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Prelacteal and Exclusive Breastfeeding Practices: A Rural Urban Comparative Study, West Bengal

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ABSTRACT

The present study aimed to study the rural- urban differences with respect to the pre-lacteal and exclusive breastfeeding. Methods- Total 200 lactating mothers were selected from the rural areas of Howrah and urban areas of Kolkata city on the basis of operational convenience. Data were collected on breastfeeding history (pre-lactaeal feeding and exclusive breastfeeding) and on complementary feeding using a pre-tested questionnaire. Results- result shows that the frequencies of pre-lacteal feed were more among the urban participants than their rural counterparts. The study reveals that most of the urban mothers had caesarean section at the time of delivery and hence initiated breast-feeding late unlike the rural mothers.

Introduction

The World Health Organization defines breastfeeding as the normal way of providing infants with the nutrients they need for healthy growth and development (WHO, 2001) Breastfeeding also offers to the mothers a considerable post-partum and long term health benefits (Gartner *et al*., 2005). According to Gupta *et al.* (2007), breast milk has a unique biological and emotional influence on the health of both

mother and child. It has been previously documented that pre-lacteal feeding is harmful and can expose infants to the risk of infection, a recent study conducted in India indicated that infants who received pre-lacteal feeding were significantly more likely to be stunted and wasted compared to those who were exclusively breastfed (Meshram *et. al*. 2012).

In India, breastfeeding practice is universal, but initiation and duration of breastfeeding after birth is sometimes considerably delayed. The overall rate of exclusive breastfeeding in this country is 17.9% (Prasad and Costello, 1995). In this backdrop the present study attempted to deal with breastfeeding practices in rural and urban populations of West Bengal. The Millennium Development Goal (MDG) 1 and MDG 4 are to reduce child mortality and morbidity and the road map is to initiate early breastfeeding, within one hour and exclusive breastfeeding for the first six months (Bryce *et al*., 2006). Mothers' own milk is the best source of nutrition for nearly all infants. Beyond somatic growth, breast milk as a biologic fluid has a variety of other benefits, including modulation of postnatal intestinal function, immune ontogeny, and brain development. Infant formula is an industrially produced substitute for infant consumption. Infant formula attempts to mimic the nutritional composition of breast milk as closely as possible, and is based on cow's milk or soymilk. A number of alternatives to cow's milk-based formula also exist (Camilia R. Martin *et. al., 2016).*

Materials and methods

The present study was conducted in the State of West Bengal. Two districts of this state *namely* Kolkata and Howrah were selected for the study. The urban participants were selected from Kolkata Municipal ward numbers 121, 122 and 123 of the district of Kolkata, whereas the rural participants were selected from two villages of Howrah district, viz. Rudrapur and Wadipur, under the G*ram Panchayat* – Rudrapur. Both of the study areas were selected for the operational convenience. Data were collected using a pre-tested questionnaire among the 200 lactating mothers having their last children aged from six to twenty four months belonging to Bengali Hindu caste population.

Types of data

Data on socio demographic status included education level of participants and her husband, working status of participants and her husband, monthly expenditure of family.

Information on breastfeeding history includes the following.

1. Pre-lacteal feeding – The participants were asked whether the child was given any other food and its type, before introduction of breast milk.
2. Exclusive Breast Feeding – The participants were asked whether they have exclusively breast fed their children consecutively for at least six months
3. Complementary Feeding – The participants were asked about their complementary feeding types if practiced.
4. Formula feeding - The participants were asked whether they gave tinned milk to their last child; and if so, what was the reason for it and when they started.
5. Knowledge, Attitude and Practice – The participants were asked about their knowledge, attitude and practice regarding breastfeeding. This includes their sources of acquiring the knowledge, their attitude towards breastfeeding.

Case studies were made to have a quantitative assessment of the attitude and practice of the participants towards breastfeeding.

Duration of data collection

The present study is conducted during the period of 28th May to 14th August of 2014.

Statistical analysis

Descriptive and bi-variant analyses were undertaken to observe the variation. The entire data was analysed using the software SPSS (Version 16.0). Here frequency is done for descriptive analysis and Chai Square and t test is done for the inferential statistics.

RESULTS

Table 1 Socio-demographic profile of the participants

Sl. No.	Sociodemographic profile	Rural (n = 100)	Urban (n = 100)
1	Non Literate	6 (6%)	3 (3%)
2	Can Sign	8 (8%)	4 (4%)
3	Primary	5 (5%)	2 (2%)

4	Secondary	76 (76%)	2 (2%)
5	High Secondary	5 (5%)	12 (12%)
6	Graduation	0 (0%)	59 (59%)
7	Post Graduation	0 (0%)	17 (17%)
8	Others*	0 (0%)	1 (1%)
1	Non Literate	7 (7%)	0 (0%)
2	Can Sign	14 (14%)	5 (5%)
3	Primary	15 (15%)	3 (3%)
4	Secondary	59 (59%)	6 (6%)
5	High Secondary	2 (2%)	1 (1%)
6	Graduation	3 (3%)	53 (53%)
7	Post Graduation	0 (0%)	27 (27%)
8	Others**	0 (0%)	5 (5%)
1	Working	12 (12%)	10 (10%)
2	Non working	88 (88%)	90 (90%)
1	Business	32 (32%)	12 (12%)
2	Skilled Labour	43 (43%)	1 (1%)
3	Unskilled Labour	21 (21%)	5 (5%)
4	Service	4 (4%)	81 (81%)
5	Others***	0 (0%)	1 (1%)
1	>6000	61 (61%)	7 (7%)
2	6001-9000	29 (29%)	4 (4%)
3	9001-20000	10 (10%)	51 (51%)
4	<20000	0 (0%)	38 (38%)

*Diploma course in medicine. ** Diploma course in medicine, Diploma course in engineering. *** Practicing Doctor.

Table 1 shows that three fourth the rural participants attained education up to secondary level. In contrast, more than half of the urban participants attained education up to graduation. Around one fifth of the urban participants studied beyond graduation level. Half of the rural participants attained education up to secondary level. In contrast, more than half of the urban participants attained education up to graduation. Around one fifth of the urban participants studied beyond graduation level. An overwhelming majority of the participants of both the groups belong to the nonworking category or

homemaker. The occupational types of the rural participants include works related to hand and crafts, embroidery workers and service holders and that of the urban types were service, teachers, nurses, practitioner (doctors) and house maid. An overwhelming majority of the husbands of the rural participants belonged to the skilled labour category whereas in case of urban area the majority of the people belonged to the service category. The table further revealed that more than half of the rural participants belong to the monthly household expenditure category <Rs. 6000, followed by the subsequent category Rs. 6001-9000. The urban participants seem to be better off than the rural counterpart. Here, the participants mostly fall in the category Rs. 9000 and above.

Table 2 Birth history

Place of Delivery				
	Rural (%)	Urban (%)	$\chi 2$	p Value
Govt. Hospital	99	13	101.71 df = 2	0.00
Private Hospital	0	87		
Home	1	0		
Mode of delivery				
Cesarean	12%	89%	0.02 df = 1	0.89
Vaginal	88%	11%		

Table 2 shows that more than three fourth of the women of rural areas (78.0%) had vaginal delivery compared to one tenth of the urban women (11.0%). Here also it is shown that overwhelming majority of rural women (99.0%) go to the governmental hospitals for child delivery. In contrast, the women of urban area (87.0%) visited private hospitals for their delivery.

Table 3 Breastfeeding history

	Urban (%)	Rural (%)	$\chi 2$	p Value
Pre-lacteal feeding				
Yes	20%	85%	0.500	0.48
No	80%	15%	df= 1	
Exclusive Breastfeeding Practiced				

Yes	66%	72%	3.425	0.00
No	34%	28%	df= 2	
Types of Complementary feeding				
Homemade food	34%	9%	1.836	0.00
Tinned food	0%	3%	df = 2	
Homemade food and tinned food	66%	88%		
Total Duration of Breastfeeding				
<6 months	5%	16%		
6-12 months	34%	25%		
13-24 months	56%	52%		
25-36 months	9%	7%		

Table 3 shows that most of the urban participants practised pre-lacteal feeding compared to the rural ones. It shows that the majority of the women of both rural (72.0%) and urban (66.0%) areas practised exclusive breastfeeding up to six. It is apparent from the table that majority of the participants of rural and urban areas used a combination of home-made and tinned food as complementary feeding. However, with reference to the duration of breast feeding, majority of the participants from both the groups fall in the category 13-24 months, followed by the category 6-12 months.

Case studies

It reveals that most of the urban mothers were aware about the practice of breastfeeding and its beneficial effects on child health. However, there were other reasons that debarred them to practice breastfeeding. For example, some mothers told that their physical indisposition immediately after the delivery prevent them from initiating breastfeeding, Others observed that the child refused breast milk; some also revealed that the health professionals (doctor and/ nurses) did not help the newly mothers regarding breastfeeding practices. One mother was of the opinion that children born out of caesarean section were usually lazy and reluctant to suck breast.

The rural participants were keen in giving breast milk to their children for the maximum period of time. But, there were some cases where mothers failed to give breast milk to their children. For example, some mothers told that they took contraceptive pills after the sixth month of delivery,. This prevented

them from breastfeeding their child(ren). Small birth spacing was another reason cited by these mothers which prevented them from breastfeeding for a prolonged period. In India, there is a traditional practice that a woman visits her parental home at the time of child delivery. It is believed that a woman gets more care and resting time in their parental home compared to that in their in-laws houses. This practice also helps a woman to recover her health from the aftermath of child delivery. However, they ususally return to their in-laws house few months after the delivery and takes on the responsibility of the household chores. Some of the study participants reported to have discontinued breastfeeding practices after returning to their in-laws houses for not being able to timely feed thier child.

1.[urban area, class 11, mother's age is 28 years, home maker, cesarean delivery, parity 2 (First child is feamle and of 6 years and last child age twenty five months , male child]

I fed breast milk to my child for ten hours after delivery. Since it was a caesarean section, I remained unconscious for some time after the delivery. During this time period my child was fed only saline water in the hospital under the supervision of the nurses. I continued to practice breastfeeding up to eight months. After that my baby started refusing breastmilk. So, I started to feed my child boiled potato, horlicks (health drink), cerelac, biscuit, etc. I preferred to give him cerelac to my first child since I was aware that this food item is better than formula milk. I was aware about the necessity of feeding breastmilk to a child exclusively for the first six months. However, I really did not know that the babies should not be given other food items during this period of time.

2. [urban area, class 12, mother's age is 30 years, home maker, cesarean delivery, parity 1, child age twenty four months, male child]

I experienced two miscarriages prior to the birth of this child. Doctor diagnosed the case as failed implantation of fertilized egg. For this reason, I had to undergo a laproscopic surgery. My third pregnancy was successful because of this operation. Since the birth of my child took place through caesarean section I was in an unconscious state during the post-delivery period. The caregivers of the medical center tried to feed my son tinned milk during the first 24 hours, but were unsuccessful. Later, the caregivers tried to feed my breast milk to my son, but again failed. I did not have any idea that exclusive breast feeding is very important for the first six months for a child. Since I stay in a nuclear family set up, there was no elderly female to guide me about the initiation and duration of breastfeeding. Under such circumstance, I had to consult my doctor.

3. [Urban, secondary, mother's age 19 years, vaginal delivery, parity 1, female child of nine months of age]

I went though vaginal delivery. My child was fed with breast milk within half an hour of her birth. I continued to practice exclusive breast feeding for around 20 days only, because I realized that there was lacking in proper milk secretion. There by most of times my child was remaining in empty stomach. So I resorted to tinned milk (Lactogen I) from the 21st day of the child's birth. I did not consult any doctor before switching over to tinned milk. From 7 months onward the child was fed with different vegetables, fruit juice, rice and pulses. I did not care whether the child had colostrums or not. I had to keep the child at my father's place because there was some problem at my husband's place, so I was unable to give her breast milk in proper time means when she felt hungry I wasn't present to give her breast milk. I used to come once a day to look after my child and feed her breast milk.

4. [Urban, post graduate, mother's age 35 years, caesarean delivery, parity 1, female child of six months of age]

I went through caesarean delivery and so the child was brought to me after 8-9 hours. For this period, the child was fed with NAN-I as pre-lacteal feed. I was fully aware about exclusive breastfeeding. I learned its benefits by reading the information from internet and several books during my pregnancy period. However, I could not practice it since my child never sucked my breast milk. I did not have any problem to practice breastfeeding but the child refused suckled my breast so formula milk was introduced. On the advice of the doctor, I tried several techniques of feeding breast milk, but I failed miserably. For this reason I had to resort to formula milk as the last option... I was also not a breastfed child In spite of not feeding breast milk I think my child is healthy enough.

5. [Rural, primary, mother's age 29 years, vaginal delivery, parity 2 (first child is of 6 years) female child 30 months of age]

I have two daughters– the elder one's age is six years and the younger one is two and the half years old. I practiced exclusive breast feeding to my younger daughter up to the two years of her age. I was able to breastfeed my child up to full and did not face any problem in doing this. Presently, I am giving complementary food to my child in terms of smashed rice or biscuits. I was informed that it was not a very healthy habit to feed a child with breast milk beyond six months because the child does not get the requisite nutrition during growth and the child will become weak. I practiced breastfeeding up to three years of age in case of elder daughter. Till date she did not encounter any major health problem. At the same time, I should confess that our financial condition did not allow me to think even about any kind of

alternative food to breast milk. I don't have any knowledge of exclusive breastfeeding, colostrums and pre-lacteal feeding.

6. [Rural, primary, mother's age 22 years, caesarean delivery, parity 1, male child of eighteen months of age]

My child is now 1 and half years old. I had caesarean delivery and so was not in a position to breast-feed the child for the first three days. On the fourth day, my child started taking breast milk. Thus, he missed the chance to get colostrums. Since I could feed adequate quantity of milk my child exclusively breast fed for one year.

The researcher tried to remind her that such long breast feeding would lead to lack of nutrition of the child. In response, the mother argued that, *mother's milk is the best diet for the child; moreover, we are too poor to think of anything else other than breast milk.*

7. [Rural, primary, mother's age 30 years, vaginal delivery, parity 3(first child 10 years, second child 6 years the last child 2 years) male child of twenty four months of age]

I was aware about breastfeeding. I have three children out of which this child is the youngest one. My son is now two years old. I could feed the child with breast milk up to the age of 1 year and then totally stopped. I became very sad with it. Because I fed my earlier two children adequately but now that I have grown old and could not do the same with my third child.

8. [Rural, primary, mother's age 25 years, vaginal delivery, parity 1, male child of eight months of age]

I had a fear to visit hospital. So, I delivered my child at home. In the morning of the day of delivery the child was alright, but at night, the body of the child started to swell. Simultaneously, the child started to bleed from mouth and nose. Finally the child was admitted to the hospital for 10 days. During these ten days, I could not continue breast feeding during these 10 days. However, I was aware about the benefits of exclusive breastfeeding thorough the ASHA workers.

9. [Rural, primary, mother's age 25 years, vaginal delivery, parity 2, (first child 4 years of age) male child of twelve of months age]

The child is 12 months old. I was informed by the ASHA workers about feeding of colostrums and feeding of breast milk exclusively. I was able to give breast milk to my child only for 7 months. After that she was stop lactation permanently. The members of the ASHA center told us to take contraceptive pills to prevent more child birth. I started taking contraceptive pills after 6 months of my child's age and I

noticed that after taking the contraceptive pills the production of breast milk got reduced. This did not happen in the case of my first child because I did not take contraceptive pills in case of my first issue. The same incident happened with one of my friends. So, I took resort to formula milk and homemade food. I was worried whether this would harm the child in any way.

Discussion

The present study finds that the frequency of practicing pre-lacteal feeding is high in case of urban participants than their rural counterparts. Factors like caesarean delivery were primarily cited by the mothers of urban area in support of the necessity to give pre-lacteal feeds. In case of caesarean delivery, generally the mothers remain indisposed for the first few days and hence the new born is given tinned (formula) milk. Such is the reason cited in another study in Nepal (Pandey *et al.,* 2006). In the rural area of Uttarkhand it was revealed that the majority of the children were breastfed (93.6%). Initiation of breastfeeding within an hour was practiced by only a few mothers (21.37%), only 5.13% babies were exclusively breastfed till six months, pre lacteal feeds was given to most of them *i.e.* 66.03% (Vyas Shaili *et. al.* 2012) which supports the result in case of the urban participants. In Jalpaiguri, West Bengal, it was noticed that the rate (68%) of initiation of breastfeeding was higher among male children belonging to the Hindu families and upper socio-economic status (Sarkar *et al.,* 2016), however, such cases were not found in present study. A report from Nigeria during 2003 to 2013 it was found that a decreasing trend in the prevalence of pre-lacteal feeding behaviour was observed among mothers with at least a primary level of education, with employment of mothers and age ranged from 35 to 49 years and also among those mothers who delivered their babies in the health centers with professionals' guidance. But in case of mothers with no education, young age and mothers who delivered their children at home were more likely to practice of pre-lacteal feeding (E.A. Kingsley *et.al.*2016). But my study rather showed that the mothers who were gone through being higher educated preferred pre-lacteal feeding.

One of the reasons for not continuing exclusive breastfeeding in case of the urban participants was for their working status. Working status of the urban mothers has been shown here for inability to continue exclusive breastfeeding beyond six months which is not found among the rural mothers in case of present study. In Ghana, mothers who were engage in the formal sectors of employment were unable to practice exclusive breastfeeding after maternity leave because facilities at their work places and conditions of work did not support exclusive breastfeeding (Nkrumah, 2017). This was in the same line with our study. The World Health Organization's (WHO) new global strategy to improve child feeding

integrates policies on breastfeeding with recommendations for appropriate complementary feeding, and it acknowledges the problem of aggressive marketing of processed complementary foods as well as breast milk substitutes. In Iran, only 28% of infants were exclusively breastfed at six months, despite a high prevalence of breastfeeding at two years of age (Olang *et.al.* 2012). In my present study it was found that among the rural mothers the practice of exclusive breastfeeding for the first six months were more common than their urban counterparts.

In case of feeding of complementary food the present study reveals that both the rural and urban mothers relied mostly on homemade food with very few uses of tinned food. In Bankura one major cause of complementary feeding was related to the mothers' concern that their milk was not sufficient (42% of the participants) (Abhay C. Pal *et. al.,* 2014). It is also found in some cases of present study.

In Jordon less educated women were more likely to breastfed than women in higher education level (Napoli A. Di *et. al.* 2006). In North Jordon it is noticed that mothers were not practising full breastfeeding because working status of the mother and also delivery by caesarean section, where mothers rarely care for babies for first two days (Mohammad khassawneh *et. al.* 2016). Knowledge, attitude and practices of the mothers towards breastfeeding play an important role in continuing this health behaviour. A study from Puduchery shows that knowledge, attitude and practice of the mothers towards breastfeeding are far from the satisfactory level (Ekambaram *et al.,* 2010). My study revealed that mothers were well aware about the usefulness of breastfeeding practice and most of the rural-urban mothers reported that the health professionals and / health workers (doctor, nurse, ANM, ASHA and ICDS) were their source of knowledge. However, this seems to have not been translated in their practice. In Bankura only 33.9% of the mothers' knew that exclusive breastfeeding should be given up to 6 months age of the new born. It is contrasting with the present study where it is found that maximum numbers of mothers (rural – 72%, urban – 66%) knew about the duration of exclusive breastfeeding (Abhay C. Pal *et. al.,* 2014).

Conclusion- The present study concludes that pre-lacteal feeding was prevalent among the mothers on the basis of some traditional beliefs and in some cases post-delivery consequences were responsible. The exclusive breastfeeding practices were moderate irrespective of their residential status. But it was mentioned worthy that working mothers faced the most for not initiating or continuing exclusive breastfeeding.

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Author's Contributions:

The author has collected, analysed the data, drafted the manuscript and prepared the final manuscript.

Conflict of interest

The author declares that there is no conflict of interest.

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