

A Cross-Sectional Study on Early Initiation of Breast-Feeding among Post-Natal Mothers in a Teaching Hospital of Kolkata, India

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Abstract:

Background: Provision of mother's breast milk to newborns within one hour of birth is referred to as 'Early Initiation of Breast feeding' (EIBF). It has benefits for the survival of children and beyond. The aim of the study was to determine the prevalence of EIBF among the post natal mothers in a teaching hospital of Kolkata and to find out the factors affecting EIBF among the post natal mothers. **Methodology:** A descriptive cross-sectional study was conducted among 171 mothers admitted in the postnatal ward of Medical College & Hospital (MCH), Kolkata from April 2018 to June 2018. All the mothers who recently delivered and gave consent were included in the study. A pre-designed pretested schedule was used to collect socio-demographic, delivery and breast feeding related information. Data was expressed in terms of number, percentage and association between categorical variables was tested by chi-square test. **Results:** Majority (68.42%) of the post natal mothers initiated breast feeding within 1 hour. Among the mothers performing delayed initiation of breastfeeding, as per mother majority (64.81%) of delays were related to delayed hand over of baby, followed by caesarean section delivery (22.22%), lack of lactation (18.52%), lack of awareness (14.81%) and pain (11.11%) with more than one reasons for delay often. EIBF was done more by the mothers who had normal vaginal delivery (91.81%) in comparison to mothers who had delivery by caesarean section (26.22%) and this was significant (p value <0.001). Untimely handing over of baby to mothers, lack of EIBF support, lack of IEC materials, lack of knowledge of breast feeding among mothers and lack of breast feeding advice during antenatal check up were other reasons for delayed initiation of breast feeding. **Conclusion:** The prevalence of EIBF among the post natal mothers admitted in MCH, Kolkata was 68.42 % which thus makes a future scope for further improvement and support EIBF that may ultimately decrease overall childhood morbidity and enhance positive health.

Keywords: Breastfeeding, EIBF, Mothers, Postnatal

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I. Introduction

Breast feeding is not a choice it is a responsibility. It has been already established that appropriate breastfeeding practices reduce child morbidity and mortality; improve immunity in children besides being essential for their optimal growth and development. On the other hand, it decreases incidence of certain diseases like breast cancer in the mother. Ideally breast milk should be given exclusively for 6 months and thereafter continued for at least 2 years with other food.¹

Provision of mother's breast milk to infants within one hour of birth is referred to as- "Early Initiation of Breast Feeding (EIBF)". It ensures that the infant receives the colostrum or "First Milk", which is rich in protective factors also provides milk ejection reflex. It is nutritious, protective, prevents the newborn from diseases, increases bonding between mother and child and at the same time facilitates the production of regular breast milk. Changes in trends of Early Initiation of Breastfeeding in India from 2005 - 06 (NFHS - 3) to 2015-16 (NFHS - 4) by 18.2 % from 23.4% in 2005-06 to 41.6 % in 2015-16 was noted.² But there is room for further improvement. In 2014, 81.1% of deliveries were attended by a skilled health provider, while only 44.6% of newborns were breast fed within 1 hour of birth, indicating that rates of early initiation of breast feeding could double if all newborns delivered by a health provider were breast fed within 1 hour of birth.³ Insufficient attention is afforded to this public health issue of early or timely initiation of breastfeeding, even though this

preventive intervention is highly cost-effective and prevents newborn infections, averts newborn death due to sepsis, pneumonia, diarrhoea and hypothermia, and facilitates sustained breastfeeding.⁴

Most of the studies done so far regarding early initiation of breast feeding and associated factors in West Bengal are community based except few. Now as the rates of institutional delivery has been increased over years from 42% (NFHS 3) to 75.2 % (NFHS 4) in West Bengal, particularly the rate of institutional delivery in urban areas of West Bengal based on NFHS 4 is 83.6%.⁵ This reflects that the problem of addressing early initiation of breast feeding has shifted primarily from individuals and families to the institutions providing care. The problems regarding EIBF in the institutions need to be found and resolved. In one of the few study in West Bengal, the knowledge score of the mothers has been assessed to find out the relationship between knowledge of mothers and EIBF practice.⁶ But, apart from knowledge there can be many other issues in an institution per se including the practices in the hospital or other birth related factors which needs to be explored completely in order to make EIBF possible for all post natal mothers. Studies from other states may not have similar implication as West Bengal as the treatment or institutional care or other systems/ procedures might vary, unless we have enough literature available and the issue is resolved. This study may help the policy makers and administrators in this state mainly in filling up the gap and support EIBF so that all health benefits to children and mother may be obtained. So the study was done with the following objectives 1) to find out the socio-demographic profile of the mothers in the study 2) to determine the prevalence of early initiation of breast feeding among the mothers admitted in the postnatal ward of a teaching hospital in Kolkata 3) to find out the relationship of socio demographic and mother & child health related variables with early initiation of breastfeeding (EIBF) and 4) to find out the role of hospital practices (if any) in early initiation of breast feeding.

II. Material And Methods

A descriptive cross-sectional institution based study was conducted among the post natal mothers admitted in post natal ward under Gynaecology and Obstetrics Department of Medical College and Hospital (MCH), Kolkata, which is a tertiary as well as teaching hospital in West Bengal. The study was conducted for a period of 3 months from April 2018 to June 2018. All the mothers who recently delivered and were admitted in the postnatal wards of MCH, Kolkata during the study period and those who gave consent were included in the study. While, the mothers whose babies were sick and admitted in Sick Neonatal Care Unit (SNCU) wards, the mothers who were sick and the mothers who had twin babies were excluded from the study. In this way finally by complete enumeration method, 171 mothers were interviewed. Data was collected using predesigned, pretested, semi-structured schedule, Bed Head Ticket (BHT) and Mother and Child Protection Card (MCPC) where available. Information was collected by interview of the post natal mothers and record review from Hospital and other records like BHT and MCPC for obtaining the birth weight and the time of birth. Study variables included dependent variable as early or delayed initiation of breast feeding, time gap between delivery and initiation of breast feeding while the independent variables included socio demographic and other mother and child health related variables like age, education, type of residence, type of family, socio-economic status, number of living children, antenatal check up done or not, whether received advice on breast feeding during antenatal check up, source of information regarding breast feeding in antenatal period, knowledge of mother regarding EIBF, the reasons for delay in EIBF as per mother, birth weight, type of delivery and other hospital practices like time of receiving baby, support provider to breast feeding in institution, presence of information education and communication (IEC) materials in hospital premises etc. Every day data were collected by trained medical students. Duplication was carefully avoided. Data were entered in MS excel and analyzed using Statistical Package for Social Sciences (SPSS) 16 software. Categorical variables were expressed in terms of their frequency and percentage and the association between categorical variables were tested using Chi square (χ^2) test. For all purposes p value less than 0.05 were considered statistically significant. Permission to conduct the study was obtained from Head of the Department of Gynaecology and Obstetrics, MCH, Kolkata. Informed consent was taken from all participants, anonymity and confidentiality was maintained and the post natal mothers were informed that the data provided by them would be solely used for academic purposes only.

III. Result

The Table 1 shows that the majority of mothers (51.46%) belonged to 20-24 yrs age group; whereas 11.11% mothers were teen age and 9.36 % were more than 30 years of age. Majority (93.57%) of the mothers had at least primary education. Majority of mothers (69.01%) resided in urban areas. The distribution of mothers was more or less equal between nuclear and joint families. 60.23% of mothers had only one child, while nearly one third (33.92 %) of the mothers had 2 children. Nearly half (46.78%) of the post natal mothers belonged to lower and lower middle socio-economic class according to modified BG Prasad Socio-economic status scale 2017.

The Table 2 shows the distribution of the study population based on the mother and child health related variables. It was found that 64.33% of the mothers had normal delivery while remaining (35.67%) had caesarean

section. Majority (96.49%) of the mothers received antenatal check-up at least once. 59.06% of the total mothers received advice on breast feeding during pregnancy. Nearly half (48.51%) of the study mothers got information regarding breast feeding during antenatal check-up from doctors, 25.74 % from nurses, 31.68 % from family members, and 6.93% from Accredited Social Health Activists (ASHA) with multiple source of information often. Majority (67.84%) of the study mothers are aware about early initiation of breast feeding.

The Table 3 shows the distribution of study population according to initiation of breast feeding related variables. It was found that more than two third (68.42%) of the study mothers initiated breast feeding within one hour while, 18.13 % of the total post natal mothers took more than two hours to initiate breast feeding. Among the mothers performing delayed initiation of breastfeeding, according to them majority (64.81%) of the delays were related to delayed hand over of the baby to the mother, followed by delivery by caesarean section (22.22 %), lack of lactation (18.52 %), lack of awareness (14.80 %) and pain (11.11.%) etc.

Table 4 shows the different hospital practices which influence the time of initiation of breast feeding. It revealed that majority (79.53%) of the study mothers received their babies within 60 minutes after birth. It was found that nearly two third (67.52 %) of the mothers i.e.79 out of 117 received support from nurses. Nearly three fourth (73.68%) of the study mothers did not see any IEC material in the hospital premises.

It was evident (from both Table 3 & 4) that 79.53 % (136 out of 171) of the mothers received baby within one hour of delivery, while, EIBF was practiced among 68.42 % (117 out of 171) of the mothers. So there was wrong practice in the hospital system of not giving baby to their mother within one hour in 20.47 % (35 out of 171) of the total mothers. More so, 123 persons including doctor, nurses, attendant and family member in various combinations provided support to the post natal mothers for EIBF to these 117 (68.42% of study mothers) post natal mothers. This reflects that 13.97 % (19 out of 136) of the post natal mothers who received baby within one hour, at least did not get support for early initiation of breastfeeding, though they may or may not have got support for breast feeding after one hour unless there is a problem in lactation itself.

Table 5 shows the association between early initiation of breast feeding versus other socio-demographic and MCH related variables. It was found that implementation of early initiation of breastfeeding was higher among lower educated mothers (73.33%) than higher educated mothers (64.58%), but this difference was not significant. Type of family didn't change the prevalence of early initiation of breastfeeding. Percentage of mothers with early initiation of breast feeding was more or less same in both rural and urban areas. Time of initiation of breastfeeding didn't vary much with birth weight of the baby. In this study it was found that the prevalence of EIBF was higher among the post natal mothers who had normal delivery 91.81% than the mothers who had delivery by caesarean section (26.22%) and this difference was statistically significant (p value < 0.001).

Table 1: Socio-demographic profile of the post natal mothers (n=171)

Socio-demographic variables		Frequency	Percentage	
Age (in completed years)	<20	19	11.11	
	20-24	88	51.46	
	25-29	48	28.07	
	30-34	16	9.36	
Educational level	Illiterate	7	4.09	
	Just literate	4	2.33	
	Primary	27	15.79	
	Middle	37	21.64	
	Secondary	50	29.24	
	Higher secondary	35	20.47	
Type of residence	Rural	53	30.99	
	Urban	118	69.01	
Type of family	Nuclear	84	49.12	
	Joint	87	50.88	
Socio economic status (Modified BG Prasad Scale 2017)	I (Upper)	(≥ Rs 6254)	11	6.43
	II (Upper middle)	(Rs 3127- Rs 6253)	33	19.30
	III (Middle)	Rs 1876- Rs 3126	47	27.49
	IV (Lower middle)	Rs 938- Rs 1875	58	33.92
	V (Lower)	< Rs 938	22	12.86
Living children	1	103	60.23	
	2	58	33.92	
	>2	10	5.85	

Table 2: Distribution of the mothers according to mother and child health related variables (n=171)

Mother and Child health variables		Frequency	Percentage
Type of delivery	Normal Vaginal Delivery	110	64.33
	Caesarean Section	61	35.67
Antenatal checkup received or not	Yes	165	96.49
	No	6	3.51
Advice given on breastfeeding during Antenatal check up	Yes	101	59.06
	No	70	40.94
Source of Information regarding breast feeding in antenatal period (n=101)#*	Doctor	49	48.51
	Nurse	26	25.74
	Family member	32	31.68
	ASHA	7	6.93
	Others (YICF counsellor, etc)	3	2.97
Mother's knowledge on EIBF	Yes	116	67.84
	No	55	32.16

#101 post natal mothers received advice on breastfeeding during Antenatal check up; *multiple responses

Table 3: Distribution of post natal mothers according to breast feeding initiation related variables (n=171)

Initiation of Breast feeding related variables		Frequency	Percentage
EIBF (Early initiation of breast feeding)	Yes	117	68.42
	No (Delayed initiation of Breast feeding)	54	31.58
Time of initiation of Breastfeeding	Immediately	13	7.60
	1- 30 Minutes	35	20.47
	31- 60 Minutes	69	40.35
	61-120 Minutes	23	13.45
	>120 Minutes	31	18.13
Reasons for delay in EIBF as per mother (n=54) #*	Pain (various)	6	11.11
	Anaesthesia	4	7.41
	Caesarean section delivery	12	22.22
	Tired and sleepy mother	3	5.56
	Baby handed over late	35	64.81
	Lack of lactation	10	18.52
	Lack of awareness	8	14.81
	Can't specify	3	5.56

#54 post natal mothers had delayed initiation of breast feeding; *multiple responses

Table 4: Distribution of the study population according to hospital practices influencing time of initiation of breast feeding (n=171)

Different hospital practices		Frequency	Percentage
Time of receiving baby	Immediately	31	18.13
	(1-30min)	41	23.98
	(31-60 min)	64	37.43
	(61-120 min)	18	10.53
	(≥121 min)	17	9.93
Support provider (n=117) # * (Early initiation of breast feeding)	Nurse	79	67.52
	Ayah/ Attendant	13	11.11
	Doctor	18	15.38
	Family Member	13	11.11
IEC material in hospital premises	Yes	45	26.32
	No	126	73.68

#EIBF was done in 117 mothers; *Multiple responses

Table 5: Relationship between early initiations of breast feeding (EIBF) versus socio-demographic and mother & child health related variables. (n=171)

Variables		Early Initiation of Breastfeeding			Test Statistics		
		Done n (%)	Not Done n (%)	Total n (%)	χ^2	df	p value
Education level	Secondary Level and Above	62 (64.58)	34 (35.42)	96 (100.00)	1.492	1	0.222
	Below secondary level	55 (73.33)	20 (26.67)	75 (100.00)			
Types of Family	Joint	60 (68.97)	27 (31.03)	87 (100.00)	0.0243	1	0.876
	Nuclear	57 (67.86)	27 (32.14)	84 (100.00)			
Residence	Rural	37 (69.81)	16 (30.19)	53 (100.00)	0.069	1	0.793
	Urban	80 (67.80)	38 (32.20)	118 (100.00)			
Birth Weight (grams)	<1800	5 (71.43)	2 (28.57)	7 (100.00)	0.049	2	0.976
	1800-2500	40 (68.97)	18 (31.03)	58 (100.00)			
	> 2500	72 (67.92)	34 (32.08)	106 (100.00)			
Type of delivery	Normal	101 (91.81)	9 (8.19)	110 (100.00)	78.13	1	<0.001
	Caesarean	16 (26.22)	45 (73.78)	61 (100.00)			

IV. Discussion

A cross-sectional study was conducted among 171 post natal mothers admitted in Medical College and Hospital, Kolkata with a purpose to find out the prevalence of EIBF among the post natal mothers and to determine the factors influencing EIBF.

The prevalence of EIBF among the post natal mothers in the present study was found to be 68.42% with no difference with respect to residence i.e. urban 67.80% and rural 69.81%. This was better in comparison to national average of 41.6 % but similarity with respect to no differences on the basis of residence i.e. urban 42.9 % and rural 41.0 %.² Even in West Bengal the prevalence of EIBF was 47.4% with once again no difference with respect to residence that is urban 48.2% and rural 47.1%.⁵ The difference in the prevalence of EIBF with respect to state and India could be explained on the basis that over 3 years the trends might be on rise and more so, the current study is based on a single institution only. The rising trend is further supported by various survey and studies.^{2,3,7} However our study finding was consistent with similar study in Kolkata in a similar institute, where it was found that baby was put to breast immediately after handover in 66.1% cases.⁶

The present study revealed that those who had normal delivery (91.81%) practiced EIBF more than those who had caesarean section (26.22%). This was consistent with the states of Andhra Pradesh and Telangana, where the high prevalence of births by caesarean section (40% in Andhra Pradesh and 58% in Telangana) were found to be associated with low rates of early initiation of breast feeding (40% in Andhra Pradesh and 37% in Telangana).² Furthermore, prospective cohort studies in India have shown that infants born by caesarean section were almost four times less likely to initiate breast feeding within 1 hour of birth than infants born by vaginal delivery.⁸ However despite being a difficulty to practice EIBF in case of caesarean section, there are evidences which shows that if dedicated support is provided then even caesarean section is not a barrier to EIBF.⁹

The study revealed that there was wrong practice in the hospital system of not giving baby to their mother within one hour in 20.47 % of the total mothers. It was also revealed that 123 persons including doctor, nurses, attendant and family member in various combinations provided support to all the post natal mothers who did EIBF. This reflected that 13.97 % (19 out of 136) of the post natal mothers who received baby within one hour, at least did not get support for early initiation of breastfeeding unless there was a problem in lactation itself. This reflected that if some prevailing hospital practices of timely handing over of baby to their newborns, and providing adequate support for EIBF could be done then definitely there may be increase in the overall prevalence of EIBF among the post natal mothers. This was even consistent with National survey findings where it was found that children whose delivery was assisted by health personnel (43%) or who were born at a health facility (43%) were more likely to start breastfeeding within one hour of birth than other children.² Recent meta analyses of health system worldwide indicated that improving individual counseling or group education supporting immediate breastfeeding at delivery and training health staff in lactation management increased the likelihood of early initiation of breastfeeding by at least 20%.^{9,10}

V. Conclusion and Recommendations

The prevalence of early initiation of breast feeding (EIBF) among the post natal mothers of Medical College & Hospital Kolkata, which is a tertiary care centre in West Bengal, was found to be 68.42%. The factors which affected early initiation of breast feeding in the present study were delivery by caesarean section and some hospital practices like not handing over of all newborn to their mother within one hour, not providing support to all post natal mothers for EIBF, lack of enough EIBF IEC materials in the hospital premises, lack of knowledge of EIBF among the post natal mothers and other reasons as per mother were failure of lactation, lack of awareness, pain, anesthesia and tiredness etc.

The limitations of the study were recall bias by the mothers in some responses and incomplete exploration of some factor like lactation failure or problem that might cause delayed initiation of breastfeeding. Despite of these limitations the study adds new knowledge regarding the factors influencing EIBF. It is thus recommended to provide support for EIBF to the post natal mothers with special emphasis on mothers delivered by caesarean section. Handing over of all babies to their mothers after birth must be ensured within one hour, which if combined with EIBF support can dramatically increase the prevalence of EIBF manifold. It is also recommended that during the antenatal check up, the mothers should be given advice on breast feeding too, otherwise it would be a missed opportunity to counsel mothers regarding EIBF and increase their knowledge regarding breastfeeding especially EIBF. This may further help in detecting any lactation problem beforehand. At the same time IEC materials on EIBF may be promoted in hospital premises.

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