



RESEARCH ARTICLE

A STUDY TO ASSESS THE KNOWLEDGE AND PRACTICES OF NEWBORN CARE AMONG MOTHERS ATTENDING PEDIATRIC INPATIENT DEPARTMENTS OF SELECTED HOSPITALS IN PUNE

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ABSTRACT

**Introduction/Background:** Globally, four million newborns die before they reach one month of age. In 2015 approximately 45% of deaths among children under five were newborns.<sup>1</sup> The mortality ratio of Infant and under 5 in developing countries have reduced significantly in the past couple of decades, but the neonatal mortality rates have remained static.<sup>2</sup>

**Methods:** The study has conducted using cross sectional design. A structured questionnaire and observation checklist was used to collect the data was used to interview the mothers. The survey questionnaire consisted of three sections; Section A was pertaining to socio-demographic information, section B was regarding Antenatal care; Section C was regarding the immediate newborn care including cord care, eye care, bathing of newborn and breastfeeding practices

**Results:** Respondents' mean knowledge was on keeping newborn warm was 40.2%, on newborn care 48.4%, on immunization 71.8%, on danger signs 25.53. Mean knowledge and practice of respondents was on measures to keep warm 8.5 and 17. Although 62 (62%) had knowledge regarding handwash before the breastfeeding, and after diaper care, only 11 (11%) followed it in practice.

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INTRODUCTION

A neonate, is a newborn child under the age of 28 days. During the first 28 days of life the mortality rate is high and the child is at highest risk of getting infections too. Therefore it is important that adequate feeding and care are provided during this period, which helps to improve the child's chances of survival and to proceed with a healthy life. Every year nearly 45% of under 5 child mortalities occurs during the first 28 days and three quarters of all newborn deaths occur in the first week of life. In developing countries nearly half of all mothers and newborns do not receive skilled newborn care during and after the birth. Up to two thirds of newborn mortality can be prevented if effective health measures are provided at birth and during the early week of life. Newborn, or neonatal, deaths account for 45% of all deaths among children below 5 years of age ([http://www.who.int/gho/child\\_health/mortality/neonatal/en/index1.html](http://www.who.int/gho/child_health/mortality/neonatal/en/index1.html)). While efforts to reduce maternal and child mortality rates over the past 20 years have had a striking impact, stillbirths and newborn deaths have over the same period missed out on the attention they need. Neonatal mortality rates are much lesser than post-neonatal deaths. Every year there are about 748,000 newborns still dying from largely preventable causes. Newborn health has now come to

the attention of policymakers and UNICEF is joining their efforts to address these preventable deaths. The government has also now developed the India Newborn Action Plan (INAP) in response to the global new born mortality. Every Newborn Action Plan (ENAP) launched at the World Health Assembly in June 2014. INAP with the partnership of UNICEF aims to significantly reduce preventable newborn mortality and stillbirths and to bring down the Neonatal Mortality Rate and Still Born Rate to "single digits" by 2030 (<http://unicef.in/Whatwedo/2/Neonatal-Health-#sthash.KUHvioTP.dpuf>). The main reason of newborn mortality are preterm birth and low-birth-weight, infections, asphyxia neonatorum and birth injuries. These causes account for nearly 80% of deaths in this age group. The mortality ratio of Infant and under 5 in developing countries have reduced significantly in the past couple of decades, but the neonatal mortality rates have remained static (Bhutta et al., 2005). The Indian government has introduced two landmark programs, the National Rural Health Mission (NRHM) and the Reproductive, Maternal, Newborn, Child and Adolescent Strategy (RMNCH+A Strategy). The NRHM has provided a remarkable focus and resources for newborn health, while the RMNCH+A strategy marks a significant shift in approach, basic services on a continuum-of-care model and on strengthening health systems. The plan includes clear timelines to implement, monitor and evaluate, and scale up interventions and is built on six types of intervention package: Pre-conception and antenatal care; Care

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during labor and child birth, Immediate newborn care, Care of newborns including Care of preterm and sick newborns, and Care beyond newborn survival (<http://unicef.in/Whatwedo/2/Neonatal-Health-#sthash.KUHvioTP.dpuf>). One-fifth of global live births and more than a quarter of neonatal deathshappens in India. In the year 2013 nearly, 0.75 million neonates died in India, the highest for any country in the world (Liu *et al.*, 2015). The current Neonatal Mortality Rate is 28 per 1000 live births (Registrar General of India, 2013). Given the infant and under-five child mortality rates of 40 and 49 per 1000 live births, respectively, more than half of under-five deaths and 70% of total infant deaths fall in the neonatal period. Indeed, with the early NMR of 22 per 1000 live births, deaths in the first week alone account for 45% of total under-five deaths (Registrar General of India, 2013). Obviously, the 'Committing to Child Survival: A Promise Renewed' goal of reducing under-five mortality to 20 or less per 1000 live births by 2035 will not be attained without specific efforts to reduce newborn mortality. In India, states like Uttar Pradesh, Madhya Pradesh, Bihar and Rajasthan contributes to 55% of total neonatal deaths (Registrar General of India. Census, 2011). Gender discrimination at each stage of the female life cycle contributes to gender-based health disparities including sex-selective abortions, neglect in care of the female child, and poor access to healthcare for girls (Fikree and Pasha, 2004; Claeson *et al.*, 2000; Detrick *et al.*, 2013; Chatterjee, 1990; Murthi *et al.*, 1995). At the district level, newborn care units typically admit 30% less females than male neonates. The sex differential rate of decline are high Andhra Pradesh, Delhi, Karnataka, Kerala and Madhya Pradesh (Government of India. Ministry of Health & Family Welfare (MOHFW), 2013). Only one-third of neonates were breastfed within 1 h after birth (United Nations Children Fund (UNICEF) Coverage Evaluation Survey 2009). Less than half of the neonates received three postnatal visits by health-care providers in the first 10 days of life (Narang *et al.*, 2013; Save the Children & Population Reference Bureau (PRB) 2007; Baqui *et al.*, 2009; Pati *et al.*, 2014; Joseph *et al.*, 2013; Patel *et al.*, 2010; Garcia *et al.*, 2011). Although several initiatives, such as Janani Suraksha Yojana and Janani Shishu Suraksha Karyakram, have attempted to address these gaps, their impact remains limited due to poor governance, shortage of health workers in primary health-care facilities and lack of preparedness of health-care facilities (Malini *et al.*, 2008; Lim *et al.*, 2010).

## MATERIALS AND METHODS

### Study design

This is a population based study has conducted using cross sectional design to assess the level of knowledge and practice of newborn care among postnatal women in Pune.

### Study population

The study population comprised of all postnatal mothers accompanying their children who are admitted in the paediatric inpatient department at the hospital. All the willing postnatal mothers who had delivered within 4 weeks in the area were included in the study.

### Sample size and sampling technique

This cross sectional study was carried out using a total of 100 postnatal mothers who were having the infants in the age of 28

days and attending the out patients department of Paediatrics due to any reasons during the study period were included in the study. The sampling technique used for the study was convenience sampling technique.

### Data collection

A structured questionnaire and observation checklist was used to collect the data was used to interview the mothers. The survey questionnaire consisted of three sections; Section A was pertaining to socio-demographic information, section B was regarding Antenatal care; Section C was regarding the immediate newborn care including cord care, eye care, bathing of newborn and breastfeeding practices. A scoring system is developed for the items. Each correct answer is assigned a score of 'one' and wrong answer a score of 'zero'. The collected data was tabulated and analyzed in terms of descriptive and inferential statistics.

### Data analysis

Descriptive data tables were generated to elaborate the findings and appropriate statistical analysis was used to explain the results. The statistical analysis included estimation of percentages regarding the knowledge level. Student "t" test was used to estimate the statistical significance between mean scores and knowledge regarding the newborn care.

## RESULTS

### 1. Findings related to Sociodemographic variables

**Table 1**

Socio demographic background of the study participants (n = 100)

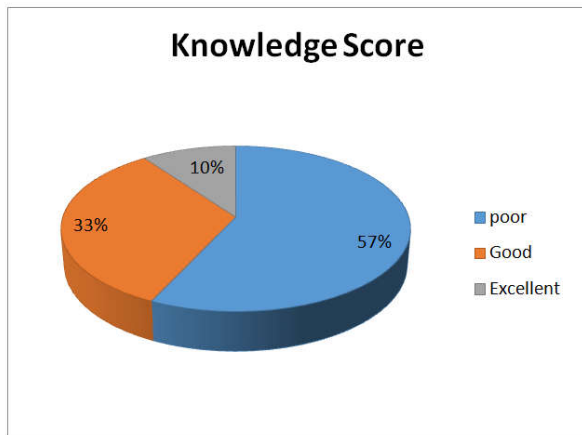
Variable	Groups	Count	Percentage
Age at marriage	Below 18	10	10%
	18-25	46	46%
	25-32	30	30%
	Above 32	14	14%
Education status	Below 10 <sup>th</sup> std	81	81%
	Higher secondary	8	8%
	Graduation	7	7%
	Post-graduation	4	3%
Occupation	Housewife	89	89%
	Working	11	11%
Family income	<5000	4	4%
	5000-10000	87	87%
	10000-25000	6	6%
	> 25000	3	3%

Age at marriage was reported 18–25 years by majority of the women. Educational status of about 81% was 10<sup>th</sup> standard or below that. Only 11% of the participants were working mothers. The monthly family income of majority (87%) of the participants ranged between 5,000 and 10000 rupees.

### 2. Findings related to knowledge scores of mothers about newborn care

At least one antenatal visit to a health care provider was done by majority of the women. Tetanus toxoid injection has been taken by most of them. Ninety Five percentage of women had an institutional delivery. The level of adequate knowledge regarding new-born care was noted only in 15%. The level of

knowledge of various components like immunization, growth and development and new-born illness were 8%, 22% and 33% respectively. The knowledge regarding new born care was found to have a significant association with the educational status of the mothers. The findings of the study showed that 57% of mothers had poor knowledge regarding newborn care and 33% of mothers had good knowledge and only 10% had excellent knowledge regarding newborn care which is depicted in figure 1.



### 3. Findings related to Practice of mothers regarding newborn care

Majority of mothers (62%) used to apply some substance to the cord stump like coconut oil, ghee and turmeric. The new born baby bath was given within 24 hours in 84% cases. Majority of mothers (94%) were not knowing about the correct practice of breastfeeding technique though they have initiated breastfeeding within 30 min. Only 30% of mothers are following Exclusive breastfeeding (EBF) and 14% of mothers have discarded the colostrum.

### 4. Description of knowledge & practice scores of mothers

The mean of knowledge score was 12.5 with SD of  $\pm 2.31$ , and mean of practice score was 32.2 with SD  $\pm 3.5$ .

### 5. Relationship between knowledge and practice score of the mothers

Respondents' mean knowledge was on keeping new born warm was 40.2%, on new-born care 48.4%, on immunization 71.8%, on danger signs 25.53. Mean knowledge and practice of respondents was on measures to maintain warmth was 8.5 and 17 respectively. Although 62 (62%) had knowledge regarding hand wash before the breastfeeding, and after diaper care, only 11 (11%) followed it in practice. To test significant relationship between knowledge and practice, correlation coefficient was calculated which revealed a statistically non-significant relationship between knowledge and practice at 0.05 level of significance.

### 6. Association between knowledge of mothers on new-born care and selected variables

Education status of the mothers ( $\chi^2 = 11.642$ ,  $p = 0.009$ ) (df) (3), had significant association with the knowledge of the mother regarding new-born care. Other demographic variables did not show any statistically significant association with knowledge score of the mothers.

## DISCUSSION

The study sample belonged to middle and low-income group with a low education status. Among the postnatal mothers most of them were between the age of less than 25 years. The response of newborn care reported in this study was higher. However, the newborn care coverage was common amongst women in low socio economic background. These differences are probably due to the fact that newborn care uptake varies by region, being higher in urban areas as compared to rural ones (Memon *et al.*, 2006). Reasons for not following the appropriate newborn care included distance to the health facility, anxiety and fear of hospitalization, health care provider's behaviour and no real need felt for seeking care. The present study revealed that availability of a health facility might not be a factor in deciding the place of delivery. Lack of utilization of health services may be due to cultural beliefs (Parlato *et al.*, 2004). In this study, poor practices regarding cord care was found among mothers. The justification for applying various substances to the cord stump was the belief that they improve the drying of the cord. Similar studies done in Bangladesh have also reported poor cord care practices. Moran C *et al* from Bangladesh and Agarwal S *et al* from India have reported regarding the harmful effect of application of substances like mustard oil, coconut oil, warm ghee, boric powder and talcum powder to the cord stump till it dries up. Although the specific affects of these substances need to be examined, however, they may lead to infection (Agarwal *et al.*, 2007). In spite of having a positive attitude about breast feeding, only half of the mothers initiated breastfeeding within 2 hours of birth. Both, breastfeeding initiation within 2 hours and prelacteals avoidance, were achieved by only 20%. Breastfeeding was initiated earlier in home deliveries as compared to institutional ones (Parveen *et al.*, 2009). These findings indicate that most of the mothers were not aware of the importance of exclusive breastfeeding, benefits of feeding colostrum and the hazards of feeding prelacteals. Observational and retrospective studies are required to confirm the association of these practices with various sociodemographic factors to help design appropriate interventional strategies.

A cross-sectional study was conducted at a tertiary care hospital in Karachi, Pakistan. A total of 170 mothers accompanying their infants attending the Paediatric Out Patient Department were interviewed through a structured questionnaire. Areas of inquiry included Antenatal care seeking, postnatal care, cord care, eye care, bathing and breastfeeding practices. Ninety Two percentage of mothers reported at least one antenatal care visit. Tetanus Toxoid coverage was 88%. Home deliveries were 18%. Seventy-four percent reported applying various substances like coconut oil, mustard oil, purified butter and turmeric to the cord stump. Kohl application to newborn's eyes was 68%, while 86% reported first bath within 24 hrs of birth. Forty Eight percentage mothers initiated breastfeeding within 2 hours of delivery. Colostrum was discarded by 43% and prelacteal feeds given by 73%. Exclusive Breast Feeding rate was 26% (Saadia *et al.*, 2014). In this study, poor practices were found regarding cord care. The reason for applying various substances to the cord stump was the belief that they help dry the cord. Similar studies done in Pakistan have also reported poor cord care practices (Fatima *et al.*, 2005; Fikree *et al.*, 2005; Khadduri *et al.*, 2008).

## Recommendations

- Information and continuous education regarding essential newborn care practices are required.
- There is a need to focus on community-based interventions.
- Enhancing female education and empowerment must be addressed as a long term goal to improve maternal and newborn survival.

## Conclusion

Antenatal care was good among the mothers but did not continue to the optimal intra-partum and postnatal practices. There is a need to promote hygienic practices for the care of the newborns, delayed bathing and immediate and exclusive breastfeeding.<sup>3</sup> Maternal educational status and income of the family play an important role in their knowledge and practices regarding newborn care. The health care facilities should emphasise more on health education regarding the newborn care.

## REFERENCES

- Agarwal S, Srivastava K. and Sethi V. 2007. Maternal and Newborn Care Practices Among the Urban Poor in Indore, India: Gaps, Reasons and Possible Program Options. Urban Health Resource Center (New Delhi) 32.
- Baqi AH, Ahmed S, El Arifeen S, Darmstadt GL, Rosecrans AM, Mannan I *et al.* 2009. Effect of timing of first postnatal care home visit on neonatal mortality in Bangladesh: a observational cohort study. *BMJ*, 339: b2826. [PMC free article][PubMed]
- Bhutta ZA, Darmstadt GL, Hasan BS. and Haws RA. 2005. Community-based interventions for improving perinatal and neonatal health outcomes in developing countries: a review of the evidence. *Pediatrics*, 115(Suppl 2):519–617
- Chatterjee, M. 1990. A Report on Indian Women from Birth to Twenty. National Institute of Public Cooperation and Child Development: New Delhi.
- Claeson M, Bos ER, Mawji T. and Pathmanathan I. 2000. Reducing child mortality in India in the new millennium. *Bull World Health Organ.*, 78: 1192–1199. [PMC free article][PubMed]
- Dettrick Z, Jimenez-Soto E. and Hodge A. 2013. Socioeconomic and geographical disparities in under-five and neonatal mortality in Uttar Pradesh, India. *Matern Child Health J.*, 18: 960–969. [PubMed]
- Fatima Z, Gulzar AZ. and Kazi A. 2005. Maternal and Newborn Care: Practices of Traditional Birth Attendants in Sindh, Pakistan. *La Mediterranee Orientale*. 11(1):23–27. [PubMed]
- Fikree FF, Ali TS, Durocher JM. and Rahbar MH. 2005. Newborn care practices in low socioeconomic settlements of Karachi, Pakistan. *Soc.Sci Med.*, 60(5):911–[PubMed]
- Fikree FF. and Pasha O. Role of gender in health disparity: the South Asian context. *BMJ* 2004; 328(7443): 823. [PMC free article][PubMed]
- Garcia CR, Mullany LC, Rahmathullah L, Katz J, Thulasiraj RD, Sheeladevi S. *et al.* 2011. Breast-feeding initiation time and neonatal mortality risk among newborns in south India. *J Perinatol.*, 31(6): 397–403. [PubMed]
- Government of India. Ministry of Health & Family Welfare (MOHFW). Two-year progress of special newborn care units in India: a brief report 2013. <http://unicef.in/Whatwedo/2/Neonatal-Health-#sthash.KUHvioTP.dpuf>
- [http://www.who.int/gho/child\\_health/mortality/neonatal/en/index1.html](http://www.who.int/gho/child_health/mortality/neonatal/en/index1.html)
- Joseph N, Unnikrishnan B, Naik VA, Mahantshetti NS, Mallapur MD, Kotian SM *et al.* 2013. Infant rearing practices in south India: a longitudinal study. *J Family Med Prim Care*, 2(1): 37–43. [PMC free article][PubMed]
- Khadduri R, Marsh D, Rasmussen B, Bari A, Nazir R. and Darmstadt G. 2008. Household knowledge and practices of newborn and maternal health in Haripur district, Pakistan. *J Perinatol.*, 28:182–7. [PubMed]
- Lim SS, Dandona L, Hoisington JA, James SL, Hogan MC. and Gakidou, E. 2010. India's JananiSurakshaYojana, a conditional cash transfer programme to increase births in health facilities: an impact evaluation. *Lancet*, 375(9730): 2009–2023. [PubMed]
- Liu L, Oza S, Hogan D, Perin J, Rudan I, Lawn JE. *et al.* 2015. Global, regional, and national causes of child mortality in 2000–13, with projections to inform post-2015 priorities: an updated systematic analysis. *Lancet*, 385(9966): 430–440. [PubMed]
- Malini S, Tripathi RM, Khattar P, Nair KS, Tekhre YL, Dhar N. *et al.* 2008. A rapid appraisal on functioning of JananiSurakshaYojana in South Orissa. *Health Popul Perspect Issues*, 31: 126 rap.
- Memon Y, Sheikh S, Memon A. and Memon N. 2006. Feeding beliefs and practices of mothers/caregivers for their infants. *J LiaquatUni Med Health Sci.*, 5:8–13.
- Murthi M, Guio A-C. and Dreze J. 1995. Mortality, fertility, and gender bias in India: a district-level analysis. *Popul Dev Rev.*, 21: 745–782.
- Narang M, Kaushik JS, Sharma AK. and Faridi MM. 2013. Predictors of mortality among the neonates transported to referral centre in Delhi. *Indian J Public Health*, 57: 100–104. [PubMed]
- Parlato RP, Darmstadt GL. and Tinker A. 2004. Qualitative Research to Improve Newborn Care Practices. Washington DC: Saving Newborn Lives Initiative; Tools for Newborn Health.
- Parveen N, Majeed R. and Khawja MA. 2009. Evaluation of Breast feeding Practices. *Gomal J of Med Sci.*, 7(1):14–16.
- Patel A, Badhoniya N, Khadse S, Senarath U, Agho KE, Dibley MJ *et al.* 2010. Infant and young child feeding indicators and determinants of poor feeding practices in India: secondary data analysis of National Family Health Survey 2005-06. *Food Nutr Bull.*, 31(2): 314–333. [PubMed]
- Pati S, Chauhan AS, Panda M, Swain S. and Hussain MA. 2014. Neonatal care practices in a tribal community of Odisha, India: a cultural perspective. *J Trop Pediatr.*, 60(3): 238–244. [PubMed]
- Registrar General of India, Census 2011. Provisional population totals of 2011. Available at [http://www.censusindia.gov.in/2011-prov-results/PPT\\_2.html](http://www.censusindia.gov.in/2011-prov-results/PPT_2.html) (accessed on 20 August 2014).
- Registrar General of India. Sample registration system (SRS) statistical report 2013. New Delhi: 2013
- SaadiaGul, Rehana Khalil, *et al.* 2014. 'Newborn care knowledge and practices among mothers attending pediatric outpatient clinic of a hospital in Karachi, Pakistan' *International Journal of Health Sciences*, 8(2).
- Save the Children & Population Reference Bureau (PRB) Postnatal Care: A critical Opportunity to Save Mothers and Newborns. Save the Children & PRB: Washington, DC, USA, 2007.
- United Nations Children Fund (UNICEF) Coverage Evaluation Survey 2009. UNICEF: New Delhi, India.