



ORIGINAL RESEARCH ARTICLE

FACTORS AFFECTING NEWBORN CARE PRACTICES AMONG THARU MOTHERS IN
SELECTED VILLAGE DEVELOPMENT COMMITTEES OF CHITWAN DISTRICT

J Chaudhary, GP Dhungana and H Ghimire*

Department of Community Medicine and Public Health, Chitwan Medical College, Bharatpur-10, Chitwan, Nepal

*Correspondence to : Mr Harish Chandra Ghimire, Department of Community Medicine and Public Health,

Chitwan Medical College, Bharatpur-10, Chitwan, Nepal. Email: jukkichaudhary@gmail.com

ABSTRACT

Although under five and infant mortality has been reducing in Nepal, neonatal mortality remains largely unchanged. Newborn care practices in the family and in the community acts as contributing factors which could be improved by adopting simple interventions at community level. The objective of the study was to identify newborn care practices (cord care, breastfeeding, and bathing) and factors affecting it. The study is cross-sectional descriptive and analytical conducted at Bachauli and Khairahani VDCs of Chitwan district from July to December 2012. A total 181 Tharu mothers were interviewed using semi structured interview schedule. Data processing and analysis was done using SPSS. The study revealed that 99.4% newborns had cord care (cutting, tying and applying nothing or using antiseptic). All newborns were breastfed and given colostrums as first feed but initiation of breastfeeding within one hour of delivery was only 52.5 %. Ninety seven per cent were bathed after 24 hours of delivery. Mothers who knew about newborn care were more likely to practice cord care (OR=0.10, 95% CI=0.02-0.41) in comparison to mothers who do not know about it. Compared to mothers with secondary and primary education, mothers having higher education were breastfeeding within one hour of delivery (OR= 2.06, 95% CI=1.12-3.81). Delaying in bathing was more practiced in institutional deliveries compared to home deliveries (OR= 12.11, 95% CI=1.65-88.64). Overall newborn care practices were acceptable as per the findings of this study. Awareness programs regarding initiation of breastfeeding within one hour of delivery should be strengthening.

Key Words: *Newborn care, cord care, breastfeeding and bathing.*

INTRODUCTION

Great efforts have been made to improve health of child around the world but mortality rates are still high in neonates. Trend of neonatal, infant, and under-five mortality rates in Nepal over the past 15 years reveals that neonatal mortality has decreased at a slower pace than infant and child mortality. The direct causes of these deaths are birth asphyxia, infections, prematurity, low birth weight, hypothermia, and congenital anomalies. Contributing factors include inadequate medical facilities for antenatal and natal services and inappropriate newborn care practices in the family and in the community, nutritional status of mothers, educational and general status of women in the family. Nepal had made progress in number of health indicators in recent years such as increased antenatal care, postnatal visits, improved delivery practices, improved maternal health and newborn care indicators which are directly or indirectly related to neonatal health.^{1,3} Despite these improvements, neonatal mortality has remained the same over the past five years and newborns are still at-risk. Thus, newborn care is essential to reduce neonatal morbidity and mortality. Caste/ethnicity could be an important determining factor for newborn care practices, particularly in the communities where there is a caste system which considers

some castes as superior and others as inferior. Various studies have shown that newborn care practice is poor among lower caste groups.⁴ Between 1996 and 2006, there was documented increased inequity of neonatal mortality between advantaged and disadvantaged caste/ethnic groups.⁵

Studies on newborn care practices during postpartum period were inadequate in Tharu community in Chitwan district. So far, none of the research publications available has looked into the effect of ethnicity/caste on newborn care practices. The study aims to identify the new born care practices (cord care, breastfeeding, bathing) and factors affecting it.

MATERIALS AND METHODS

Study design

The study design was cross-sectional descriptive conducted among Tharu mothers having children between seven days to under one year at Khairahani and Bachauli VDCs of Chitwan district.

Sample size

Total 181 Tharu mothers were selected ($n=z^2pq/l^2$) where, p

= 0.5, $q = (1-p) = 0.5$, $l =$ allowable error (absolute) = 0.077 from two Khairahani and Bachauli VDCs of Chitwan district. The two VDCs were selected on the basis of Tharu population density. All eligible mothers of two VDCs were interviewed in the study. Follow up was made for those mothers who were not available at the time of data collection.

Data collection tool and technique

Data was collected by face to face interview using semi-structured questionnaire during the month of August and September 2012. The independent variables considered in the study were: socio-demographic, socio-economic status, use of health services, mothers' knowledge, and counseling from health worker and distance to health facility. The outcome variable newborn care practices included cord care, breastfeeding and bathing. Socio-economic status was classified into five quintiles using principle component method where first quintile was considered as the poorest group and fifth quintile as the richest group based on ownership of selected household features, such as kitchen facility, toilet facility, flooring of the house, roofing, walls, and possessions of the household (electricity, television, radio, landline phone, cow/buffallow, and land).

Data processing and analysis

Data were analyzed using bivariate and multivariate techniques in SPSS full version 17.0. Descriptive analysis was done in terms of frequency, percent, mean and standard deviation. Bivariate analysis was performed applying Chi-square test to study the association between study variables and outcome variables. Binary logistic regression models were developed for multivariate analysis to examine the relationships of the independent effects of explanatory variables obtained significant (P -value <0.05) at 95% confidence interval (CI) from the bivariate analysis.

Inclusion and exclusion criteria

The study included Tharu mothers who were permanent resident of two VDCs having children between seven days to less than one year excluding mothers with still birth and those who were mentally handicapped.

Ethical consideration

Ethical approval was taken from Chitwan Medical College-Institutional Review Committee (CMC-IRC). Informed consent was taken prior to the interview with mothers. Confidentiality of information was maintained. Participation was voluntary and respondents were free to withdraw from the study at any time.

RESULTS

Socio-demographics characteristic of study population is illustrated in Table 1. The mean age of mothers was 24 years with standard deviation ± 4 years. With respect to education, majority of mothers had received middle school followed by primary level of education. Almost mothers (95%) were housewives and 93.9 percent were Hindu. Findings showed 47.5 percent families were joint followed by extended (30.4%). The study showed that more than half (61.9%) of mothers had only one child.

Table 1: Socio-demographic characteristics of respondents (n=181)

Socio-demographic Characteristic	Frequency	Percent
Age of mothers		
Below20	42	23.2
20-24	68	37.6
25-29	56	30.9
Above30	15	8.3
*Mean \pm S.D = 24 \pm 4 years, Range = 16-45 years		
Education level of mother		
Secondary school	63	34.8
Primary school or literate	47	26.0
High school	31	14.4
Higher secondary	26	6.6
Graduate and above	12	1.1
Illiterate	2	
Occupation of mother		
Housewife	145	80.1
Agriculture	31	17.1
Service	3	1.7
Business	2	
Religion		
Hindu	170	93.9
Christian	11	6.1
Type of family		
Joint	86	47.5
Extended	55	30.4
Nuclear	40	22.1
Birth order		
1	112	61.9
2	45	24.9
3	14	7.7
≥ 4	10	5.6
Sex of newborn		
Female	91	50.3
Male	90	49.7

**Mean age of mother from continuous data*

Table 2 shows the distribution of newborn care practices (cord care, breastfeeding and bathing). Most of the mothers (95.0%) reported that they practiced cord care. All newborns were breastfeed. Similarly all mothers had given colostrums as first fed and further continued breastfeeding but rate of initiation

of breastfeed was only 40.3 percent after one hour of delivery while 24.3 percent breastfeed within one hour of delivery and 7.2 percent had breastfeed after 24 hours of delivery. Regarding to bathing time, the study revealed that 96.7 percent mothers reported that they had bathed newborn after 24 hours for the first time after delivery and only 3.3 percent had bathed within 24 hours of birth.

Table 2: Distribution of newborn care practices (n=181)

Variable	Frequency	Percent
Safe cut cord		
Yes	180	99.4
No	1	0.6
Clean cord tying		
Yes	180	99.4
No	1	0.6
Application on cord		
Nothing/antiseptic	172	95.0
Substance applied on cord	9	5.0
Cord Care		
Yes	172	95.0
No	9	5.0
Time of breastfeeding		
Within 1 hour	95	52.5
After 1 hour	86	47.5
Bathing time		
After 24 hours	175	96.6
Within 24 hours	6	3.3

Further by logistic regression method, adjustment was carried out for the variables that were significant in bivariate analysis having P-value<0.1 (as shown in table 3). After adjusting significant variables, knowledge regarding danger signs was found to be associated with cord care (OR=0.10, 95% CI=0.02-0.41) and parity was found to be insignificant after adjustment. In multivariate analysis, place of delivery was found to be associated with delaying bathing (OR= 12.11, 95% CI=1.65-88.64) while occupation was found to be insignificant after adjustment.

Table 3: Association of variables associated with cord care and bathing

Variables	Unadjusted OR	95% CI	Adjusted OR	95% CI
Cord care				
Parity				
Primi para*	1		1	
Multi para	0.28	0.07-1.19	0.84	0.19-3.71

Know about newborn care				
Yes*	1		1	
No	0.09	0.02-0.37	0.10	0.02-0.41
Bathing				
Occupation				
Unemployed*	1		1	
Employed	4.17	0.43-40.05	1.95	0.14-25.65
Place of delivery				
Home*	1		1	
Institutional	14.08	2.14-92.53	12.11	1.65-88.64

*Reference group

DISCUSSION

The study analysed the patterns and factors affecting newborn care practices: cord care, breastfeeding and bathing. The study reveals that cord care had been practiced by 95.0 percent mothers. The findings were similar to that of national figure where 80.0 percent cord cutting was safe while only 4.0 percent were using unsterile blades.¹ In 88.4 percent newborn, cord clamp was used for tying cord and 7.2 percent mothers reported that they don't know about cord tying. Once the cord was cut more than half (59.1%) of mothers had usually left umbilical stump undressed. The most common application was found to be antiseptic or ointment (87.8%) followed by oil and ghee (6.8%), turmeric (4.1%). The findings seemed to be similar to that of NDHS 2011, where 41.0 percent had some material (usually oil, an ointment, turmeric, or ash) placed on their umbilical stump.¹ A study from Egypt among 217 newborns showed various applications were commonly applied and antiseptic was mostly on umbilical cord. The chi-square test was performed to test cord care and the result found that there was no association with socio-demographic, socio-economic status. The findings were opposite to that of national studies where education and socio-economic status of mother was associated with newborn care including cord care.¹ Another study from Bangladesh in which 6150 data were drawn from the Bangladesh Demographic and Health Survey 2007, compared with mothers with no education those with secondary or higher levels were associated with clean cord care.⁷ The place of delivery, knowledge regarding newborn care was found to be associated with cord care P-value <0.05. After adjusting in logistic regression, knowledge regarding newborn care was again found to be associated with cord (OR=0.10, 95% CI=0.02-0.41). A study from Nepal (1994 to 1996) identified that health education for postnatal mothers in poor communities had no impact on recommended practice such as cord care, infant feeding or immunization⁸ which is opposite to the findings of this study. Findings from different studies have shown that mothers' knowledge can influence health care practices in several ways.^{9,10}

The study found that all newborns were breastfed and had given colostrums as first fed which was similar to that of results of NDHS 2011.¹ But the study revealed that rate of initiation

of breastfeed was only 52.5 percent within an hour and 40.5 percent after one hour of delivery. Findings from different studies showed similar results example from Egypt among 217 newborns, not breastfeeding was rare and nearly half of mothers breastfed immediately and all received colostrums.⁶ A cross-sectional, survey among 22,243 female of southern Tanzania found, only 18 percent breastfeed within an hour. The chi-square test found association between breastfeeding and education of mother (P-value <0.05). As per NDHS 2011, 58% of children born to mothers with some secondary education started breastfeeding within one hour of birth, compared with 35.0 percent of children of mothers with no education.¹ The findings were similar to a study conducted in Bangladesh in 6150 data, found that compared to mothers with no education, those with secondary or higher levels were associated with breastfeeding.⁷

Bathing in newborns after 24 hours of birth was found 96.7 percent in this study which is better than that of national figure¹ Place of delivery was significantly associated with bathing where home delivery had decreased odds ratio 0.08 (at 95% CI 0.01-0.60) even after adjustment. Various studies from Nepal showed similar findings for example a descriptive cross-sectional study conducted at Baitadi district found that most 81.7 percent practiced bathing within 24 hours.¹² A cross-sectional survey carried out in Pokhara city of Nepal, among home deliveries found that almost all of these newborns were bathed before 24 hours of birth.¹³ Another study from Egypt among 217 newborns found that newborns were bathed in a week time⁶ similar to the findings from this study. The finding was opposite to a population based survey conducted among 414 mothers (infants aged 1-4 months) in a Demographic Surveillance Site in eastern Uganda found that place of delivery was not associated with bathing.¹⁴

The study was conducted on newborn care practices among limited Tharu mothers in two VDCs of Chitwan district and can't be generalized to wider perspective. The newborn care practices were studied based on verbal expression of mothers.

CONCLUSION

Cord care practices of mothers were in accordance with accepted standard. Mothers who knew about newborn care practices were more likely to use sterilized equipment for cord cutting, clean cord tying and applying nothing or using antiseptic for cord stump dressing than those who do not know about it. All newborns were breastfed and colostrum was given as first feed. However, breastfeeding within one hour of birth was better among mothers attaining higher education than having lower (primary and secondary) education. Newborns, in almost cases, were bathed after 24 hours of delivery. Bathing after 24 hours of birth was common in institutional deliveries than home deliveries.

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REFERENCES

1. Ministry of Health and Population USAID, ICF Macro, New ERA. Nepal Demographic and Health Survey 2011-2012.

2. Family Health Division DoHS, Ministry of Health. National Neonatal Health Strategy 2004.
3. Lives SN. State of the World's Newborns: Nepal. Washington, DC: Save the Children 2002.
4. Nepal Family Health Program USAID, John Hopkins Bloomberg School of Public Health. Community-Based Maternal and Neonatal Care Program (CB-MNC). Summative Report on Program Activities and Results in Banke, Jhapa and Kanchanpur districts. Kathmandu, Nepal 2007.
5. Pradhan Y, Upreti SR, KC NP, Ashish K, Khadka N, Syed U, et al. Newborn survival in Nepal: a decade of change and future implications. *Health Policy and Planning*. 2012;27(suppl 3):iii57-iii71.
6. Darmstadt GL, Hussein MH, Winch PJ, Haws RA, Lamia M, El-Said MA, et al. Neonatal home care practices in rural Egypt during the first week of life. *Tropical Medicine & International Health* 2007;12(6):783-97.
7. Shahjahan M, Ahmed MR, Rahman MM, Afroz A. Factors affecting newborn care practices in Bangladesh. *Paediatric and Perinatal Epidemiology* 2012.
8. Bolam A, Manandhar DS, Shrestha P, Ellis M, de L Costello AM. The effects of postnatal health education for mothers on infant care and family planning practices in Nepal: a randomised controlled trial. *BMJ* 1998;316(7134):805-11.
9. Senarath U, Fernando DN, Vimpani G, Rodrigo I. Factors associated with maternal knowledge of newborn care among hospital-delivered mothers in Sri Lanka. *Transactions of the Royal Society of Tropical Medicine and Hygiene* 2007;101(8):823-30.
10. Sharan M. Determinants of Safe Motherhood and Newborn Care Behaviors in Rural India: Johns Hopkins University 2004.
11. Penfold S, Hill Z, Mrisho M, Manzi F, Tanner M, Mshinda H, et al. A large cross-sectional community-based study of newborn care practices in Southern Tanzania. *PloS one* 2010;5(12):e15593.
12. Devkota M, Bhatta M. Newborn Care Practices of Mothers in a Rural Community in Baitadi, Nepal. *Health Prospect* 2012;10:5-9.
13. Sreeramareddy C, Joshi H, Sreekumaran B, Giri S, Chuni N. Home delivery and newborn care practices among urban women in western Nepal: a questionnaire survey. *BMC Pregnancy and Childbirth* 2006;6(1):27.
14. Waiswa P, Peterson S, Tomson G, Pariyo GW. Poor newborn care practices-a population based survey in eastern Uganda. *Ibid* 2010;10:9.