

Awareness and practice regarding puerperal danger signs among postnatal mothers attending at rural tertiary care center of Nepal

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Abstract

Background: Global evidences show that all pregnancies are at risk and complications during pregnancy, childbirth, and the postnatal period are difficult to predict. Awareness regarding puerperal danger signs is essential for appropriate and timely health management so that maternal mortality and morbidity can be reduced. An objective of the study is to assess the awareness and practice regarding puerperal danger signs among postnatal mothers.

Method: Descriptive cross-sectional study design was conducted among 139 postnatal mothers, who were attending at maternal and child health (MCH) clinic and postnatal ward of Karnali Academy of Health Sciences (KAHS), Jumla. Probability simple random sampling method was used. Data were collected by using semi-structured interview questionnaire. After collection of the data, coding was done. Coded data was entered into EXCEL and transformed in SPSS for analysis.

Result: Out of 139 postnatal mothers, 60.4% had poor level of awareness regarding puerperal danger signs. Only 39.6% had good level of awareness regarding puerperal danger signs. Similarly, 85.6% of the respondents had poor practice on puerperal danger signs. Only 14.4% had good practice on puerperal danger signs.

Conclusion: Health education & awareness program is needed to improve the mother's knowledge and practice on puerperal danger signs.

Keywords: Awareness; Practice; Puerperal danger signs; KAHS; MCH

1. Introduction

Global evidences show that all pregnancies are at risk and complications during pregnancy, childbirth, and the postnatal period are difficult to predict. Awareness regarding puerperal danger signs is essential for appropriate and timely health management so that maternal mortality and morbidity can be reduced.

Postnatal danger signs and symptoms are indicators of possible complications that occur within 6 weeks of birth. During the postpartum period, key maternal danger signs include severe vaginal bleeding, foul-smelling vaginal discharge and a high fever. These signs may indicate postpartum hemorrhage or puerperal sepsis, the leading causes of maternal deaths. Other maternal postnatal danger signs include fast or difficult breathing, convulsions, being too weak to get out

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of bed, blurred vision and headaches, pain in calf muscles, redness or swelling, urinary incontinence, swollen or tender breasts or nipples, increased perineal pain and depression within 42 days of birth.[1]

Worldwide, nearly 600,000 mothers between the ages of 15–49 years die every year due to complications arising from pregnancy and childbirth. Hence, maternal death occurs almost every minute of every year, out of which 99% are in the developing countries. Around two thirds of maternal and newborn deaths occur in the early postpartum period in developing countries.[2]

Globally, every day, approximately 800 women die from preventable causes related to pregnancy and childbirth, majority of these deaths occur after childbirth (post-partum period). Raising awareness of women on obstetric danger sign of childbirth and postpartum, are crucial for safe motherhood initiative and to reduce maternal mortality.[3]

According to national population and housing census 2021 report in Nepal, the maternal mortality ratio (MMR) is 151 maternal death per 100,000 live birth and 172/100000 live birth in Karnali province.[4]The third Sustainable Development Goals (SDG) for 2030 aims to reduce global maternal deaths from the preventable disease to <70/100000 live births. Maternal mortality is high globally, in 2017; about 295,000 women have lost their life due to direct obstetric complications; most of which could have been prevented.[5,6, 7]

Women and newborns are most vulnerable during and immediately after childbirth. The majority of maternal and newborn deaths occurring in developing countries can be attributed to inability to access health services, illiteracy, social stigmas, and gender inequalities. Women should be made aware of the danger signs so that health care services can be assessed on time, thus reducing maternal mortality.[8]

2. Method

A descriptive cross-sectional study design was conducted among 139 postnatal mothers (within the 45 days of delivery), who were attending at MCH clinic and postnatal ward of KAHS. Probability (Randomization) simple random sampling method was used. Ethical clearance and approval was obtained from the IRC then written permission from hospital administration, Obstetrics and gynecology department and In-charge of MCH clinic and postnatal ward was obtained to conduct the study. Informed written consent was obtained from each participant. Privacy and confidentiality of the subjects were maintained throughout the study. Data were collected by using semi-structured interview questionnaire, which is divided into 2 parts.

- Part I- It consists of questions related to socio- demographic characteristics.
- Part II- It consist questions related to awareness and practice regarding puerperal danger signs.

Interview was taken by principal investigator and it was completed within 15-20 minute for each participants. Interview was taken only one time for each participant. Pretesting of tool was done by taking 10 percent of the calculated sample size. Participants included in pretesting were not included in final study. Data was collected from 24th December 2021 to 14th April 2022. After collection of the data, it was checked for completeness then coding was done. Coded data was entered into EXCEL 2010 and transformed in SPSS 16 versions. Descriptive statistics (frequency, percentage) was used to describe the demographic and obstetric variables. Chi-square test was used to find out the association of awareness level with selected variables.

3. Result

Out of 139 postnatal mothers, majority 93 (66.9%) of the respondent belong to age group of 20-30 years. Most 81 (58.3%) of the respondent belong to the ethnic group of Brahman/chhetri. Majority 136 (97.8%) of the respondents belong to Hindu religion. All 139 (100%) of the respondents were married. Most 93 (66.9) of the respondents were married before the age of 20 years. Majority 121 (87.1%) of the respondents belong to the joint family. Majority 115 (82.7%) of them were agriculture by occupation. About more than one third 56 (40.3%) of respondents had higher secondary education. one third 47 (33.8%) of the husband had higher secondary education in which nearly two third 86 (61.9%) of them earns > 1, 00,000 per year.

Table 1 Obstetric Characteristics of the Postnatal Mother

(n=139)

Characteristics	Frequency	Percentage
No of pregnancy		
Primigravida	62	44.6
Multigravida	77	55.4
No of children		
One	66	47.5
Two	45	32.4
Three	21	15.1
Four	06	4.3
Five	01	0.7
Complication present in past pregnancies		
Yes	06	4.3
No	133	95.7
ANC check up		
Yes	139	100
No	00	00
No. of ANC Visit		
<4	06	4.3
4-8	133	95.7
>8	00	00
Place of ANC check up		
Health-post	119	85.6
Hospital	20	14.4
Complication present in current pregnancy		
Yes	10	7.2
No	129	92.8
Place of delivery		
Health facility	138	99.3
Ambulance	01	0.7
Type of delivery		
Normal delivery (SVD)	123	88.5
Caesarean section	14	10.1
Breech delivery	02	1.4

Table 1 depicts that most 133 (95.7%) of the women had no complication in her past pregnancy. more than half 77 (55.4%) of women were multi gravida mother. Nearly half 66 (47.5%) of the women had one child. Similarly, most 133(95.7%) of the women had completed her 4-8 antenatal visit. Majority 119 (85.6%) of the women had done her antenatal check-up at health post. Most 129 (92.8%) of the women had no complication in her present pregnancy.

Almost 138 (99.3%) of the women were delivered at health facility. Majority 123 (88.5%) of the women had spontaneous vaginal delivery.

Table 2 Awareness of Mother Regarding Puerperal Danger Signs (n=139)

SN	Puerperal Danger signs	Frequency	Percentage
1	Excessive Bleeding	124	89.2
2	Fits	37	26.6
3	Fever	102	73.4
4	Headache	93	66.9
5	Blurred vision	32	23.0
6	Weakness	60	43.2
7	Foul vaginal discharge	60	43.2
8	Wound infection	54	38.8
9	Depressed mood	51	36.7

*Multiple Responses

Table 2 depicts that majority 124 (89.2%) of the respondents stated excessive bleeding as a puerperal danger signs. Most (73.4% and 66.9%) of the respondents stated fever and headache as puerperal danger signs respectively. Nearly half (43.2%) of the respondent stated that weakness as a puerperal danger signs. Only 23% recognized blurred vision.

Table 3 Level of Awareness regarding Puerperal Danger Sign among Postnatal mother (n=139)

Variables	Puerperal danger signs
Level of Knowledge	Frequency
Poor Level	84 (60.4%)
Good Level	55 (39.6%)

The data in table 3 illustrates that nearly two third 84 (60.4%) of the women had a poor level of awareness regarding puerperal danger sign. Whereas more than one third 55 (39.6%) had a good level of awareness regarding puerperal danger sign among postnatal mother.

Table 4 Level of Practice regarding Puerperal Danger Sign among Postnatal mother (n=139)

Variables	Puerperal danger signs
Level of Practice	Frequency
Poor Level	119 (85.6%)
Good Level	20 (14.4%)

Table 4 illustrates that 119 (85.6%) of the women had a poor level of practice and 20 (14.4%) had a good level of practice regarding puerperal danger sign.

Table 5 Presence of Puerperal Danger Signs among Postnatal Mothers

(n=139)

Puerperal Danger Signs	Frequency	Percentage
Yes	11	7.9
No	128	92.1
Total	139	100
<i>If Yes (n= 11)</i>		
Wound Infection	1	9.0
Headache	3	27.3
Fever	4	36.4
Excessive Bleeding	3	27.3
Total	11	100
<i>Place of treatment received (n=11)</i>		
Hospital	07	63.6
Health post	04	36.4

Table 5 depicts that majority 128 (92.1%) of the respondents had not presented the sign of puerperal danger signs and only 11 (7.9%) of the respondent had presented the danger signs, among those who had presented puerperal danger signs most 4 (36.4%) of them had fever. 63.6% respondents were treated in hospital who had presented puerperal danger signs.

Table 6 Association between Socio-Demographic variables and Awareness level on Puerperal Danger Sign among postnatal mother (n=139)

Demographic variables	Awareness level		χ^2	P value
	Poor	Good		
	Frequency	Frequency		
Age of women in year				
<20	21 (15.1%)	11 (7.9%)	0.666	0.717
20-30	54 (38.8%)	39 (28.1%)		
>30	9 (6.5%)	5 (3.6%)		
Ethnicity				
Brahmin/Chhetri	49 (35.2%)	32 (23%)	0.080	0.961
Dalit	20 (14.4%)	14 (10.1%)		
Others	15(10.8%)	9(6.5%)		
Religion				
Hindu	84 (60.4%)	52 (37.4%)	4.683	0.060
Buddhism	0 (0.00%)	3 (2.2%)		
Age at Marriage				
<20 years	58 (41.7%)	35 (25.2%)		0.507

>20 years	26 (18.7%)	20 (14.4%)	0.440	
Type of family				
Joint	71 (51.1%)	50 (36%)	1.202	0.273
Nuclear	13 (9.3%)	5 (3.6%)		
Occupation				
Agriculture	70 (50.3%)	45 (32.4%)	0.053	0.817
Other	14 (10.1%)	10 (7.2%)		
Education level (n=110)				
Primary level	12 (11%)	5 (4.5%)	3.479	0.323
Secondary level	21 (19.1%)	16 (14.5%)		
Higher secondary level	37 (33.6%)	19 (17.3%)		
Husband's education level (n=126)				
Primary level	7 (5.6%)	3 (2.4%)	3.126	0.537
Secondary level	18 (14.3%)	19 (15%)		
Higher secondary level	30 (23.8%)	17 (13.5%)		
University level	21 (16.7%)	11 (8.7%)		
Family Income per year (rupees)				
<50,000	4 (3%)	1 (0.7%)	1.203	0.548
50,000-1,00,000	27 (19.4%)	21 (15.1%)		
>1,00,000	53 (38.1%)	33 (23.7%)		

Significant at $p < 0.05$

Table 6 reveals that there is no statistically significant association between socio-demographic variables like; age, ethnicity, religion, marriage age, type of family, occupation, education, husband's education level and family income with the awareness level of mother on puerperal danger signs with p -value ($p=0.717$, $p=0.961$, $p=0.060$, $p=0.507$, $p=0.273$, $p=0.817$, $p=0.323$, $p=0.537$ & $p=0.548$) respectively.

Table 7 Association between Obstetrics Characteristics and Awareness level of mother on Puerperal Danger Signs (n=139)

Obstetrics Characteristics	Awareness level		χ^2	P value
	Poor	Good		
	Frequency	Frequency		
Complication present in past pregnancies				
Yes	2 (1.4%)	4 (2.9%)	1.926	0.168
No	82 (59%)	51 (36.7%)		
Gravida				
Primigravida	37 (26.6%)	25 (18%)	0.027	1.000
Multigravida	47 (33.8%)	30 (21.6%)		
Number of children				
Up to two	65 (46.8%)	46 (33.1%)	0.809	0.397

More than two	19 (13.7%)	9 (6.4%)		
ANC Visit				
<4 visit	6 (4.3%)	00 (00%)	1.375	0.403
4-8 visit	91 (65.5%)	42 (30.2%)		
Place of ANC visit				
Health-post	82 (59%)	37 (26.6%)	2.074	0.217
Hospital	15 (10.8%)	5 (3.6%)		
Complication present in current pregnancy				
Yes	5 (3.6%)	5 (3.6%)	0.952	0.435
No	92 (66.2%)	37 (26.6%)		
Place of delivery				
Health facility	97 (69.8%)	41 (29.5%)	1.538	0.396
Ambulance	00 (00%)	1 (0.7%)		
Type of delivery				
Normal delivery (SVD)	86 (61.9%)	37 (26.6%)	1.470	0.480
Caesarean section	9 (6.5%)	5 (3.6%)		
Breech delivery	2 (1.4%)	00 (00%)		

Significant at $p < 0.05$

Table 7 display that there is no statistically significant association between socio-demographic variables like; complication present in past pregnancy, gravida, number of children, ANC visit, place of ANC checkup, complication present in current pregnancy, place of delivery and type of delivery with the awareness level of puerperal danger signs with p -value ($p=0.168, p=1.000, p=0.397, p=0.403, p=0.217, p=0.435, p=0.396$ & $p=0.480$) respectively.

Table 8 Association between Socio-demographic variables and practice level of mother on Puerperal Danger Signs (n=139)

Demographic variables	Practice level		χ^2	P value
	Poor	Good		
	Frequency	Frequency		
Age of women in year			10.359	0.006*
<20	29 (20.8%)	3 (2.2%)		
20-30	82 (58.9%)	11 (8%)		
>30	8 (5.8%)	6 (4.3%)		
Ethnicity			2.658	0.265
Brahmin/Chhetri	71 (51.1%)	10 (9.2%)		
Dalit	30 (21.5%)	4 (2.9%)		
Others	18 (13%)	6 (4.3%)		
Religion			0.515	1.000
Hindu	116 (83.4%)	20 (14.4%)		
Buddhism	3 (2.2%)	0 (0.00%)		

Age at Marriage			1.496	0.304
<20 years	82 (58.9%)	11 (8%)		
>20 years	37 (26.6%)	9 (6.5%)		
Type of family			1.030	0.294
Joint	105 (75.5%)	16 (11.5%)		
Nuclear	14 (10.1%)	4 (2.9%)		
Occupation			0.978	0.342
Agriculture	100 (72%)	15 (10.8%)		
Other	19 (13.7%)	5 (3.6%)		
Education level (n=110)			0.800	0.850
Primary level	15 (13.6%)	2 (1.8%)		
Secondary level	33 (30%)	4 (3.6%)		
Higher secondary level	47 (42.7%)	9 (8.2%)		
Husband's education level (n=126)			0.801	0.938
Primary level	8 (6.3%)	2 (1.6%)		
Secondary level	32 (25.4%)	5 (4%)		
Higher secondary level	40 (31.7%)	7 (5.6%)		
University level	27 (21.4%)	5 (4%)		
Family Income per year (rupees)			0.879	0.644
<50,000	5 (3.6%)	0 (0.00%)		
50,000-1,00,000	41 (29.5%)	7 (5%)		
>1,00,000	73 (52.5%)	13 (9.4%)		

Significant at $p < 0.05^*$

Table 8 depicts that there is no statistically significant association between socio-demographic variables like; ethnicity, religion, marriage age, type of family, occupation, education, husband's education level and family income with the practice level of puerperal danger signs with p -value ($p=0.265, p=1.000, p=0.304, p=0.294, p=0.342, p=0.850, p=0.938$ & $p=0.644$) respectively. There is statistically significant association between socio-demographic variables like; age with the practice level of puerperal danger signs with p -value ($p=0.006$).

Table 9 Association between Obstetric Characteristic and practice level of mother on Puerperal Danger Signs (n=139)

Obstetrics Characteristics	Practice level		χ^2	P value
	Poor	Good		
	Frequency	Frequency		
Complication present in past pregnancies			1.827	0.207
Yes	4 (2.9%)	2 (1.4%)		
No	115 (82.7%)	18 (13%)		
Gravida			0.200	0.809
Primigravida	54 (38.8%)	8 (5.8%)		
Multigravida	65 (46.8%)	12 (8.6%)		

Number of children			5.726	0.031*
Up to two	99 (71.2%)	12 (8.6%)		
More than two	20 (14.4%)	8 (5.8%)		
ANC Visit			0.026	1.000
<4 visit	5 (3.6%)	1 (0.7%)		
4-8 visit	114 (82%)	19 (13.7%)		
Place of ANC check-up			4.622	0.043*
Health-post	105 (75.5%)	14 (10.1%)		
Hospital	14 (10.1%)	6 (4.3%)		
Complication present in current pregnancy			1.239	0.593
Yes	7 (5%)	0 (0.00%)		
No	112 (80.6%)	20 (14.4%)		
Place of delivery			0.169	1.000
Health facility	118 (84.9%)	20 (14.4%)		
Ambulance	1 (0.7%)	0 (0.00%)		
Type of delivery			0.636	0.728
Normal delivery (SVD)	107 (77%)	19 (13.7%)		
Caesarean section	10 (7.2%)	1 (0.7%)		
Breech delivery	2 (1.4%)	0 (0.00%)		

Significant at $p < 0.05^*$

Table 9 exhibit that there is no statistically significant association between socio-demographic variables like; complication present in past pregnancy, gravida, ANC visit, complication present in current pregnancy, place of delivery and type of delivery with the practice level of puerperal danger signs with p -value ($p=0.207$, $p=0.809$, $p=1.000$, $p=0.593$, $p=1.000$ & $p=0.728$) respectively. There is statistically significant association between obstetric characteristics like; number of children, place of ANC checkup with the practice level of puerperal danger signs with p -value ($p=0.031$ & $p=0.043$).

Table 10 Association between levels of awareness and level of practice on puerperal danger signs (n=139)

	Level of Practice		χ^2	P value
	Poor Frequency	Good Frequency		
Level of Awareness				
Poor	72 (51.8%)	12 (8.6%)	0.002	1.000
Good	47 (33.8%)	8 (5.8%)		

Significant at $p < 0.05$

Table 10 depicts that there is no any association between level of awareness and level of practice on puerperal danger signs with p -Value ($p=1.000$).

4. Discussion

In the present study, majority 93 (66.9%) of the respondent belong to age group of 20-30 years. This finding is similar to a study conducted in the Eastern Democratic Republic of the Congo by Imani Ramazani BE et.al. revealed that majority (49%) of women were aged 20–29 years.[9] Majority 136 (97.8%) of the respondents belong to Hindu religion and 121

(87.1%) of the respondents belong to the joint family. This finding is similar to a study done in Rajasthan of India by Kumar A et.al revealed that belonged to the Hindu religion and joint family (97.5%) and (84.7%) respectively.[10] Also similar with study done in Delhi of India by Kumar A et.al. showed that most of participants (87%) and (54.5%) belonged to Hindu religion and joint family respectively.[11]

In the present study, majority 56 (40.3%) of respondents had higher secondary education which finding is similar to a study conducted in Kigali, Rwanda by Uwiringiyimana E et.al. revealed that most (50.5%) of respondents had secondary education or higher.[12]

4.1. Obstetric Characteristics of the Postnatal Mother

In the present study, more than half 77 (55.4%) of women were multi gravida mother which is similar to a study conducted in Nepal by Ghimire B, Pathak P, Ghimire P study revealed that 52.1% were multi gravida, also similar to study conducted in Wolaita Sodo town, South Ethiopia by Bolanko A, et.al, study revealed that most (57.7%) were multi gravida.[5,13] Nearly half 66 (47.5%) of the women had one child which is contrast to a study conducted in Nepal by Ghimire B, Pathak P, Ghimire P study showed that most of the respondents (86.5%) had one child.⁵ Similarly, most 133 (95.7%) of the women had completed her 4-8 antenatal visit which is similar to a study conducted in Ethiopia by Amenu Get.al. majority (43.3%) of women had completed four or more ANC visit. Majority, 119(85.6%) of the women done her antenatal check-up at health post.[14] In this study, only (7.2%) of the women had complication in her present pregnancy. This finding is lower than study done in Ethiopia by Amenu Get.al. (34.6%) have experienced obstetric complications.[14]

In the present study, most 138 (99.3%) of the women was delivered at health facility and 123 (88.5%) of the women had spontaneous vaginal delivery. This finding is consistent with the study conducted in Ethiopia by Wassihun B. et.al. showed that majority of the respondents, 368 (87.2%) gave birth at a health center. From the total respondents, 334 (79.5%) had a spontaneous vaginal delivery. [15]

In this study, majority (61.9%) respondents reached health care facility within 30minutes which finding is contrast with study conducted in by Asfaha BT. et.al. in Ethiopia and by Uwiringiyimana E, et.al. in Kigali, Rwanda showed that majority (75.6%) and most (43.2%) of the participants take ≥ 30 minutes to reach health facility respectively.[16,12]

4.2. Awareness of Mother Regarding Puerperal Danger Signs

In the present study, majority 124 (89.2%) of the respondents stated excessive bleeding as a puerperal danger signs followed by fever (73.4%) which findings is similar to a study conducted in Delhi of India by Kumar A. et.al. showed that most of 105 (83.3%) participants had knowledge about heavy bleeding. When compared with the study in Ethiopia by Wassihun B. et.al. is a similar result observed is danger sign during post-partum was postnatal bleeding (63.3%), followed by postnatal fever. Also similar with the study conducted in Asmara city of Africa by Beraki G. et.al.revealed that heavy vaginal bleeding was 83.2% as a danger sign during the postpartum period. Also similar with the study conducted in Rajasthan by Kumar A. et.al. showed that heavy vaginal bleeding (74.5%) as a danger signs during post-partum. This finding was also consistent with the findings of the study conducted in Nepal by Thapa B, Manandhar K (88.3%) knew that severe vaginal bleeding is a danger sign during post partum period. [11, 15, 2, 8, 17]

In the present study, most (85.6%) of the respondents had poor knowledge of puerperal danger signs compare to only (14.4%) of the study subjects had good knowledge. This finding is consistent with the study conducted in Eastern Democratic Republic of the Congo by Ramazani B-E. et.al. revealed that majority (78.1%) had poor knowledge and only (21.9%) of respondents had good knowledge.[9]

The findings of this study revealed that the good knowledge of respondents regarding puerperal danger sign was 14.4% which is similar with study conducted in Southern Ethiopia by Dangura AD showed that (29.1%) of respondents had good knowledge but lower than other studies conducted in Ethiopia by Wassihun B. et.al. and by Asfaha BT. et.al. showed that (40.5%) and (42%) had good knowledge respectively.[3,15,16] When compared with the study conducted in WolaitaSodo town, South Ethiopia by Bolanko A et.al, a similar result observed is (37.3%) participants were knowledgeable about danger signs during postpartum.[13]

4.3. Practice of Mother Regarding Puerperal Danger Signs

In the present study, most 119 (85.6%) of the women had a poor level of practice and only 20 (14.4%) had a good level of practice regarding puerperal danger sign among postnatal mother.

Present study reveals that there is no statistically significant association between socio-demographic variables like; age, ethnicity, religion, marriage age, type of family, occupation, education, husband's education level and family income with the awareness level of mother on puerperal danger signs with p -value ($p=0.717$, $p=0.961$, $p=0.060$, $p=0.507$, $p=0.273$, $p=0.817$, $p=0.323$, $p=0.537$ & $p=0.548$) respectively which findings is consistent to a study conducted in Nepal by Manandhar N, Tamang M showed that there is no significant relation between knowledge score and selected demographic variables i.e. age (p value=0.2), education (p value=0.4), gravid (p value=0.9), week gestation (p value=0.3) and number of ANC visit (p value=0.5) since p value is more than 0.05.[7]

5. Conclusion

Knowledge and practice level regarding Puerperal danger sign was well evident in our study, On the basis of these results, it might be prudent to use awareness programme which is a safe, cheap, and effective method for preventing and managing the complications during pregnancy, childbirth, and the postnatal period.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest to be disclosed.

Statement of informed consent

Informed consent was obtained from all individual participants included in the study.

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