

Awareness and Attitude Regarding Breastfeeding and Immunization Practices Among Primigravida Attending a Tertiary Care Hospital in Southern India

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ABSTRACT

Introduction: Infant mortality rate (IMR) is considered as one of the most sensitive indicators of health status of a community. Infant mortality figures in India are very high and the two important causes which contributes maximum to the IMR is inadequate breastfeeding and immunization. The major cause of death among under five children in India is neonatal sepsis, diarrhea and pneumonia and breast milk is protective against all the three diseases. Immunization along with breastfeeding reduces a significant number of infant and maternal mortality. Disease like neonatal tetanus is rampant in our country and it can be prevented by vaccination of the women during pregnancy. This study tries to find out the awareness and attitude among the primigravida females regarding breastfeeding and immunization.

Materials and Methods: This facility based cross-sectional study was conducted among 186 primigravida who came to the

hospital for delivery and antenatal check-up during March 2014 in three associated teaching hospitals of Kasturba Medical College, Mangalore, which is situated in coastal South India. Approval was obtained from the Institutional Ethics Committee (IEC) of KMC (Manipal University), Mangalore, India. A pre tested, semi structured questionnaire was used as the data collecting tool.

Results: Majority (n=163, 87.6%) were Hindus followed by Muslims (n=16, 3.2%). Nearly half of the participants (n=92, 49.5%) were in the 21-25 y age group, 54.8% participants were not aware of correct position of baby during feeding and 10.8% (n=20) believed that immunization should be stopped if it showed side effects.

Conclusion: Breastfeeding and Immunization is an effective way of reducing child and maternal mortality. The results from our study showed that many participants had lacunae in knowledge and attitude and adequate health education should be given to the pregnant women.

Keywords: Colostrum, Immunization, Maternal and neonatal tetanus, Vaccine preventable disease, Weaning

INTRODUCTION

Infant mortality rate (IMR) is considered as one of the most sensitive indicators of health status of a community. Infant mortality figures in India are very high and the two important causes which contributes maximum to the IMR is inadequate breastfeeding and immunization. According to NFHS-3 data [1] 75% of the children are not breastfed from birth and over 50% are not exclusively breastfed. According to Lancet series of 2008, breastfeeding promotion alone contributes to an 11.6% reduction [2] in IMR and it reduces the risk of dying from diarrhea and pneumonia. Immunization program is one of the key interventions for protection of children from life threatening conditions, which are preventable. India has one of the largest immunization program in the world but diseases like Maternal and neonatal tetanus (MNT) has alone led to 58,000 newborns deaths [3] in 2010 and a significant number of women also die to due to maternal tetanus every year.

Breast milk has nutritional, immunological, behavioral and economic benefits and helps to build mother infant bonding [4]. Breastfed children have lower rates of childhood cancers, infections, asthma, allergies, childhood diabetes, gastrointestinal illnesses and infections that can damage their hearing [5]. The major causes of death among under five children in India is neonatal sepsis, diarrhea and pneumonia and breast milk is protective [1] against all the three diseases. Breastfeeding benefits is not just restricted to child, it protects the mother who has breastfed from developing ovarian and premenopausal breast cancers [6,7], and it also reduces the risk of postpartum bleeding and osteoporosis.

More than 15% of 24 lacs child deaths could be avoided in India by optimal breastfeeding practices but very few women in India

have access to counseling services on infant and young child feeding [8]. Despite the knowledge of benefits of breastfeeding, its prevalence and duration among general population in many countries are still lower than the international recommendations of six month of exclusive breastfeeding [9]. The prevalence of exclusive breastfeeding of six months duration is 46.4% and the early initiation of breastfeeding in India is less than 41% which are far from the desired level and interestingly breastfeeding practices vary among different regions and communities [10,11]. In India it is common practice amongst mothers to extract the initial breast milk which they think is watery and is harmful to the baby [12].

UNICEF in its report recounted that percentage coverage of immunization of DPT3 and Polio3 was around seventy percent in India [10]. Expanded programme on immunization (EPI) target diseases that are the leading causes of high childhood morbidity and mortality as evidenced by the high IMR in developing countries. Immunization is a timely step for prevention of diseases in the 0-5 years of age group [13]. Despite India being a leading producer of vaccines, it harbors one-third of the world's unimmunized children [14]. However in the past few decades' immunization coverage rates have improved sufficiently in developed countries whereas most of the developing countries are still struggling with low rates [13]. A study was warranted to assess the awareness and attitude of the primigravida with respect to breastfeeding and immunization practices in this part of the state.

MATERIALS AND METHODS

This facility based cross-sectional study was conducted during March 2014 in three associated teaching hospitals of Kasturba

Medical College, Mangalore, which is situated in coastal Southern India. The study was done among 186 primigravidae attending the hospitals for delivery and those who attended the outpatient department for antenatal care during the study period.

Approval was obtained from the Institutional Ethics Committee (IEC) of KMC (Manipal University), Mangalore, India. The hospitals were visited on a pre-informed date. The participants were selected by convenient non-random sampling. The nature and objectives of the study was explained to the participants in a language which they could clearly understand. A written informed consent was taken from the subjects before their recruitment in the study and those not willing to participate were excluded from the study. The data was collected using a pretested, semistructured questionnaire to assess the knowledge and attitude regarding breast feeding and immunization among the primigravida. The questionnaire consisted of four parts. Section-A) dealt with the socio demographic profile of the participants. Modified Kuppaswamy scale was used to assess the socio-economic status. The second part B dealt with pregnancy details. The questions pertaining to knowledge and attitude regarding breast feeding constituted Section C and the last Section D assessed the knowledge and attitude of the respondents towards immunization in accordance with National Immunization Schedule.

STATISTICAL ANALYSIS

The data collected was analysed using statistical package SPSS version 16.0. Analysis was done by using Chi-square test and $p < 0.05$ was considered as statistically significant.

RESULTS

This was a cross-sectional study done among 186 primigravida who came to the hospital for delivery and antenatal check-up. [Table/Fig-1] shows that majority (n=163, 87.6%) were Hindus followed by Muslims (n=16, 3.2%). Nearly half of the participants (n=92, 49.5%) were in the 21-25 y age group, 43% (n=80) belonged to upper lower class. The mean age of the participants and the mean age of marriage were 25.19 y and 23.64 y respectively.

	n (%)
Age of the subject (in years)	
<20	15 (08.1)
21-25	92 (49.5)
26-30	68 (36.6)
31-35	11 (05.9)
Religion	
Hindu	163 (87.6)
Muslim	16 (03.2)
Christian	06 (03.2)
Buddhist	01 (00.5)
Socio-economic status	
Upper class	07 (03.8)
Upper middle class	33 (17.7)
Middle/ Lower middle class	64 (34.4)
Lower/ Upper lower class	80 (43.0)
Lower class	02 (01.1)
Place	
Rural	82 (44.1)
Urban	104 (55.9)

[Table/Fig-1]: Demographic details of the study population (n = 186)

		Socio-economic status		
		Upper class n(%)	Middle class n(%)	Lower class (%)
Knowledge regarding breastfeeding n (%)	Inadequate	04 (57.1)	51 (52.6)	33 (40.2)
	Adequate	03 (42.9)	46 (47.4)	49 (59.8)
Knowledge regarding immunization n (%)	Inadequate	05 (71.4)	62 (63.9)	49 (59.8)
	Adequate	02 (28.6)	35(40.2)	33(36.1)

[Table/Fig-2]: Knowledge regarding breastfeeding and immunization among different socio-economic status (n = 186)

[Table/Fig-2] shows the distribution of knowledge of breastfeeding and immunization among the different socio-economic groups. The adequate knowledge regarding breastfeeding was found among 49 (59.8%) of participants belonging to the lower class followed by 46 (47.4%) of the participants of the middle class. Similarly adequate knowledge regarding immunization was found among 35 (40.2%) of participants belonging to the middle class group followed by 33 (36.1%) of the participants of the lower class.

[Table/Fig-3] shows that out of total respondents, 86.6% (n=161) were aware of the fact that the colostrum should be fed to the newborn. Approximately half of the participants (n=84, 45.2%) knew that breast feeding decreases the risk of diarrhea in baby and almost equal number of participants 78 (41.9%) were aware of the fact that breastfeeding decreases the risk of jaundice in the baby. Seventy two percent (n=134) participants knew the correct duration of exclusive breastfeeding. The study revealed that 54.8% participants were not aware of the correct position of baby's during feeding.

Nearly 2/3rd (n=121, 65%) women were not aware that whether OCPs could be consumed during breastfeeding and majority of the study population (n=124, 67%) were unaware of the fact that exclusive breast feeding is a natural method of contraception. Eighty six percent (n=160) knew that smoking is prohibited during breast feeding and almost equal number 84.4% (n=157) knew that alcohol consumption is contraindicated during breastfeeding. [Table/Fig-4] shows that 74.7% (n= 139) participants were aware that immunization prevents risk of disease. When asked about the tetanus immunization approximately eighty two percent (n=152, 81.7%) knew that it is given during pregnancy and almost similar number (n=154, 82.4%) were aware of two doses during pregnancy. All the participants (n=186,100%) showed positive attitude towards getting their child completely immunized and almost the same number of participants (n=184, 98.9%) believed that immunization is important for their children and decided to follow the immunization schedule regularly. More than 10% participants (n=20, 10.8%) had the misconception of stopping the immunization if it caused side effects. Fifty one percent (n=95) of the respondents knew that the child should be vaccinated even if it had minor illness during the time of immunization.

As shown in [Table/Fig-5], the level of adequate knowledge regarding breastfeeding was higher among the subjects in the age group of 21-25 years compared to others. However, this difference was not found to be statistically significant ($p = 0.429$). The urban dwellers and lower middle class were found to have higher level of knowledge than the subjects living in rural area but the results was not statistically significant. [Table/Fig-6] depicts that the level of knowledge regarding immunization was adequate among the age group of 21-25 y, among the urban dwellers and in the participants belonging to upper lower socio-economic status but the findings were found to be statistically insignificant.

DISCUSSION

Our study depicted that 86.6% (n= 161) respondents knew that colostrum should be fed to the child and 64.5% (n=120) participants were aware that colostrum boosted immunity. This was an encouraging finding and is in contrast to a similar study done in a rural area of East Delhi [15] which revealed that 52% of mothers considered colostrum harmful, although all of them breast fed their babies but only 9.5% initiated within 1 hour of delivery, prelacteal feeds were given by 82% of the women, jaggery being the most common form. This difference in finding between the two study settings could be attributed to high literacy rate of this place which is 94.03% of which female literacy is 91.63% [16] and is well above the national average. Although only 40% (n=74) knew that the baby should be fed on demand and it warrants the need of health education and baby-care by the health providers to the expecting mother. Media can play a pivotal role in enhancing the knowledge of breastfeeding in the target population.

Knowledge & perception among the participants	n (%)	Socio-economic status		
		High n=7	Middle n=97	Low n=82
Child should be fed colostrum	161 (86.6)	5(3.1)	86(53.4)	70(43.4)
Colostrum boost child immunity	120 (64.5)	4(3.3)	70(58.3)	46(38.3)
Duration of exclusive breast feeding is 6 months	134 (72.0)	5(3.7)	75(55.9)	54(40.2)
Baby should be breast fed on demand	74 (39.4)	1(1.3)	46(62.1)	27(36.4)
After breastfeeding baby should be made to burp	148 (79.6)	6(4.0)	80(54.1)	62(41.8)
Complementary feed should be started after 6 months	148 (79.6)	6 (4.1)	76 (51.4)	66 (44.6)
Breastfeeding decreases the risk of diarrhea in the baby	84 (45.2)	5(6.0)	45(53.6)	34(40.5)
Breastfeeding should be continued if the child falls sick	146 (78.5)	6(4.1)	81(55.5)	59(40.4)
Breastfeeding is stopped temporarily if the mother falls ill	62 (33.3)	3(4.8)	32(51.6)	27(43.5)
Breastfeeding is stopped if there is a breast infection	88 (47.3)	3(3.4)	41(46.6)	44(50.0)
Colostrum is healthy for my baby	175 (94.1)	6(3.4)	91(52.0)	78(44.6)
Breastfeeding will help me bond better with my child	177 (95.2)	7(3.9)	92(52.0)	78(44.1)
Doctors and nurses should encourage breastfeeding	173 (93)	7(4.0)	90(52.0)	76(43.9)
Breastfeeding is old fashioned	3 (1.6)	0(0)	1(33.3)	2(66.7)
Breastfeeding has negative effect on marital relationship	17 (9.1)	1(5.9)	5(29.4)	11(64.7)
Breastfeeding decreases the risk of jaundice	78(41.9)	4(5.1)	39(50)	35(44.9)
Attitude among the participants				
Will exclusively breastfeed my baby	183 (98.4)	7 (3.8)	96 (52.5)	80 (43.7)
I will give pre lacteal food to my baby	28 (15.5)	1 (3.6)	13 (46.4)	14 (50)
Will continue to breast feed my baby after resuming my work	171 (91.9)	7 (4.1)	88 (51.5)	76 (44.4)

[Table/Fig-3]: Knowledge perception and attitude towards breastfeeding among the participants (n = 186)

Knowledge & awareness among participants	n (%)	High n=7	Middle n=97	Low n=82
Immunization prevents and reduces the risk of disease	139 (74.7)	6 (4.3)	73 (52.5)	60 (43.2)
Immunization is started at birth	122 (65.6)	5 (4.1)	64 (52.5)	53 (43.4)
TT vaccine is given during pregnancy	152 (81.7)	7 (4.6)	82 (53.9)	63 (41.4)
2 doses of TT are given during pregnancy	154 (82.4)	7 (4.5)	81 (52.6)	66 (42.9)
TT given during pregnancy protects mother and neonate	122 (65.6)	4 (3.3)	65 (53.3)	53 (43.4)
Child should be taken to nearest health centre if it shows AEFI	159 (85.5)	4 (2.5)	86 (54.1)	69 (43.4)
Thursday is immunization day in Karnataka	89 (47.8)	2 (2.2)	46 (51.7)	41 (46.1)
Feel that immunization is important for my child	113 (60.75)	7 (6.2)	55 (48.7)	51 (45.1)
Vaccines may cause side effects , so will discontinue my child's vaccination	142 (76.34)	5 (3.5)	76 (53.5)	61 (43.0)
Attitude towards Immunization among primigravida				
Will get my child completely immunized	186(100)	7(3.8)	97(51.9)	82(44.3)
Will follow vaccination schedule	184(98.9)	7(3.8)	96(52.2)	81(44.0)

[Table/Fig-4]: Knowledge awareness and attitude towards Immunization among primigravida (n = 186)

Variables	Level of Knowledge regarding breastfeeding		p-value
	Adequate	Inadequate	
Age of the subject	n (%)	n (%)	0.429
<20	07 (3.76)	08 (4.30)	
21-25	40 (21.50)	52 (27.95)	
26-30	35 (18.81)	33 (17.74)	
31-35	06 (3.22)	05 (2.68)	
Place			0.814
Rural	38 (20.43)	44 (23.65)	
Urban	50 (26.88)	54 (29.03)	
Socio-economic status			0.250
Upper class	04 (4.50)	03 (3.10)	
Middle class	51 (58.00)	46 (46.90)	
Lower class	33 (37.50)	49 (50.00)	

[Table/Fig-5]: Associations of variables with different variables (n = 186) Knowledge regarding breastfeeding

Variables	Level of knowledge regarding Immunization		p-value
	Adequate	Inadequate	
Age of the subject	n (%)	n (%)	0.391
<20	9 (4.83)	6 (3.22)	
21-25	63 (33.87)	29(15.59)	
26-30	38 (20.43)	30(16.12)	
31-35	6 (3.22)	5(2.68)	
Place			0.383
Rural	54 (29.03)	28(15.05)	
Urban	62 (33.33)	42(22.58)	
Socio-economic status			0.765
Upper class	05 (4.30)	02 (2.90)	
Middle class	62 (53.40)	35 (50.00)	
Lower class	49 (42.20)	33(47.10)	

[Table/Fig-6]: Associations of variables with different variables (n = 186) knowledge regarding Immunization

A study done in Dhaka [17] showed that majority had knowledge on duration of exclusive breastfeeding (74%) and breastfeeding (66%) and this finding was in coherence with our study which showed that more than 70% (n=134) agreed to the fact that exclusive breast feeding should be given for six month and 79.6% (n=148) knew that complementary feed should be started after six months. A cross sectional study done in Puducherry [8] concluded that the knowledge of mothers was inadequate in areas of initiation of breast feeding (95%), colostrum feeding (56%), exclusive breast feeding (38%) which was discordant with the findings of our study.

There is a tradition in India that pregnant female stays in her mother's residence and prefers to stay for some time after delivery and elder women and relatives are the main source of information regarding breastfeeding practices and newborn care. Although it is better to have an experienced lady to advise the new mother but sometime there are practices which are unhealthy. Prelacteal feed is one of such practice and its prevalence and practice is different in different parts of the country. Prelacteal feed is a health hazard both for the mother and the newborn baby, but it is a common practice in our country. It can lead to infection to the newborn and hampers with the bonding [18] of mother and child. According to the report of nationwide study by Breast Feeding Promotion Network of India (BPN), the prevalence of prelacteal feed [19] was found to be 49%. Our study depicted that close to 16% (n=28) primigravida females had positive attitude for giving prelacteal feed which showed a contrasting finding from the study done in Maharashtra [20] where knowledge and attitude about prelacteal feed was 75.5% and 54% respectively. A similar study done in Mysore [20] and Uttarakhand [4] showed that pre-lacteal feeds were done in more than 50% and 66.03% respectively.

Time of initiation and adequate duration of breastfeeding is a very important landmark in the development of the baby. Exclusive

breastfeeding of the newborn is stopped many times by the mother due to various reasons. One of the reason mentioned by the mothers are breast infection. Our study showed that 33.3% (n=62) participants were aware that breastfeeding should be stopped temporarily if they fall ill and 47.3% (n=88) of them knew to stop breastfeeding when they developed breast infection. A self-reported study by the mothers done in America [21] found that on an average 4.6 women stopped breastfeeding because of pain due to breast infection. A study in Davangere [22], Karnataka showed that (23.1%) mothers had stopped breastfeeding because of problems like sore nipples, mastitis, breast engorgement and breast abscess. Mothers usually develop feeding problems like mastitis and breast engorgement due to poor positioning of the baby. Initiatives like health education by the health care provider during pre and post-delivery regarding correct positioning of the baby will help in reducing the number of mothers who discontinue breastfeeding due to breast infection.

Immunization is the main weapon by which infectious diseases can be controlled in developing country like India. India has National immunization program for prevention of infectious diseases and vaccines are provided free of cost at the government health centre. It is sad that despite these efforts diseases like Maternal and neonatal tetanus (MNT) are still rampant in our country. MNT transmits mainly during the delivery and can be prevented by two doses of tetanus toxoid [23] given to the pregnant women.

A questionnaire based study [13] done in Kashmir showed that 100% mothers knew that immunization is beneficial and protects their

children from diseases, the results shown was better with respect to our study which showed that only 74.7% (n=139) participants were aware of the advantages of immunization. The above mentioned study [13] also showed that all mothers were aware of immunization during pregnancy (TT) but 86% were unaware of its benefits. These findings were in contrast to our study which depicted that 74.7% primigravida were aware of the benefits of immunization and 82.4% were aware of two doses of TT given during pregnancy. Study [24] has shown that a pregnant mother staying in joint family has a positive influence on the immunization status of the mother and child. Our study shows that majority of the respondents (40%, n=84) stayed in a joint family and this could be the reason for better knowledge of immunization among the respondents.

Our study showed that all the participants wanted to get their children immunized. 99.5% felt that immunization is important for their child. Although the attitude was good among the participants, the levels can be further improved by providing awareness and health education.

The current study showed that the knowledge deficit was found in all the socio-economic class of the participants, particularly in middle class. Health education should be more focused on these groups so that their knowledge could be improved thereby helping them in proper care of their newborn.

[Table/Fig-7] shows the comparison of results of different studies of perception and attitude among females regarding breastfeeding and immunization with current study.

Study title design and place of the study	Population and setting	Objective and intervention	Results	Current study findings
Knowledge and practice of mothers regarding breast feeding: a hospital based study [25] Cross sectional study Nepal	200 mothers of under 1 year old children who attending the pediatric Out Patient Department, well baby clinic and immunization clinic at BPKIHS	To assess the knowledge and actual practices of mothers regarding breastfeeding	25% had idea on importance of Colostrums 15% knew the meaning of exclusive breast feeding	86.6% had knowledge regarding the feeding of the colostrum 72% knew the meaning of exclusive breastfeeding
Socio-demographic correlates of breast-feeding in urban slums of Chandigarh [26] Cross sectional study Chandigarh	270 Mothers of infants willing to participate in the study in the selected area	To study the prevailing breast-feeding practices adopted by mothers	43 (15.9%) mothers discarded colostrum 159 (58.9%) initiated breast-feeding within 6 h of birth	
Breastfeeding practices among lactating mothers: Problems and prospects in a cross-sectional study [12] Mysore	Lactating mothers having at least a single infant attending well baby clinic at selected hospitals were included in the study and data was collected	To describe and explain the factors influencing breastfeeding practices in Mysore city	36% of mothers had discarded the colostrum considering it as harmful to the baby's health and also difficult for digestion by the baby more than 50% used pre-lacteal feeds	64.5% primigravida females knew that colostrum boost child immunity 15.5% showed positive attitude for the use of pre lacteal feed
Factors associated with knowledge about breastfeeding among female garment workers in Dhaka city [27] cross sectional study Dhaka city	200 female garment workers in the reproductive age group (15-49 y)	To investigate the existing knowledge and associated factors influencing breast-feeding among female garment workers in Dhaka city	74% exclusive breastfeeding Knowledge regarding advantages of exclusive breastfeeding (89%)	98.4% showed positive attitude towards breastfeeding 94.1% knew that colostrum is healthy for the newborn
A community based study on breastfeeding practices in a rural area of Uttarakhand [4] community based cross sectional study	500 mothers having children between 0-3 y age group were included in the study	To know breast feeding practices of mothers with a view to strengthen these practices for improving the health of infants	5.13% babies were exclusively breastfed till six months	----
Knowledge, Attitude, and Practices of Breastfeeding and Weaning Among Mothers of Children up to 2 Years Old in a Rural Area in El-Minia Governorate, Egypt [28] Cross sectional study	307 rural mothers who have a youngest child aged 2 y or less	Knowledge, attitude, and actual practices of mothers in a rural area in Egypt regarding breastfeeding, complementary feeding and weaning	83.4% agreed that breastfeeding should be avoided during mother's illness 42.7% women showed positive response for pre lacteal feeds	33.3% perceives that breastfeeding should be stopped if mother falls ill
Immunization of Children in a Rural Area of North Kashmir, India: A KAP Study [29] Cross sectional study	Mothers of children aged 1-2 y.	To know the mothers Knowledge, attitude and practices related to immunization	100% of mothers knew that vaccination is beneficial and protects their children from diseases	99.5% females felt that immunization was important for their child 74.7 % participants knew that immunization prevents and reduces risk of disease
Factors associated with TT (tetanus toxoid) immunization among pregnant women, in Saparua [30] Maluku, Indonesia	all pregnant women living in the area and registered for health services		(55%) of the women knew about the use of tetanus toxoid to prevent tetanus.	81.7% females that tetanus toxoid is given during pregnancy

[Table/Fig-7]: Comparison of knowledge regarding breastfeeding and immunization of other studies with the current study

The study was done in a developed area where the female literacy is higher compared to the national average and so the results obtained cannot be generalized. This is a limitation of the study and further research in rural and suburban parts of the country is recommended.

CONCLUSION

Breastfeeding and Immunization is an effective way of reducing child and maternal mortality. The results from our study showed that although a major population had adequate knowledge of breast feeding and immunization but lacunae was found in many of them. The short comings in the knowledge should be met through the available resources present in the health care facility. The knowledge regarding breastfeeding and immunization should be restricted only to health care professionals. It should be incorporated in adolescent education which can result in building of the attitude and later into practice. We must direct our efforts to empower such women as well as adolescent girls through health education and life skills education activities through existing health programs.

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