Introduction

Breastfeeding is known to have innumerable benefits for both the child as well as the mother. Other than helping in obvious physical and mental development of the child, there is less vomiting and diarrhoea, reduced risk of upper respiratory tract and ear infections, and lowered risk of obesity in later life. For the mother, there is faster uterine involution, reduced risk of cancers—breast, uterine, and ovarian, reduced risk of osteoporosis and improved emotional health.

Breastfeeding ideally should be initiated within 1 h of childbirth. There is a 2.4-fold increase in the risk of mortality with delayed initiation. However, as reported by the World Health Organization (WHO), on 31st July, 2018, around 78 million babies, that is, 58% were not breastfed in the 1st h of life. This number stood at 55.4% for India as of 2014. A study published in 2016, conducted in the Motta town, Ethiopia, indicated that the main reasons for delayed initiation of breastfeeding were delayed milk secretion (35.3%), cesarean section (32.9%), sick mother (17.6%), and sick baby (14.1%).

This study had the primary objective to find out the average time of breastfeeding initiation and secondary objectives of correlating this time of initiation to the sociodemographic factors affecting the same and in assessing whether prelacteal feeds were offered or not.

Methods

Our observational study was conducted between 1st May 2019 and 30th September 2019 at a tertiary care centre in Bhubaneswar, Odisha. The number of participants required for the study calculated using 95% confidence interval, 5% significance, and 5% precision, was 375. A total of 400 mothers were approached, of whom 10 refused to participate. 5 candidates needed to be excluded on the basis of the criteria mentioned below:

Keywords: Colostrum, feeding, milk, human, neonate, rooming-in care
Breast abscess,
- Who received radioactive isotopes,
- Open untreated tuberculosis,
- HIV positive,
- Varicella in the mother 5 days before and 2 days after delivery,
- Active herpes simplex lesions on the breast,
- Receiving cancer chemotherapy,
- Addiction to drugs, especially cocaine/alcohol, postpartum psychosis, or infants diagnosed with galactosemia.

The remaining 385 participants [Table 1], once consented for, were administered a structured questionnaire-based interview by a single trained interviewer. To negate recall bias, the interview was conducted at the earliest feasible after birth but not beyond the first 72 h of birth.

The questionnaire covered various sociodemographic factors like the mother’s age, education and economic status, religion, family size and place of residence; obstetric details including parity, gestational age and weight of the child at delivery, type of delivery, health status of the mother, a previous history of breastfeeding, and rooming in of the child. In addition, data was collected regarding antenatal counselling, colostrum feeding, and prelacteal feeds given to the child. Institutional ethics committee approval was taken prior to the start of this study vide letter no. IEC/AIIMS BBSR/STS_UG/2018-19/05 dated April 19th 2019. The data collected was double checked for completeness, coded, and analyzed using appropriate statistical methods using SPSS software version 25.

Results

Only 36.4% mothers had initiated breastfeeding in a timely manner, that is, within an hour of childbirth. Mothers who had undergone vaginal delivery scored better than cesarean with 41.3% initiating timely. Rooming in helped with 37.6% of neonates being timely breastfed, while all those who were not roomed in were initiated late. 39.3% of those who gave colostrum initiated timely breastfeeding while almost all (96.8%) of the mothers who discarded colostrum initiated late. Mothers who had previously breastfed fared better with 45.9% of them initiating timely as compared to 30.5% among those who had not. Only 13.6% of the children who fell sick immediately after delivery could be initiated timely breastfeeding. Less than 5% of the babies were given prelacteal feeds and mostly it was water [Table 2].

Discussion

Our study showed a poor timely breastfeeding initiation in the city of Bhubaneswar, Odisha, at 36.4% compared to the national average of 41.6% obtained from NFHS 4 data. Though this is much better compared to the meagre 15% in the Sarasvati district of Uttar Pradesh, it is far behind the best figures of 94.6% from Thiruvananthapuram, Kerala. These low rates may be attributed to the lower literacy rates, poorer access to healthcare facilities, poor antenatal counselling and some tribal practices in the state of Odisha.

Women delivering vaginally were more likely to initiate breastfeeding timely as compared to those who had undergone a cesarean section. This may be because anaesthesia given during the surgery delays the onset of lactation by inhibiting the maternal oxytocin release. 44.6% of our deliveries were through cesarean section compared to the Odisha state average of 19.1%, obtained in 2015–2016 for urban areas.

Rooming-in of the neonate played a significant role in timely breastfeeding initiation as obtained from our study. While 37.6% of roomed-in children were initiated timely breastfeeding, all

| Demographic Parameter | No. of participants (%) |
|-----------------------|-------------------------|
| Age of the mother     |                         |
| <20 years             | 43 (11.2)               |
| 21-25 years           | 177 (46.0)              |
| 26-30 years           | 138 (35.8)              |
| 31-35 years           | 20 (5.2)                |
| >35 years             | 7 (1.8)                 |
| Education of mother   |                         |
| <10th                 | 129 (33.5)              |
| 10th or more          | 256 (66.5)              |
| If the mother is      |                         |
| Homemaker             | 361 (93.8)              |
| Working               | 24 (6.2)                |
| Religion              |                         |
| Hindu                 | 343 (89.1)              |
| Muslim                | 42 (10.9)               |
| Socio-economic status |                         |
| Lower class           | 75 (19.5)               |
| Upper Lower Class     | 52 (13.5)               |
| Lower Middle Class    | 87 (22.6)               |
| Upper Middle Class    | 171 (44.4)              |
| Family size           |                         |
| Nuclear               | 78 (20.3)               |
| Extended              | 307 (79.7)              |

Table 2: Time of initiation of breastfeeding with respect to different variables

| Time of initiation (from birth) | <1 h (%) | >1 h (%) | Total | P |
|---------------------------------|----------|----------|-------|---|
| Sex of the baby                 |          |          |       |   |
| Male                            | 58 (31.4)| 127 (68.6)| 185   | 0.049|
| Female                          | 82 (41) | 118 (59) | 200   |    |
| Birthweight                     |          |          |       |   |
| <2500 g                         | 13 (21.3)| 48 (78.7) | 61    | 0.008|
| >2500 g                         | 127 (39.2)| 197 (60.8)| 324   |    |
| Type of delivery                |          |          |       |   |
| Vaginal                         | 93 (41.3)| 132 (58.7)| 225   | 0.016|
| Cesarean                        | 47 (29.4)| 113 (70.6)| 160   |    |
| Parity of mother                |          |          |       |   |
| Primiparous                     | 68 (35.1)| 126 (64.9)| 194   | 0.590|
| Multiparous                     | 72 (37.7)| 119 (62.3)| 191   |    |
| Child sick after delivery       |          |          |       |   |
| Yes                             | 134 (39.3)| 207 (60.7)| 341   | 0.001|
| No                              | 6 (13.6) | 38 (86.4) | 44    |    |
| If mother is on chronic medication |        |          |       |   |
| Yes                             | 127 (37.6)| 211 (62.4)| 338   | 0.186|
| No                              | 13 (27.2) | 34 (72.8) | 47    |    |
| Antenatal counselling           |          |          |       |   |
| Given                           | 64 (37.9)| 105 (62.1)| 169   | 0.587|
| None                            | 76 (35.2)| 140 (64.8)| 216   |    |
| Colostrum given                 |          |          |       |   |
| Yes                             | 139 (39.3)| 215 (60.7)| 354   |    |
| No                              | 1 (3.2)  | 30 (96.8) | 31    | 0.000|
| Prelacteal feeds                |          |          |       |   |
| Given                           | 137 (37.4)| 229 (62.6)| 366   | 0.056|
| None                            | 3 (15.8) | 16 (84.2) | 19    |    |
| Previous history of breastfeeding|        |          |       |   |
| Yes                             | 73 (30.5)| 166 (69.5)| 239   | 0.002|
| No                              | 67 (45.9)| 79 (54.1) | 146   |    |
| Roomed in                       |          |          |       |   |
| Yes                             | 140 (37.6)| 232 (62.4)| 37    |    |
the children not roomed-in had delayed initiation. Rooming-in allows for increased time of interaction between the mother and child and promotes lactation. Our results were comparable to a community hospital-based study in Puerto Rico which showed that 30% of the roomed in babies were initiated breastfeeding within 6 h of birth while none of the babies not roomed-in were.[13]

Women who discarded colostrum had delayed initiation of breastfeeding, attributable to the fact that they took time to discard colostrum and synthesis of breastmilk after this takes further time. In our study, only 8% mothers had discarded colostrum, this value is comparable to the 12% obtained from a 2018 study in South Sudan[14] but much lower than the 43% seen in Karachi, Pakistan[15] or the 27% in R S Pura block of Jammu and Kashmir.[16]

Breastfeeding of a previous child was found to be a promotive factor for timely breastfeeding initiation with 46% mothers, with a history of breastfeeding initiating early compared to only 30.5% of those without a history. A woman who had previously lactated has an earlier start of milk synthesis and secretion as compared to a newly lactating mother. Also, she is likely to have already had first-hand knowledge of breastfeeding practices from the previous child. A study in Areka Town, Southern Ethiopia, published in April 2019, showed that 47% of primiparous mothers had incorrect positioning of the baby during breastfeeding as compared to 29% among the multiparous women,[17] which could lead to problems in either initiation or continuing of breastfeeding.

Low birth weight babies were initiated breastfeeding late and so were the babies who fell sick immediately after delivery. This can be attributed to most of these children being admitted to the NICU.

Our study did not show a significant difference in timely initiation of breastfeeding based on antenatal counselling. This may have been because of ineffective counselling in the antenatal period, the high baby–nurse ratio, lack of properly trained counsellors, and inadequate support to the newly delivered mother. In a study by Archana Patel et al. in 2018, where in weekly phone calls were made and text messages sent to women both antenatally and postnatally it was seen that, this group achieved better results in timely initiation of breastfeeding at 37% as compared to 23.5% in the control group.[18]

Only 5% of the babies were given prelacteal feeds. This is a satisfactory number when we compare these figures with that of our neighboring country, Pakistan, where 45% babies in Sindh were started on prelacteal feeds[19] or that within our own country, where a rate of 26% has been reported from Bihar.[20] The study limitations included the fact that this is a two centre experience which are referral institutions causing a large number deliveries by cesarean section, thus probably accounting for an inordinate delay in breastfeeding initiation. Inclusion of a larger number of institutions may help in generalizability of the results.

**Key Messages**
- An alarming decline in the timely breastfeeding initiation rates to 36.4% was noted.
- Provision of a lactational counsellor/identified breastfeeding supervisory nurse would help increase this rate especially in low to medium income countries.

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**Declaration of patient consent**

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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**Conflicts of interest**

There are no conflicts of interest.

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