Research Article

Knowledge and Practice on Neonatal Care Among Postnatal Mothers in A Selected Teaching Hospital, Kaski District, Nepal

Muna Bhattarai[1]*, Rajmi Gurung[2], Sunita Gurung[3], Sharmila Poudel[1], Janaki Mahato[1], Kalpana Katel[3], Harikala Soti[4], Sabita Koirala[3], Laxmi Paudyal[4]

[1]Women Health, and Development, Gandaki Medical College Teaching Hospital and Research Centre (GMCTHRC), Nepal
[2]Obstetric and Gynaecological Nursing, Gandaki Medical College Teaching Hospital and Research Centre (GMCTHRC), Nepal
[3]Adult Health Nursing, Gandaki Medical College Teaching Hospital and Research Centre (GMCTHRC), Nepal
[4]Child Health Nursing, Gandaki Medical College Teaching Hospital and Research Centre (GMCTHRC), Nepal

Abstract

Newborn care is an essential component of the health care delivery system to maintain the optimal health of the newborn and reduce mortality and morbidity in newborn. Neonatal care refers to the services which are provided by the mother to their neonates such as maintaining thermoregulation, breastfeeding, hygiene, immunization, and care of umbilical cord. The objective of the study was to assess the knowledge and practice of neonatal care among postnatal mothers. A descriptive cross-sectional study design was adopted and 150 postnatal mothers were selected using a non-probability, convenient sampling technique. Data were collected by using semi-structured interviews with a Likert scale and analyzed by using descriptive and inferential statistics. The study result revealed that 60.7 percent of the postnatal mother was aged between more than 25 years. The majority of the postnatal mother (60.7%) of had good knowledge and majority of the respondent (80.7%) of had adequate practice regarding neonatal care. Among multigravida mothers, the majority (61.9%) had good knowledge of neonatal care. Where among primigravida mothers, majority (54.2%) had good knowledge. Among multigravida mothers, the majority (78.6%) had adequate practices on neonatal care. Wheres among primigravida mothers; majority (91.7%) had adequate practices. There is a significant association between the level of knowledge and age (P=0.020), occupational status (P= 0.027), and type of family (p= 0.004). It is concluded that multigravida mothers had good knowledge and adequate practices compared to primigravida mothers. Hence, there is a need for awareness programs by government and non-government organizations, especially among first-time pregnant mothers.

Introduction

Newborn care is the essential care given to every newborn from up to 28 days to ensure survival and wellbeing of the babies including warmth, normal breathing, feeding, hygiene, skincare, immunization, care of umbilical cord, and infection prevention. The services are rendered by members of the health professions for the benefit of the

baby. Within 24 hours, neurologic, renal, endocrine, gastrointestinal, and metabolic functions must be operating competently for life to be sustained (Pillitteri, 2010).

Worldwide, about two-thirds of infant deaths occur in the first month of life, about two-third die in the first week of life, and two-third die in the first 24 hours of life. The neonatal mortality rate in Nepal was 21 deaths per 1000 live births {Nepal Demographic and Health Survey (NDHS), 2016}.

According to UNICEF 2015, the first 28 days of life is the most vulnerable time for a child's survival {United Nations Children's Fund (UNICEF), 2015}. Despite a significant reduction in childhood mortality achieved during the past 2 decades, there are still an estimated 2.7 million neonatal deaths and 2.6 million stillbirths every year. Neonatal deaths and stillbirths remain an important health problem in Nepal {World Health Organization (WHO), 2016}.

Maternal and infant bonding starts from few moments after birth. The form of bonding includes kissing, cuddling, gazing, fonding with the infant. It establishes the mother-child relationship with the art of baby care so that the mother can take full care of the baby while at home (Dutta, 2018).

Neonatal care of the mothers plays an important role in bringing down mortality as well as morbidity because they will have adequate information and enough confidence to take care of their newborn baby who helps to provide quality care and prevent deviation of normal health. Skilled professional care during pregnancy, at birth, and during the postnatal period is essential to enhance the practice of neonatal care (Parlato *et al.*, 2014).

Globally, mortality rates are still high in neonates even after great efforts to improve the health of child. In Nepal, the mortality rates of neonatal, infant and under-five over the past 15 years showed that neonatal mortality has decreased at a slower rate to infant and child mortality. The direct causes of neonate deaths are birth asphyxia, infections, prematurity, low birth weight, hypothermia, and congenital anomalies. Thus, newborn care is essential to reduce neonatal morbidity and mortality (Chaudhary *et al.*, 2013).

In Nepal, due to lack of knowledge among primigravida mothers for the preparation of their new role and responsibilities, most of the women get tired easily by newborn care. Deficient of Knowledge and adherence to traditional health practices leads to high risk of infants. Some traditional practices may cause tetanus, hypothermia and other life-threatening illnesses to newborn baby (Shrestha *et al.*, 2014).

The study showed that mean knowledge on newborn care 47.2, keeping newborn warm 44.2, immunization 67.33. Out of all respondents, 70% knew about early initiation of breastfeeding (Shrestha *et al.*, 2013).

In India, the study showed that knowledge of mothers was inadequate in care of umbilical cord (35%), thermal care (76%) whereas 19% of mothers practice oil instillation into nostrils of newborn and 61% administer gripe water to their babies (Thapa *et al.*, 2016).

Maternal education program and awareness for newborn care are the best ways to improve knowledge of mothers and to adapt healthy practices for newborn care so it is important to determine the knowledge and practice on neonatal care among postnatal mothers.

Materials and Methods

A descriptive cross-sectional study design was adopted to assess the knowledge and practice on neonatal care among postnatal mothers. The sample populations were the postnatal mothers who had undergone either vaginal delivery or cesarean section delivery and admitted to the postnatal wards. The sample size was 150 including both primigravida and multigravida women who have a viable newborn to provide care. A non-probability, purposive sampling technique was used. Data were collected by using semi-structured interviews methods following ethical principles. The data was collected for two months period from August to October 2020 at Gandaki medical college teaching hospital and research centre (GMCTHRC), Pokhara. Questionnaire were developed through extensive review of related literature and tool was given to subject related experts. The demographic related question was developed by the investigator. It consisted of 11 items. The investigator developed a practice related question for Neonatal Care. The tool consisted of 22 items on a five points likert type scale, the options being (0- Never:-, 1- Seldom:-, 2- Sometimes:-, 3- Usually:-, 4- Always).The total score range from 22 to 110. The maximum score was 110 and the minimum score was 22 and it was classified as adequate practices and inadequate practices with a score of ($\geq$50%) and (<50%) respectively. The data were analyzed on SPSS -20 statistical software. The chosen significance level was 95%.

Results and Discussion

The results of the study were summarized and presented as follows.

Part I: Description of Socio-Demographic Characteristics variables related to the postnatal mothers

This part deals with the distribution of participants according to their demographic characteristics. Data is analyzed using descriptive statistics and are summarized in terms of percentage.

Table 1 shows that among 150 mothers, more than half of the respondents (60.7%) belonged to the age group of $\geq$25 years. Majority (92.7%) of respondents followed Hinduism. Regarding ethnicity, (46.7%) belonged to upper cast group whereas (74%) of respondents were from joint family and

majority (92%) were literate among which (43.3%) of the respondents can read and write and only few respondents (3.3%) had obtained bachelor degree and (74%) of the respondents had income less than Rs 7000 per month, (52.7%) respondents were having single child, (84%) respondents were multigravida, (52.7%) had antenatal checkup in hospital whereas most of the respondents (78%) were house maker.

Table 1: Frequency and percentage distribution of sample according variables (N= 150)

Variables	Frequency	Percent
Monthly Income		
< 7000	111	74
>7000	39	26
Frequency of Children		
One	79	52.7
Two or more	47	31.3
Gravida		
Primi	24	16
Multi	126	84
Place of antenatal check up		
Primary health centre	22	14.7
Health post	48	32
Hospital	79	52.7
Nursing	1	0.7
Occupation		
Government Service	4	2.7
Non-Government Service	6	4
Self-employed/ Business	4	2.7
Farmer	11	7.3
Animal Husbandry	2	1.3
Daily Labour	5	3.3
Homemaker	117	78
Students	1	0.7

Part II: Respondents' Levels of Knowledge Regarding Neonatal Care

This part deals with the assessment of levels of knowledge regarding neonatal care among postnatal mother.

Table 2 shows that the level of knowledge regarding neonatal care was classified into two categories namely good knowledge (≥50%) and poor knowledge (<50%). The findings of the study revealed that the level of knowledge was good among 60.7% of the postnatal mothers whereas 39.3% of the postnatal mothers had poor level of knowledge while the findings of the study conducted in Rwanda by

Batamuriza,Uwingabire and AOluyinka (2020) found 65.1% of the postnatal mothers had good knowledge and 34.9% had poor knowledge. Another study conducted in Nepal by Bhandari and Paudyal (2016) found 38.7% of the postnatal mothers had good knowledge and 20% had poor knowledge.

Part III: Respondents' Levels of Practices Regarding Neonatal Care

This part deals with the assessment of levels of practices regarding neonatal care among postnatal mother.

Table 2: Percentage distribution of levels of knowledge regarding neonatal care N=150

Variables	Frequency	Percent
Poor Knowledge < median	**59**	**39.3**
Good Knowledge> median	**91**	**60.7**

Table 3 shows that the level of practice regarding neonatal care was classified into two categories namely adequate practice (≥50%) and inadequate practice (<50%). The findings of the study revealed that the level of practices was adequate among 80.7% of the postnatal mothers whereas 19.3% of the postnatal mothers had inadequate practices while the findings of the study were supported in Nepal by Bhandari and Paudyal (2016) found 73.3% of the postnatal mothers had adequate practices and 26.7% had inadequate practice related to newborn care.

Table 3: Percentage distribution of levels of practices regarding neonatal care N=150

Variables	Frequency	Percent
Inadequate Practice< median	**29**	**19.3**
Adequate Practice ≥ median	**121**	**80.7**

Part IV: Correlation between Knowledge Score and Practice Score Regarding Neonatal Care

This part deals with relationship between knowledge and practices on neonatal care among postnatal mothers

Table 4 reveals that the Spearman's rank correlation coefficient was found to have no correlation between knowledge and practice on neonatal care with correlation coefficient (r= -0.49) at 0.55 level of significance. The strength of this relationship between knowledge and practice score of the postnatal mother was negative, (r= -0.49, p=<0.55) which is no statically significant. This finding is similar to the study conducted in Nepal by Bhandari and Paudyal (2016) which showed Relationship between knowledge and practice score of the mother was not statistically significant at 0.05 level (P =0 .377).

Table 4: Correlation between Knowledge Score and Practice Score Regarding Neonatal Care

Variable	r_s	p value
Knowledge Vs Practice	-0.49	0.55

Correlation is significant at the 0.01 level

Part V: Comparison of Knowledge on Neonatal Care Among Primi and Multi Postnatal Mother

This part compares knowledge on neonatal care among primi and multi postnatal mother

The data presented in Table 5 shows that majority of the primigravida mothers 54.2% had good knowledge 45.8% had poor knowledge, whereas most of multigravida (61.9%) had good & 38.1% had poor knowledge on newborn care. This finding is similar to the study conducted in Mohali by Ramanadin and Bhangu (2017) found primipara mothers (96.2%) had average knowledge, 2.5 % had poor knowledge & only 1.2% had good knowledge, whereas most of multipara (73.8%) had good & 26.2% had average and none them had poor knowledge on newborn care.

Part VI: Comparison of practice on neonatal care among primi and multi postnatal mother

This part compares practice on neonatal care among primi and multi postnatal mother

The data presented in Table 6 shows that among respondents, multigravida mothers (78.6%) had adequate practice than primigravida mothers.

Part VII: Association between knowledge on neonatal care with selected variables

Chi-square test was computed to test the association between the knowledge among neonatal care and selected variables;

Data presented in Table 7 shows that there was significant association between knowledge with the age (P=0.020), occupation (P=0.027) and type of family (p= 0.004). Similarly, there was no statistically significant association between level of knowledge with religion, ethnicity, and income status, place of ANC checkup, educational status and number of children of the respondents' respectively. In this study there was significant association of level of knowledge with selected demographic variables; occupation (*p*=0.027). This was well supported by study conducted in Nepal by Acharya et.al (2015). This study shows that there is significant association between level of knowledge and occupation ($\chi2$ =5.341). In this study there was significant association of level of knowledge and age (*p*=0.020). This was well supported by study conducted in Rwanda by Batamuriza, Uwingabire and AOluyinka (2020). This study shows that there is significant association between level of knowledge and age (p=0.003).

Table 5: Comparison of knowledge on neonatal care among primi and multi postnatal mothers

Variable	Knowledge		$\chi2$	P-Value
	Good	Poor		
	(%)	(%)		
Gravida (N=150)				
Primi	13(54.2)	11(45.8)	0.506	0.477
Multi	78(61.9)	48 (38.1)		

Table 6: Comparison of practice on neonatal care among primi and multi postnatal mothers

Variable	Practice		$\chi2$	P-Value
	Adequate	Inadequate		
	(%)	(%)		
Gravida				
Primi	22(91.7)	2(8.3)	2.217	0.137
Multi	99(78.6)	27 (21.4)		

Table 7: Association between knowledge with selected variables   (N=150)

Variable	Knowledge		$\chi 2$	P-Value
	Good (%)	**Poor (%)**		
Age (in completed year)				
<25years	29 (49.2)	30 (50.8)	5.403	0.020*
≥25 years	62(68.1)	29 (31.9)		
Religion				
Hinduism	87 (62.6)	52(37.4)	2.938	0.87
Non-Hinduism	4 (36.4)	7 (63.6)		
Ethnicity				
Upper cast group	45 (64.3)	25 (35.7)	0.720	0.396
Others	46 (57.5)	34 (42.5)		
Place of ANC Checkup				
Hospital	46 (58.2)	33 (41.8)	0.416	0.519
Others	45 (63.4)	26 (36.6)		
Income Status				
<7000	69 (62.2)	42 (37.8)	0.400	0.527
≥7000	22 (56.4)	17 (43.6)		
Number of Child				
One	59 (57.3)	44 (42.7)	1.579	0.209
Two or More	32 (68.1)	15(31.9)		
Type of Family				
Nuclear	16 (41)	23 (59)	8.520	0.004*
Joint	75(67.6)	36(32.4)		
Educational Status				
Literate	84 (60.9)	54(39.1)	0.030	0.863
Illiterate	7 (58.3)	5(41.7)		
Occupation Status				
Home Maker	77(65.3)	41(34.7)	4.878	0.027*
Others	14(43.8)	18(56.2)		

Note *:   Significance level at < 0.05

Conclusion

Majority postnatal mothers have good knowledge on newborn care. Regarding practice most of the mothers have adequate practice on newborn care. Majority of multigravida mothers had adequate practice on newborn care. There was a not significant difference in knowledge and practices regarding neonatal care between primigravida and multigravida postnatal mothers. Therefore, educational intervention regarding neonatal care is required during the period of antenatal visit. It is a small-scale hospital-based study therefore large-scale hospital base as well as community-based study should be carried out to expand the real setting.

Implication

The finding of the study might be helpful to provide baseline data for the future researches regarding Knowledge on newborn care. The finding of this study would be helpful for planning awareness program concerning newborn care for mothers by local health worker, health post, female community health volunteer and primary health center.

Limitation

The study finding of the study cannot be generalized because of small sample size. The finding has limited applicability because of the sample cannot be said as representation

Recommendation of the Study

1. Local health service center should conduct awareness program in order to increase the awareness level of mothers.
2. Training programs regarding new-born care should be provided to female community health volunteer.
3. More study can be carried on community level.

Authors' Contribution

All the authors were participation during write the complete articles and final form of the manuscript was approved by all respected authors.

Conflict of Interests

Acknowledgement

Funding

References

Acharya N, Dhakal R, Chaudhary D and Baral G (2015) Knowledge on Newborn Care among Postnatal Mothers *Journal of International Journal of Health Sciences and Research* **5**(4). Available from https://www.ijhsr.org/IJHSR_Vol.5_Issue.4_April2015/34.pdf

Batamuriza M, Uwingabire E and Oluyinka A (2020) Essential Newborn Care Among Postnatal Mothers *Journal of Rwanda Journal of Medicine and Health Sciences* **3**(2). Available from file:///C:/Users/Dell/Downloads/Essential_Newborn_Care_Among_Postnatal_Mothers_at_.pdf

Bhandari S and Paudyal SS (2016) Knowledge and Practice of Postnatal Mothers on Newborn Care in Chitwan *Journal ARC Journal of Nursing and Healthcare (AJNH)* **2**(1): 25-30. Available from https://www.arcjournals.org/pdfs/ajnh/v2-i1/3.pdf

Chaudhary J, Dhungana GP and Ghimire H (2013) Factors affecting newborn care practices among tharu mothers in selected village development committees of chitwan district *Journal of Chitwan Medical College.***3**(3): 42-45. Available from http://www.cmc.edu.np/images/gallery/Original%20Articles/WKMWrarticle8.pdf

Dutta DC (2018) Textbook of OBSTETRICS including Perinatology and Contraception. 8th edition. JAYPEE the health science publisher. New Delhi; p520.

Nepal Demographic and Health Survey (2016) Infant and Child Mortality p141-142. Available from http://www.nepal%20demographic%20and%20health%20survey.pdf

Parlato R, Darmstadt G and Tinker A (2014) Saving Newborn lives tools for newborn health, Saving Newborn Lives Initiative Washington, DC

Pillitteri A (2010) Maternal and child health Nursing Care of the childbearing and Childbearing Family.6th edition. China; pg no:448.

Ramanadin P and Bhangu M (2017) A comparative study on knowledge regarding newborn care between primi and multi para *Journal Homepage* **5**(2): 1794-1796. Available from http://www.journalijar.com/uploads/816_IJAR-15676.pdf

Shrestha T, Bhattarai SG and Silwal K (2013) Knowledge and Practice of Postnatal Mother in Newborn Care *Journal of Nepal Medical Association* **52**(190): 372-377. Available from file:///C:/Users/Dell/Downloads/2117-01.%20Manuscript%20 (Article%20Text)-3557-1 - 10-20131020.pdf

Shrestha S, Adachi K, Petrini MA and Shrestha S (2014) Factors associated with post-natal anxiety among primiparous mothers in Nepal **61**(3): 427-434. Available from https://pubmed.ncbi.nlm.nih.gov/25039801/

Thapa B, Souza RBS and Kamath P (2016) Perceived Self-Efficacy Regarding Neonatal Care among Postnatal Mothers of Selected Manipal Group of Hospitals in Udupi District Karnataka. Nitte *University Journal of Health Science* **6**(3): 2249-7110. Available from file:///C:/Users/Dell/Downloads/2016_NitteUniversityJournalofHealthScienceSep2016.pdf

United Nations Children's Fund (2015) Levels and Trends in child mortality. Estimates. Developed by the UN Inter-agency Group for Child Mortality estimation. Available from https://www.un.org/en/development/desa/population/publications/mortality/child-mortality-report-2015.asp

World Health Organization (2016) Making every baby count Audit and review of stillbirth and Neonatal Death. Available from https://apps.who.int/iris/bitstream/handle/10665/250124/WHO-RHR-16.11-eng.pdf?sequence=1