



Original Article

Knowledge Regarding Obstetric Danger Signs Among Antenatal Mothers Attending A Tertiary Level Hospital

Abstract:

Introduction: Pregnancy is a normal physiological process in life of women but many of child-waiting females face a tragic death as a result of complications during or following pregnancy and childbirth.

Objectives: The objective of this study was to assess knowledge regarding obstetric danger signs among antenatal mothers attending a tertiary level hospital.

Methods and Materials: Descriptive cross sectional design was used to find out the knowledge regarding obstetric danger signs among antenatal mothers. The population of the study comprised of pregnant women of reproductive age group (15–49 years old); and were attending in antenatal OPD for antenatal checkup. Non-probability, purposive sampling technique was used and face to face interview schedule was adopted. Total 252 mothers were interviewed from December 2 to 24, 2014, and data had been processed by SPSS 20:00 version then analyzed using descriptive as well as inferential statistic.

Results: The study revealed that 96 % (242) of respondents had heard about some danger signs during pregnancy, labour and postpartum period. Fifty two percent had moderate knowledge, 44.4% had inadequate knowledge and remaining had adequate knowledge about some danger signs during pregnancy, labour and postpartum period. The study had also shown that there is significant association between overall knowledge on obstetric danger signs and age, gravida, number of ANC visit of present pregnancy and occupation of respondents (p -value < 0.05) but there is no significant association between educational status, age of first pregnancy and age at marriage of respondents (p -value > 0.05)

Conclusion: This study shows that majority of the respondents had heard about obstetric danger signs of mothers and baby but only few respondents had adequate knowledge and majority had a moderate knowledge and knew about birth preparedness and complications readiness.

Key Words: Knowledge, Obstetric danger signs, Antenatal mother, Birth Preparedness, Complication readiness.

Tara Kumari Acharya¹, Ambika Poudel²

¹ Lecturer, Om Health Campus, Kathmandu Nepal

² Professor, Lalitpur Nursing Campus, Sanepa, Lalitpur, Nepal

Corresponding Author:

Tara Kumari Acharya

Email: tara_acharya6@yahoo.com

© 2016 IJNRP All rights reserved.

Introduction

In developing countries, conditions related to pregnancy and childbirth constitute the second leading causes (after HIV/AIDS) of death among women of reproductive age. Every day about 800 women die around world on ground of various such complications, which emerge during pregnancy.¹

Rates of obstetric complications were high in central Nepal.^{2,3} Community based descriptive study of Rautahat district showed that only 11% respondents had knowledge about 5 danger signs.⁴

In Nepal maternal mortality rate (281/ 100,000) was significantly high due to life threatening obstetric complications⁵ which could be prevented if women are made aware about and able to identify obstetric danger signs. Hence, this study is designed and intended to find out the knowledge regarding obstetric danger signs among antenatal mothers, which helps to plan to provide information and education to mothers and families to prevent obstetric complications and maternal and neonatal death.

Methodology

Descriptive cross sectional design was used to find out the knowledge regarding obstetric danger signs among antenatal mothers in Antenatal OPD of T. U. Teaching Hospital Kathmandu, Nepal. The population of the study comprised of pregnant women of reproductive age group (15–49 years old); and were attending in antenatal OPD for antenatal check up and reproductive age pregnant mothers who belonged to health related field (FCHV, ANM, CMA, HA, Nurse, Doctors) were not included in the study. Non-probability, purposive sampling technique was used and face to face interview schedule was adopted with 252 respondents. Standardized tools, which were developed by the Maternal Neonatal Program of JHPIEGO,

an affiliate of John Hopkins University were adopted and some modification were done with accordance and as per need. Instrument was divided into two parts; socio-demographic characteristics and knowledge related information. Age, Education, Ethnicity, Religion Occupation, Economic status, Number of ANC visit and Gravida/ Parity were taken as independent variables and knowledge regarding obstetric danger signs as a dependent variables. Pretesting was carried in the same setting among ten percent of similar group characteristics respondents. According to feedback of the pretest, some modification was done for finalization and validation of the questions. Each respondents took 20 - 25 minutes to complete the questionnaires. Approximately 12/13 respondents were interviewed per day(morning and evening).

Data were checked, organized and reviewed for completeness and accuracy. After conformation of completeness and accuracy, they were coded and entered in SPSS 20:00 version statistical software. Before further analysis, data related to knowledge were confirmed for normality using shapiro - wilk test. For knowledge score, p - value of shapiro -wilks tests was obtained less than 0.05 at 5% significance level. Hence knowledge score violates the assumption of normality. So researcher used non- parametric inferential statistics. Descriptive statistics such as frequency, percentage, mean were used. Likelihood Ratio test was used to find out the association between selected socio-demographic variables with knowledge regarding obstetric danger signs.

The instruments had total 45 questions but question includes the multiple response questions so all together with knowledge related questions were 70. Score 1 was given for each right answer and 0 was given for wrong answer and for no response. The question which had more than one right answer, each right answer was given a score of one.

Knowledge of respondent were categorized in three levels as follows:

Level of knowledge	Score
Inadequate knowledge	Below 50%
Moderate knowledge	50% - 75%.
Adequate knowledge	More than 75%

Result

The mean age of respondents were 25.35 years and 234 (92.9%) of them belonged to age group of 20-34 years and 85 (34.3%) respondents had achieved higher secondary education. More than half of the respondents 155 (61.5%) were home makers and 46 (18.3%) were engaged in services and 103 (40.9%) were Brahmin and 231(91.7%) respondents were Hindu by religion. Ninety percent of respondents got married between the age 15 - < 25 years of life and 80.1% became pregnant before 25 years of age and 59.9% respondent were primigravida. More than half of the respondents (63.9%) got ANC services for present pregnancy from hospital up to four times and only 3.6% visited nine times and more as well if needed. Majority of respondents (97.2%) could reach to health centre about in less than half an hour and 92% could take decision for health check-up by self or in own conscience. Almost all of the respondents (99.2%) mentioned hospital as the safest place for delivery.

Table 1: Knowledge on Sources of Information and Danger Signs during Pregnancy, Delivery and Postpartum Period

Characteristics	f	%
Danger sign during pregnancy, during delivery and postpartum period (n-252)		
Yes	242	96.0
No	10	4.0
Source of information *(n-242)		
Medias	169	70.1
Health personnel	97	40.2
Family /Friends / Neighbours	80	33.2
FCHV	4	1.7

Multiple responses*

Table 1 shows that information about danger signs and sources of information on danger signs during pregnancy, delivery and postpartum period. 96% respondents had knowledge about possible danger signs and 70.1 % of the respondents got information from medias. Only 40.2% of the respondent obtained the information from health personnel.

Table 2: Knowledge on Danger Signs during Pregnancy and Actions Taken if Danger Signs Occurred during Pregnancy n=242

Characteristics	f	%
Danger sign during pregnancy*		
Vaginal bleeding	231	95.5
Loss of fetal movement	160	66.1
Foul vaginal discharge	159	65.7
Lower abdominal pain	156	64.5
Swollen hands/face	149	61.6
Severe headache	82	33.9
Severe vomiting	80	33.1
Blurred vision	41	16.9
Water breaks without labour	31	12.8
Fits / convulsion	30	12.4
Others **	26	10.7
Pregnant woman die from any problems		
Yes	237	97.9
No	3	1.2
Don't know	2	0.8
Action taken		
Immediately go to the health institution	240	99.2
Traditional healer	2	0.8

Multiple responses*

Anorexia, High BP, Constipation, Allergy, Fever, Burning micturition**

Table 2 shows that among 242 respondents, 95.5 % of the respondents reported that they know the vaginal bleeding as a common danger sign during pregnancy, 66.1% reported loss

of fetal movement, 65.7% reported foul smelling vaginal discharge, 64.5% reported lower abdominal pain and 61.6% reported swollen hand and face as a danger sign during pregnancy. Question were asked regarding their understanding on causes of death of pregnant women due to danger signs and actions to be taken immediately if danger signs occurred during pregnancy. Almost all the respondents 97.9% agreed and 99% of respondents reported immediate reach to the health center is necessary in time of such danger signs.

Table 3: Knowledge on Danger Signs during Labour n=242

Characteristics	f	%
Danger signs during labour *		
Retained placenta	169	72.8
Severe bleeding during delivery	164	70.7
Footling	141	60.8
Cord Prolapsed	129	55.6
Hand prolapsed	123	53.0
Severe headache	22	9.5
Fit/ Convulsions	16	6.9
Blurred vision	16	6.9
Prolonged labour (> 12 hours)	15	6.5
Others	3	1.3
Woman die from any of these problems		
Yes	233	96.3
Don't know	9	3.7

Multiple responses *

Table 3 shows that out of 242 respondents, majority of them 72.8% stated retained placenta and 70.7% of them stated severe bleeding as sign of danger during delivery. In regard to respondents' knowledge about the danger sign as a cause of death during labour, almost all the respondents 96.3% exhibited the knowledge on it by stating yes.

Table 4: Knowledge on Danger Signs during Postpartum n=242

Characteristics	f	%
Danger sign during postpartum*		
Severe Vaginal bleeding	215	93.9
High Fever	94	41.0
Low abdominal Pain	42	18.3
Fit/ Convulsions	37	16.2
Foul Smelling vaginal discharge	35	15.3
Others	26	11.4
Woman die from any of these problems		
Yes	229	94.6
Don't know	13	5.4

Multiple responses*

Table 4 reveals that majority of them 93.9% stated severe vaginal bleeding and 41% stated high fever as a danger signs. Few respondents 11.4% mentioned breast and wound infection, headache, vulval hematoma, uterine prolapsed, high BP and not passing urine during postpartum period could also be equally danger signs during postpartum period. In context of information regarding knowledge about danger signs as a cause of death during postpartum period, majority of respondents 94.6% answered as if they were aware of the issue.

Table 5: Knowledge on Newborn Danger Signs n=242

Characteristics	f	%
Newborn danger signs*		
Unable to suck	159	72.3
High fever	155	70.5
Yellowish discoloration of the eyes and skin (jaundice)	139	63.2
Difficult/fast breathing	121	55.0
Pus, bleeding, or discharge from around the umbilical cord	43	19.5
Very small baby	29	13.2
Lethargy/unconsciousness	23	10.5

Characteristics	f	%
Urine and stool does not pass within 24 hours	22	10.0
Cold, clammy hands and feet	13	5.9
Skin lesions or blister with pus around the whole body	13	5.9
Red or swollen eyes with pus	12	5.5
Convulsions/spasms/rigidity	11	5.0
Others **	25	11.4
Newborn die from any of these problems		
Yes	219	90.5
don't know	23	9.5

Multiple responses*

No growth, diarrhoea, excessive vomiting and cry, not cry**

Table 5 highlights the knowledge on neonatal danger signs. Seventy two point three percent of the mothers stated that the children's inability to suck is one neonatal danger sign, 70.5 % stated fever, 63.2% stated yellowish discoloration of the eyes and skin and 55% stated difficulty in breathing as newborn danger sign. Ninety point five percent of the mothers knew newborn danger signs as a cause of death.

Table 6: Knowledge Regarding Obstetric Danger Signs n=242

Characteristics	f	%
During Pregnancy		
No knowledge about any obstetric danger sign	10	4.0
Knowledge about (1- 5) obstetric danger sign	168	66.7
Knowledge about (6 - 9) obstetric danger sign	69	27.4
Knowledge about all (10) obstetric danger sign	5	2.0
Average number of danger signs during pregnancy	4.44±2.06	
During Labour		
No knowledge about any obstetric danger sign	20	7.9
Knowledge about (1-4) obstetric danger sign	157	62.3
Knowledge about (5-8) obstetric danger sign	72	28.6

Characteristics	f	%
Knowledge about all (9) obstetric danger sign	3	1.2
Average number of danger sign during Labour	3.15±2.06	
During Postpartum Period		
No knowledge about any obstetric danger sign	24	9.5
Knowledge about (1- 3) obstetric danger sign	208	82.5
Knowledge about 3 obstetric danger sign	9	3.6
Knowledge about all (5) obstetric danger sign	11	4.4
Average number of danger sign during post-partum	1.67±1.17	
Newborn Danger Signs		
No knowledge about newborn danger sign	32	12.7
Knowledge about(1- 6) newborn danger sign	204	81.0
Knowledge about (7- 11) newborn danger sign	13	5.2
Knowledge about all (12) newborn danger sign	3	1.2
Average number of Newborn danger sign	2.93±2.26	

Table 6 provides information regarding knowledge on obstetric danger signs , which shows that 66.7% had knowledge about 1 to 5 pregnancy danger signs whereas comparatively only a few respondents 2% had known about all (10) signs, which were possible during pregnancy. It is further observed that 62.3% were aware of 1 to 4 signs during labour, 82.5% were aware of 1 to 3 signs during postpartum period and 81% were aware of 1 to 6 neonatal danger signs.

Fig1: Knowledge on Birth Preparedness n=242

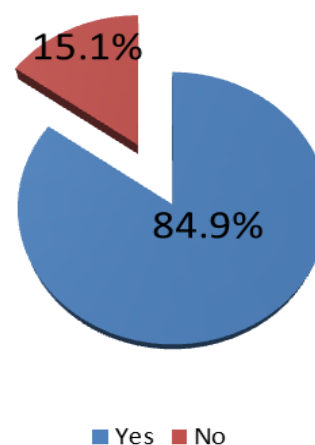
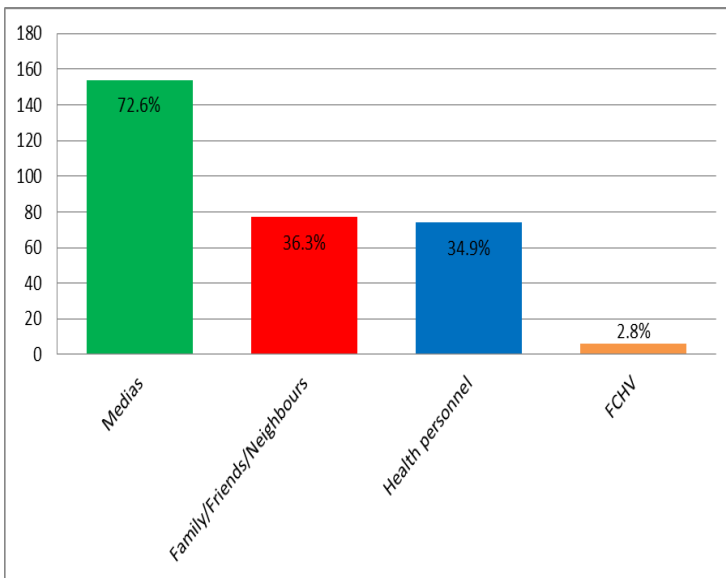


Fig.1 shows that among 242 respondents 84.9% were rightly updated about needed birth preparedness .

Fig 2: Knowledge on Source of Information on Birth preparedness n=214



Multiple responses*

Fig.2 shows that 72.6% of respondents obtained information from medias and 2.8% from FCHV.

Table 7: Knowledge on Components and Advantages of Birth Preparedness n=214

Characteristics	f	%
Components of birth preparedness*		
Save money for delivery	206	96.7
Arrange clothes for mother and baby	196	92.0
Ensure for blood donors	114	53.5
Ensure for emergency transportation	97	45.5
Ensure place of delivery	54	25.4
Arrange delivery kit	25	11.7
Identify the skill health worker for delivery	16	7.5
Advantage of birth preparedness*		
Reduce delay	172	80.4
Safe mother and baby	134	62.6
Help to improve outcome of delivery	24	11.2
Raising awareness of danger signs	16	7.5
Increasing decision making before the onset of labour	11	5.1

Multiple responses*

Table 7 shows that ninety six point seven percent of them reported saving money for delivery from early is most essential and in regard to advantages of birth preparedness 80.4% believed that birth preparedness would rightly reduce delay in seeking care.

Figure 3: Overall Knowledge Level Regarding Obstetric Danger Sign and Birth Preparedness and Complication Readiness n=252

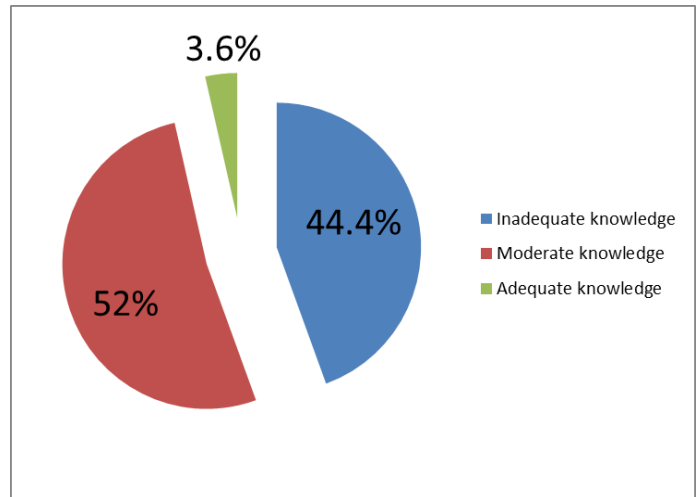


Fig. 3 shows that 52% of the mothers had moderate knowledge on obstetric danger signs and only 3.6% had adequate knowledge on that.

Table 8: Association between Overall Knowledge Level and Age, Gravida and Number of ANC Visit of Present Pregnancy of the Respondents n=252

Characteristics	knowledge level			Likelihood Ratio	p-value
	Inadequate knowledge	Moderate knowledge	Adequate knowledge		
Age in years					
15 -<20	9	1	0		
20 – 34	100	125	9	10.522	0.032*
35+	3	5	0		
Gravidity					
Primi	77	69	5		
Multi	35	62	4	6.640	0.036*
Number of ANC Visit of present Pregnancy					
<= 4	83	74	4		
5– 8	26	51	5	10.846	0.028*
9+	3	6	0		

*p ≤ 0.05 = Statistically Significant

Table 8 reveals that there was a significant association between overall knowledge level of obstetric danger signs and birth preparedness and complication readiness and age, gravida and number of ANC visit of present pregnancy of the respondents (p-value < 0.05).

Table 9: Association between Overall Knowledge Level and Occupation of the Respondent, Respondents' Husband, Educational Status, Age of First Pregnancy and Marriage Age of the Respondents n=252

Characteristics	knowledge level			Likelihood Ratio	p-value
	Inadequate knowledge	Moderate knowledge	Adequate knowledge		
Occupation of the Respondent					
House maker	71	81	3	13.050	0.042*
Business	16	19	0		
Services	15	26	5		
Others	10	5	1		
Occupation of the Respondent Husband					
Agriculture	3	1	0	19.769	0.011*
Business	33	42	2		
Services	40	61	6		
Labour	17	3	0		
Others	19	24	1		
Educational status					
Illiterate	3	1	0	1.700	0.427
Literate	109	130	9		
Age of first pregnancy in years					
≤ 18	11	5	0	4.781	0.092
19.00+	101	126	9		
Marriage age in years					
≤ 18	19	26	0	3.946	0.139
19+	93	105	9		

*p ≤ 0.05 Statistically Significant

Table 9 shows that there was a significant association between overall knowledge on obstetric danger signs and occupation of the respondent and respondents' husband (p < 0.05) and no significant association with educational status, age of first pregnancy and marriage age (p -value > 0.05).

Discussion

Result of the present study showed the mean age of respondents was 25.35 years and most of the respondents (92.9% of them) belonged to age group of 20-34 years. Among 252 respondents, 96% respondents had heard about danger signs. Out of 242 respondents, 70.1 % of the respondents got information mainly from the Medias. Regarding the overall level of knowledge on obstetric danger signs and birth preparedness and complication readiness, 52% had and few respondents only, 3.6%, had adequate knowledge on that. This was not supported with the study conducted in Thailand on Perceptions and Care Seeking Behavior of Obstetric Complication⁶ and supported with the findings of the study conducted in Karachi.⁷

This study shows that 99% of the respondents reach immediate to the health center if problems occur during pregnancy, labour, postpartum period and in Newborn baby as well. These findings are in line with result of study which was conducted in district of Blantyre, Malawi and that had revealed that 82% of primigravida could make an informed decision to go to health facility with pregnancy complication and 61% of primigravida with complications after delivery.⁸

This study's findings showed that 66.7% of the respondents had knowledge about 1 to 5 pregnancy danger signs during pregnancy followed by 62.3% had knowledge about only of 1 to 4 signs during labour, 82.5% had ideas about 1 to 3 signs during postpartum period and 81% had knowledge about 1 to 6 neonatal danger signs. These findings are also supported by other studies and their findings on title knowledge of obstetric dangers and birth preparedness practices among women in rural Uganda where more than 50% had knowledge about at least one danger sign during three different periods. And very low, that is 19%, knew at least three key danger signs during each of the three phase.⁹ Regarding new born danger sign finding, the study's findings are supported by community survey which was carried

out at rural Uganda where 58.2% could identify one and 14.8% could identify two danger signs.¹⁰ In contrast, in another study, only 26% respondents knew at least one obstetric danger sign that was during pregnancy, 23% during delivery and 40% after delivery.¹¹ The respondents had knowledge on the average number of danger signs during pregnancy, labour, Postpartum and new born were 4, 3, 2 and 3 respectively .

This study findings show that majority of respondents (95.5%) reported that vaginal bleeding as a danger sign during pregnancy. The finding is unlike with the findings of the study which was carried out at Uganda where only 49 % respondents mentioned the vaginal bleeding as a symptom as danger sign.⁹ And it is directly supported by the study which was conducted in India among antenatal mothers, where 90.5% respondents had rightly mentioned vaginal bleeding as a danger sign.¹² Sixty six point one percent had reported loss of fetal movement as danger sign in this study and in India, this was reported by 80% respondents.¹²

Similarly 72.8% mentioned that retained placenta as danger sign whereas 70.7% respondents perceived severe bleeding for the danger sign during labour. This is alike with a study in Uganda where 64% mentioned the same ⁹ and more than half of respondents mentioned footling, cord prolapsed, hand prolapsed- that was 60.8%, 55.6%, and 53% of total population respectively, as a danger sign during delivery. A few of respondents (1.3%) mentioned high BP and fatal death.

In regard with knowledge on danger signs during postpartum period, majority of respondents (93.9%) mentioned severe vaginal bleeding as the sign. This is contradictory with a in Uganda study where only 57% mentioned vaginal bleeding ⁹ as danger sign and few respondents (11.4%) only mentioned breast and wound infection, headache, vulval hematoma, uterine prolapsed, high BP and not passing urine during postpartum period could be other danger signs during postpartum

period.⁹

This study also showed that 72.3 % of the respondents mentioned unable to suck is one neonatal danger sign, 70.5 % mentioned fever, 63.2% mentioned yellowish discoloration of the eyes and skin and 55% mentioned difficulty in breathing and only 5 % of the respondents mentioned convulsions as a neonatal danger signs respectively.

In this study findings, majority of respondents 84.9% knew about birth preparedness but only 15.1% of them were unaware of it, 96.7% of them reported as they had regular saving of money for delivery from the beginning of pregnancy and that was most essential. Ninety two percent respondents reported arrangements of clothes for mother and baby is also essential where 45.5% ensured the means of transports and 7.5% of respondents knew the necessity of searching of the skilled health worker. This findings were similar with the study on the knowledge of obstetric danger signs and birth preparedness practice among women in rural Uganda, where 91% had saved money, 71% had bought birth materials, 61% had identified a health professional and 61% identified means of transport respectively.⁹

Findings of this study depict that that there is significant association between age, gravida and over all knowledge on obstetric danger signs and birth preparedness and complication readiness. This finding is close to the findings of a study conducted in Rural Tanzanian on the title" women's awareness of danger signs of obstetric complications ¹¹ and another study which was carried out at Ethiopia also supported ¹³ but sharply in difference with the conclusion of a study carried out at BRD medical college Gorakhpur on title 'knowledge and practice regarding obstetrics danger signs in women attending antenatal care clinic'. But it holds statistical significance with educational status ¹² which was opposite of this study. Another finding of this study, which is on way to rightly and positively correspond

with the study conducted in Rural Tanzanian, is that there is significant association between the number of ANC visits of present pregnancy of the respondents and over all knowledge on obstetric danger signs.^{11,13}

Those study findings revealed that there is significant association between overall knowledge on obstetric danger signs and Occupation of the Respondents. This finding is in other way with the finding of a study carried out at rural Tanzanian¹¹ and likely with the study conducted at Ethiopia.¹³

This study finding also shows that there is no significance association between overall knowledge on obstetric danger signs and age of first pregnancy. The findings of age of first pregnancy are not supported with study conducted at Ethiopia on title 'Awareness of danger signs of obstetric complications among pregnant women attending antenatal care'.¹³

This study finding revealed that there is no significant association between marriage age and over all knowledge on obstetric danger signs (p -value > 0.05) but holds a significant association with occupation of respondents' husband (p -< 0.05).

Conclusion

This study shows that all most all the respondents have heard about obstetric danger signs that could occur during pregnancy, delivery and postnatal period in mother and baby but few respondents had adequate knowledge. This study also reveals that, a large proportion of respondents knew about birth preparedness and complications readiness and they stated saving money for delivery from the beginning of the pregnancy is most essential. This warrants an urgent attempt to introduce health education and awareness programme strategies to reproductive age pregnant women in Nepal to reduce the maternal and neonatal morbidity and mortality.

Acknowledgement

The authors would like to acknowledge to Lalitpur nursing campus for providing opportunity to conduct this research study and sincere thanks goes to Institutional Review board of TU IOM for approving this research proposal and valuable suggestion to improve research study. We also owe our sincere gratitude to Mr. Bibhav Adhikari for statistical guidance. we are extremely grateful to the T.U Teaching Hospital for giving permission to carry out the study and helping me for data collection. Last but not the least, we cordially thank all the respondents, included in this study, without whom, this study would never been possible.

Ethical Consideration

Ethical consideration was taken from Institutional Review board of Tribhuvan University, Institute of Medicine, Kathmandu, Nepal. The study was conducted only after the written permission taken from concerned authority of Tribhuvan University Teaching Hospital. All the participants were informed about the objective and relevance of the study. Privacy, confidentiality and comfort were strictly adhered while collecting information.

Funding - Self arrangement

References

1. World Health Organization . Ten facts on Maternal Health. 2014. Available from.http://www.who.int/features/factfiles/maternal_health/maternal_health_facts
2. Mesko N, Osrin D, Tamang S, Shrestha BP, Manandhar DS, Manandhar M, et al. Care for Perinatal Illness in Rural Nepal; A Descriptive Study with Cross-.Sectional and Qualitative Components. BMC Int Health Hum Rights . 2003. Available from <http://www.ncbi.nlm.nih.gov/pubmed/12932300>
3. Karkee R, Lee AH, Khanal V, Pokhral PK, Binns CW. Obstetric Complications and Cesarean Delivery in Nepal. International Journal of Gynaecology and Obstetrics.2014 April; Vol. 2(14). Retrieved from <http://pu.edu.np/university/wp-content/uploads/2013/03/JHAS-2012-Vol-2-14.pdf>
4. Jha NK. Factors Associated with First delay to Seek Emergency Obstetric care Services among the Mother of Matsari VDC of Rautahat District. JHAS.2012;Vol. 2(1).Retrieved from <http://pu.edu.np/university/wp-content/uploads/2013/03/JHAS-2012-Vol-2-14.pdf>
5. Ministry of Health & Population, USAID, New ERA. Nepal demographic & health survey 2006, Kathmandu. MOHP. 2006.

6. Sharma SK, Vong-Ek P. Perceptions and Care Seeking Behavior of Obstetric Complication in Thailand. *Kathmandu Univ Med J.* 2012;38(2):63-70 Available from <http://www.kumj.com.np/issue/38/63-70.pdf>
7. Hasan IJ, Nisar N. Womens ' Perceptions Regarding Obstetric Complications and Care in a Poor Fishing Community in Karachi. *JPMA.*2002; 52(4). Retrieved from <http://www.ncbi.nlm.nih.gov/pubmed/12174478>
8. Kumbani L, Mc Inerney P. The knowledge of obstetric complications among primigravidae in a rural health centre in the district of Blantyre, Malawi. *Curationis.*2012; 25(3); 43- 54. Retrieved from <http://www.ncbi.nlm.nih.gov/pubmed/12434638>
9. Kabakyenga JK, Ostergren PO, Turyakira E, Pettersson KO. Knowledge of Obstetric Danger Signs and Birth Preparedness Practices among Women in Rural Uganda. *Reproductive Health.*2011; 8(33). Retrieved from <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3231972/>
10. Sandberg J, Odberg Pettersson K, Asp G, Kabakyenga J, Agardh, A . Inadequate .Knowledge of Neonatal Danger Signs among Recently Delivered Women in..Southwestern Rural Uganda: A Community Survey. *PLoS ONE* .2014; 9(5). doi:10.1371/journal.pone.0097253
11. Pembe AB, Urassa DP, Carlsted A, Lindmark G, Nyström L, Darj E. Rural Tanzanian women's awareness of danger signs of Obstetric Complications. *BMC Pregnancy and Childbirth.* 2009. Available from <http://www.biomedcentral.com/1471-2393/9/12>
12. Sangal R, Srivastava R, Singh AK, Srivastava DK, Meera, Khan H. Knowledge and Practices Regarding Obstetric Danger Signs in Women Attending Antenatal Care Clinic at BRD Medical College, Gorakhpur. *Indian J. Prev. Soc. Med.* 2012;Vol 43, No. 1.
13. Wanboru Aw. Awareness of danger signs of obstetric complications among pregnant women attending antenatal care in east wollega,ethiopia. (Master 's Thesis, University Of South Africa 2013). http://uir.unisa.ac.za/bitstream/handle/10500/13315/dissertation_abera_ww.pdf?