnancy[15].Our findings are in agreement with other studiesdone in Karnataka India and Northern Ethiopia where women were aware regarding excessive vaginal bleeding as danger sign of pregnancy(67.1%) and (72.6%) respectively[16,17].

V. Conclusion

In the present study, only one third of respondent had good knowledge, few respondents had moderate knowledge and more than half of the respondents had poor knowledge regarding birth preparedness and complication readiness among respondents. There was no association between socio demographic variable and obstetric characteristics with awareness regarding BPCR.The result can be concluded that the respondents are unprepared regarding BPCR.Poor awareness and unprepared of BP/CR in

this study calls for strengthened efforts from healthcare providers to design effective programs geared towards educating women onthe importance of BP/CR that will reduce the delays of seeking care, hence reducing maternal and neonatal deaths

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