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Original Research Article

Postpartum breast complications and breast-feeding practices in a baby-friendly hospital in Bangladesh

Rifat Ara[1]*, Shahana Previn[1], Dilruba Yeasmin[1], Farhana Haque[1], Tohmina Akhter[1], Rumana Afroz[1], Sayeba Akhter[2]

[1]Department of Gynaecological Oncology, National Institute of Cancer Research and Hospital (NICRH), Dhaka, Bangladesh
[2]Department of Gynaecological Oncology, Popular Diagnostic Dhanmondi, Dhaka, Bangladesh

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***Correspondence:**
Dr. Rifat Ara,
E-mail: drrifatara2017@gmail.com

ABSTRACT

Background: Breastfeeding is essential for health of both infants and mothers, but it often encounters challenges such as postpartum breast complications. These issues can adversely affect maternal health and significantly hinder success of breastfeeding practices. Aim of study was to assess postpartum breast complications and breast-feeding practices.
Methods: This cross-sectional study was conducted in department of obstetrics and gynaecology, Dhaka medical college hospital, Dhaka, Bangladesh from February 2006 to July 2006. Two hundred patients in the postnatal ward who delivered their babies at DMCH were randomly selected.
Result: Among 200 postnatal women, 33.5% experienced breast problems. Women with breast problems were designated as group A and women without breast problems were designated as group B. Most women in groups A and B were aged between 21-30 years with average 24.8 years for both groups. Antenatal check-ups were similar across groups, with breastfeeding advice given to 55.2% in group A and 64.7% in group B pre-lacteal feeds were given to 19.4% of group A and 21.8% of group B neonates, while colostrum was fed to the majority. Most neonates were breastfed within 2 hours. Good breastfeeding position and attachment were observed in most cases. Exclusive breastfeeding was more common in group B (73.7%) than in group A (58.2%). Breast problems in group A included engorgement, lactation insufficiency, and nipple issues.
Conclusions: The study reveals that postpartum breast complications, notably breast engorgement and lactation insufficiency, significantly affects the breastfeeding effectiveness of new mothers.

Keywords: Postpartum, Breast complications, Breast-feeding practices, Baby-friendly hospital

INTRODUCTION

The benefits of breastfeeding to both infants and mothers are established.[1] While some fortunate women can nurse successfully without any preparation, breastfeeding is not pure instinct for either mother or infant. Despite the fact that more mothers are electing to breastfeeding, most women still experience some difficulties in nursing.[2] Improper breastfeeding practices due to lack of knowledge cause many of the problems in the lactating breasts which in turn interfere with successful breastfeeding. Breastfeeding is recognized as the most superior form of infant feeding.[3] It has been the subject of rapidly growing interest in developing countries because of its important implications not only for the improved health of children, but also for lowering fertility.[4] Breastmilk, the first vaccine of newborn, not only decreases the incidence of diarrhoea, acute respiratory tract infection (ARI), necrotizing enterocolitis (NEC), sudden infant death syndrome (SIDS), but also associated with decreased risk of developing insulin-dependent diabetes mellitus (IDDM), inflammatory bowel disease, lymphomas and allergic

diseases later in life.[5] A number of studies have shown positive associations between breastfeeding and improved childhood cognitive functions.[6] For mother, it is convenient, economical and emotionally satisfying. It reduces the risk of postpartum haemorrhage (PPH) and anaemia, accelerates involution of uterus. By allowing spontaneous draining of milk, it prevents milk stasis and subsequent complications. Immune factors in breastmilk provide a defense mechanism for baby and also for breast itself.[7] Although more attention is usually paid to their importance for infant health, they may also help to protect the breast against infection. There is an epidemic of breast cancer among women of developed countries in the western world.[6] A number of recent studies have shown a reduced risk of premenopausal breast cancer amongst women who have breastfed their babies.[6] In recent decades, medical science has demonstrated that human breastmilk contains certain properties and benefits not available in formula. As a result, medical society and other health organizations got on the bandwagon to support breastfeeding.[8] The United States (US) government is teaming up to mount a massive public health campaign promoting breastfeeding. In the United Kingdom (UK), where uptake of breastfeeding is lower than most other European countries, targets have been set for a 2% increase per annum in breastfeeding initiation rates.[9,10] Bangladesh has long been regarded as one with a strong breastfeeding culture. The breastfeeding tradition of the country is without a doubt among the strongest in the world and has shown no evidence of declining. However, feeding practices during neonatal period are unsatisfactory.[11] Many studies, both in rural and urban areas, have shown widespread improper feeding practices. Pre-lacteal feeding is still continuing at a very high rate, colostrum is also discarded for a percentage of babies. Delayed start to breastfeeding is still a problem, bottle-feeding prevalent and preferred by 'modernized' urban women. Unsafe breastfeeding practices endanger baby's life, put breastfeeding at risk and is associated with several breast problems which can occasionally become severe if inadequately treated. These conditions may form a considerable burden of disease and involve substantial cost.[12,13] But the conditions are largely preventable if breastfeeding is practiced appropriately, and largely manageable when occur inadvertently by supportive help from baby-friendly hospital and community. Frequency of breast problems reflect the pattern of care for mother in a maternity facility and help to assess need for strengthening existing policy.

Objectives of the study were to assess the postpartum breast complications and the breast-feeding practices.

METHODS

This cross-sectional study was conducted in department of obstetrics and gynaecology, Dhaka medical college hospital, Dhaka, Bangladesh, during the period from February 2006 to July 2006. Two hundred patients in the postnatal ward who delivered their babies at DMCH, either vaginally or by LUCS were randomly selected. Data were collected by face-to-face interview of patients using structured questionnaire. If patients could not remember the events of first few hours following delivery, attendants were allowed to help them. Patients were interviewed after the first postpartum day when they were found stable after the stress of labour and delivery. Before collecting data, aim of the study was explained to the patients and verbal consents were taken. Data on delivery events, maternal age, parity, education, occupation, social status, quality of antenatal care, detailed data on breastfeeding method and feeding pattern at discharge were collected. Breastfeeding technique was observed and breasts were examined. After collection of all information, the patients were divided into two groups: 1) Group A: Women with breast problems. 2) Group B: Women without breast problems. Ethical clearance was taken from appropriate authorities before carrying out study. Verbal consent was taken from patients after explaining what will be done in this study and its aim and objectives.

Inclusion criteria

Patients who delivered their babies at DMCH, either vaginally or by LUCS and all age groups were included.

Exclusion criteria

Mothers with serious complications like obstetric shock and decompensated organic heart disease, mothers with active pulmonary tuberculosis and puerperal psychosis, patients transferred to another hospital and patients who did not give consent were excluded from study.

Statistical analysis

Collected data were checked, edited and decoded. Integrated data were analyzed using computer-based software, statistical package for social science (SPSS). $P<0.05$ taken as minimum level of significance.

RESULTS

Table 1 shows that out of 200 postpartum women included in this study, 67 (33.5%) had breast problems. Table-II demonstrates demographic characteristics of patients. Maximum of group A and B belonged to age group 21-30 years (58.2% and 63.2%, respectively), 29.9 and 24.1 percent, respectively belonged to age group ≤20 years, and 11.9 and 12.8 percent, respectively, belonged to age group >30 years. The mean (±SD) age was 24.81±5.21 years for group A and 24.91±5.12 years for group B women. Parity, education, occupation and socioeconomic status were also assessed between the groups. There were no statistically significant differences between the study groups in socio-demographic parameters except occupation ($p<0.05$). Table 3 shows distribution of antenatal check-up and breastfeeding advice during antenatal check-up of group A and B women. Status of antenatal check-up of group A and group B women shows almost equal distribution, regular

(29.9% vs 34.6%), irregular (56.7% and 52.6%) and none (13.4% vs 12.8%). Out of 58 women of group A and 116 women of group B, who were either on regular or irregular antenatal check-up, 32 (55.2%) and 75 (64.7%), respectively, were advised to breastfeed their child.

Table 1: Frequency of postpartum breast problems.

Total number of postpartum women	Problem developed	Frequency (%)
200	67	33.5

Table 2: Demographic characteristics of the patients, (n=200).

Parameters	Group A, (n=67)		Group B, (n=133)		P value[a]
	N	%	N	%	
Age group (in years)					
≤20	20	29.9	32	24.1	>0.05*
21-30	39	58.2	84	63.2	
>30	8	11.9	17	12.8	
Mean ± SD[b]	24.81±5.21		24.91±5.12		>0.05*
Parity					
Para 1	34	50.7	58	43.6	>0.05*
Para 2	14	20.9	36	27.1	
Para 3 +	19	28.4	39	29.3	
Education					
Illiterate	18	26.9	33	24.8	>0.05*
Primary (Up to class VI)	24	35.8	28	21.1	
Secondary (Class VII to X)	21	31.3	63	47.4	
Higher secondary (Class XI to XII)	1	1.5	6	4.5	
Graduate and above	3	4.5	3	2.3	
Occupation					
Housewife	66	98.5	119	89.5	<0.05**
Service	1	1.5	14	10.5	
Socioeconomic status					
Poor	48	71.6	73	54.9	>0.05*
Lower middle	9	13.4	32	24.1	
Middle	10	14.9	28	21.1	

a=Chi-square test, b=Unpaired student's t-test, *Not significant, **Significant

Table 3: Status of antenatal check-up and breastfeeding advice during antenatal check-up, (n=200).

Parameters	Group A, (n=67)		Group B, (n=133)		P value
	N	%	N	%	
Antenatal check-up					
Regular	20	29.9	46	34.6	>0.50*
Irregular	38	56.7	70	52.6	
None	9	13.4	17	12.8	
Breastfeeding advice on the antenatal check-up	**(n=58)**		**(n=116)**		
Given	32	55.2	75	64.7	>0.10*
Not given	26	44.8	41	35.3	

Data analyzed using Chi-square test, *Not significant.

Table 4 presents the feeding status to newborns. Prelacteal feeds were given to 13 (19.4%) of group A and 29 (21.8%) of group B neonates. Prelacteal feeds were not given to maximum number of neonates of both group A and B, i.e. 50 (74.6%) in group A and 103 (77.4%) in group B. Four (6%) women of group A and 1 (0.8%) women of group B were unaware of the status of prelacteal feeding to their newborns. Colostrum was given to maximum number of group A and group B neonates, 61 (91%) of group A and 127 (95.5%) of B. The reasons for not giving colostrum to 6 (9%) of group A and 6 (4.5%) of group B neonates were sickness of baby (66.7% and 66.7%), suggested by family

members (16.7% in both groups), no milk in breast/ nipple problem (16.7% and 0%) and colostrum is harmful (0% and 16.7%), respectively. Table 5 shows time of initiation of breastfeeding, position and attachment of breastfeeding to the newborns after birth. In group A, 66 and in group B, 133 babies were breastfed, of which 6 (9.1%) and 15 (11.3%) within 1 hour, 28 (2.4%) and 53 (39.8%) within >1-2 hours), 24 (36.4%) and 53 (39.8%) within >2-24 hours and 8 (12.1%) and 12 (9%) more than 24 hours, respectively. Maximum number of neonates of group A and group B neonates were breastfed within 2 hours, i.e. 34 (51.5%) and 68 (51.1%), respectively. In maximum no. of cases, position and attachment during breastfeeding were good, in 57 (85.1%) cases of group A and 124 (93.2%) cases of group B women. Position and attachment were poor in case of 10 (14.4%) of group A and 9 (6.8%) of group B women. Table 6 demonstrates the feeding pattern during hospital stay. Breastfeeding could not be maintained only in one case of group A (1.5%). In group A and group B, exclusive breastfeeding could be initiated in 39 (58.2%) and 98 (73.7%), predominant breastfeeding in 13 (19.4%) and 28 (21.1%), and partial breastfeeding in 14 (20.9%) and 7 (5.3%) cases, respectively. Statistically significant difference was observed in feeding pattern between study groups. Reasons for partial breastfeeding in 14 cases of group A neonates were not enough milk (57.1%), breast engorgement (21.4%), retracted nipple (14.3%), and too long nipple (7.1%), and in 7 cases of group B neonates were sickness of mother (28.6%), twin baby (28.6%), refusal by the baby (28.6%) and mother on antithyroid drug (14.3%). Of the 67 women of group A who experienced postpartum breast problems, breast engorgement was seen in 31 (46.27%), lactation insufficiency in 28 (41.79%), retracted nipple in 4 (5.97%), too long nipple in 3 (4.48%), flat nipple and sore nipple in 2 (2.99%) each, and cracked nipple and bloodstained nipple discharge in 1 (1.49%) each (Table 7).

Table 4: Feeding status to newborns, (n=200).

Parameters	Group A, (n=67)		Group B, (n=133)		P value
	N	%	N	%	
Pre-lacteal feeding					
Given	13	19.4	29	21.8	>0.05*
Not given	50	74.6	103	77.4	
Unaware	4	6.0	1	0.8	
Colostrum					
Given	61	91.0	127	95.5	>0.10*
Not given	6	9.0	6	4.5	
Reasons for not giving colostrum	**(n=6)**		**(n=6)**		
Baby sick	4	66.7	4	66.7	>0.05*
Suggested by family members	1	16.7	1	16.7	
No milk in breast	1	16.7	0	0.0	
Colostrum harmful	0	0.0	1	16.7	

Data analyzed using Chi-square test, Not significant.

Table 5: Time, position and attachment of breastfeeding, (n=200).

Parameters	Group A, (n=67)		Group B, (n=133)		P value
	N	%	N	%	
Time after birth (hours)					
≤1	6	9.0	15	11.3	>0.05*
>1-2	28	41.8	53	39.8	
>2-24	24	35.8	53	39.8	
>24	8	11.9	12	9.0	
Position and attachment					
Good	57	85.1	124	93.2	>0.05*
Poor	10	14.9	9	6.8	

Data analyzed using Chi-square test, *Not significant,

Table 6: Feeding pattern during hospital stay, (n=200).

Variables	Group A, (n=67)		Group B, (n=133)		P value
	N	%	N	%	
Feeding pattern					
No breastfeeding	1	1.5	0	0.0	<0.01**
Exclusive breastfeeding (regardless of medication)	39	58.2	98	73.7	

Continued.

Variables	Group A, (n=67)		Group B, (n=133)		P value
	N	%	N	%	
Predominant breastfeeding (breastmilk plus any liquid other than formula)	13	19.4	28	21.1	
Partial breastfeeding (breastmilk plus formula)	14	20.9	7	5.3	
Reasons for partial breastfeeding	**(n=14)**		**(n=7)**		
Not enough milk	8	57.1	0	0.0	-
Breast engorgement	3	21.4	0	0.0	
Retracted nipple	2	14.3	0	0.0	
Too long nipple	1	7.1	0	0.0	
Mother sick	0	0.0	2	28.6	
Twin baby	0	0.0	2	28.6	
Baby refused	0	0.0	2	28.6	
Mother on antithyroid drug	0	0.0	1	14.3	

Data analyzed using Chi-square test, **Significant.

Table 7: Types of postpartum breast problems in group A, (n=67).

Breast problem	N	Percentage (%)
Breast engorgement	31	46.3
Lactation insufficiency	28	41.8
Retracted nipple	4	6.0
Too long nipple	3	4.5
Flat nipple	2	3.0
Sore nipple	2	3.0
Cracked nipple	1	1.5
Bloodstained nipple discharge	1	1.5

DISCUSSION

This study was conducted at Dhaka medical college hospital (DMCH) during February and July, 2006. In our study, out of 200 patients included in the study, 67 (33.5%) developed breast problems. The patients having breast problems were categorized as group A and those having no breast problem were categorized as group B for detailed statistical analysis. Age distribution of group A and B women showed that maximum number of women in both the groups belonged to age group 21-30 years. The mean (SD) age of group A and group B women were 24.81±5.21 and 24.91±5.12 years, respectively. No significant effect of age on developing breast problems is observed in the study. One retrospective study by Kaufmann in 1991 showed that women aged 30-34 years were more likely to develop mastitis.[14] In another study, a significantly increased risk of breast abscess was found among women aged 30 and above. In the present study, maximum number of women in both group A and B were primipara, 34 (50.7%) and 58 (43.6%), respectively. No significant difference is found among study groups regarding parity. Primiparity was found to be a risk factor in some studies.[12,15] Regarding education and socioeconomic status, no significant difference was seen between the groups. Distribution of women by occupation showed that maximum number of women, i.e. 66 (98.5%) in group A and 119 (89.5%) women in group B were housewives, only 1 (1.5%) in group A and 14 (10.5%) in group B were service-holders. Status of antenatal check-up of group A and group B women showed almost equal distribution, regular (29.9% vs 34.6%), irregular (56.7% vs 52.6%) and none (13.4% vs 12.8%). Statistically there was no significant difference between groups. The findings revealed that antenatal check-up available in this country could not improve mother's level of breast care. This may be due to the fact that our check-up is not up to the standard for changing breastfeeding behavior. Out of 58 women of group A and 116 women of group B, who were on regular or irregular antenatal check-up, 32 (55.2%) and 75 (64.7%), respectively, were advised to breastfeed their child. This finding suggests that, such antenatal intervention had no impact in preventing breast problems by promoting breastfeeding, which is similar to the finding of a study in Northwest of England in 1998, which stated that, antenatal intervention failed to address the emotional and physical needs in the postnatal period.[16] There is some evidence that interventions delivered both antenatally and postnatally may be more effective.[17] These findings were consistent with other recent research exploring similar antenatal interventions.[18] Our study found that in maximum cases of both group A and B (74.6% vs 77.4%), prelacteal feeds were not given and 21.8% patients in group B and 19.4% patients in group A were given prelacteal feeds. The baseline survey for Bangladesh Integrated Nutrition Project revealed that 92.3% babies were given prelacteals. The tenth-round survey on surveillance on breastfeeding and weaning situations

showed that 78.6% newborns were given it.[19] Regarding status of colostrum feeding, 61 (91%) patients in group A and 127 (95.5%) patients in group B gave colostrum to their babies and 6 (9%) in group A and 6 (4.5%) in group B did not give it. More patients in group A than group B did not use colostrum for babies. The report of consultancy services for breastfeeding showed that in 1980, colostrum was largely discarded, in 2001, colostrum feeding status was 78%. Regarding time of initiation of breastfeeding, 6 (9.1%) patients in group A and 15 (11.3%) patients in group B put their babies to breast within 1 hour of birth. According to the tenth-round survey, initiation of breastfeeding within 1 hour after birth was 60.7%.[19] The finding of the present study is much lower than it. A Swedish study suggested that 'mother and infant dyads with suboptimal start to breastfeeding may have increased lactation problems later on'- this hypothesis may be rejected, as study has shown that encouragement and support if given to mothers to allow continued breastfeeding after delayed start, may prevent the breastfeeding problems.[20] In the present study, 65 (48.8%) patients of group B, in spite of delay, had not developed breast problems, which is similar to the above findings that, extra help provided in the hospital can protect some patients. Poor position and attachment were found in 10 (14.9%) of group A patients and 9 (6.8%) of group B patients. Group A patients were more associated with poor breastfeeding technique than group B patients this finding is similar to many other findings described by many authors.[21-23] Exclusive breastfeeding was initiated in 98 (73.7%) of group B neonates in comparison to 39 (58.2%) neonates of group A patient. 14 (20.9%) neonates of group A and only 7 (5.3%) neonates of group B were given partial breastfeeding. These findings show a significant difference in feeding pattern between group A and group B patients, which indicate a relationship between feeding pattern and postpartum breast problems. Similar findings have been reported by other studies.[21,24,25] A study on infant feeding patterns and risk of death and hospitalization in the first half of infancy published in the WHO bulletin in June 2005 showed that there was no significant difference in infant death between exclusive and predominant breastfeeding but partial breastfeeding is dangerous and harmful for both baby and mother. In the study, among 14 patients of group A adopting partial breastfeeding, 8 (57.1%) patients added formula complaining of 'not enough milk'-this is similar to a study carried out in the United Kingdom.[16] Three (21.4%), 2 (14.3%) and 1 (7.1%) patients took partial breastfeeding for caring neonates due to breast engorgement, retracted nipple and too long nipple, respectively. breastfeeding. Causes of partial breastfeeding in group A and group B suggest that, group A patients were prone to take partial breastfeeding due to the breast problems that were not detected and managed properly. Uptake of partial breastfeeding in group B patients is explained by lack of information in the facility to change their breastfeeding behavior. In our study, some of the patients had more than one postpartum breast complication. Among 67 patients (having 72 complications), 31 (46.27%) had breast engorgement. A study showed that 15% patients in a maternity facility developed milk fever due to breast engorgement.[26] But engorgement may occur without apparent transient fever. Frequency of lactation insufficiency was found in 41.79%. It is consistent with many other studies, and now has become the most important cause of discontinuation of breastfeeding by women in many countries.[16] Four (5.97%) had retracted nipple, among them 2 (2.99%) developed breast engorgement and 1 (1.49%) complained of lactation insufficiency and 1 (1.49%) did not breastfeed her baby. Among the 3 (4.48%) patients with too long nipple, 2 established breastfeeding well but 1 developed breast engorgement. Two (2.99%) patients with sore nipple and 1 (1.49%) with cracked nipple continued breastfeeding by changing position with the help of the hospital staff. One (1.49%) patients was found to have bloodstained milk. In this study, no case of mastitis or breast abscess could be detected.

Limitations

Study population was selected from one center in Dhaka city, so may not represent wider population. The study was conducted at a short period of time. Many of the information regarding the variables of the study were collected from patient herself or from their attendant and may be misleading. Information regarding antenatal care was mostly verbal statement of the patients, only a few patients could show written record. Very few patients delivered vaginally could be included in this study because most of them went home from the hospital before breastfeeding could be established. Follow-up of the patients after discharge was not possible because most of the patients came from remote areas and had no telephone facilities. For breast problems, most of them preferred visiting nearby healthcare facilities. Comparison of the present study with other recently published similar studies were not up to the mark because of the lack of availability of data on postpartum breast complications.

CONCLUSION

Based on the findings of this study, it is evident that postpartum breast complications are a significant concern among new mothers, impacting breastfeeding practices. The majority of the women in the study faced challenges like breast engorgement and lactation insufficiency, which affected their ability to breastfeed effectively. The study highlights the need for enhanced support and education for new mothers, particularly in managing breast complications and understanding the importance of early and effective breastfeeding, to promote better health outcomes for both mothers and infants. Doctors and health workers should provide proper antenatal care and information to the pregnant women about good breastfeeding practices. Postnatal support should be strengthened to meet the emotional and physical needs of the women. Doctors and/or nurses, caring the baby after delivery should take the responsibility to put the baby to

the breast as soon as possible to avoid unnecessary delay to start feeding. Further research should be carried out to identify the real picture of postpartum breast problems in the community.

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REFERENCES

1. Jordan S, Emery S, Bradshaw C, Watkins A, Friswell W. The impact of intrapartum analgesia on infant feeding. Int J Obstetr Gynaecol. 2005;112(7):927-34.
2. Neville MC, Neifert MR. An introduction to lactation and breast-feeding. In Lactation: Physiology, Nutrition, and Breast-Feeding, Boston, MA: Springer US. 1983;3-20.
3. Mannan HR, Islam MN. Breast-feeding in Bangladesh: patterns and impact on fertility. Asia-Pacific Population J. 1995;10(4):23-38.
4. WHO S. Infant and young child nutrition: Global strategy on infant young child feeding. 55th World Health Assembly. 2002. Available at: https://www.who.int/publications/i/item/924156221. Accessed on 10 March, 2024.
5. Mannan HR, Islam MN. Breast-feeding in Bangladesh: patterns and impact on fertility. Asia-Pacific Population J. 1995;10(4):23-38.
6. Decherny AH, Nathan L. Postpartum hemorrhage and the abnormal puerperium in: Current Obstetrics and Gynecologic diagnosis and treatment, 12th edi, McGraw Hill Education. 2003;531-52.
7. Prentice A, Prentice AM, Lamb WH. Mastitis in rural Gambian mothers and the protection of the breast by milk antimicrobial factors. Transactions Royal Society Trop Med Hygiene. 1985;79(1):90-5.
8. Queenan JT. Breastfeeding: It's an important gift. Obstetr Gynecol. 2003;102(1):3-4.
9. Fairbank L, Lister-Sharpe D, Renfrew MJ, Woolridge MW, Sowden AJ, O'Meara S. Interventions for promoting the initiation of breastfeeding (protocol for a Cochrane Review). The Cochrane Library. 2002;4(25):1-171.
10. Department of Health. Improvement, expansion and reform: the next three years priorities and planning framework 2003-2006. 2002. Available at: http://www.DH.gov.uk/planning 2003-2006/index.htm. Accessed on 12 March, 2024.
11. Greiner T. Breast feeding in Bangladesh: A Review of the Literature. Bangladesh J Nutr. 1997;10(1):xx.
12. Evans M, Heads J. Mastitis: incidence, prevalence and cost. Breastfeed Rev. 1995;3(2):65-71.
13. Murthy DP, SenGupta SK, Muthaiah AC. Benign breast disease in Papua New Guinea. Papua and New Guinea Medical Journal. 1992;35(2):101-5.
14. Kaufmann R, Foxman B. Mastitis among lactating women: occurrence and risk factors. Social Sci Med. 1991;33(6):701-5.
15. Isbister C. Acute mastitis: a study of 28 cases. Med J Aus. 1952;2(23):801-8.
16. Lavender T, Baker L, Smyth R, Collins S, Spofforth A, Dey P. Breastfeeding expectations versus reality: a clusterrandomised controlled trial Int J Obstetr Gynaecol. 2005;112(8):1047-53.
17. Sikorski J, Renfrew MJ, Pindoria S, Wade A. Support for breastfeeding mothers: a systematic review. Paediatr Perinatal Epidemiol. 2003;17(4):407-17.
18. Forster D, McLachlan H, Lumley J, Beanland C, Waldenström U, Amir L. Two mid-pregnancy interventions to increase the initiation and duration of breastfeeding: a randomized controlled trial. Birth. 2004;31(3):176-82.
19. Hannan A, Rahman A, Hassan MQ, Rahman AT, Begum RA, Rahman F. Surveillance on breastfeeding and weaning situation and child and maternal health in Bangladesh: 12th round survey. Bangla Breastfeeding foundation (BBF). 2005;8.
20. Kvist LJ, Rydhstroem H. Factors related to breast abscess after delivery: a population-based study. Int J Obstetr Gynaecol. 2005;112(8):1070-4.
21. Fetherston C. Risk factors for lactation mastitis. J Human Lactation. 1998;14(2):101-9.
22. Escott R. Positioning, attachment and milk transfer. Breastfeeding Rev. 1989;1(14):31-7.
23. Gunther M, Morris D, Ferreira J. Discussion on the breast in pregnancy and lactation. Proceedings Royal Society Med. 1958;51(5):305-11.
24. Riordan JM, Nichols FH. A descriptive study of lactation mastitis in long-term breastfeeding women. J Human Lactation. 1990;6(2):53-8.
25. Marshall BR, Hepper JK, Zirbel CC. Sporadic puerperal mastitis: an infection that need not interrupt lactation. JAMA. 1975;233(13):1377-9.
26. Campbell S, Lees C, editors. Obstetrics by ten teachers, 20th edi, Arnold Publishers, London. 2000.

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