

Original Research Article

## Newborn Care Practices in a Jhangad Community of Eastern Nepal

Sunil Shah<sup>1</sup>, Ghanashyam Sharma<sup>2</sup>, Tribhuvan Chandra<sup>3</sup>, Ramesh Chandra<sup>4</sup>, Niraj Khatri Sapkota<sup>5</sup>

<sup>1</sup>Lecturer, Department of Community Medicine, Nepalgunj Medical College, Teaching Hospital, Kohalpur, Banke, Nepal,

<sup>2</sup>Program Coordinator, Nepal CRS Company/MI-Project, Regional Office, Chitwan, Bharatpur.

<sup>3</sup>Lecturer, Department of Emergency Medicine, Nepalgunj Medical College, Teaching Hospital, Kohalpur, Banke, Nepal.

<sup>4</sup>Professor and Head, Dept. of Community Medicine, Nepalgunj Medical College, Chisapani, Banke, Nepal.

<sup>5</sup>Chitwan Medical College, Kailashnagar, Chitwan.

Corresponding Author: Sunil Shah

Received: 27/10/2015

Revised: 22/11/2015

Accepted: 26/11/2015

### ABSTRACT

**Background:** Clean delivery and clean cord care are used for the prevention of newborn infections, especially tetanus and sepsis.

**Objectives:** The objective of this study was to explore neonatal care practices in relation to home delivery in a Jhangad community of Eastern Nepal and to identify a relationship of socio-demographic characteristics of mothers who recently delivered at home with neonatal care practices.

**Materials and methods:** The Lot Quality Assurance Sampling (LQAS) technique was applied. Participants included 162 mothers of the Morang and Sunsari districts of Eastern Nepal who recently delivered newborns.

**Results:** Of the respondents, 69.1% were illiterate, 82% were wage laborers and 53% were living in a joint family. Clean cord care was found in 79.6% of home deliveries. The stump of the umbilical cord was left undressed in 85.2% of deliveries.

The majority of newborns, 76.5%, were bathed within 24 hours of their birth. About 11.7% of deliveries were conducted on a plastic sheet, 59.9% on an old mat and 28.4% on open ground. Good thermal care was only found in 1.2% of the newborns. Good breast feeding practice was found in 29.6% of the mothers. Roughly 32.7% of mother's breast fed immediately after childbirth and about 60% practiced pre-lacteal feeding.

**Conclusion:** Delayed wrapping, bathing within one hour, cord application, delayed breastfeeding and pre-lacteal feeding were common high-risk practices in the Jhangad community. Practices concerning home delivery and neonatal care are based on deep-seated traditional beliefs and ignorance.

**Key Words:** delivery care, cord cutting, thermal care, breastfeeding, prelacteal feeding.

### INTRODUCTION

Government of Nepal has given priority to safe-motherhood programme for reducing maternal and neonatal morbidity and mortality. The current statistics of the 4000 women and 30,000 newborns are dying every year in Nepal. This will be significantly reduced by

striving to achieve the MDGs of 60% of deliveries attended by SBA by 2015. The common five causes of maternal deaths most of which are preventable with the provision of adequate ANC, safe delivery practices and timely referral and well organized and accessible FP services. (1-3) By tradition, the home is the most

common place for delivery in Nepal. The challenge is not to change the culture of home delivery but to make it clean, safe and within the limits of referral management to avoid the death or serious illness of the mother and newborn. The neonatal mortality care guideline recognizes that the home will remain the preferred place for the foreseeable future; it recommends that women with health problems during pregnancy should deliver in a HF. (4,5) World Health Organization (WHO) estimates, the causes of neonatal mortality to be infections, 32%, birth asphyxia and injuries, 29%, and complications of pre-maturity. (6,7)

Nepal government has formulated the “National Essential Maternal and Neonatal Health Care Package” in 2006, which consists of basic sets of health care interventions that should be available at different levels of the health care delivery system, to all women and their newborns to prevent and manage common obstetric and neonatal complications. The MNH package define all those activities which should perform at family level to District Hospital health care delivery system for ensuring that every pregnancy result in best possible outcome for mother and newborn. (8)

The health outcomes can be substantially improved if the mother, family and community members adopt the following six practices which are: newborn is dried thoroughly immediately after birth, kept covered and warm at all times, not bathed for the first 24 hours of birth, cord is cut with clean blade and nothing is applied on the stump, breast fed within one hour of birth and monitored for danger signs and treated immediately. In 14.8% of the deliveries, something was applied on the cord which is less than reported by NDHS 2006 that showed 36.2 percent in the Terai area of Nepal. (9-11)

There is limited use of safe motherhood and neonatal healthcare services by disadvantaged ethnic groups

and dalits (lower castes) because of limited knowledge on maternal and neonatal health issues and lack of prior preparation to access those services. (12)

## **MATERIALS AND METHODS**

This was a community based descriptive, cross sectional study conducted among mothers who delivered within 28 days in the Morang and Sunsari districts of Eastern Nepal. The study was conducted from July 2013 to December 2013. Quantitative and qualitative research methods were used. The study population included all mothers of the Jhangad community who had delivered at home before 28 days. In the first stage, geographical areas with the Jhangad population were divided into eight sub-geographical areas and 20 samples were collected randomly from each sub-geographical area using the LQAS technique. A total of 167 samples were collected.

A semi-structured questionnaire was designed and pre-tested. Before starting the interview the mothers were given a verbal consent and an explanation of the study. If the informant selected turned out not to fulfill criteria for inclusion then the informant next to her was included. Descriptive analysis such as percentage, mean and standard deviation (SD) were used to describe composition and relationship among variables.

The data was entered in the Statistical Package for Social Sciences (SPSS). Chi-Square was used to determine the relationship of the study variables. P-values based on the chi square test were calculated. Qualitative data was analyzed by content analysis. The results were analyzed with both descriptive and inferential statistics.

## **RESULTS**

A total of 162 mothers responded and the response rate was 100 percent. The mean age of mothers who delivered within

28 days was 25.02 years with a standard deviation of  $\pm 4.01$ . Of the respondents, 69.1% were illiterate, 82 % were wage labourer, 53% were living with a joint

family, 79.6% did not have sufficient income to maintain daily expenses and about 58% of the newborns were male (Table 1).

**Table 1: Socio-demographic characteristics of respondents**

Socio-demographic characteristics	Frequency (n=162)	Percentage (%)
Age group	Mean=25.02	SD= $\pm 4.01$
15-19	9	5.6
20-24	62	38.3
25-29	72	44.4
30-34	12	7.4
35-39	7	4.3
Educational status		
Illiterate	112	69.1
Literate	8	4.9
Primary	28	17.3
Secondary	14	8.6
Occupation of the mother		
Wage labor	134	82.7
Agriculture	26	16
Service	2	1.2
Type of family		
Nuclear	76	46.9
Joint	86	53.1
Economic Status		
Lower	129	79.6
Middle	30	18.5
Higher	3	1.9
Sex of the child		
Male	94	58
Female	68	42
Parity	Mean=2.48	SD= $\pm 1.26$

**Table 2: Cord cutting practices in the community**

Cord cutting practices	Frequency (n=162)	Percentage (%)
Cord cutting instrument		
New blade	162	100
Application to the cord (n=162)		
Yes	24	14.8
No	138	85.2
Dressing applied to umbilicus(n=24)		
Oil	6	25
Ointment	9	37.5
Coal	9	37.5
Instrument used to tie the cord		
Boiled/new thread	162	100
Tying of cut part of cord		
No	153	94.4
Yes	9	5.6
Thing used to tie the cut part (n=9)		
Piece of cloth	9	100
Clean cord care (n=162)		
Yes	129	79.6
No	33	20.4

In 100% of the deliveries, the umbilical cord was cut with a new blade and tied with a new. The stump of the umbilical cord was left undressed in 85.2% of deliveries. Coal was applied in 37.5%, ointment in 37.5% and oil in 25% of the umbilical cord of neonates. Cut part of umbilical cord was not tied with anything

in 94.4 %. Clean cord care means use of a clean cutting instrument to cut the umbilical cord, and use of a clean thread to tie it, and not applying anything on the umbilical stump and not tying the cut part with anything. Clean cord care was found in 79.6% of home deliveries.

**Table 3: Clean cord care practice and association with socio-demographic factors**

Variable	Clean cord care		P-value
	No	Yes	
Educational status			0.014
Illiterate	23	89	
Literate	5	3	
Primary	3	25	
Secondary	2	12	
Family type			0.083
Nuclear	20	56	
Joint	13	73	
Economic status			0.759
Lower	25	104	
Middle	7	23	
Higher	1	2	
Occupation			0.758
Agriculture	5	21	
Service	0	2	
Labor	28	106	
Sex			0.396
Male	17	77	
Female	16	52	

The association on clean cord care practice with socio-demographic factors shows it is statistically significant with the education level of the mother (P-value <0.05).

**Table 4: Thermal Care Practices in study area**

Thermal care practices	Frequency (n=162)	Percentage (%)
Time of cleaning and drying the newborn	n=162	
Before the exit of placenta	6	3.7
After the exit of placenta	156	96.3
Time of cord cutting	N=162	
Before the delivery of placenta	5	3.1
After the delivery of placenta	157	96.9
Time taken for delivery of placenta	N=162	
Less than 5 minutes	8	4.9
5-15 minutes	24	14.8
15-30 minutes	114	70.4
More than 30 minutes	16	9.9
Surface of child birth	N=162	
On plastic	19	11.7
On mat	97	59.9
On ground	46	28.4
Materials used for cleaning and drying newborn	N=162	
Hot water and soap	112	69.1
Used washed clothes	46	28.4
New clothes	4	2.5
Activities done to warm the newborn	N=162	
Burnt cow dung	156	96.3
Other	6	3.7
Covered before the delivery of placenta	N=162	
Yes	157	96.9
No	5	3.1
Materials for covering before exit of placenta	N=5	
Old washed clothes	4	80
New clothes	1	20
Time of bathing newborn	N=162	
Within 24 hours	124	76.5
After 24 hours	38	23.5
Part of body covered	N=162	
Head to leg	140	84.4
Only body and legs	22	13.6
Placing newborn just after birth	N=162	
With mother	140	86.4
On bed	17	10.5
On ground	5	3.1
Good thermal care		
No	160	98.8
Yes	2	1.2

Only 3.7% of newborns were washed and cleaned and 3.1% of newborns were covered before the delivery of the placenta. A majority of newborns, 69.1%, were cleaned and dried with hot water and soap, 76.2%, were wrapped after bathing, 86.4%, were covered from head to leg, 80%, were wrapped with old washed clothes, 76.5%, were bathed within 24

hours of their birth and 86.4%, were placed with their mother.

Good thermal care is drying and wrapping of the newborn before the placenta is delivered. This delays the newborn's first bath for more than 24 hours and the wrapping of the baby's head, body and legs. Good thermal care was found only in 1.2% of the newborns.

**Table 5: Good thermal care and association with socio-demographic factors**

Variable	Good thermal care		P-value
	No	Yes	
Educational status			0.000
Illiterate	112	0	
Literate	8	0	
Primary	28	0	
Secondary	12	2	
Family type			1.000
Nuclear	75	1	
Joint	85	1	
Economic status			0.511
Lower	128	1	
Middle	29	1	
Higher	3	0	
Occupation			0.419
Agriculture	25	1	
Service	2	0	
Labor	133	1	
Sex			0.512
Male	92	2	
Female	68	0	

The association of good thermal care practice with socio-demographic factors shows that education of the mother is statistically significant with good thermal care (p value <0.05).

**Table 6: Breast feeding practices in the community**

Breast feeding practices	Frequency	Percentage (%)
Initiation of breast feeding	N=162	
Immediately after birth	53	32.7
In 3-24 hours	11	6.8
In 1-2.5 days	16	9.9
After 2.5 days	82	50.6
Colostrums feeding	N=162	
Yes	121	74.7
No	41	25.3
Pre-lacteal feeding	N=162	
Yes	99	61.1
No	63	38.9
Type of pre-lacteal feeding	N=99	
Milk of other women	75	75.8
Milk of goat	24	24.2
Reason for not colostrums feeding	N=41	
As it is dirty	31	75.6
As senior said not to feed	6	14.6
As it is spicy due to spicy meal eaten by mother	2	1.2
Other	2	1.2
Good breast feeding	N=162	
No	114	70.4
Yes	48	29.6

A majority of newborns, 50.6%, were breastfed after 2.5 days followed by 32.7% of mothers who breastfed

immediately after birth. About 60% practiced pre-lacteal feeding. Breast milk of other mothers, 75.8%, was found

common for pre-lacteal feeding followed by goat milk, 24.2%. Good breastfeeding practice was considered as initiation of breastfeeding immediately after birth for example, within one hour, not pre-lacteal feeding and not feeding colostrums. Good breastfeeding practice was found only in 29.6%.

**Table 7: Good breast feeding practice and association with socio-demographic factors**

Variable	Good breast feeding practice		P-value
	No	Yes	
Educational status			0.046
Illiterate	76	36	
Literate	6	2	
Primary	25	3	
Secondary	7	7	
Family type			0.491
Nuclear	51	25	
Joint	63	23	
Economic status			0.362
Lower	92	37	
Middle	19	11	
Higher	3	0	
Occupation			0.666
Agriculture	17	9	
Service	1	1	
Labor	96	38	
Sex			0.148
Male	62	32	
Female	52	16	

The association of good breastfeeding practice with socio-demographic factors shows that education of the mother is statistically significant with good breastfeeding practice (p value <0.05).

## DISCUSSION

Infection accounts up to 36% of neonatal deaths. Therefore, WHO emphasizes “five cleans” during the delivery. The “five cleans” are: a clean delivery surface, clean hands of the birth attendant, a clean blade, a clean tie and a clean cord stump with nothing applied on it. In this study, one hundred percent of women reported the use of a clean instrument to cut the umbilical cord, clean thread to tie the cord. 85.2% of mothers applied nothing on umbilical stump and 94.4% did not tie the cut part of the umbilical stump, so clean cord care was found in 79.6% of deliveries. The use of a sterilized instrument to cut the cord was

higher than reported by NDHS 2006, 79%.<sup>(13)</sup>

The Indian study from Uttar Pradesh did not take into consideration the application to the cord stump where as the present study does take into consideration this parameter.<sup>(14)</sup> Moreover, the present study did not enquire how long the blade or thread was boiled. Boiling may have been insufficient or items may have been re-contaminated before being used, and this figure may overestimate the prevalence of effective clean cord care. Sreeramreddy CT et al reported that 90.4% used a new blade to cut the umbilical cord in urban areas.<sup>(15,16)</sup> The NDHS 2006 also reported similar findings regarding the use of a sterilized instrument to cut the cord which is 93.5% in the Terai area of Nepal. An earlier study from West Bengal of India by Dasgupta S, Das P, Mandal NK et al reported that 86.7% used the boiled instrument for cutting the cord, which was less than the present study.<sup>(17,18)</sup>

Similar practices have been reported in Nepal by NDHS 2006. WHO has focused on thermal care of newborn. In this study, the practice of drying a baby before the delivery of the placenta was found only in 3.7% of the deliveries which is less compared to NDHS 2006 in the Terai area of Nepal, 47.5%, and in Nepal, 42.6%.<sup>(19,20)</sup> According to the study by Osrin D et al from the rural areas, it reported the use of oil, oil and turmeric, antiseptic and oil & ash as common materials were applied to the umbilical cord stump which is consistent with the present study.<sup>(21)</sup>

The practice of wrapping the baby before the delivery of the placenta was found in 3.1% of the deliveries which is less than the reported by NDHS 2006 in the Terai area, 47.3%, and in Nepal, 44.4%. In this study, 23.5% babies were a given bath after 24 hours of birth which is more than was reported by NDHS 2006 in the Terai area, 15%, and in Nepal, 9%, and an earlier study from Karachi, Pakistan by



Firkee FF, Ali TS, Durocher JM et al, 17.4%.

Despite the low usage of CHDK in the present study, a new or boiled blade was used to cut the cord in all of deliveries. This practice is encouraging as compared to the practice in rural areas where a sickle or wooden knife was used in nearly one-third of deliveries and an old, unboiled blade was used in 23% of deliveries as stated by Osrin D et al. In this study 50.6% of the newborns were breast fed after two and half days followed by 32.7% being breast fed immediately after birth which is lesser than the previous studies done by Sreeramreddy CT et al in urban areas, 57.9%, and the study by Osrin D et al in the rural areas of Nepal 63%.<sup>(22)</sup> Practices like pre lacteal feeding and discarding colostrums is still reported as a matter of concern.<sup>(21, 22)</sup>

Moreover, 61.1% of the newborns received a pre lacteal feed, which is higher than the previously described by Osrin D et al in rural areas of Nepal<sup>(21)</sup> and NDHS 2006 in Nepal, 37%. About 25.3% of the mothers discarded colostrums, compared to the study by Sreeramreddy CT et al, 10 %, and the study conducted by Osrin D et al, 40%, in rural areas of Nepal.<sup>(14, 22)</sup> This study showed good breast-feeding practice by 29.6% mothers. Education of the mother was found significant with clean cord care, good thermal care and good breast feeding practice ( $p < 0.05$ ). Many conditions that result in a newborn dying can easily be prevented or treated.<sup>(23)</sup>

## CONCLUSION

Newborn mortality can be significantly reduced through improved household practices and use of community-based health services. Several efforts have been made to reduce child mortality. The Nepal government formulated the "National Neonatal Health Strategy" with the goal to improve the health and survival of newborn babies in the country and the strategic objectives

focus on increasing the adoption of healthy newborn care practices, reducing the prevailing harmful practices and strengthening neonatal health services. Delayed wrapping, bathing within one hour, cord application, delayed breast feeding and pre-lacteal feeding were found to be common high risk neonatal care practices in the Jhangad community. Mothers were not aware of the kangaroo mother care for thermal protection of the newborn. Practices concerning neonatal care are based on deep-seated traditional beliefs and ignorance.

## ACKNOWLEDGEMENTS

I acknowledge residents, colleagues, library unit, medical record section and mothers helping me to collect data, DPHO for allowing me to carry out the study and the Professor Rajendra Raj Wagle from IOM, TU and Professor S.M. Sahu from Nepalgunj Medical College for their mentorship. I would like to thank the staff of health facilities and the study participants.

## REFERENCES

1. WHO. Make every child count, World Health Report.2005.
2. Park K. Preventive and Social Medicine, 17th edi. India; 2002.
3. South East Asia Region. Regional Strategy for Reduction of maternal mortality in the South East Asia Region, India; 2000: RC-53(13).
4. FHD/DoHS/HMG Nepal, 2002. National Safe-motherhood plan (2002-2017).
5. National Essential Maternal and Neonatal Health Care Package: Ministry of Health & Population/GN Department of Health Services, Family Health Division; 2006.
6. MCHRC. Confidential enquiry into Stillbirths and Deaths in infancy. Maternal and Child Health Research Consortium; London, 1998.
7. Desk Review Research on BCC/IEC Programme in Health, Ministry of Health & Population, Nepal; June 2006

8. Bolam A, Manandhar D.S, Shrestha P. et al. Factors affecting home delivery in the Kathmandu Valley. Center for International Child Health. Institute of Child Health, London and MIRA Project, Maternity Hospital, Kathmandu Nepal; 1998.
9. Nepal Demographic and Health Survey, Ministry of Health & Population/New Era/ORC Macro, Kathmandu, Nepal; 2001.
10. Nepal Demographic and Health Survey, Ministry of Health & Population/New Era/ORC Macro, Kathmandu Nepal; 2006.
11. Equity and Access program, EAP Action Aid/SSMP, Kathmandu, Nepal.
12. Darmstadt GL, Bhutta ZA, Cousens S et.al. Evidence-based, cost-effective interventions: how many newborn babies can we save? *Lancet* 2005; 365(9463): 977-988
13. T Sreeramareddy, Hari S, et al. Home delivery and newborn care practices among urban women in western Nepal: a questionnaire survey. *BMC. pregnancy childbirth* 2006; 6:27
14. Moss W, Darmstadt G, Marsh D, Black R, Santosham M: Research priorities for the reduction of perinatal and neonatal morbidity and mortality in developing country communities. *J Perinatol.* 2002; 22: 484-495.
15. Firkee FF, Ali TS, Durocher JM et al. Newborn care practices in low socio-economic settlements of Karachi, Pakistan. *Social Science Medicine.* 2005; 60(5):911-21.
16. Rahi M, Taneja DK, Misra A et al. Newborn care practices in an urban slum of Delhi. *Indian Journal of Medical Sciences.* 2006; 60(12): 506-513.
17. Dasgupta S, Das P, Mandal NK et al. A study on intra natal care practices in a district of West Bengal. *Indian Journal of Public Health.* 2006; 50(1): 15-8.
18. Department of Reproductive Health and Research. *Maternal and Newborn Health.* WHO: 2005.
19. Thapa N, Chongsuvivatwong V, Geater AF et al. Infant death rates and animal-shed delivery in remote rural areas of Nepal. *Social Science Medicine.* 2000; 51:1447-56
20. Adikari RK and Kratz EM: *Child Health and Nutrition*, third edition, Health Learning material centre. Kathmandu; 2001.
21. Osrin D, Tumbahangphe KM, et al. Cross sectional community based study of care of newborn infants in Nepal. *BMJ.* 2002; 325:1063.
22. Barnett S, Azad K, Barua S et al. *Maternal and Newborn-care Practices during Pregnancy, Childbirth, and the Postnatal Period: A Comparison in Three Rural Districts in Bangladesh.* *Journal of Health Population Nutrition* 2006; 24(4).
23. Gro Harlem Brundtland, "Plenary Address" delivered at United Nations General Assembly Special Session on Children, 2002: 9.

How to cite this article: Shah S, Sharma G, Chandra T et al. Newborn care practices in a Jhanged community of eastern Nepal. *Int J Health Sci Res.* 2015; 5(12):6-13.

\*\*\*\*\*