

Original Research Article

Assessment of exclusive breastfeeding status in southern region of Bangladesh

Ashadur Rahaman Malik^{1*}, Shamima Yasmin², Fauzia Nasreen³, Faizul Haque Ponir⁴

¹Department of Pediatrics, Upazila Health and Family Planning Office, Sadar, Chuadanga, Bangladesh

²Department of Civil Surgery, Chuadanga, Bangladesh

³Department of Paediatrics, Singair Upazila Health Complex, Manikganj, Bangladesh

⁴Department of Paediatrics, Mugda Medical College Hospital, Dhaka, Bangladesh

Received: 18 March 2025

Accepted: 15 April 2025

*Correspondence:

Dr. Ashadur Rahaman Malik,

E-mail: drasadpd@gmail.com

Copyright: © the author(s), publisher and licensee Medip Academy. This is an open-access article distributed under the terms of the Creative Commons Attribution Non-Commercial License, which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

ABSTRACT

Background: Breastfeeding is the gold standard for infant nutrition, playing a crucial role in the growth, development and survival of newborns. This hospital-based descriptive cross-sectional study was conducted to assess exclusive breastfeeding practices in the southern region of Bangladesh.

Methods: This descriptive cross-sectional study was conducted in the Department of Pediatrics at Sher-E-Bangla Medical College Hospital (SBMCH), Barisal, Bangladesh, from August 2007 and January 2008. In this study, we enrolled 760 children 06 to 12 months of age who were admitted to the inpatient department and attended in outpatient department during this period.

Results: The study revealed that while 95% of mothers were aware of the importance of colostrum, only 68.5% recognized it as the ideal first food for newborns. In practice, 65% of mothers fed colostrum first, while 35% gave pre-lacteal foods, with formula milk (37.4%), plain warm water (13.6%) and cow's milk (13.2%) being the most common alternatives. Early initiation of breastfeeding was also examined, with 35.8% of mothers starting within one hour, 36.3% between 1-4 hours and 26.3% after four hours. While 80% of mothers knew the recommended duration of exclusive breastfeeding (six months), only 37.4% practiced it for that period. The primary reason for early supplementation was perceived insufficient milk production (77.3%), followed by concerns about the baby not growing well (10.9%). Despite challenges in exclusive breastfeeding, 94% of mothers continued breastfeeding beyond six months, while 6% discontinued.

Conclusions: Breastfeeding practice is now better position than previously but it is still far away from the ultimate goal. Promoting early initiation and sustained exclusive breastfeeding could significantly contribute to child survival and overall health outcomes.

Keywords: Bangladesh, Exclusive breastfeeding, Infants, Southern region

INTRODUCTION

Human milk is uniquely adapted to the infant's needs and is the most appropriate milk for infants.¹ The health benefits of breastfeeding for babies and mothers have long been recognized. Breastfeeding is essential for child survival and development.² Breast milk is unique to provide optimum nutrition for newborns and infants up to age.³ The beneficial effect of breastfeeding has

undoubtedly been recognized worldwide. Besides it also immunizes the child against common infections.⁴ In countries with a moderate or high infant mortality rate, artificially fed infants are at least 14 times more likely to die from diarrhea than are breastfed children and four times more likely to die from pneumonia.⁵ Exclusive breastfeeding means- no drinks or foods other than breast milk, no pacifiers/dummies or artificial teats are given to the baby and most exclusively breastfed newborn babies

breastfeed at least eight to twelve times in 24 hours including night feeds.⁶ Babies should be allowed to breastfeed as soon as possible after birth when they are alert and active.⁷ A study in 2003 showed that 16% of neonatal deaths could be saved if all infants breastfed from day 1 and 22% if breastfeeding started within 1st hour.⁸ Breast milk is reasonably adapted to the requirements of the infant and provides the best start in life. Colostrum is the first perfect food for babies with more protein and vitamins and acts as a laxative.⁶

Das Dk et al, showed that 83.5% of mothers know that colostrum are good for the child and less than 8% of them gave it as the first food to their babies.⁹ According to WHO semisolid foods to complement milk should be introduced at about 4-6 months of age, but UNICEF recommends it at about 6 months.⁶ Kramar et al, showed that exclusive breastfeeding for 6 months experience less mortality from gastrointestinal infection than those who are mixed breastfed for these to 4 months and no deficit of growth has been demonstrated who exclusively breastfed for 6 months or longer.¹⁰

Despite these important benefits of breast milk, unfortunately, western society has shown a rapid decline in the practice of breastfeeding since 1930.¹¹ It has been observed that there is decreasing the prevalence and duration of breastfeeding in developing countries. The situation in Bangladesh is evident from different studies.^{12,13} Islam et al, found that breastfeeding was the common practice in most of the rural and urban populations but there was an increased incidence of bottle feeding in the urban affluent.¹² Karim et al, showed that 33.5% of mothers breastfed their infants exclusively, 14% predominantly and 52% of infants were bottle-fed.¹³ With rapid urbanization, social changes, widespread marketing and advancement of breast milk substitute breastfeeding practices changed at a rapid rate among all the strata of the community. Talukder et al, showed that 66% of the urban elite exclusively breastfed their child at birth, 42% at one month and 12% at 4 months.¹⁴ Various studies showed that proper breastfeeding practices in our country are much below the expected target despite several measures taken by Govt. and NGOs in this field, to promote exclusive breastfeeding practice. There are various programs for exclusive breastfeeding running through the organizations like BBF, NNP, LMC, etc. Factors lying behind the failure of this program are yet to be disclosed.

Therefore, in this study, we decided to assess the exclusive breastfeeding status in the southern region of Bangladesh.

METHODS

Study design

This descriptive cross-sectional study was conducted in the Department of Pediatrics at Sher-E-Bangla Medical

College Hospital (SBMCH), Barisal, Bangladesh, from August 2007 and January 2008. In this study, we enrolled 760 children 06 to 12 months of age who were admitted to the inpatient department and attended in outpatient department during this period.

These are the following criteria to be eligible for enrollment as our study participants a) Children aged between 06 to 12 months, b) Children of both sexes were included in the study and a) Parents who were not willing to participate were excluded from this study.

Data collection and analysis

Among the admitted patients, children of 6 to 12 months of age were enrolled. The objectives of the study were explained to the mothers and informed written consent was taken. A total of 760 mothers were interviewed in the pediatric inpatient and outpatient departments of Sher-E-Bangla Medical College Hospital within the study period. All data were recorded systematically in the preformed data collection form.

The same procedure was applied to the children who attended the outpatient department. All collected data were analyzed manually. All data were expressed as frequency distribution and percentage and then presented in tabulated and graph form. This study was approved by the ethical review committee of Sher-E-Bangla Medical College Hospital (SBMCH), Barisal, Bangladesh.

RESULTS

Table 1 shows the age distribution of infants whose mothers participated in the study (n=760). The largest group of infants were between 6-7 months old, making up 26.3% (200 infants), followed by 7-8 months (21%) and 10-11 months (17.5%). The number of infants gradually decreased with age, with 8-9 months accounting for 10.5%, 9-10 months at 11.2% and 11-12 months at 13.4%.

The pie chart illustrates the gender distribution of enrolled infants. Males make up 61% (460 infants), while females account for 39% (300 infants) indicating a higher proportion of male infants in the study. The male and female ratio of the study was 1.53:1 in the study.

Figure 2 shows the level of knowledge among mothers regarding colostrum, which is essential for a baby's health. The majority of mothers (95%) were aware of colostrum's importance, while a small percentage (5%) were not familiar with it.

Figure 3 shows the knowledge and practice regarding colostrum and pre-lacteal feeding among infants. For colostrum, 68.4% of mothers were aware of its importance, while 65% practiced feeding it to their infants. In contrast, 31.6% knew about pre-lacteal feeding, but a slightly higher percentage (35%) practiced

it. Table 2 shows that formula milk was the most commonly used, given by 37.4% of respondents. Warm water (13.6%) and cow's milk (13.2%) were also frequently used. Other pre-lacteal foods included honey (10.9%), goat milk (8.3%), sugar water (7.5%), mustard oil (4.5%) and suji (4.5%). These findings highlight the diverse traditional and cultural practices regarding early infant feeding.

Figure 3 shows the timing of breastfeeding initiation among mothers. The majority of mothers (36.3%) started breastfeeding within the first hour after birth, followed by 35.8% initiated breastfeeding between one and four hours after birth, 26.3% began breastfeeding after more than four hours and only 1.6% did not breastfeed at all.

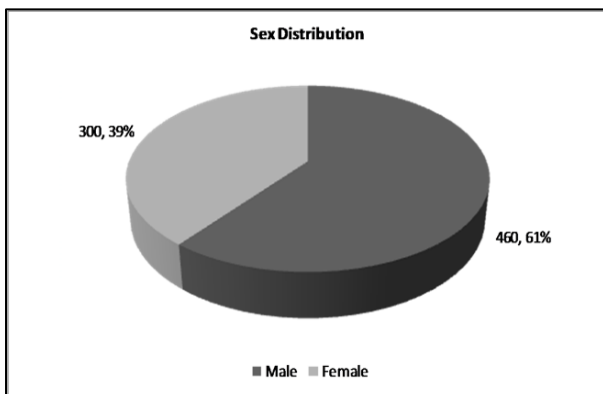


Figure 1: Sex Distribution of enrolled infants.

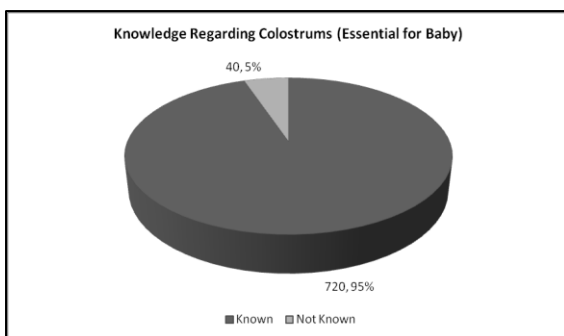


Figure 2: Distribution of the infants by knowledge regarding.

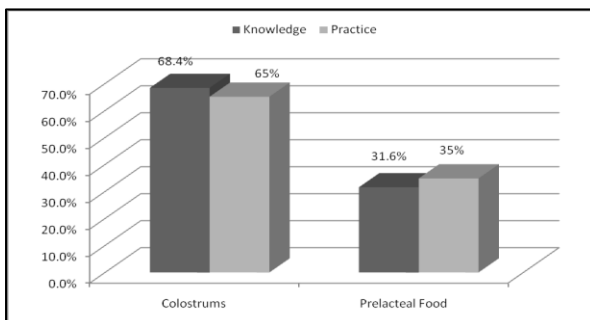


Figure 3: Distribution of the enrolled newborns by their first food.

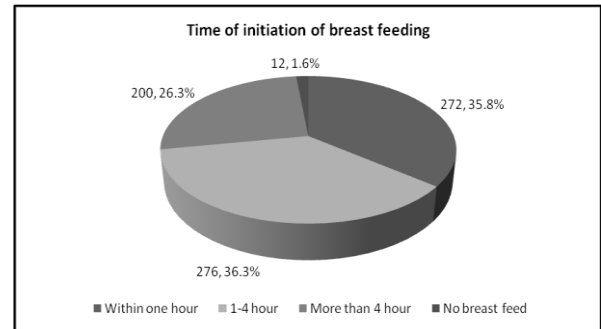


Figure 4: Distribution of study participants by the time of initiation of Breastfeeding.

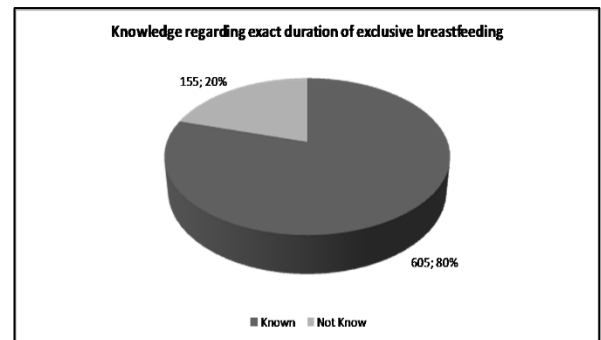


Figure 5: Distribution of the infants by mothers' knowledge regarding exclusive breastfeeding.

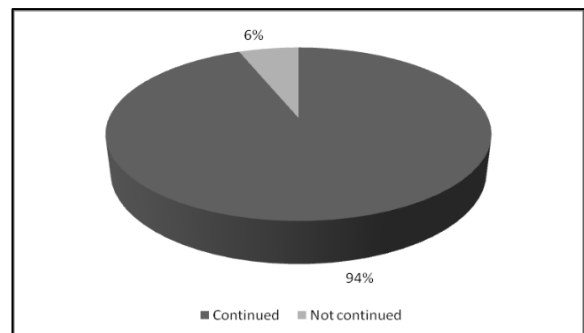


Figure 6: Distribution of the infants by mothers' breastfeeding beyond six months of age (6 to 12 months).

Figure 4 shows that 80% of mothers are aware of the recommended duration for exclusive breastfeeding up to 6 months, while 20% of mothers are not familiar with this information.

Table 3 shows that 37.4% of mothers provided exclusive breastfeeding for 6 months or more. Additionally, 43.2% of mothers breastfed exclusively for 5-6 months, while 50.4% did so for 4-5 months. The percentages increase as the duration decreases: 59.2% for 3-4 months, 68.7% for 2-3 months, 73.9% for 1-2 months and 92.4% for less than 1 month. Interestingly, 7.4% of mothers did not provide exclusive breastfeeding at all. Table 4 shows the reasons for non-exclusive breastfeeding up to six months

of age. The most common reason is insufficient milk production, accounting for 77.3% of cases, followed by not growing well (10.9%), lack of interest in breastfeeding (5.9%), being a working mother (4.2%) and loose motion (1.7%).

Figure 5 shows that 94% of mothers continued breastfeeding beyond six months, while 6% of mothers did not continue breastfeeding past that age.

Table 1: Number of respondent mothers according to age distribution of infants (n=760).

Age	Number	%
6-7 months	200	26.3
7-8 months	160	21
8-9 months	80	10.5
9-10 months	85	11.2
10-11 months	133	17.5
11-12 months	102	13.4

Table 2: Distribution of infants by types of pre-lacteal foods (n=265).

Pre-lacteal foods	Number	%
Formula milk	99	37.4
Warm water	36	13.6
Cow's milk	35	13.2
Honey	29	10.9
Goat milk	22	8.3
Sugar water	20	7.5
Mustard oil	12	4.5
Suji	12	4.5

Table 3: Distribution of infants by the exclusive breastfeeding pattern.

Duration of exclusive breastfeeding	Number	%	Cumulative %
6 months or more	288	37.4	37.4
5-6 months	44	5.7	43.2
4-5 months	55	7.2	50.4
3-4 months	67	8.8	59.2
2-3 months	72	9.5	68.7
1-2 months	40	5.3	74.9
<1 month	140	18.4	92.4
No exclusive breastfeeding at all	56	7.4	7.4

Table 4: Reason for non-exclusive breastfeeding (n=476).

Reason	Number	%
Insufficient milk production	368	77.3
Not growing well	52	10.9
Not interested in breastfeeding	28	5.9
Working mother	20	4.2
Loose motion	8	1.7

DISCUSSION

Breastfeeding is the best and safest way of feeding infants for the first 4-6 months of life. Bangladesh is traditionally a breastfeeding country, but it is strange to see that the majority of protein-energy malnutrition (PEM) cases are less than 1 year of age and commonly

under 6 months of age.^{15,16} The present study was carried out with 760 children of 6-12 months of age in outpatient and inpatient departments of pediatrics in Sher-E-Bangla Medical College Hospital (SBMCH), Barisal. In this study, 95% of mothers know that colostrums are essential for baby and 74.21% gave colostrums but 68.4% of mothers know that colostrums should be given as the first

food, whereas 31.6% of mothers know that pre-lacteal foods should be given as the first food. In practice, 65% of mothers gave colostrums as a first food and 35% of mothers gave pre-lacteal foods. Darryl et al showed that Ninety percent of the mothers reported feeding their newborn colostrums.¹⁷ Another study by Das et al, reported that 83.5% of mothers knew that colostrums are good for babies, which is comparable to this study, but less than 8% gave it as a first food to their babies.¹⁸ S Ahmed showed that 12% know that newborns should be given colostrums first and in practice fewer women fed colostrums to their newborns.¹⁹ A study conducted in Matlab reported that only 60% of the infants were given colostrums.²⁰

In the present study, to know the first food (pre lacteal) food given, 37.4% of mothers stated that they gave formula milk to their babies, followed by warm water 13.6% and cow's milk 13.2%, honey 10.9% goat milk 8.3%, sugar water 7.5%, mustard oil 4.5%. These results show a change in the types of food given as pre-lacteal feeding when compared with the study by Nasirullah et al, where honey (52%) was the most common food followed by sugar (32%), plain water (7.4%), cow's milk (1.2%) and artificial milk (0.6%).²¹

The promotion of early initiation of breastfeeding has the potential to make a major contribution to the achievement of the child survival millennium development goal. 8 In this study initiation of breastfeeding within 1 hour, 1-4 hours and >4 hours are 35.8%, 36.3% and 26.3% respectively. Ahmed in 1988 showed that 23% of the infants were put to the breast as soon as they were born.²² In another study, 59% of mothers-initiated breastfeeding within 4 hours and 88% within 12 hours.¹⁷ Ahmed et al, in 1998 reported that 18% of mothers-initiated breastfeeding immediately after birth and an additional 23% within 2-3 hours after birth.¹⁹

To know the knowledge of mothers regarding exclusive breastfeeding and colostrums, a maximum of number mothers (80%) know the exact duration of exclusive breastfeeding up to 6 months of age and 95% know that colostrums are essential for babies. This result shows a change compared with done by S Ahmed et al, where only 27% know that exclusive breastfeeding should be given at least 5 months.¹⁹

It was found that exclusive breastfeeding up to full 6 months was 37.4% and 5-6 months, 4-5 months, 3-4 months, 2-3 months, 1-2 months and <1 month was 43.2%, 50.4%, 59.2%, 68.7%, 74.9% and 92.4% respectively. Das et al, showed that all mothers (100%) breastfed their infant from birth, but exclusively breastfed at 1 month 84%, 40% for 3 months and 20% for 5 months.¹⁸ In another study, 15% of infants were exclusively breastfed for 5 months of age.¹⁹ The exclusive breastfeeding rate in some studies was 37.75%, 28% and 16% respectively. 23-25 Arifeen S et al, reported that at 1 month of exclusive breastfeeding, 53%

declined to 5% at 6 months of age.²⁶ Giashuddin shows the median duration of full breastfeeding was 3.67 months.²⁷

The continued breastfeeding rate in this study beyond 6 months (6-12 months) was 94%. Das et al, reported that all (100%) mothers continue breastfeeding their infants for 1 year.¹⁸ A study in Comilla reported that 97% of rural, 90% of urban poor and 25% elite continued breastfeeding at 1 year.²⁸

In this study, the second most common cause (10.92%) was not growing well by only breast milk. To identify the reason behind the failure of exclusive breastfeeding during the first 6 months of life, most mothers said (77.3%) insufficient milk production. This psychosocial problem remains the top cause of the failure of exclusive breastfeeding, which is consistent with other studies.^{14,21,25,29}

The study was conducted in a single hospital setting, which may not fully represent breastfeeding practices in the broader community. The data were collected through self-reported interviews, where mothers might have given responses, they believed were expected rather than their actual practices. Also, the study did not account for socioeconomic factors, maternal education levels or cultural influences that could impact breastfeeding decisions.

CONCLUSION

In this study, we found that breastfeeding practice is now better position than previously but it is still far away from the ultimate goal. It is encouraging that through breastfeeding campaigning by different strategies people becoming conscious, but the achievement is increasing very slowly. So further campaigns should be done vigorously and continuously at different levels of society by different strategies.

Further study with a prospective and longitudinal study design including a larger sample size needs to be done to validate the findings of our study.

Funding: No funding sources

Conflict of interest: None declared

Ethical approval: The study was approved by the Institutional Ethics Committee

REFERENCES

1. Heird WC, The feeding of infants and children. In: Eds. Behrman, Kliegman, Jenson, Nelson Text-Book of Pediatrics, 17th Edition, USA, Saunders. 2004:157-67.
2. Talukder MQK, Bangladesh campaign for protection and promotion of breastfeeding, Bangladesh J of Child Health. 1992;16:25-31

3. Talukder MQK, Kabir SM, Talukder SY, Problems in breastfeeding and their management. *Bangladesh J Child Health.* 1992;16:37-48.
4. United Nations Children's Fund. The state of the world's children. New York: United Nations Children's Fund. 1991.
5. A warm chain for breast feeding (editorial). *Lancet* 1994;344(8932):1239-41.
6. Breast feeding management and promotion in a baby friendly hospital. UNICEF/WHO, New York. 1993.
7. Williams AF, Infant feeding. Forfar and arneils. Text book of Pediatrics 6th edition, UK. Churchill Livingstone.
8. Edmond KM, Zandoh C, Ougley MA, Amena-Etego S, Owusu- Agyei S, Krikwood BR. Delayed breast feeding initiation increases risk of neonatal mortality. *Pediatrics.* 2006;117(3):380-6.
9. Das DK, Ahmed S. Knowledge and attitude of the Bangladeshi rural mothers regarding breastfeeding and weaning. *Indian J Pediatr.* 1995; 62(2):213-7.
10. Kramer MS, Kakuma R. Optimal duration of exclusive breastfeeding. *Cochrane Database Syst Rev.* 2002;(1):3517.
11. Langford CM. A consideration of some retrospective study on breastfeeding in Great Britain. *J Biosoc.* 1978;10:398.
12. Islam MN, Ali MY. Pattern of infant feeding in northern Bangladesh (A study of feeding pattern of 400 infants in Rangpur). *Bangladesh Med J Paediatr.* 1983;7:31-5.
13. Karim ASMB, Rahman M, Ali SMS, Nazir MFH, Islam MN. Infant feeding practice in Bangladesh using WHO indicators. *Dhaka Shishu (Child) Hosp J.* 1996;12:5-9.
14. Talukder MQK, Feroz ASM. Breastfeeding trends in the Dhaka urban affluent. *Bangladesh Medical J.* 1983;12(1):4-6.
15. Huffman SL, Chowdhury A, Chakravarty J, Simpson NK. Breastfeeding in rural Bangladesh. Symposium on malnutrition during pregnancy and lactation: perinatal nutrition problem. In: XI international congress on nutrition, Reo-de-Janerio, Brazil. 1978: 27-31.
16. Talukder MQK. Infant feeding practice in Bangladesh and recent dangerous trend towards breastfeeding. *Bangladesh J Child Health.* 1984;8:84-90.
17. Darryl J. Holman And Michael A. Grimes. colostrum feeding behaviour and initiation of breast-feeding in rural Bangladesh. 2022.
18. Das DK, Talukder MQ, Sella GE. Infant feeding practices in rural Bangladesh. *Indian J Pediatr* 1992;59(5):573-7.
19. Ahmed S, Parveen SD, Islam A. Infant feeding practices in rural Bangladesh: policy implications. Operations Research Project (ORP). *Int Centre for Diarrh Dis Res.* 2019;2:67-9.
20. International centre for Diarrhoeal Disease Research, Bangladesh. Demographic surveillance system; early indicators, Matlab-1993. Dhaka: International Centre for Diarrhoeal Disease Research, Bangladesh. 1994.
21. Nasirullah HIM, Islam MI, Islam MA. Feeding practice in infants attending children outpatient department of IPGMR, Dhaka, Bangladesh.. *Paediatrics* 1983;7:80-4.
22. Ahmed S. Breastfeeding, weaning and infant growth in rural Chandpur, Bangladesh. London: University of London. 1988:186-7.
23. Muttalib Ma, Huq JAQ, Husna Y, Khan MU, Rahman M. Pattern of feeding in the clinic and home delivered infants in Dhaka city during first four months of life. *Bangladesh Paediatr.* 1983;7:19-24.
24. Haque AKM, Parvin S, Hossain SZ, Islam MN. Breastfeeding practice in 1000 children *Health Today. J of DAB.* 1996;1:66-9.
25. Huq S, Khan N, Talukder MQK. Infant feeding practices in Dhaka City. *Bangladesh Med J.* 1983;12:152-9.
26. Arifeen S, Black RE, Antelman G, Baqui A, Caulfield L, Becker S. Exclusive breastfeeding reduces acute respiratory infection and diarrhea deaths among infants in Dhaka slums. *International Centre for Diarrhoeal Disease Research, Bangladesh, Dhaka. Pediatrics.* 2001;108(4):67.
27. Giashuddin, MS, Kabir M. Duration of breast-feeding in Bangladesh *Indian J of Medical Res.* 2004;2:56-9.
28. Khan M. Infant feeding practices in rural Meheran, Comilla, Bangladesh. *Am J Clin Nutr.* 1980;33(11):2356-64.
29. Afroza S, Begum R. Breastfeeding corner support in promotion of breastfeeding for infants. *Bangladesh J Child Health.* 2003;27(2):38-42.

Cite this article as: Malik AR, Yasmin S, Nasreen F, Ponir FH. Assessment of exclusive breastfeeding status in southern region of Bangladesh. *Int J Contemp Pediatr* 2025;12:728-33.