



## Original Research Article

## Does early separation of the neonate impact the knowledge, attitudes and feeding practices of their mothers? - A cross sectional study in a rural teaching hospital in Telangana

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## ABSTRACT

**Introduction:** Promotion of knowledge on breast feeding improves the attitude and breast feeding practices of mothers. Studies regarding knowledge, attitude and practices of breastfeeding among Indian mothers are limited, with no studies among mothers of neonates admitted to NICU. Hence this study was planned.

**Objectives:** 1): To assess the difference in knowledge, attitude and practices regarding breast feeding between mothers whose neonates were admitted in NICU  $\leq 24$  hours of birth, and whose neonates were admitted  $\geq 96$  hours of birth. 2): To assess gap in knowledge to feeding practices among both groups.

**Study Design:** A Cross Sectional KAP (Knowledge, Attitude and Practice) study.

**Materials and Methods:** 440 postnatal mothers of neonates admitted to NICU between 1<sup>st</sup> June 2019 to 31<sup>st</sup> December 2020 were included. Based on age at admission of their neonates to NICU, mothers were divided into 2 groups. 1<sup>st</sup> group comprised of 205 mothers of neonates admitted to NICU  $\leq 24$  hours of life and 2<sup>nd</sup> group comprised of 235 mothers of neonates admitted  $\geq 96$  hours of life. Data was collected from mothers on KAP of breast feeding by interview, on a pretested questionnaire by the primary researcher.

**Results:** The group 2 mothers whose neonates were admitted at  $\geq 96$  hours of life demonstrated better KAP which was statistically significant. There was no significant difference noted in implementation of knowledge to practices among all 440 mothers. Out of 440 mothers, only 17% had knowledge to initiate breast feeds within 1 hour after birth & 15% fed the babies within 1 hour after birth. 88% of mothers had knowledge that colostrum should be fed & 82% practiced it; 80% knew that pre-lacteals should be avoided & 87% practiced it; 68% were aware of burping the baby; 91% practiced burping before putting the baby down.

**Conclusions:** Early separation of neonates from mothers impacts the knowledge, attitude and practices towards breastfeeding. Poor attendance at the antenatal counselling clinic is also a contributing factor.

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## 1. Introduction

There has been extensive research on benefits of human milk which has demonstrated good health, nutrition, immunity, and development in children. Improved maternal

and infant health outcomes were observed in both industrialized and developing nations as a result of breastfeeding.<sup>1</sup> Breastfeeding drastically reduces deaths from acute respiratory infections and diarrhea which are the two major child killers.<sup>2</sup> In one of the studies, it was seen that exclusive breastfeeding in the first 3 days of life had lower mortality rates in babies compared to those

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not breastfed at all.<sup>3</sup> WHO and UNICEF recommend that children be initiated on breastfeeding within the 1<sup>st</sup> hour of birth and be exclusively breastfed for the first 6 months of life. However, nearly 66% infants are not exclusively breastfed for the recommended 6 months, a rate that has not improved in 2 decades, and 60% infants are not breastfed within the first hour of life.<sup>4</sup> According to NFHS V for the state of Telangana, children <6 months of age who were exclusively breastfed in urban areas were 59.1%; in rural areas 73.4%; with overall prevalence of 68.2%.<sup>5</sup> Children under the age of 3 years who were breastfed within one hour of their birth in urban & rural areas constituted 38.8 % & 36.0% respectively; with overall prevalence in initiation of breastfeeds within 1 hour of birth being 37.1%.<sup>5</sup> This is attributed to poor knowledge attitude and practice regarding breastfeeding among mothers. Education regarding breastfeeding should not only be provided to the mother but also to the entire family.<sup>6</sup> This in future will help in strengthening the breastfeeding practice, which will decrease mortality rates in children.

## 2. Aims and Objectives

1. To assess the difference in the knowledge of breastfeeding practices between mothers of neonates admitted to Neonatal Intensive Care Unit (NICU) at  $\leq 24$  hours of life and those admitted at  $\geq 96$  hours of life.
2. To assess the difference in practices of breastfeeding between mothers of neonates admitted to NICU at  $\leq 24$  hours of life and those admitted at  $\geq 96$  hours of life.
3. To assess the gap in knowledge to feeding practices among both the groups of the mothers.

## 3. Material and Methods

### 3.1. Study setting and population

A cross sectional prospective KAP (knowledge, attitude and practices) study was conducted among 440 mothers of neonates admitted in NICU, of a rural teaching hospital in Telangana, India between 1<sup>st</sup> June 2019 to 31<sup>st</sup> December 2020. The mothers were divided into Group 1, (n=205) comprising of mothers whose neonates' age was  $\leq 24$  hours of life at admission to NICU. These neonates were admitted for treatment of respiratory distress like transient tachypnea of newborn, meconium aspiration or shifted from mothers' side due to symptomatic hypoglycemia, aspiration, pathological jaundice. Group 2 (n=235) comprised of mothers whose neonates' age was  $\geq 96$  hours of life at admission to NICU. These neonates were admitted for phototherapy, dehydration and late onset sepsis.

### 3.2. Inclusion criteria

1. Mothers whose neonates' were born at the institute where study was conducted.

2. Mothers whose neonates age was  $\leq 24$  hours of life at admission to NICU.
3. Mothers whose neonates' age was  $\geq 96$  hours of life at admission to NICU.

### 3.3. Exclusion criteria

1. Mothers who refused to consent.
2. Those who gave incomplete data.
3. Mothers who were not in a position to participate in the study due to their medical conditions (MICU admissions, Severe PPH etc.).
4. Mothers of babies born at other hospitals and referred for treatment to NICU.
5. Mothers whose babies were critically ill, on life support such as ventilator /CPAP, those suffering from sepsis and HIE stage 2, stage 3 were excluded.

### 3.4. Ethics

An ethical clearance from institutional ethical committee was taken for this study.

### 3.5. Study instrument

A pre-formed questionnaire based on studies conducted by WHO and UNICEF was modified after a pilot study on 25 mothers, printed in English and Telugu.<sup>7</sup> Questionnaire comprised of 6 sections.

Section 1 comprised of demographic characteristics like age, literacy status, parity, occupation, residence. Section 2 comprised of information regarding pregnancy and birth which includes total number of pregnancies, total number of live babies, any deaths of children in the family, number of antenatal visits, antenatal counselling sessions regarding breastfeeding practices and mode of delivery. Section 3 comprised of information from neonatal case sheets. In order to get complete data along with the data given by mothers, case sheets from NICU were referenced regarding details of resuscitation, shift of the baby after birth and reason for NICU admission. Section 4 comprised of structured questionnaire to assess knowledge of mothers regarding initiation of breastfeeding, colostrum feeding practices, pre lacteal feeds administration, and burping after feeds with possible responses given as options. Section 5 comprised of questions related to attitude of mothers. It includes questions regarding attitude of mothers towards breastfeeding which was assessed using Likert scale with 5 possible responses for each question (1-Strongly agree, 2-Agree, 3-Neither agree nor disagree, 4-Disagree, 5-Strongly disagree).<sup>8</sup> Section 6 comprised of questions related to feeding practices with respect to initiation of breastfeeding, colostrum feeding practices, pre lacteal feeds administration, and burping after feeds by mothers with possible responses given as options.

### 3.6. Data collection procedure

All 440 mothers were given an explanation of purpose of the study by the primary researcher. Written informed consent was obtained from the mothers & data was collected through face to-face interview. It took approximately 30 minutes to complete the structured questionnaire.

Statistical analysis: Data collected was analyzed using SPSS software- version 21.0. Inferential statistics like Chi square test was used to test whether there was a statistical significance between both the groups with respect to knowledge, attitude and feeding practices. The level of significance was set at  $P < 0.05$ .

## 4. Results

The mothers were divided into Group 1 ( $n=205$ ) comprising of mothers whose neonates age was  $\leq 24$  hours of life at admission to NICU & Group 2 ( $n=235$ ) comprising of mothers whose neonates age was  $\geq 96$  hours of life at admission to NICU.

Background data of all the 440 mothers is shown in [Table 1].

Knowledge of the mothers in group 1 and group 2 regarding initiation of breast feeds was assessed and compared [Table 2 Q1]. In group 1 ( $n=205$ ) 14% stated that breast feeds should be initiated within 1 hour, another 14% stated within 6 hours, overall, 56% stated less than 24 hours and 10% of the mothers stated more than 24 hrs. 34% of the mothers had no knowledge as to when exactly the breast feeds should be initiated.

In group 2 out of the 235 mothers 20% stated that breast feeds should be initiated within 1 hour, 24 % within 6 hours, overall, 66% of mothers said less than 24 hours, 9% said more than 24 hours. 25 % of the mothers stated that they had no knowledge as to when exactly the breastfeeds should be initiated. However, there was no significant difference in the knowledge of mothers in both groups  $P = 0.05$  with regards to initiation of breast feeding.

With regards to knowledge regarding colostrum feeding practices [Table 3Q2]- In group 1: 92 % said that colostrum should be fed to the baby, whereas 8% stated that it should be discarded. Among mothers belonging to group 2, 84% mothers felt that colostrum should be fed, 9 % felt it should be discarded and 7% were not having any knowledge regarding colostrum feeding practices. There was a statistically significant difference in the knowledge of colostrum feeding practices between the 2 groups ( $P = 0.001$ ).

Knowledge in pre-lacteals administration was assessed between the groups. [Table 3 Q3]. In Group 1, 11% of the mothers felt that pre-lacteals should be fed to the babies, 85 % felt that pre-lacteals should be avoided. 4% of mothers had no knowledge regarding this practice.

In group 2, 9% reported that pre lacteals should be fed, 74% reported that pre-lacteals feeds should be avoided and 17 % had no knowledge regarding it. There was a statistical significance ( $P = 0.001$ ) in knowledge with regards to pre-lacteals administration.

When knowledge regarding burping after feeds was assessed in both the groups, following results were observed [Table 3Q4]. In group 1, 76 % were aware of burping practices, 15% said that baby should be laid down immediately and 9% said they were not aware of any such practice. In group 2, 64% stated that burping was to be done, 25% stated that baby needed to be laid down immediately, 11% were not aware of any such practice. When both groups were compared in knowledge with respect to burping practices, statistically significant difference was observed ( $P=0.02$ ).

When attitudes of mothers in both groups were assessed [Table 4Q1], 89% of mothers in group 1 felt that exclusive breast feeding was important to the baby, as compared to 96% of the mothers in group 2. There was a statistical significance noted in attitudes between both groups of mothers with regards to exclusive breast feeding. ( $P= 0.005$ ).

92% of mothers in group 1 as compared to 97% mothers in group 2, felt that their child would be healthier when fed Breast milk as compared to formula milk. There was a statistical significance noted in attitudes between both groups of mothers with regards to breastfeeds being superior to formula feeds. ( $P=0.03$ ).

When asked whether adequate knowledge and training has been given to them 60% of mothers in group 1, agreed as compared to 89 % in group 2. The statistical significance difference was noted ( $P=0.001$ ) between both the groups with respect to attitude towards knowledge and training imparted to them.

Similarly feeding practices between both the groups were compared [Table 5]. In group 1 14% breastfed within 1 hour after birth, 1% within 6 hours, 19% within 24 hours, 7% after 24 hours. 74% of the mothers did not remember as to when they initiated breastfeeds. In group2, 24% of the mothers-initiated breast feeds within 1 hour of birth, 25% within 6 hours, 76% within 24 hours and 14% did not remember as to when they first initiated breast feeds. When both groups were compared there was a significant difference in the practice of initiation of breast feeds ( $P = 0.001$ )

In colostrum feeding practices [Table 6Q1], in group 1 mothers, 88% gave colostrum while 12 % discarded it. However, in group 2, 76% of mothers gave colostrum, whereas 24% discarded it. There was significant difference in colostrum feeding practices between both groups ( $P=0.001$ )

In administration of Prelacteal feeds as shown in [Table 6Q2] 12% of 205 mothers in group 1 had given

**Table 1:** Background data of all the mothers

Variable	n=440	Percentage
Age		
<25 years	226	51%
25-30 years	202	46%
>30 years	12	3%
Parity		
Primigravida	130	30%
Multigravida	310	70%
Mode of Delivery		
Vaginal delivery	134	30%
LSCS	306	70%
Antenatal Counselling attended		
Yes	176	40%
No	264	60%

**Table 2:** Knowledge of mothers regarding initiation of breast feeds

	Q1. How long after delivery should breastfed be initiated?					Total
	<1hr	1-6hrs	7-24hrs	>24hrs	Don't know	
Group1	30	30	57	21	67	205
Group2	45	56	52	22	60	235
Total	75	86	109	43	127	440

P = 0.05

**Table 3:** Knowledge of mothers regarding different feeding practices

Q2 According to you should colostrum be fed or not?						
Groups	Yes	No	Don't Know	Total	P value	
Group 1	190	14	1	205	0.001	
Group 2	197	21	17	235		
Q3 Do you think pre-lacteals should be given to the baby before breast feed?						
Groups	Yes	No	Don't know	Total	P value	
Group 1	21	170	13	205	0.001	
Group 2	21	175	39	235		
Q4 Should burping be done after breastfeeding your baby?						
Groups	Yes	No	Don't know	Total	P value	
Group 1	156	32	17	205	0.02	
Group 2	151	59	25	235		

**Table 4:** Attitudes of mothers towards breastfeeding

Q1 Exclusive breast feeding is important to baby							
Groups	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree	Total	P value
Group 1	91	92	16	4	2	205	0.005
Group 2	91	134	1	7	2	235	
Q2 Child will be healthier when given breast milk as compared to formula milk							
Groups	Strongly Agree	Agree	Neither agree nor disagree	Disagree	Strongly Disagree	Total	P value
Group 1	60	129	10	4	2	205	0.03
Group 2	82	147	1	4	1	235	
Q3 Adequate knowledge and training has been given to me regarding breastfeeding							
Groups	Strongly Agree	Agree	Neither agree nor disagree	Disagree	Strongly Disagree	Total	P value
Group 1	61	62	81	2	1	205	0.001
Group 2	111	99	20	3	1	235	

**Table 5:** Practice of initiation of breastfeeds after birth

	About how long after your delivery did you breastfeed your baby for first time?					Total	P value
	<1hour	1 to 6hours	7 to 24hours	> 1day	Don't know		
Group 1	29	1	9	14	152	205	0.001
Group 2	57	58	63	22	35	235	
	86	59	72	36	187	440	

**Table 6:** Practices of mothers of both groups

<b>Q1 Colostrum feeding practices by the mothers</b>					
Groups	Yes	No	Total	P value	
Group 1	181	24	205	0.001	
Group 2	179	56	235		
<b>Q2 Prelacteal feeds administration by the mothers</b>					
Groups	Yes	No	Total	P value	
Group 1	25	180	205	0.1	
Group 2	18	217	235		
<b>Q3 Burping practices by the mothers</b>					
Groups	Yes	No	Total	P value	
Group 1	179	26	205	0.01	
Group 2	221	14	235		

prelacteals and 88% of the mothers said that no prelacteals were given. In group 2, 24% of mothers had administered prelacteals, whereas 76% did not give. There was no statistical significance in practice of prelacteals between both groups.

In Burping practices [Table 6Q3], 87% of the mothers in group 1 burped the baby before putting down to sleep, whereas 12% directly put the baby down to sleep. In group 2, 76% of the mothers burped the baby, whereas 24% put the baby directly down to sleep. There was a statistical significance in practice of burping noted between both the groups (P= 0.01).

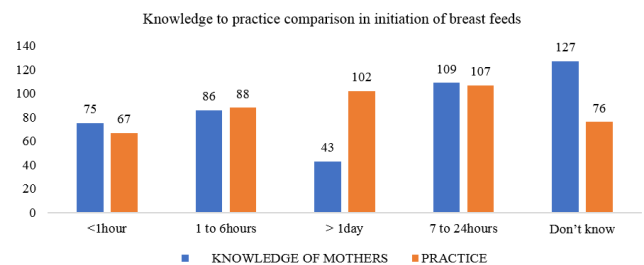
Both the groups were combined to assess the gap between knowledge to feeding practices of mothers. Out of the 440 mothers only 17% had knowledge to initiate breast feeds within 1st 1 hour after birth, 15% were feeding the babies within 1 hour after birth as shown in [Figure 1].

88% of the mothers said that colostrum should be fed, 82% were feeding colostrum as shown. 80% of mothers said that prelacteals should be avoided, 87% did not give prelacteal feeds. 68% were aware of burping the baby after fed, 91% were practicing burping before putting the baby down.

## 5. Discussion

Extensive literature search did not yield any Indian studies amongst mothers whose babies were admitted to NICU.

The knowledge regarding initiation of breast feeds in both the groups was similar. Both the groups of mothers had poor knowledge. When knowledge regarding other practices (colostrum feeding practices, pre lacteals administration,

**Fig. 1:** Knowledge to practice comparison in initiation of breastfeeds in all mothers

burping practices) was assessed there was a significant difference noted between both the groups. Similarly, there was a significant difference in attitudes and feeding practices between both the groups. The knowledge, attitudes and feeding practices were better in group 2 mothers. This probably could be attributed to early separation of the neonates from the mothers in group 1, while group 2 mothers received regular counselling and motivation during bedside postnatal rounds by the residents and the attending pediatricians. However, when knowledge to practice was assessed in both groups, there was no significant difference noted. With whatever knowledge the mothers had, they were feeding the babies effectively.

In our present study, 17% of mothers had knowledge regarding initiation of breast feeds within 1 hour after birth. In other community-based studies, the knowledge of the mothers ranged from 37- 80%.<sup>9-11</sup> In present study 15% of mothers had initiated breast feeds within 1 hour. In studies mentioned above the percentages of practices in the mothers

were 34%, 18% and 37.4%.<sup>9-11</sup> Though the knowledge in the mothers regarding initiation of feeds was less in our study, there was not much difference in knowledge to practice noted, whereas in other studies though the knowledge of the mothers was good, their practices were not at par.

88% of the mothers in our study felt that colostrum was beneficial and 68% were actually giving it. In other studies, the mothers who had knowledge regarding colostrum feeding were 92%, 79% and 67% & percentage of mothers practicing it was 94%, 87% and 41% respectively.<sup>12-14</sup> Here contrary to our study, 2 studies showed better practices in comparison to the knowledge of the mothers.<sup>12,13</sup>

Regarding knowledge on administration of pre-lacteals, 80% of the mothers in our study stated pre-lacteals should be avoided, and 87% of them did not give. In other studies, knowledge not to give pre-lacteals was 87%, 85% and 83% and mothers who did not give were 86%, 88% and 85% respectively.<sup>12,13,15</sup> There was no significant gap in knowledge to practice, which was similar between our study and the other studies.

68% of mothers in present study had knowledge regarding burping which was less compared to another study where 90% of mothers had knowledge.<sup>16</sup> The practice of burping in present study was 91% similar to 98% reported in another study.<sup>9</sup> In our study as compared to knowledge regarding burping, practices were better.

## 6. Conclusions

Early separation of the neonates from the mothers impacted their feeding practices. Though this was not the only reason. Poor attendance at antenatal counselling clinics also contributed to the deficiency in knowledge, attitudes and feeding practices in our study.

## 7. Way Forward

Motivating the mothers and their caregivers to attend antenatal counselling clinics on importance of breastfeeding has to be emphasized. Even after the birth of the baby, irrespective of whether baby is by mothers' side or not, health workers and residents should continue counselling during regular postnatal rounds.

## 8. Source of Funding

There was no funding received for conducting the study.

## 9. Conflict of Interest

The authors declare no conflict of interest.

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