Knowledge on Newborn Care among Primi Postnatal Mother in District Hospital Chitwan, Nepal

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Methods: The objective of the study was to assess the knowledge of newborn care among primipostnatal mothers in the district hospital, Chitwan. A descriptive cross-sectional study design was adopted and 104 postnatal mothers were selected using a non-probability, convenient sampling technique. Data were collected by using interviews. Data entry was done by using Epi data and analysed by SPSS. Descriptive and inferential statistics were used to analyze the collected data.

Keywords: knowledge, newbor, care, postnatal, primi mother.

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Knowledge on Newborn Care among Primi Postnatal Mother in District Hospital Chitwan, Nepal

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Abstract- *Background:* The birth of a newborn is a blissful moment in one's life. Newborn babies constitute the foundation of any nation. It referred to a baby under 28 days of life. During their first month of life, these newborns undergo remarkable physical, cognitive, emotional, psychological, social, sensory and motor skills development. Worldwide, around about three million newborns die in this period. Neonatal mortality is a public issue in low and middle-income countries. Knowledge of newborn care among mothers is important for the survival, growth, and development of a newborn.

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Results: Among total respondents 50.96% of respondent had moderately adequate knowledge, 45.19% had inadequate knowledge, and 3.84% had adequate knowledge. Mothers had good knowledge of aspects like first feeding, cleanliness, and maintenance of body temperature. Socio-demographic variables like age, ethnicity, education, and occupation were significantly associated with knowledge of newborn care at a 95% confidence intervalp-value-<0.05).

Conclusion: Based on the finding of the present study it is concluded that the knowledge of newborn care among primi postnatal mothers is inadequate among half of the respondents, the excellent level of knowledge is very less in comparison to the good and poor knowledge.

Keywords: knowledge, newbor, care, postnatal, primi mother.

I. Introduction

Newborn death is a global public health burden mostly concentrated in low- and middle-income countries.[1]Neonates are a vital link in the life cycle, spanning from conception to adulthood. The neonatal stage is defined as the first twenty-eight days after birth.[2] Newborns face a higher risk of death in this period with an average globalized rate of 17 deaths per thousand live births in the year 2019.[3]

Evidence shows that 2.5 million children lost their lives in the first month of life in 2018, this translates to 7,000 neonatal deaths occurring every day; most of which close to three quarters dying, with one-third of newborns dying on the first day. About 75% of neonate mortality occurs in the first week of life and about one million newborns die within the first 24 hours after birth.[4] On top, 80 percent of all newborn deaths are caused by three preventable and treatable issues namely complications related to prematurity, birth complications including lack of oxygen (asphyxia) and newborn infections such as sepsis and pneumonia. Numerous lives could be saved each year by investing in quality care around the time of birth, coupled with special care for sick and small newborns.[5]There are mainly three major causes of death in the neonatal period worldwide are infections (around 36% of which include pneumonia, severe sepsis, and diarrhoea), 28% of preterm, about 23% of birth asphyxia and 13% due to other causes.[6]

A child born in Southern Asia and sub-Saharan Africa is ten times more likely to die in the first 28th days of life than a child born in a developed and high-income country.[7] The first 28 days of neonate life is the most vulnerable time for survival.[8] WHO formulated and focused the priority strategy to reduce neonatal mortality rate worldwide by following neonatal health: thermoregulation, hygienic skincare and cord care, early initiation and exclusive breastfeeding for neonates, assessment for serious health issues or need of additional care in case of low birth-weight and baby of HIV-infected mother and preventive care.[9] Relevant care after birth is very important for the survival and well-being of the newly born infant. Basic objectives for neonatal care at birth include initiation of normal breathing, prevention of hypothermia, initiation of breastfeeding, protection from infection and early identification of danger signs.[10]

Care of neonates had always been a traditionally and culturally vital role of mothers irrespective of their educational level, occupation status, family income level, family type and religion.[11]

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The neonatal mortality rate per thousand live births in Nepal is 24.2. There are numerous unscientific and unhygienic health practices and social taboos in child-rearing that make the newborn extremely vulnerable.[12] Newborn care of the mothers plays a significant role in bringing down mortality and morbidity because they will have appropriate information and enough confidence to take care of their newborn baby who helps to provide quality and essential care to prevent deviation of normal health.[13] The knowledge of newborn care is directly linked with education level.[14] Out of 363 mothers, 61.70% of the mothers had adequate knowledge of neonatal danger signs. The mothers were educated up to secondary and more education secured good knowledge.[15] One recent study revealed that a significant association was found between the knowledge scores of primipara mothers with their residential area and education level. [16]

The Sustainable Development Goals (SDGs) have set ambitious targets for all countries. South Asia's target is set to reduce newborn deaths from 28 per 1,000 live births in 2016 to 21 per 1,000 live births by 2021.[17]

Out of 17 Sustainable Development Goals (SDGs) set by United Nations in 2015, the third goal, target (No. 3.2) states that all countries aim to put a stop to millions of avoidable deaths of newborns and under-five children by 2030. The targets achieve by reducing neonatal and under-five deaths to no more than 12 and 25 deaths per 1000 live births respectively.[18] the majority of low-income countries are far behind in achieving SDG target number 3.2 goal mostly because of slow progress in reducing neonatal death.[19] Among 518 mothers, more than half of the newborns were bathed within six hours of delivery. Around 50% started breastfeeding within one 1 h of birth. And 44.8% of them did not feed colostrum to their newborns.[20] Numerous studies show that an umbilical cord is one of the sensitive issues concerning newborn care. WHO focuses on the significance of hygiene while handling the cord and applying chlorhexidine, basically in regions where there are over neonatal mortality rates.[21] A study shows that one-third of the participants had good newborn care practice based on three composite variables such as early breastfeeding initiation 83.9%, safe cord care 32.9%, and thermal care 30.6% respectively.[22]

Mothers are the key person for providing newborn care in Nepal.[23] In the context of Nepal, lack of knowledge among primigravida mothers about the preparation for their new roles and responsibilities.[24] The health of newborns has been neglected despite the huge number of deaths due to various causes in Nepal such as preterm birth complications 31%, intrapartum related complications 23%, sepsis 19%, congenital abnormalities 13%, diarrhoea 1%, pneumonia 6%, other conditions 7%.[25] A study was conducted in Nepal, among 276 primiparous mothers, 56% of women had moderate knowledge about newborn care, 44% had a low level of knowledge of breastfeeding, and 78 % had a sufficient level of knowledge about immunisation.[26]

II. MATERIAL AND METHODS

a) Study Design, Setting and Population

A descriptive cross-sectional research design was used for this study to meet its objectives. This study was conducted at the postnatal ward Bharatpur hospital in Chitwan. The main objective of the study was to find out the knowledge on newborn care among primi postnatal mothers. The study population was primigravida postnatal mothers.

b) Sampling Technique

A descriptive cross-sectional study design was adopted to assess the knowledge of newborn care among primi postnatal mothers. The sample populations were the primi postnatal mothers who had undergone either vaginal delivery or cesarean section delivery and were admitted to the postnatal wards. The sample size was 104. A non-probability, purposive sampling technique was used. Data were collected by using structured interview methods following ethical principles. The data were collected for 6 weeks period from August 22nd to October 6th 2021 at Bharatpur district hospital postnatal ward, Chitwan.

c) Instrumentation

The instrument for data collection was a structured interview schedule through face to face interview method which was developed by the researcher herself by reviewing the related literature and consulting with subject experts.

d) Inclusion criteria

All primi postnatal mothers who had undergone either vaginal delivery or cesarean section delivery and were admitted to the postnatal wards were willing to participate. Others criteria was mothers who can understand English and Nepali language.

e) Outcome variable

Find out the knowledge on newborn care among primi postnatal mothers.

f) Explanatory variables

Explanatory variables were age, educational status, ethnicity, types of family, occupation, area of residence, type of delivery and duration of hospital stay etc.

g) Ethical committee approval

Ethical clearance was obtained from Manmohan Memorial Institute of Health Sciences (IRC) Kathmandu, Nepal. Data collection permission was obtained from the Bharatpur district hospital in Chitwan. The purpose of the study was explained to the participants. Verbal consent was taken from all

respondents before the data collection. Privacy was maintained by using a code number for each respondent. Confidentiality was maintained by not disclosing the information to others and assured that the information will be used for study purposes only. Respondents were clearly explained that they have the choice to reject or discontinue the research study at any point during the study time.

h) Questionnaire design

Content validity of the instrument was established by consultation with the research advisor and subject experts. English questionnaire was translated into the local Nepali language to maintain simplicity and comprehensibility with the help of a language expert. Besides, pre-testing was done among 10% of respondents (i.e. 11 respondents) to assess the practicability of use of the instrument and was excluded from the main study. Slight modifications were done to the instrument such as arranging questions in order and adding/deleting some response categories after the pretest.

i) Data management and statistical analysis

The collected data was checked, reviewed and organized for accuracy, completeness and consistency. All collected data were analyzed by using the statistical package for social sciences (SPSS) version 20.0. Association between different variables were tested by Chi-square.

III. Results

Table 1: Socio-demographic Characteristics

n=104

Variables	Frequency (n)	Percentage (%)
Age groups (in completed years)		
<20years	28	26.9
20-25years	53	50.9
>25 years	23	22.9
Residence		
Rural	62	59.6
Urban	42	40.3
Ethnicity		
Brahmin/Chhetri	42	40.3
Janajati	40	38.5
Dalit	18	17.4
Others	4	3.8
Religion		
Hindu	84	80.8
Muslim	4	3.9
Buddhist	6	5.7
Christian	10	9.6
Education Status		
Literate	102	98.1
Illiterate	2	1.9
If Literate, Level of Education(n=102)		
General literate (Can read and write only)	1	0.9
Basic level (Up to 8 classes)	18	17.9
Secondary level	39	38.1
Higher secondary level	29	28.0
Graduate and above	15	15.1
Type of family		
Nuclear	28	26.9
Joint	68	65.5
Extended	8	7.6
Occupation		
Household work	77	74.1
Daily wages	12	11.5
Service	15	14.4

Table 1 shows the socio-demographic variables of respondents. Out of 112 respondent's majority, 50.9% belong to the age group 20-24 years. The present study shows that majority of the respondents were from rural areas 59.6%. Likewise, the majority of the respondents were from janajati ethnicity 38.5% and 80.7% followed the Hindu religion. Majority of respondents 98.0% were literate. Among them, 38.1% had completed secondary level and at least 0.9% could read and write. Regarding the type of family, the majority 65.3% were living in joint

families. Nearly one-third of the respondents 74.0% were household workers.

Table 2: Respondents' Level of Knowledge on Newborn Care

n=104

Variables	Frequency	Percentage (%)
Inadequate knowledge (<50%)	47	45.1
Moderately adequate knowledge (50-75%)	53	50.9
Adequate knowledge (>75%)	4	3.8

Table 2 shows the knowledge score on newborn care which depict that the majority of 50.9% mother had moderately adequate knowledge, 45.1% had inadequate knowledge, and only 3.8% had adequate knowledge of newborn care.

Table 3: Knowledge of General Characteristics of Newborn

n=104

Variables	Frequency	Percentage (%)
Meaning on newborn care**		
Breast feeding	100	96.1
Immunization	58	55.7
Cleanliness	69	66.3
Management of illness	20	19.2
Others	2	1.9
Meaning of newborn		
One week baby	42	40.3
One month baby*	18	17.3
One year baby	44	42.3
Normal weight		
2.5-3.5 kg*	53	50.9
3.6-4 kg	18	17.3
Above 4kg	33	31.7
Newborn sleep		
8-12 hours	31	29.8
12-15 hours	28	26.9
16 -20 hours	32	30.7
More than 20 hours*	13	12.5

*correct response

Table 3 shows that, 96.1% replied breastfeeding is one of the most important areas of newborn care, whereas only 19.2% replied management of illness is the meaning of newborn care. Similarly, 40.3% respondents knew of the newborn period, and 50.9%respondents knew the normal weight of the newborn.

Table 4: Knowledge on Breast Feeding

n=104

Variables	Frequency	Percentage
Initiation of first feeding		
8-10 hours after birth	20	19.2
After 24 hours	10	9.6
After 2 days	2	1.9
Immediately after birth*	72	69.2
First feeding		
Honey	8	7.6
Breast milk/colostrums*	96	92.3
Position for breastfeeding		
Sitting*	59	56.7
Laying	6	5.7
Standing	1	0.9
Not specific	38	36.5
Knowledge on burping		
No	37	35.5

Yes*	47	45.1
Do not know	20	19.2
Knowledge of exclusive breastfeeding		
Yes	46	44.2
No	58	55.7
If, yes(n=46)		
Meaning of EBF		
Feeding only breast milk*	38	82.6
Feeding breastmilk with solid food	8	17.3
Duration of EBF		
6 Months*	28	60.8
Less than 6 months	5	10.8
1 year	3	6.5
2 years	10	21.7

*Correct answer

Table 4 shows 92.3% had knowledge of the first feeding, 56.7% had knowledge of the position of breastfeeding and 47% of mothers said burping should be done after feeding. While asking about exclusive breastfeeding only 44.2% heard, 82.6% knew what exclusive breastfeeding and 60.8% knew its duration.

Table 5: Knowledge of Cleanliness and Maintenance of Body Temperature

n=104

Variables	Frequency	Percentage
Cord care (Need for cord care)		
To prevent infection*	92	88.4
Not necessary to keep the cord clean	5	4.8
Do not know	7	6.7
Way to keep cord clean		
Applying turmeric powder	2	1.9
Cleaning with warm water and cotton*	86	82.6
Applying cow dung	1	0.9
Way to keep the eye clean		
Cleaning the eyes separately with warm water and cotton*	74	71.1
Cleaning with fingers	3	2.8
Applying kajal	25	24.0
Not necessary to keep the eyes clean	2	1.9
An appropriate time to give a bath		
Immediately after birth	5	4.8
Within 24 hours of delivery	53	50.9
After 24 hours of delivery*	46	44.3
Maintenance of body temperature **		
By covering the newborn with warm cotton clothes	67	64.4
By delay bathing	30	28.8
By keeping newborn in contact with mother	62	59.6

*Correct answer ** Multiple responses

Table 5 shows the majority of mothers 88.46% of mothers knew the umbilical cord should be kept clean to prevent infection and 82.6% of mothers were knowledgeable about cleaning cords with warm water and cotton. In addition, 71.1% of mothers knew that their eyes should be cleaned using warm water and cotton. Regarding maintenance of body temperature, 44.2% knew an appropriate time to give baby baths after delivery and only 28% knew that delaying bathing after birth helps in maintaining body temperature.

Table 6: Knowledge on Immunization and Newborn Danger Signs
n=104

Variables	Frequency	Percentage
Heard about immunization		
Yes	81	77.8
No	23	22.2
If, yes(n=81)		
The appropriate time for BCG immunization		
Within 2 months	6	7.4
Within 45 days*	17	20.9
Within 1 year	2	2.4
Above 1 year	56	69.1
Necessity of vaccination		
To increases weight	9	11.1
To prevent some diseases*	67	82.7
Do not know	5	6.1
Aware of newborn danger sign		
Yes	50	48.0
No	54	51.9
If, yes (n=50) **		
Feeling too cold	29	58
Convulsion	18	36
Cord infection	34	68
Feeling too hot	30	60
Seeking medical help(n=104) **		
Not sucking well	85	81.7
Difficulty in breathing	81	77.8
Yellowish discoloration of skin	40	38.4
Unconscious	39	37.5

*Correct answer

Table 6 delineates that 77.8% had heard about immunization. Similarly, 69.1% of mothers were unknown about the appropriate time for BCG vaccination and 82.1% knew the necessity of vaccination is to prevent some diseases. Likewise, 48.0% had heard about newborn danger signs and 68% considered cord infection as a danger sign.

Table 7: Association between the socio-demographic variables and knowledge on newborn care
n=104

Variables	Inadequate	Moderately adequate - Adequate	Value	p-value
Age				
< 20years	17(16.4%)	11(10.5%)	6.113	0.047*
20 – 24years	24(23.0%)	29(27.8%)		
25 and above	6(5.7%)	17(16.3%)		
Religion				
Hindu	37(35.5%)	47(45.1%)	0.231	0.611
Non hindu	10(9.6%)	10(9.6%)		
Education				
Up lower secondary	10(9.6%)	9(8.6%)	6.074	0.03*
Secondary and above	35(33.6%)	48(46.1%)		
Ethnicity				
Bhramin/Chhetri	14(13.4%)	32(30.7%)	7.271	0.026*
Janajati	23(22.1%)	17(16.3%)		
Dalit	10(9.6)	8(7.69%)		

Type of family				
Nuclear	15(14.4%)	13(12.5%)	1.086	0.297
Joint and extended	32(30.7%)	44(42.3%)		
Occupation				
Housewife	41(39.4%)	36(34.6%)	7.768	0.05*
Service and daily Wages	6(5.7%)	21(20.1%)		
Type of delivery				
Caesarean section	18(17.3%)	23(22.1%)	0.045	0.831
Normal vaginal delivery	29(27.8%)	34(32.6%)		
Duration of hospital stay				
≤ 5 days	43(41.3%)	49(47.1%)	0.77	0.38
≥6 days	4(3.8%)	8(7.6%)		

*Significantly associated in 95% confidence interval. P-value obtained from Pearson chi-square ***

Table 9 shows that, there is significant association of knowledge on newborn care with mother age (p=0.047), education (p=0.03), ethnicity (p=0.026) and occupation (p=0.05).

IV. Discussion

The present study found that, 50.9% had moderately adequate knowledge, 45.2% had inadequate knowledge and only 3.8% had adequate knowledge of newborn care. Which was in contrast to the study conducted by Bagilkar & Anuchihra (2014) where 68% had moderately adequate knowledge, 30% had adequate knowledge and only 2% had inadequate knowledge.[27] In the current study, only 17.3% mothers answered one month baby is the newborn, which was inconsistence with the study conducted in Nepal by Bhandari & Sharma (2016) where 85.3% know the meaning of newborn baby.[28]

In this study, 69.23% of the respondents knew about the right time for the initiation of breastfeeding and 92.3% knows colostrum feeding. This result were similar to the study conducted by Mohite, Mohite, & Kakade (2012) in Bangaladesh. The result that 59.6% had fair knowledge about breastfeeding and 82.7% knew about colostrum feeding.[29] A contras finding which was conducted by Pathak, Singh, Agarwal, & Kant (2021) shows that only 4.5% of the mothers knew about the initiation of breastfeeding to the baby within one hour after delivery. Regarding the knowledge of burping after feeding, only 45.1% knew burping is necessary. Whereas, the contrast finding shows that 93.5% knew burping after feeding is necessary.[30]

Most of the respondents 96.1% knew about breastfeeding is one of the important parts of newborn care which is supported by the finding of Berhea, Belachew, & Abreha, (2018) where 97.4% replied about breastfeeding.[31] It contradict the findings by Chaudhary, Dhungana, & Ghimire (2013) in Nepal [32] and Berhe, et al., (2016) in North Ethiopia showing that 52.5% and 63.1%[33] were knowledgeable about breastfeeding respectively.

Regarding exclusive breastfeeding 44.2% had heard it while a contrast study conducted by Ahmed & Piro (2019) shows that 69.2% of the mothers answered about exclusive breastfeeding.[34] This study reflects that 88.4% of mothers knew cord should be kept clean to prevent infection and 71.1% knew how to keep eye-clean. This is similar to the finding of Bhandari & Sharma (2016) where the primi postnatal mothers who revealed that 56.3% of the answered cord should be kept clean and 88% had knowledge on eye care to prevent infection.[28]

Regarding immunization, though 77.8% of respondents had heard about it only 20.9% knew about the appropriate time for B.C.G vaccination which contradicts the finding in the study by Pathak, Singh, Agarwal, & Kant, (2021) which revealed that (97%) were fully immunized.[30] A study was done by Bhandari, and Sharma,2016 expressed centpercent of mothers had heard about immunization.[28] In the present study, 48.0% had heard about newborn danger signs. Where 81.73% of mothers thought poor sucking was a serious condition where they should seek medical help. This is in contrast to the finding of Pathak, Singh, Agarwal, & Kant, (2021) which shows that (98%), (78%), (37%), (and 31%) knew fever, fast breathing, chest in drawing and unable to feed respectively were the newborn danger signs.[30]According to the study the knowledge on newborn care is significant association with the education of the mother (p=0.03) which was similar to the study conducted by Bagilkar, & Anuchihra (2014) and Sakelo, Assefa, Oljira, & Assefa (2020) were the significant association of knowledge with maternal education with newborn care. [35]

V. Conclusion

Based on the finding of the present study it is concluded that the knowledge of newborn care among primi postnatal mothers is inadequate in almost half of

the respondents, the adequate level of knowledge is very less in comparison to the moderately adequate and inadequate knowledge. Knowledge of breastfeeding, knowledge on eye care, and cord care were good but mothers were lacking knowledge in various aspects of newborn care and newborn danger sign. As the study was about population on primipostnatal mothers who had no experience in raring and caring for newborns. Hence, emphasizing health education regarding newborn care during antenatal visits might increase the knowledge during the postnatal period.

VI. Limitations of the Study

The study was conducted in only one district hospital in Chitwan. The finding cannot be generalized to the overall population as well as others setting.

VII. Recommendation

Health education on essential newborn care should be integrated into routine antenatal services and re-emphasized in the postnatal period to help improve maternal knowledge and essential newborn care practices.

Health intervention should be provided for primigravida in the special focus area like immunization, exclusive breastfeeding, prevent hypothermia, and cleanliness of newborn danger signs.

Conflict of Interest: The authors do not have any conflict of interest arising from the study.

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39