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Knowledge and Practice on Newborn Care among Mothers in a Rural Community in Manipur

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ABSTRACT
Deaths in the first month of life, mostly preventable, represent 46% of total deaths among children under five. Despite of inadequate health care facilities, IMR of Manipur is on the lower side as compared to many other states and national average which might be due to good newborn care practice by the mothers. Hence, our study aimed to assess the knowledge and practice of newborn care among mothers in a peri-urban community in Imphal East. A cross sectional study was conducted among 222 mothers of 15-49 years of Kshetrigao constituency, Imphal having at least one under-5 child. Participants were selected d from 9 localities or leikai(s) using convenience sampling to assess the knowledge and to determine the practice of mothers on newborn care and to assess the association between the knowledge of mothers on newborn care and their background characteristics by using interview schedule. Data was analyzed using SPSS Version 21.0. Approval was obtained from the Research Ethics Board, RIMS, Imphal. 29.5% and 46.9% of the mothers had adequate knowledge good practice on newborn care respectively. There was a significant association between age group, socio-economic and mothers' overall knowledge and also age group and practice on newborn care. Only 1/3 of the mothers had adequate knowledge however, half of the mothers had adequate/good practice on newborn care. Mothers belonging to higher age group had better knowledge and practice on newborn care. Mother's belonging to higher socio-economic class had better knowledge.

INTRODUCTION

The guidelines for essential newborn care includes keeping newborn warm, early initiation of breastfeeding, exclusive breastfeeding, cord care and immunization[1-3]. Proper care practices in these areas reduces neonate's risk of morbidity and mortality. The three major causes of neonatal deaths worldwide are infections which includes sepsis/pneumonia, tetanus and diarrhea (36%), pre-term complications (28%) and birth asphyxia (23%)[4-5]. Deaths in the first month of life, which are mostly preventable, represent 46% of total deaths among children under five. In 2016, an estimated 2.6 million children died in their first month of life, which is approximately 7,000 newborns every day. Neonatal mortality is on the decline globally with the world's neonatal mortality rate falling from 37 deaths per 1,000 live births in 1990 to 19 per 1,000 live births in 2016[6-8]. The result is a drop in neonatal deaths worldwide from 5.1 million in 1990 to 2.6 million in 2016[9-10]. However, this decline of 49% is slower than the rate of decline among children aged 1-59 months (62%)[11]. India achieved a reduction of 59% in under 5 mortality from 126 in 1990 to 52 in 2012 and 42% in neonatal mortality from 52 in 1990 to 30 in 2016[12-13]. According to SRS, 2019 infant mortality rate of Manipur is 12. Despite of inadequate health care facilities in addition to bad law and order situation in Manipur, IMR of Manipur is on the lower side as compared to many other states and national average which might be due to good newborn care of the mothers. Hence, our study aimed to assess the knowledge and practice of newborn care among mothers in a peri-urban community in Imphal East.

MATERIALS AND METHODS

A cross-sectional study was conducted during June 26-July 25, 2019 among 222 mothers of 15-49 years of Kshetrigao constituency having at least one under-5 child. Kshetrigao is a constituency in Imphal East, Manipur with a total number of 33041 electors in 2017 (ceomanipur.nic.in). It is located at a range of 10-18 km towards the East of RIMS, Imphal. Participants have been selected from 9 areas or leikai(s) using convenience sampling to assess the knowledge and to determine the practice of mothers on newborn care and to assess the association between the knowledge of mothers on newborn care and their background characteristics. Mothers who were health workers and those who refused to participate were excluded. Sample size was calculated based on formula, $n = 4PQ/L^2$, where, P = prevalence; Q = 100-P; L = Absolute allowable error. Taking prevalence (P = 76%) from the previous study conducted by Castalino *et al*.[14] (Knowledge and practice of postnatal mothers on newborn care in tertiary care hospital of Udupi district). Taking L = 6, calculated sample size was found to be 202, adding 10% non-response rate, final sample size was derived as 222. Age of the participant (years), residence, religion, marital status, education level, occupation, type of family, no. of children, per capita income/month (in), age of the youngest child of the participant (months), place of delivery, mode of delivery, sex of the youngest child were independent variables, Birth weight of the youngest child (g) were the independent variables. Knowledge on newborn care and practice on newborn care were outcome variables. A pretested structured questionnaire which consists of three parts:

- **Part I:** Background characteristics on (mother-9 questions, youngest child-5 questions)
- **Part II:** Knowledge questions on newborn care (General-*3 questions, Thermal care-3 questions, Breastfeeding-5 questions, Cord care-2 questions, Immunization-4 questions)
- **Part III:** Practice questions on newborn care (Thermal care-2 questions, Breastfeeding-4 questions, Cord care-2 questions, Immunization-3 questions)

Knowledge Scoring each correct answer was awarded a score of 2 and 0 for incorrect answer, maximum attainable score was 28 and minimum was 0, >75 percentile of maximum obtained score was considered as adequate knowledge. Practice scoring - each correct answer was awarded a score of 2 and 0 for incorrect answer, maximum attainable score was 16 and minimum was 0, >75 percentile of maximum obtained score was considered as adequate/good practice. Data were collected using an interview schedule. Prior to the interview, the selected participants were explained about the purpose of the study and verbal consent and assent were obtained. Care was taken to maintain privacy during the interview. Data was checked for consistency and completeness, then entered in IBM SPSS version 21.0. Armonk, NY. Data was presented in percentages, mean with standard deviation. Chi-square test was used to test the association between proportions. A p-value of <0.05 was considered as statistically significant. Approval was obtained from the Research Ethics Board, RIMS. Data were anonymized and confidentiality was maintained using password encryption.

RESULTS

In total 261 mothers from 9 different localities participated in the study. Minimum and maximum age

of the participants were 17 and 45 years respectively. Mean age of the participant was 29.19±6.01. Minimum and maximum age of the youngest child of the participants were 1 and 59 months respectively. Mean age of the youngest child was 26.59±17.55. Minimum and maximum birth weight of the youngest child of the participants were 1.4 and 4 kg respectively. Mean birth weight of the youngest child was 3.87±0.35.

Minimum and maximum knowledge score (overall) were 0 and 28 respectively. Mean knowledge score (overall) was 14.49±4.32. 75th percentile of knowledge score (overall) was 18.

Minimum and maximum knowledge score (thermal care) were 0 and 6 respectively. Mean knowledge score (thermal care) was 1.85±1.35. 75th percentile of knowledge score (thermal care) was 2. Minimum and maximum knowledge score (breastfeeding) were 0 and 10, respectively. Mean knowledge score (breastfeeding) was 7.14±2.54. 75th percentile of knowledge score (breastfeeding) was 10. Minimum and maximum knowledge score (cord care) were 0 and 4 respectively. Mean knowledge score (cord care) was 2.13±1.28. 75th percentile of knowledge score (cord care) was 4. Minimum and maximum knowledge score (immunization) were 0 and 8 respectively. Mean knowledge score (immunization) was 2.72±1.78. 75th percentile of knowledge score (immunization) was 4.

Minimum and maximum practice score (overall) were 0 and 16 respectively. Mean knowledge score (overall) was 14.49±4.32. 75th percentile of knowledge score (overall) was 12. Minimum and maximum practice score (thermal care) were 0 and 4 respectively. Mean practice score (thermal care) was 3.03±1.14. 75th percentile of practice score (thermal care) was 4. Minimum and maximum practice score (breastfeeding) were 0 and 8 respectively. Mean practice score (breastfeeding) was 5.71±2.05. 75th percentile of practice score (breastfeeding) was 8. Minimum and maximum practice score (cord care) were 0 and 2 respectively. Mean practice score (cord care) was 14.49±4.32. About 75th percentile of practice score (cord care) was 2. Minimum and maximum practice score (immunization) were 0 and 2 respectively. Mean practice score (immunization) was 1.20±1.15. About 75th percentile of practice score (immunization) was 2.

In this study majority of the mothers belonged to the age group of 26-35 years. More than half of the mothers belonged to joint family and were unemployed. Three percentage (3%) of the participants were either divorced or separated. Most of the mothers studied up to high school and belonged to lower middle class. Most of them had only one child. Most of them gave birth in government hospital. More than half of the participant had undergone caesarean section. Sex of the youngest child of most of the mothers were male and majority of them had normal birth weight (Table 1).

Table 1: Background characteristics of the participants (N = 261)

Background characteristics	n (%)
Age group (completed years)	
16-25	74 (28.3)
26-35	145 (55.6)
35-45	42 (16.1)
Religion	
Hinduism	96 (36.8)
Islam	140 (53.6)
Christianity	16 (6.1)
TRC*	9 (3.4)
Types of family	
Joint	149 (57.1)
Nuclear	112 (42.9)
Marital status	
Married	253 (96.9)
Separated/Divorced	8 (3.1)
Occupation	
Housewife	201 (77.0)
Self-employed	50 (19.2)
Government employed	6 (2.3)
Private employed	4 (1.5)
Educational level	
Illiterate	23 (8.8)
Lower primary	24 (9.3)
Upper primary	33 (12.6)
High school	92 (35.2)
Higher secondary	44 (16.9)
Graduate and above	45 (17.2)
Parity	
1	114 (43.7)
2	95 (36.4)
>3	52 (19.9)
Economic class	
Lower	34 (13.0)
Lower middle	92 (35.3)
Middle	57 (21.8)
Upper middle	55 (21.1)
Upper	23 (8.8)
Government hospital	177 (67.8)
Private hospital	55 (21.1)
Home	29 (11.1)
Mode of delivery	
NVD**	125 (47.9)
Caesarean section	136 (52.1)
Sex of the youngest child	
Male	141 (54.0)
Female	120 (46.0)
Weight of the youngest child (g)	
1000-<1500	2 (0.8)
1500-<2500	28 (10.7)
>2500	231 (88.5)

*: Tingkao ragwang chapriak, **: Normal vaginal delivery

In this study only 29.5% of the mothers had adequate knowledge (overall). Nearly 3/4th (74.7%) of the mothers had adequate knowledge in thermal care, only 28.0% of them had adequate knowledge regarding breastfeeding. Almost half (49.8%) of the mothers had adequate knowledge regarding cord care. More than forty five (45.6%) of them had adequate knowledge regarding immunization. Nearly forty seven (46.9%) of the mothers had adequate practice (overall). More than half of them had adequate practice in thermal care (56.0%) and immunization (57.5%). Only 1/3rd (33.0%) of the mothers had adequate practice in breastfeeding. More than forty five (45.6%) of them had adequate practice in cord care (Table 2).

Table 2: Distribution of participants by scores (N = 261)

Score	Adequate n (%)	Inadequate n (%)
Knowledge (overall)	77 (29.5)	184 (70.5)
Knowledge (thermal care)	195 (74.7)	66 (25.3)
Knowledge (breastfeeding)	73 (28.0)	188 (72.0)
Knowledge (cord care)	130 (49.8)	131 (50.2)
Knowledge (immunization)	119 (45.6)	142 (54.4)
Practice (overall)	122 (46.9)	139 (53.1)
Practice (thermal care)	146 (56.0)	115 (44.0)
Practice (breastfeeding)	86 (33.0)	175 (67.0)
Practice (cord care)	119 (45.6)	142 (54.4)
Practice (immunization)	150 (57.5)	111 (42.5)

Table 3: Association between knowledge score (overall) and background characteristics {N = 261}

	Knowledge score (overall)		
Background characteristics	Adequate n (%)	Inadequate n (%)	p-value
Age group (Completed years)			
15-25	13 (17.6)	61 (82.4)	0.011
26-35	46 (31.7)	99 (68.3)	
36-45	18 (42.9)	24 (57.1)	
Education status			
Illiterate	3 (13.0)	20 (87.0)	0.000
Lower primary	6 (25.0)	18 (75.0)	
Upper primary	3 (9.1)	30 (90.9)	
High school	23 (25.0)	69 (75.0)	
Higher Secondary	19 (43.2)	25 (56.8)	
Graduate and above	23 (51.1)	22 (48.9)	
Economic status			
Lower class	6 (17.6)	28 (82.4)	0.009
Lower middle class	25 (27.2)	67 (72.8)	
Middle class	16 (28.1)	41 (71.9)	
Upper middle class	16 (29.1)	39 (70.9)	
Upper class	14 (60.9)	9 (39.1)	
Mode of delivery			
NVD	27 (21.6)	98 (78.4)	0.007
Caesarean section	50 (36.8)	86 (63.2)	

Table 4: Association between practice score (overall) and background characteristics {N = 261}

	Practice score (overall)		
Background characteristics	Adequate n (%)	Inadequate n (%)	p-value
Age group (Completed years)			
15-25	23 (31.1)	51 (58.9)	0.005
26-35	75 (52.1)	69 (47.9)	
36-45	24 (57.0)	18 (43.0)	
Education status			
Illiterate	11 (47.8)	12 (52.2)	0.010
Lower primary	10 (41.7)	14 (58.3)	
Upper primary	6 (18.2)	27 (81.8)	
High school	47 (51.6)	44 (48.4)	
Higher secondary	21 (47.7)	23 (52.3)	
Graduate and above	27 (60.0)	18 (40.0)	
Occupation			
Housewife	87 (43.3)	114 (56.7)	0.029
Self-employed	23 (46.0)	27 (54.0)	
Government employed	6 (100.0)	0 (0.0)	
Private employed	3 (75.0)	1 (25.0)	
Education status			
Illiterate	6 (26.1)	17 (73.9)	0.000
Lower primary	17 (70.8)	7 (29.2)	
Upper primary	11 (33.3)	22 (66.7)	
High school	56 (60.9)	36 (39.1)	
Higher secondary	26 (59.1)	18 (40.9)	
Graduate and above	34 (75.6)	11 (24.4)	

Those mothers belonging to age group of 36-45 years, who had education up to upper primary level, belonging to upper class had higher knowledge and it was found to be statistically significant. Those mothers who had undergone caesarean section had better knowledge and was also statistically significant (Table 3).

Those mothers belonging to higher age group significantly had better practice. Mothers who were graduate and above had better practice, it was found to be statistically significant (Table 4).

Those mothers who were government employees had better practice score and it was found to be statistically significant. Those mothers who were graduate and above had better practice score (immunization) and it was found to be statistically significant.

DISCUSSION

This study shows that out of 261 mothers, majority 56% were in the age group of 26-35 years, majority 53.6% were Islam and around 35.2% of the population were educated up to high school which they form a majority. The level of education among women plays a major role in their understanding of the importance of correct ways of child rearing. It has been found that with increase in education level (graduates) and higher the age of the mother more is the knowledge regarding newborn care which could be because of more exposure and experience of new born care. These findings are very similar to a study conducted by Padiyath *et al*.[15] in Puducherry and a study conducted by Castalino *et al*.[14] in Uduppi district in Karnataka.

Among the different religions, the participants belonging to TRC had better knowledge of new born care which could be because of their correct knowledge which is passed through the generations.

Out of all the mothers participated in the study, 2.3% were government employee and it has been found that they had good cord care practice.

In this study, institutional deliveries were more common (88.9%) as compared to home deliveries (11.1%). It also shows that 52% had delivered via caesarean section and these participants had better knowledge regarding newborn care (36.8%) than those who underwent NVD, this might be because of longer hospital stay hence more counselling regarding newborn care by health care providers.

About 33% of the participants have better breast feeding practice. In the distribution of participants by prelacteal feeds majority (67.4%) gave nothing which is a good practice.

It is found that higher the economy of the family, better is the knowledge regarding newborn care which could be because of their frequent consultation with health care providers. This is similar to a study conducted by Padiyath[15] in Puducherry. This study has good response rate. Issue of recall bias was there while ascertaining some of the variables.

CONCLUSION

Only 1/3 of the mothers had adequate knowledge however, half of the mothers had

adequate/good practice on newborn care. Approximately 3/4, 1/4 and 1/2 of the mothers had adequate knowledge on thermal care, breastfeeding and cord care respectively. More than 1/2 of the mothers had adequate practice on thermal care and immunization. Only 1/3 of the mothers had adequate practice on breastfeeding and nearly 1/2 of them had adequate practice on cord care. Mothers belonging to higher age group had better knowledge and practice on newborn care. Mother's belonging to higher socio-economic class had better knowledge. Mother's whose education level are graduates and above had better knowledge as well as practice on newborn care. Mothers who had undergone caesarean section had better knowledge on newborn care. Qualitative studies may be conducted regarding newborn care to understand the traditional and cultural practices. Health education and awareness programs regarding newborn care at community level by ASHAs should be encouraged.

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REFERENCES

1. WHO., 2002. Essential newborn care and breastfeeding: training modules., https://apps.who.int/iris/handle/10665/107481
2. Amolo, L., G. Irimu and D. Njai, 2017. Knowledge of postnatal mothers on essential newborn care practices at the Kenyatta national hospital: A cross sectional study. Pan Afr. Med. J., 28: 159-166.
3. Sreeramareddy, C.T., H.S. Joshi, B.V. Sreekumaran, S. Giri and N. Chuni, 2006. Home delivery and newborn care practices among urban women in western Nepal: A questionnaire survey. BMC Pregnancy Childbirth, Vol. 6, No. 27. 10.1186/1471-2393-6-27.
4. WHO., 2020. Newborn death and illness. Millennium Development Goal (MDG)
5. Sridhar, P.V., P.S. Thammanna and M. Sandeep, 2021. Morbidity pattern and hospital outcome of neonates admitted in a tertiary care teaching hospital, Mandya. Int. J. Sci. Stud., 3: 126-129.
6. WHO., 2020. Newborns: Improving survival and well-being., https://www.who.int/news-room/fact-sheets/detail/
7. Wardlaw, T., D. You, L. Hug, A. Amouzou and H. Newby, 2014. Unicef report: Enormous progress in child survival but greater focus on newborns urgently needed. Reprod. Health, Vol. 11, No. 82 .10.1186/1742-4755-11-82.
8. Waiswa, P., K. Kallander, S. Peterson, G. Tomson and G.W. Pariyo, 2010. Using the three delays model to understand why newborn babies die in Eastern Uganda. Trop. Med. Int. Health, 15: 964-972.
9. Wondemagegn, A.T., A. Alebel, C. Tesema and W. Abie, 2018. The effect of antenatal care follow-up on neonatal health outcomes: A systematic review and meta-analysis. Public Health Rev., Vol. 39, No. 33 .10.1186/s40985-018-0110-y
10. Arunda, M., A. Emmelin and B.O. Asamoah, 2017. Effectiveness of antenatal care services in reducing neonatal mortality in Kenya: Analysis of national survey data. Global Health Action, Vol. 10 .10.1080/16549716.2017.1328796
11. Hill, K. and Y. Choi, 2006. Neonatal mortality in the developing world. Demographic Res., 14: 429-452.
12. Sankar, M.J., S.B. Neogi, J. Sharma, M. Chauhan and R. Srivastava *et al*., 2016. State of newborn health in India. J. Perinatol., 36: S3-S8.
13. Bhattacharyya, R., 2016. An account of India's under-5 mortality rate. Int. J. Social Work Hum. Serv. Pract., 4: 82-88.
14. Castalino, F., B.S. Nayak and A. D'Souza, 2014. Knowledge and practices of postnatal mothers on newborn care in tertiary care hospital of Udupi District. J. Health Allied Sci. NU, 4: 98-101.
15. Padiyath, M.A., B.V. Bhat and M. Ekambaram, 2010. Knowledge attitiude and practice of neonatal care among postnatal mothers. Curr. Pediatr. Res., 14: 147-153.