Original Article

Knowledge on Puerperal Sepsis among Hospitalized Postnatal Mothers in a Lumbini Provincial Hospital

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ABSTRACT

Introduction: Puerperal sepsis is a leading cause of maternal mortality and morbidity in developing countries due to the lack of knowledge on preventive measures. The objective of the study was to find out the knowledge on puerperal sepsis among hospitalized postnatal mothers.

Method: A descriptive cross-sectional research design was adopted among 262 postnatal mothers who were admitted in Lumbini Provincial Hospital. Data were collected by using non-probability purposive sampling technique, through structured interview schedule. Data was analyzed by using descriptive and inferential statistics.

Result: More than one third of respondents (38.2%) were from the age group 25-29 years with mean age was 26.21±4.44. Only 19.1% had good level of knowledge on puerperal sepsis.There was statistical association between level of knowledge on puerperal sepsis and ethnicity ($p=0.006$), educational level ($p<0.001$) and number of antenatal checkup ($p=0.012$).

Conclusion: The majority of the respondents had fair level of knowledge on puerperal sepsis. However, only few respondents had known the important issue regarding the risk factors such as prolonged labour, sexual intercourse in late pregnancy and anemia. There is need to increase awareness program for antenatal as well as postnatal mothers that would help to promote healthy postpartum period.

Keywords: Knowledge, Postnatal mother, Post-partum Period, Puerperal sepsis

INTRODUCTION

Maternal mortality is important indicator of the overall health of a population and functioning of the health system. The global estimated in 2017 every day approximately 810 women died from preventable causes related to pregnancy and childbirth[1]. Puerperal sepsis is leading cause of preventable maternal death, accounting for up to 11% of maternal death worldwide. [2] In Kenya, puerperal sepsis accounts for approximately 15% of maternal deaths. The challenges of the prevention and management.[3]. In Nepal 28% of maternal mortality occur in postpartum period where puerperal sepsis is fifth leading cause accounting 5%[4]. A study conducted in Nepal show that Puerperal sepsis was the most frequently diagnosed in 33.3%[5].

Puerperal sepsis is an important public health problem[6]. Education and knowledge plays an important role in prevention of puerperal sepsis[7]. In Egypt 87.4% of women had unsatisfactory knowledge on prevention of puerperal sepsis[8]. In India 87.5% respondents had inadequate knowledge,[9]. In Nepal there has been limited study conducted regarding the knowledge on puerperal sepsis.

METHODS

A descriptive cross-sectional design was used to find out the postnatal mothers level of knowledge. Non probability purposive sampling technique was used to select 262 sample using structure interview schedules. Ethical approval was taken from IRC, TUIOM. Administrative approval was taken from Lumbini Provincial Hospital, and written consent taken from each respondent. Sample size was

calculated for this study through the use of sample size calculation formula n= Z^2pq/d^2 (Cochran, 1977) by taking prevalence of Knowledge regarding puerperal infection (37%) from Hospital based Study in India(Sarkar et al., 2019) as below:n=Z^2pq/d^2

where, n=required sample size for the study , Z= 1.96 for 95% confidence interval=Prevalence of knowledge on puerperal infection= 37%= 0.37,q= 1-p=1-0.37=0.63, d=permissible error, value of d=6%=0.06 (taking 6% permissible error and 95% of confidence interval)

Then required sample size (n)= $\frac{1.96^2 X 0.37\ X 0.63}{0.06^2}$

n=248.7~ 249To adjust for possible non response, the sample size included additional 5 % of respondent in the calculated sample size.Hence, final total sample size was (249+13)=262 postnatal mothers.

Inclusion criteria were postnatal mothers who gave birth at Lumbini provincial Hospital and within six weeks of postnatal period and willing to participate in study. The research instrument was consists of two: Part I: Questions related to Socio-demographic information and Obstetric factors of respondents; included 13 questions. Part II: Questions related to knowledge on puerperal sepsis. It consist of 21 question that included 17 multiple choice questions (MCQ). The maximum possible score was 40. Content validity ensured by consultation with research advisor, subject experts. The instrument was pretested in 10% sample. Ethical approval was taken from IRC, TU, IOM. Administrative approval for data collection was taken from Hospital Administration of Lumbini Provincial Hospital, .Respondents were selected purposively among the postnatal mothers who were supposed to discharge by medical team. The postnatal mothers who had delivered through caesarean section were included in third day of caesarean section. Data was collected during day time as per the convenience of respondents. Before collecting the data respondent's comfort was ensured. Data was collected from February 14 to March 5th2021.The average time taken to complete interview for one respondent was 15-20 minutes. All collected data was overviewed, checked and verified daily for its completeness, consistency and accuracy. Data were inter SPSSversion 20. Data was summarized using descriptive statistics (Frequency, Percentage, Mean, and Standard Deviation) and inferential statistics (Chi square test).

RESULTS

Table 1: Respondents' Knowledge on Puerperal Sepsis (n=262)

Variables	Number	Percentage
Meaning		
Infection of the genital tract	254	96.9
Cause		
Microorganism	260	99.2
Risk Factors *		
Poor perineal hygiene	262	100.0
Poor personal hygiene	262	100.0
Delivery in an unhygienic environment	243	92.7
Poor Nutrition	235	89.7
Premature rupture of membrane	161	61.5
Prolonged labour	94	35.9
Sexual intercourse in late pregnancy	43	16.4
Retained bits of placental tissue	40	15.3
Anaemia	39	14.9
Sign and Symptoms *		
Foul-smelling vaginal discharge	238	90.8
Fever	198	75.6
Pain, swelling and pus discharge from tear or episiotomy site	157	59.9
Lower abdominal pain	115	43.9
Sub involution of uterus	8	3.1
Treatment		
Seek health facility	262	100.0
Complication of Puerperal Sepsis*		
Uterine problem	250	95.4
Infertility	202	77.1
Infection of blood	44	16.8
Don't know	8	3.1

*Multiple Responses

Table 1 reveals that almost all of the respondents (96.9%) knew the meaning of puerperal sepsis.

Regarding the cause of puerperal sepsis, almost all of them (99.2%) had known that microorganism as the causative factor. In regard to risk factors entire respondents (100%) knew that poor perineal hygiene and poor personal hygiene were the risk factors of puerperal sepsis. Beside that only 16.4%, 15.3% and 14.9%, respondents knew that sexual intercourse in late pregnancy, retained bits of placental tissue and anemia as the risk factors of puerperal sepsis respectively. Regarding the sign and symptoms, almost all of the respondents (90.8%) knew that foul-smelling vaginal discharge followed by fever (75.6%) and only 3.1% of respondents knew sub involution of the uterus. Furthermore, entire respondents (100%) knew that seeking a health facility is required for the treatment of puerperal sepsis. With regard to complication of puerperal sepsis, almost all of the respondents (95.4%) knew uterine problem followed by infertility (77.1%) and only 16.8% knew infection of the blood.

Table 2: Respondents' Knowledge on Activities to Prevent Puerperal Sepsis (n=262)

Variables	Number	Percentage
Taking Iron in the postnatal period	237	90.5
Taking iron one tab for 42 days (n=237)	155	65.4
Avoiding sexual intercourse in the postnatal Period	84	32.1
Three times of Postnatal Visits	25	9.5

Table 2 shows, almost all of the respondents (90.5%) knew that it is necessary to take the iron tablet in the postnatal period. Among them, only 65.4% of respondents knew the correct duration. Regarding the sexual intercourse, only 32.1% knew that the sexual intersexual should be avoided for at least six weeks after delivery. Regarding the required times of postnatal visit, only 9.5% of respondents knew the correct frequency of postnatal visit.

Table 3: Respondents' Level of Knowledge on Puerperal Sepsis

Level of Knowledge	Number	Percentage	95% confidence interval	
			Lower	Upper
Poor (<50%)	27	10.3	6.4	13.6
Average (50%-75%)	185	70.6	65.50	76.49
Good >75%	50	19.1	14.3	23.7
Total	**262**	**100.0**		

Table 3 shows that majority of the respondents (70.6%) had average level of knowledge regarding the puerperal sepsis, 19.1% had a good level and 10.3% had poor level of knowledge. The mean score of knowledge was 63.86±11.19.

Table 4: Association between Level of Knowledge on Puerperal Sepsis and Socio- demographic Variables (n=262)

Variables	Level of Knowledge		χ^2	P-value
	Poor No. (%)	Average to Good No. (%)		
Age Group(in a year)				
Up to 25	14(11.7)	106(88.3)	0.444	0.50
26 and above	13(9.2)	129(90.8)		
Ethnicity				
Brahmin/Chhetri	6(4.8)	118(95.2)	7.611	0.006
Others*	21(15.2)	117(84.8)		
Education Level				
Up to basic level	20(40.0)	30(60.0)	61.905	0.001
Secondary and more	6(2.9)	204(97.1)		
Occupation				
Home maker	25(12.1)	181(87.9)	3.494[a]	0.062
Others**	2(3.6)	54(96.4)		
Type of Family				
Nuclear	10(11.0)	81(89.0)	0.071	0.791
Joint/Extended	17(9.9)	154(90.1)		

¥ - Continuity correction, a-expected cell value >5

**: Dalit, Janajati, Madhesi, Muslim **: Service Holder, Business*

Table 4 shows that there was a statistically significant association in level of knowledge with ethnicity and education level. There was no statistically association with level of knowledge on age, religion, occupation and type of family.

Table 5: Associations between Level of Knowledge and Obstetric Variables (n=262)

Variables	Level of Knowledge		χ^2	P-value
	Poor No. (%)	Average to good No. (%)		
Parity				
First delivery	12(8.8)	124(91.2)	0.672	0.412
More Than one time delivery	15(11.9)	111(88.1)		
Number of Antenatal Checkups				
Less than four times	5(27.8)	13(72.2)	6.384	0.012
Four and more than four	22(9.0)	222(91.0)		
Type of Health Facility Used				
Health post	18(13.9)	117(86.7)		
Government hospital	7(11.7)	53(88.3)	5.344[a]	0.069
Other health facilities	2(3.0)	65(97.0)		

P-Value significant at <0.05 level χ^2-Pearson's Chi-square Test

A-expected cell value >5 other health facilities: Private hospital, Local clinic

Table 5 shows that there was a statistically association between respondents' level of knowledge and frequencies of antenatal checkup. There was no statistically association between the level of knowledge and parity (p=0.412) and type of health facility used for antenatal care (p=0.069).

DISCUSSION

Majority of the respondents (70.6%) had a fair level of knowledge, only 19.1% of respondents had a good level and 10.3% of respondents had a poor level of knowledge. This finding is similar to the study conducted by Sarkar[10] in Hariyana, India which showed that 63.33% had an average level of knowledge. This finding was also supported by the similar study conducted in Bhavnagar; India where 65% of the respondents had an average level knowledge Belagavi[11]. But this finding was inconsistent with the study conducted by Masoud[12] in Egypt, where almost all of the respondents (96.0%) had poor level of knowledge regarding puerperal sepsis. This finding might be inconsistent due to education where one third of respondents were illiterate.

The knowledge on danger sign in postnatal period, almost all respondents (98.5%) said excessive vaginal bleeding and 50.0% said fever are the danger signs in postnatal period. This findings were higher than the study conducted in Ethiopia by Amenu[13]where only 60.2% of respondents said vaginal bleeding and 36.8% said fever as the danger signs in postnatal period. However, the other responses regarding the postnatal danger signs in this study like foul smelled lochia (40.5%) and convulsion (24.8%) were supported by the above study where 38.5% of respondents said foul smelling vaginal discharge and 22% of respondents said convulsion as the danger signs in postnatal period.

This study showed almost all of the respondents (96.9%) knew meaning of puerperal sepsis, which in contrast with the study conducted by Gamel[6] Where only 30% knew about it. This might be due to dissimilar respondents where all of the respondents were primipara. Present study showed that entire respondents knew poor perineal hygiene and poor personal hygiene as the risk factors of puerperal sepsis. Besides that, other responses of risk factors were delivery in unhygienic environment (92.7%), premature rupture of membrane (61.5%), poor nutrition (89.7%) and sexual intercourse in late pregnancy (16.4%). This finding was inconsistence with the study conducted in Uganda by Ambrose[14] where it was found that only 54% respondents believed that the cause of puerperal sepsis was poor personal hygiene and 26% of the believed that some cultural practices were the causes of puerperal sepsis.

Regarding sign and symptoms, almost all of the respondents (90.8%) answered foul smelling vaginal discharge, fever(75.6%), pain, swelling and pus discharge from tear or episiotomy site (59.9%)and lower abdominal pain (43.9%) whereas only 3.1% respondents answered sub involution of uterus as the symptoms of puerperal sepsis. This finding was inconsistent with the study conducted by Ibrahim[15] in Uganda among the midwives where it was found that tender abdomen (90%) and pus discharge from the birth canal (86%)as the sign and symptoms of puerperal sepsis. However, the other responses like high fever and foul smelling from birth canal (80%) supported the present study. This might be due to dissimilar respondents.

Regard to the meaning of perineal hygiene 100% stated cleaning perineal area and changing the pad frequently. Allmost all respondents (93.1%) knew perineal pad should changeevery 3-4 hours. This finding was higher than a study conducted by Timilsina[16] in Nepal which showed that 85.71% knew keeping vulva clean and dry is perineal hygiene. Likewise, 83.16% had knowledge on frequently. The difference might be due to the different source of information where majority of respondents got information from friends and family.

More than two-third of the respondents (67.9%) knew that technique of cleaning perineal, (94.7%) said that sanitary pad was the best type of perineal pad and 9.5% respondents gave correct postnatal visit time. This result was not in agreement with the study conducted by Ganiga[17] in India, which showed that only 77% of respondents were aware that perineum should be cleaned after defecation and urination, 53% were aware on cleaning perineum area, and 65% were aware to use cotton pads in postnatal period and 54% were aware about postnatal checkup.

The potential difference could be due to difference setting.

In present study 90.5% of respondents knew that to take iron in postnatal period and 65.4% knew proper duration. It was inconsistent a study conducted by Shah[18] where 60% knew about it and only 25% know the during. It might be due to dissimilar setting and respondents.

Present finding revealed uterine problem (95.4%), subfertility (77.1%) and infection of blood (16.8%) were the complications of puerperal sepsis. This finding was supported by a study conducted in Uganda by Ambrose[14] where it was found that more than two-third of the respondents (66%) believed that puerperal sepsis lead to complications like female reproductive system infection, infertility and blood infection and almost all of the respondents(98%) agreed that puerperal sepsis should be managed from hospital.

Present finding revealed that no any statistically association between level of knowledge and age of the respondents (p=0.50), type of family (p=0.791). These findings were similar to the study conducted by Joe and Joykutty[19] and Indra[20] which showed there was no any statistically association between level of knowledge, age and type of family. But, this finding was contrast with the study conducted by Lalitha[21] which showed significant association between the level of knowledge and age of respondents with p value <0.05. The potential difference could be due to difference in study setting and sample size which was conducted in India and sample size was fifty.

Finding revealed the statistically association between the level of knowledge and ethnicity p value 0.006. No statistically association between level of knowledge and religion (p=0.798). In contrast to this finding, the statistically association was observed between level of knowledge on puerperal sepsis and religion of respondents with p value 0.04 in a study conducted by Joe[19]. This might be due to the reason that almost all respondents were Hindus in present study. Similarly, study showed statistically association between level of knowledge and educational with p value <0.001. This finding was supported by the study conducted by Sultana[22].The study revealed that there was no statistically association between level of knowledge and occupation (p=0.062). This finding was similar to study conducted by Indra[20].

The study revealed that there was no statistically association between level of knowledge and parity (p=0.412).This finding was similar with the study conducted by Sarkar[10]. But, this finding in contrast with Belagavi[11] which showed that there was significant association between level of knowledge and parity. This might be due to the difference in setting and source of information.

LIMITATION

This study was conducted in only one provincial hospital and using non probability purposive sampling technique due to unavailability of sampling frame of respondents. So the finding may not be generalized to other setting.

IMPLICATION

The finding of this study would help the concerned authority to plan and implement the awareness programme on puerperal sepsis. It would be useful to health service providers to take the preventive measure of puerperal sepsis as well as to conduct health teaching for postnatal mothers, which helps to modification and adaptation of healthy behavior and performance of regular antenatal visit, institutional delivery and postnatal care.

It is recommended that the need of continuous planning and implementation of the awareness programme for the postnatal as well as pregnant mothers for the promotion of healthy postpartum period.

CONCLUSION

Majority have average level of knowledge. Few numbers of respondents knows time of postnatal visit. Knowledge is poor in premature rupture of membrane, prolonged labour and sexual intercourse in late pregnancy and anemia. Regarding sign and symptoms very few respondents know the sub involution of uterus. There is statistically association between level of knowledge with ethnicity, education level, and number of antenatal visit.

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