

## Research Article

# New born care in rural area: a cross-sectional study

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**Received:** 08 February 2016

**Accepted:** 15 February 2016

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### ABSTRACT

**Background:** Though under five mortality and infant mortality rates are declining globally, the neonatal mortality rate has relatively remained unchanged. Poverty, illiteracy and health care services are interlinked. They play a role in neonatal mortality. The measures required to reduce for neonatal mortality are simple. The knowledge gap is the main reason why even the simplest of measures are not efficiently utilized. The objectives of the study were to study the knowledge regarding some of the cost-effective interventions influencing the health of the neonate and to examine the association between selected socio-demographic, antenatal and delivery care factors.

**Methods:** A cross-sectional study was done in rural field practice area. Data was recorded on pre-designed and pre-tested questionnaire. Total of 84 women were interviewed to establish baseline levels of awareness regarding selected new born care factors. Statistical analysis was done using chi-square test.

**Results:** 97.61% were given health education. 67.85% of the study subjects had no knowledge regarding cord care though 96.42% had knowledge regarding thermal care. 98.80% were aware of taking iron and folic acid tablets. 88.095% had hospital delivery. 75% of the literates said that more than 3 antenatal checkups have to be received. The association between educational status of the mothers and the knowledge regarding cord care was statistically significant at  $p < 0.01$ .

**Conclusions:** Improving new born survival is a major priority in child health today. We suggest importance of establishing good health education along with home based new born care.

**Keywords:** Literacy, Antenatal check-ups, TT doses, Cord care, Thermal care

### INTRODUCTION

Global mortality rates for children under five and infants have declined over past four decades, but neonatal mortality rate (NMR) has remained relatively unchanged. NMR ranges from an estimated 42 to 57 deaths per 1000 live births in the south Asian countries. About 1.2 million neonates die annually in India alone accounting for about 1/4<sup>th</sup> of global neonatal deaths.<sup>1</sup>

Poverty is an underlying cause of many neonatal deaths contributing either through increase in the prevalence of risk factors such as maternal infection, or through reducing access to effective care.<sup>2</sup> The World Health

Organization guidelines for essential newborn care encompass cleanliness, thermal protection, initiation of early breastfeeding, exclusive breastfeeding, eye care and immunization, management of illness and care of low birth weight infants.<sup>3</sup>

Most of these new borns die at home while being cared by mothers, relatives and trained birth attendants.<sup>2,4</sup> Despite cost-effective solutions such as promoting antenatal TT immunization, skilled attendance during delivery etc. there has been little change in neonatal mortality rate especially in developing countries.<sup>5</sup> Every new born needs basic care like feeding, warmth, identification of danger signs, basic hygiene to be given

at home and seek help from health personnel whenever needed.

Our understanding of the awareness of the mothers regarding new born care in rural areas and how to improve their awareness is limited. Therefore the purpose of this research was to study the awareness among the mothers regarding some of the cost-effective interventions influencing the health of the neonate. Also, we wanted to examine the association between selected socio-demographic, antenatal and delivery care factors.

## METHODS

A cross-sectional study was carried out in rural field practice area in Yadwad village, under Rural Health Training Centre, Department of Community Medicine, SDM College of Medical Sciences and Hospital, Dharwad. The study was done by paying house-to-house visits. Repeat visits were made to ensure coverage. All women who had recently delivered and having babies aged <6 months were interviewed to assess the awareness regarding new born care. This cut off of having babies aged <6 months was to avoid recall bias. The study was carried out for a period of 2 months from 1<sup>st</sup> May 2015 to 30<sup>th</sup> June 2015.

Data was collected by administering a pre-designed and pre-tested questionnaire. A total of 84 women satisfying the above said criteria were involved in the study. This study information was also to establish baseline levels of awareness regarding selected new born care factors, and to be used further for a larger community based intervention trial. Data was entered and analysed using Microsoft excel. Statistical analysis like Chi square test was used to know the association between different variables. Informed consent was taken from all the study subjects, after explaining the questions pertaining to the study and their implications in a language understood by them.

## RESULTS

Of the total 84 mothers studied majority 49 (58.33%) of the Hindus were aware of getting more than 3 antenatal check-ups compared to Muslims. Of the 67 literates, 63 (75%) were aware of need for more than 3 antenatal check-ups and all the 67 of them were aware about importance of hospital delivery and also preferred hospital delivery. Majority 84 of them were aware of thermal care, of which majority 64 (76.19%) of them were literates. Almost all of them were aware and had knowledge of taking iron and folic acid (IFA) tablets (83; 98.80%) and receiving tetanus toxoid (TT) immunization (84, 100%) (Table 1).

Of the 84 mothers, majority 57 (67.86%) of them had no knowledge regarding cord care. Of 67 literates only 17 (20.24%) of them were aware of cord care. The

association was found to be statistically significant (Table 2).

**Table 1: Socio-demographic variables vs. antenatal care factors.**

Religion	ANC check-up	
	<3	≥3
Hindu	3 (3.57%)	49 (58.33%)
Muslim	1 (1.19%)	30 (35.71%)
Educational status	<3	≥3
Literate	4 (4.76%)	63 (75%)
Illiterate	0	16 (19.04%)
Educational Status	Place of delivery	
	Hospital	Home
Literate	67 (79.76%)	0
Illiterate	16 (19.04%)	1 (1.20%)
Educational Status	Thermal care	
	Yes	No
Literate	64 (76.19%)	3 (3.58%)
Illiterate	17 (20.23%)	-
Educational Status	IFA tabs	
	Yes	No
Literate	67 (79.76%)	-
Illiterate	16 (19.04%)	1 (1.20%)
Educational Status	Injection TT – 2 doses	
	Yes	No
Literate	67 (79.76%)	0
Illiterate	17 (20.24%)	0

\* Wherever total doesn't add up to 84, one person was excluded as she had never undergone any antenatal check-up.

**Table 2: Association between educational status and cord care.**

Education- al Status	Knowledge regarding cost effective interventions cord care		Chi square, df and p value
	Yes	No	
Literate	17 (20.24%)	50 (59.52%)	6.95, 1,
Illiterate	10 (11.90%)	7 (8.34%)	0.0083

The following observations were made about the health education received and knowledge regarding some of the cost effective interventions. Of the 84 study subjects, 81 (96.42%) of them had received health education regarding cost-effective interventions (for e.g., cord care, thermal care, IFA tablets, TT doses, child immunization and pre-lacteal feeds) during antenatal care. Of those receiving health education, 24 (28.57%) of them had the correct knowledge of cord care, 78 (92.85%) of them had knowledge of thermal care, and almost all of them had knowledge of taking IFA tablets and TT doses. 81 (96.42%) had received health education on immunization and all them had the knowledge regarding the same during the time of this study. 81 of them were educated on pre-lacteal feeds, of which 76 (90.47%) of them said that no pre-lacteal feeds should be given to the neonate (Table 3).

**Table 3: Health education vs. knowledge regarding cost-effective interventions.**

Health Education	Knowledge regarding cost effective interventions	
	Cord care Yes No	
Given	24 (28.57%)	57 (67.85%)
Not given	2 (2.38%)	-
Health Education	Thermal care Yes No	
Given	78 (92.85%)	3 (3.57%)
Not given	2 (2.38%)	-
Health Education	IFA tabs Yes No	
Given	80 (95.23%)	1 (1.19%)
Not given	2 (2.38%)	-
Health Education	TT doses Yes No	
Given	81 (96.42%)	-
Not given	2 (2.38%)	-
Health Education	Child Immunization Yes No	
Given	81 (96.42%)	-
Not given	2 (2.38%)	-
Health Education	Pre-lacteal feeds Yes No	
Given	5 (5.59%)	76 (90.47%)
Not given	1 (1.10%)	1 (1.19%)

\* One study subject was not aware of any of the cost-effective interventions. This is because she did not receive any health education as she had not undergone any antenatal check-up. This one case is not included in this Table 3.

## DISCUSSION

Our study presents the knowledge and awareness of some of the essential new born care factors and their association with socio-demographic variables, among the married women in rural area of Yadwad village. Of the total 84 study subjects studied, majority of the women 45 (53.57%) were in the 20-24 years age group. Baqui, et al also reported similar findings that majority, around 70.5% of the study subjects were in the age group of 20-34 years.<sup>1</sup> 52 (61.90%) of our study subjects were Hindus, around 76 (89.50%) were literates and 53 (63.09%) belonged to joint family. Similar findings were found in a study done by Pratibha Gupta, et al in that 70.6% were Hindus, 39.5% of the mothers were literates. However, it differed with our study as majority, which is 70% of the families were of nuclear type.<sup>8</sup>

Most of the study subjects 83 (98.80%) had received antenatal check-ups in the hospital. Of these, majority of them 79 (94.04%) had availed more than 3 antenatal visits and most of them preferred hospital delivery. 42 (50%) felt that the appropriate person to conduct delivery was doctor followed by nurse 27 (32.14%). The Baqui, et al study revealed that only 17% pregnant women received

only one antenatal check-up during their entire period of pregnancy.<sup>1</sup> In our study most 82 (97.61%) of them had received health education during antenatal check-up. 27 (32.14%) were informed regarding clean cord care practices, most of them 81 (98.80%) received information about thermal care and almost all of 84 had information of taking IFA tablets and TT doses except one study subject, who was not aware of taking IFA tablets as she never had any previous antenatal check-ups and was an illiterate.

Allisyn C Moran reported that, 84% gave birth at home assisted by traditional birth attendant (TBA). Knowledge on immediate new born care was not uniform. 64% had knowledge about drying the baby, 59% on wrapping the baby with warm clothes after birth and 46% on cord care.<sup>9</sup> Baqui, et al reported very poor knowledge regarding new born care practices among pregnant mothers, especially in rural areas. Only 7% of the pregnant women received information regarding clean cord care from health professionals. 5% women received information on thermal care and breast feeding. Most of the deliveries were conducted at home, by family members or relatives.<sup>1</sup> All our study subjects had knowledge regarding immunization and 75 (89.28%) of them replied that babies have to be immunized with 3 vaccines (BCG, DPT & OPV) before 6 months of delivery.

In the present study 56 (66.66%) of them did not know what instrument has to be used to cut the cord and what material has to be used to tie the cord. 27 (32.14%) of them, said that the instrument used to cut the cord and the material used to tie the cord has to be sterilized. Allisyn C Moran, et al reported that almost all 98% of the respondents reported using a new boiled instrument (blade or scissors) to cut the umbilical cord.<sup>9</sup> All our study subjects had the knowledge of keeping the baby warm. 45 (53.57%) of them reported that baby has to be given the first bath within 0-1 hour of delivery, while 19 (22.61%) said that the baby has to be given first bath after 24hrs of delivery. The risk of catching cold was the main factor in determining the time of bath.

David Osrin, et al reported that three quarters of the babies were bathed within first half an hour of birth.<sup>3</sup> Pratibha Gupta, et al reported that majority 77.1% of the mothers believed that baby should be bathed with warm water and dried with a clean cloth and 15.1% said that the baby should not be bathed and to only dry up with a clean cloth.<sup>8</sup> Many, 78 (92.85%) of our study subjects said that pre-lacteal feeds should not be given and 68 (80.95%) said that breast feeding has to be initiated within half an hour of delivery. Breast feeding has to be initiated within 30 minutes of delivery.<sup>10</sup> The delay in initiation will delay the development of oxytocin reflexes which are important for contraction of uterus and the breast milk reflex.<sup>11</sup> Allisyn C Moran, et al reported that 64% of their study subjects were giving first feeds to their babies something other than breast milk.<sup>9</sup> Exclusive breastfeeding should

be continued for 6 months.<sup>12</sup> In our study, all the study subjects had information and knowledge regarding exclusive breastfeeding, and when asked for the length of exclusive feeding, 19 (22.61%) of them said exclusive breastfeeding has to be for 6 months and 21 (25%) of them said that exclusive breast feeding has to be for 1 year.

Madhu K, et al reported, mothers received information regarding breast feeding practices from their doctors and women who went to government hospitals exclusively breastfed their babies.<sup>7</sup> The development of counselling skills among doctors helps in conveying the right message to mothers about breast feeding and weaning practices.<sup>13</sup>

Association between educational status of the study subjects and their knowledge regarding cord-care, one of the cost effective interventions, was found to be statistically highly significant (chi-square value= 6.96; df=1; P<0.01). Baque, et al reported that higher levels of maternal education were associated with clean cord care and early breastfeeding.<sup>1</sup> In the present study, depending on the information received regarding cost-effective interventions during antenatal care from the health care providers, 81 (95%) of them had received health education, of which 24 (28.58%) of them had correct knowledge on cord care, 78 (92.85%) of them had knowledge on thermal care. Almost all the study subjects were informed on exclusive breastfeeding and 81 (95%) were educated on pre-lacteal feeds and 76 (90%) of them said no pre-lacteal feeds have to be given.

## CONCLUSION

Improving new born survival is a major priority in child health today. Specific programs for enhancing the maternal and child health have been in place since the early 1950s, like Maternal and Child Health program, immunization, ORS for the control of dehydration due to diarrhoeal diseases, anaemia, and vitamin A prophylaxis program, CSSM and currently Reproductive and Child Health program II.<sup>8</sup>

In the present study, 67 (80%) of the study subjects were literates. Most of them were aware of regular antenatal care, adequate number of antenatal check-ups and some of the cost-effective interventions for the neonate. This was mainly because of the educational status of the study subjects and knowledge imparted to them during antenatal check-ups.

This study has strong evidence for the association between the level of education and awareness among the mothers regarding the new born care in rural area. The long term solutions can be achieved by improving the literacy rate and empowering the mothers, which has been clearly shown to be effective by reduction of neonatal mortality in Indian states of Goa, Kerala and

Mizoram where female literacy and empowerment is at a high level.

Implementation of an effective program for promotion of child birth and new born care practices requires understanding of the community and household traditional new born care practices. It also involves community mobilization and the empowerment of individuals and communities to demand quality services that respond to their needs.

Thus building capacity of the mothers through basic education is a key long term strategy to improve prenatal and neonatal care.<sup>6</sup>

*Funding: No funding sources*

*Conflict of interest: None declared*

*Ethical approval: The study was approved by the Institutional Ethics Committee*

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**Cite this article as:** Patil PS, Dixit UR. New born care in rural area: a cross-sectional study. *Int J Community Med Public Health* 2016;3:826-30.