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Contraceptive Effectiveness of Breastfeeding and Current Contraceptive Practice in Bangladesh

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The study was conducted to investigate the opinion about reproductive behavior commodity participation in contraceptive mothers opinion about suitable contraceptive method during breastfeeding in Bangladesh. For this purpose secondary data were collected from Bangladesh Institute of Research for Promotion of Essential and Reproductive Health and Technologies (BIRPERHT), in Bangladesh in the year 1995. The contraceptive effectiveness of lactational amenorrhoea during exclusive breastfeeding the baby, 35.6% mentioned that this period is fully protective from risk of contraception; about 37.9% stated that there is a partial risk of pregnancy. The suckling of the infant appears to trigger the chain of events. Stimulating the hypothalamus and anterior pituitary to release some hormones and inhibit the release of mothers. This has the total effect of suppressing ovulation with contraceptive effect being strongest during lactational period. Mothers in rural and urban area may choose to adopt a contraceptive method during breastfeeding and that is suitable method in this period oral pill 33% and condom 28% by their opinions. The overall distribution of opinion about risk of conception reflects that significantly larger proportion with 99% confidence level of urban mothers think that lactational period does not provide adequate protection from conception. Mothers should be informed about the maternal health benefit of breastfeeding including lactational period and its contraceptive effect, which increases birth interval and maintain good health of the mothers.

Key words: Breastfeeding, contraceptive, lactational amenorrhoea, pregnancy

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Introduction

Human breast milk is an ideal food for healthy growth and development of infants. Breastfeeding itself is a unique biological process, which strengthens emotional bondage between the mother and her child. It is a cheapest way of feeding the child and protecting her from infections. Breastfeeding can be used either as a birth spacing method in its own right or it can be used as a means to delay introduction of other family member (Akter and Ahmed, 1991).

In Bangladesh, breastfeeding is available for the majorities of infants for long period. In fact Bangladesh is one of the countries, having longest mean duration of lactation (30 months) with about 98% of mothers starting to breastfeed immediately after birth (Shah and Khatun, 1989; Akter *et al.*, 1998).

Breastfeeding has always been synonymous with human reproduction and the nourishment of infants. Yet it is only in the last 20-25 years that its effects on fertility and child survival have been systematically investigated. In the light of the accumulated scientific evidence, the promotion of breastfeeding through family planning, maternal and child health programs is increasingly considered to be a public health policy priority, especially in developing societies (Akter *et al.*, 1998). The use of fortified human milk typically provides premature infants adequate growth, nutrient retention, and biochemical indices of nutritional status when feed at approximately 180ml kg⁻¹ d⁻¹ compared with un-fortified human milk. Thus, for premature infants, neonatal centers should encourage the feeding of fortified human milk, together with skin to skin contact, as reasonable methods to enhance milk production, while potentially facilitating the development of an enteromammary response (Schanler, 2001).

Human milk feeding is recommended for the entire first year of life, but few studies focus on the nursing dyad for more than 3 months duration. Continued study is needed so that nutritional adequacy may be maintained and appropriate dietary guidance can be provided. When human milk feeding is not practiced, modern and reliable data on human milk constituents and their significance to infants also are essential for the preparation of formulas; especially those not based on bovine milk. The adequacy of human milk substitutes cannot be predicted from compositional analysis because of possible differences in compartmentalization and molecular form of nutrients and such preparations must be evaluated using specific indices of nutrient use, together with traditional anthro-pometric measures in infants (Picciano, 2001).

In contrast of religion, cultural and economic determinant of low acceptance and sustainable use of contraceptive in developing countries. Perceived side effects resulting from reproductive tract infections can usually be ameliorated easily and expeditiously. Contraceptive use trends and their relationship to the gender composition of the surviving children remains an important factor in developing contraceptive use (Mazumder *et al.*, 1998).

This paper investigates the opinion about reproductive behavior commodity participation in contraception mother's opinion about suitable contraceptive method during breastfeeding in Bangladesh. Some important factors affecting about role of lactational amenorrhoea in protection from conception during exclusive breastfeeding and complementary feeding.

Materials and Methods

Data were obtained from Bangladesh Institute of Research for Promotion of Essential and Reproductive Health and Technologies (BIRPERHT), Bangladesh. The study was

assessed by collecting the data on the indicators of breastfeeding practices developed by World Health Organization (WHO, 1992). In this study adopted a cross-sectional survey design (Koutsoyiannis, 1977), which was carried out in 10 unions and 5 divisional head quarters of 5 divisions of the country. From each division 2 districts were selected by simple random sampling and from each district one union was selected by multistage random sampling. The selected unions were considered as rural area and the corresponding divisional headquarters were selected as an urban area. Total period of data collection was 3 months during 1995. Sample size calculation on prevalence of continued breastfeeding according to Bangladesh Fertility Survey, (Huq *et al.*, 1989). Eligible respondents were interviewed through structured questionnaires with some open-ended questions, administered by well-trained female interviewers. A total of 5313 others who is initiation of breastfeeding after childbirth were interviewed to collect the relevant information keeping in mind the objective of the work.

Results and Discussion

Among the mothers 58.8% reported that was not using any method and nearly 40% indicated that they were using contraceptive method.

Current contraceptive practice of couples those who are in the lactation period: When all 5313 mothers were asked about their contraceptive method use at the time of interview, 58.8% reported that were not using any method nearly 40% indicated that they were using contraceptive method. Contraceptive use was double (50.5%) among urban mothers than the rural mothers (25%) (Table 1).

Opinion about protection from pregnancy during lactational amenorrhoea during exclusive breastfeeding and complementary feeding to baby: Mothers were asked about their understanding of protection from pregnancy during lactational amenorrhoea, while breastfeeding exclusively. Among 5311 respondents, 35.6, 37.9 and 18.3% mothers stated lactational amenorrhoea fully protects from conception, partial risk of pregnancy and substantial risk of pregnancy, respectively. When urban and rural responses were analyzed, relatively larger proportion of rural mothers (41%) think that lactational amenorrhoea provides full protection from risk of conception than that of their urban counterpart (31.5%). The overall distribution of opinion about risk of conception reflects that significantly larger proportion of urban mothers think that lactational amenorrhoea does not provide adequate protection from conception. Over 8% of mothers do not know about the extent of contraceptive effectiveness of lactational amenorrhoea.

When mothers were asked about the risk of conception during lactational amenorrhoea while complimentary feeding is given simultaneously, nearly 27% of both urban and rural mothers indicated that there is no risk of conception, 32% of rural and 30% of urban mothers mentioned that there is a partial risk of conception. However, larger proportion of urban mothers (36%) as compared to rural mothers (30.4%) reported that there is substantial risk of conception when complementary food is given to the baby during lactational amenorrhoea, knowledge about this risk is significantly lower among rural mothers than urban mothers. Overall significantly larger proportion of urban mothers perceived that lactational amenorrhoea during complementary feeding is not adequately protective from pregnancy (Table 2).

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Table 1: Distribution of mothers by their contraceptive use status by residence

Contraceptive practice	Total n= 5313	Rural n= 2287	Urban n= 3026
Currently using	39.6	25.1	50.5
Not using at present	58.8	73.5	47.7
Unwilling to inform	1.2	0.8	1.6
Never used	0.4	0.5	0.2

$$\chi^2 = 392.86 \text{ df} = 3, P < .0001^*$$

The test statistic, $\chi^2 = \sum(O-E)^2/E^{**}$

* Source: Cambridge elementary Statistical Table (Lindley and Scott, 1991).

** Source: Fundamental of applied Statistics, Gupta and Kapoor (1984).

Table 2: Distribution of mother knowledge about the role of lactational amenorrhoea in protection from conception during exclusive breastfeeding and complementary feeding by residence status.

Opinion on protection From pregnancy	Total n= 5311	Rural n= 2287	Urban n= 3024
While exclusive breastfeeding*			
Fully protective	35.6	41.0	31.5
Partial risk of conception	37.9	34.2	40.6
Substantial risk of conception	18.3	15.7	20.3
Don't know	8.2	9.1	7.6
$\chi^2 = 65.49 \text{ df} = 3 \text{ P} < .0001$			
While complementary feeding**			
No risk of conception	26.8	27.0	26.6
Partial risk of conception	30.9	31.7	30.3
Don't know	8.6	10.8	7.0

$$\chi^2 = 36.32 \text{ df} = 3, P < 0.0001$$

*not stated – 2 cases, **not stated – 2 cases

Table 3: Mothers opinion about suitable contraceptive method during breastfeeding by residence status.

Suitable contraceptive During breastfeeding	Total n= 5266*	Rural n= 2243	Urban n= 3023
Oral pill	33.3	32.9	33.6
Injectable	13.1	17.3	10.0
IUD/Cu-T	6.9	7.8	6.3
Norplant	0.6	0.1	1.0
Condom	27.8	14.6	37.6
Sterilization (ligation/ Vasectomy)	1.0	1.3	0.9
Aza/natural method/safe Period	4.1	4.0	4.1
Foam/jelly/diaphragm	0.2	0.4	0.2
Others (no method Is suitable/kabiraji)	32.1	44.0	23.4

* Not stated – 47 cases, multiple responses.

Table 4: Percentage of Married Women Age 10-49 Currently Using Family Planning Methods by Types, Bangladesh 1975-1995.

Method	1975	1983	1985	1989	1991	1993-94	1994	1995
	BFS	CPS	CPS	BFS	CPS	BDHS	HDS HDS	
Any method	7.7	19.1	25.3	30.8	39.8	44.6	46.3	48.7
Pill	2.7	3.3	5.1	9.6	13.9	17.4	23.5	27.3
IUD	0.5	1.0	1.4	1.4	1.8	2.2	1.6	1.5
Injection	0.0	0.2	0.5	0.6	2.6	4.5	3.8	4.2
Vaginal methods	0.0	0.3	0.2	0.1	0.0	0.0	-	-
Condom	0.7	1.5	1.8	1.8	2.5	3.0	4.8	3.3
Sterilization	1.1	7.4	21.7	9.7	10.3	9.2	9.5	8.7
Traditional method	2.7	5.4	6.9	7.6	8.7	8.4	6.9	6.4
Number of women	-	7662	7822	10907	9745	8980	8820	14774

Sources of the above table: Statistical Year Book of Bangladesh, 1999.

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Table 5: Life table cumulative continuation rates for any type of breastfeeding by current contraceptive use status.

Mothers using oral pill.							
X	l_x	$d_x = l_x - l_{x+1}$	$q_x = d_x / l_x$	$p_x = 1 - q_x$	$L_x = l_x - 1/2 d_x$	T_x	$e^0_x = T_x / l_x$
1	1175	48	0.04085	0.95915	1151	8371.5	7.12
3	1127	17	0.01508	0.98492	1118.5	7220.5	6.41
4	1110	19	0.01712	0.98288	1100.5	6102	5.50
5	1091	31	0.02841	0.97159	1075.5	5001.5	4.58
6	1060	110	0.10377	0.89623	1005	3926	3.70
9	950	117	0.12316	0.87684	891.5	2921	3.07
12	833	173	0.20768	0.79232	746.5	2029.5	2.44
15	660	164	0.24848	0.75152	578	1283	1.94
18	496	159	0.32056	0.67944	416.5	705	1.42
20	337	217	0.64392	0.35608	228.5	288.5	0.86
24	120	120	1.0000	0	60	60	0.50
Mothers not using any contraceptive methods							
X	l_x	$d_x = l_x - l_{x+1}$	$q_x = d_x / l_x$	$p_x = 1 - q_x$	$L_x = l_x - 1/2 d_x$	T_x	$e^0_x = T_x / l_x$
1	3146	486	0.15448	0.84552	2903	15894.0	5.05
3	2660	218	0.88195	0.91805	2551	12991.0	4.88
4	2442	166	0.06798	0.93202	2359	10440.0	4.28
5	2276	232	0.10193	0.89807	2160	8081.0	3.55
6	2044	451	0.22065	0.77935	1818.5	5921.0	2.90
9	1593	306	0.19209	0.80791	1440	4102.5	2.58
12	1287	410	0.31857	0.68143	1082	2662.5	2.07
15	877	257	0.29304	0.70696	748.5	1580.5	1.80
18	620	231	0.37258	0.62742	504.5	832.0	1.34
20	389	256	0.65810	0.34190	261	327.5	0.84
24	133	133	1.0000	0	66.5	66.5	0.50
Mothers using other contraceptive methods							
X	l_x	$d_x = l_x - l_{x+1}$	$q_x = d_x / l_x$	$p_x = 1 - q_x$	$L_x = l_x - 1/2 d_x$	T_x	$e^0_x = T_x / l_x$
1	913	41	0.04491	0.95509	892.5	6234.5	6.83
3	872	21	0.02408	0.97592	861.5	5342 6.13	
4	851	23	0.02703	0.97297	839.5	4480.5	5.26
5	828	41	0.04952	0.95048	807.5	3641 4.40	
6	787	121	0.15375	0.84625	726.5	2833.5	3.60
9	666	74	0.11111	0.88889	629	2107 3.60	
12	592	128	0.21622	0.78378	528	1478 2.50	
15	464	98	0.21121	0.78879	415	950	2.05
18	366	116	0.31694	0.68306	308	6535 1.46	
20	250	148	0.59200	0.40800	176	227	0.91
24	102	102	1.0000	0.00000	51	51	0.5

Source: Abridge life table.

Where,

X = Age of babies that continue the breastfeeding

l_x = No. of babies continued breastfeeding at age X

d_x = No. of babies discontinued breastfeeding at age x to x+ 1

q_x = Discontinuing probability of breastfeeding of babies at age x= 1

p_x = Continuation probability of breastfeeding of babies at age X+ 1

L_x = The number of babies of the life table stationary population in the age group (x, x= 1)

T_x = The number of babies continued breastfeeding after age x

e^0_x = Expected continuation of breastfeeding at age X

Opinion about suitable contraceptive during breastfeeding: When mother's opinion regarding the contraceptive, which is suitable during breastfeeding, on an average 33.3, 28 and 13% of the

mothers mentioned of oral pills, condom and injectable, respectively. However 32% mentioned that none of the method is suitable for a lactating mother and among the some indicated

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kabiraji medicine as contraceptive. Larger proportion of urban mothers (37.6%) mentioned of condom as suitable method as compared to that of rural mothers (14.6%) (Table 3).

Opinion about protection from pregnancy during the married women age 10-49: When the couples were asked about the family planning methods, 7.7, 19.1, 25.3, 30.8, 39.8, 44.6, 46.3 and 48.7% was reported that they were using contraceptive method in the year 1975, 83, 85, 89, 91, 93-94 and 1995, respectively and contraceptive using rates are increasing day by day.

About 2.7, 3.3, 5.1, 9.6, 13.9, 17.4, 23.5, and 27.3% was reported that they were using oral contraceptive pills in the year 1975, 83, 85, 89, 91, 93-94, 94 and 95 respectively which was the higher among the couples.

Next commonly used method was sterilization, which was reported second higher among the methods, and other traditional method user is countable portion of the couples (Table 4).

Life table cumulative continuation rates for any type of breastfeeding by current contraceptive use status: Cumulative discontinuation rates of breastfeeding among mothers using oral contraceptive, using other methods and non-users are reflected in the Table 5 by duration of breastfeeding in months. Abridged life table calculates the cumulative breastfeeding continuation rates. The life table is the preferred procedure for the copulation of cumulative rates of continuation and discontinuation.

Life table mentioned that the probability to start breastfeeding of the new born babies is 95.9, 84.5 and 95.5% among using oral pill, not using any contraceptive methods and using others contraceptive methods, respectively and the expected continuation of breastfeeding is 7.12, 5.05 and 6.83 months among the babies of the mothers those who were using oral pill, not using any contraceptive method and using other contraceptive methods respectively.

In almost all ages of the baby up to 18 months, the discontinuation rates are highest among non-users and lowest among oral pill users. Between 18 to 24 months age of the baby, discontinuation rates are highest among non-users, followed by other method users and lowest among oral contraceptive users.

Mother should be informed about initiating breastfeeding immediately after birth of the baby and breast feeding the baby on demand and lactational amenorrhoea partially protected from contraception. And also informed about the maternal health benefit of breastfeeding including lactational amenorrhoea and its contraceptive effect, which increases birth interval and maintains good health of the mothers.

References

- Akter, H. H., 1991. Breastfeeding Practices in Bangladesh. Paper presented in 1st National Conference on Breastfeeding, Breastfeeding Saves Lives at Dhaka Nov., 9: 1991.
- Akter, H. H. and S. Ahmed, 1991. Determinants of Contraceptive Use Dynamics in Rural Bangladesh. Published by Bangladesh Institute of Research for Promotion of Essential and Reproductive Health and Technologies (Birperht).
- Akter, H. H., M. Akter and K. M. R. Azad, 1998. A National Baseline Survey to Assess the Breastfeeding practice in Bangladesh. Published by Bangladesh Institute of Research for Promotion of Essential and Reproductive Health and Technologies (birperht).
- Gupta, S. C. and V. K. Kapoor, 1984. Fundamentals of applied statistics, published by Daryaganj, New Delhi – 110002.
- Huq, M. N., J. Cleland, A. Rashid, F. Mahabud and S. Saber, 1989. Bangladesh Fertility survey 1989. Analytical Tables 6.8. Published by NIPORT, Azimpur, Dhaka, March, 1990.
- Koutsoyiannis. A., 1977. Theory of Econometrics, Published by ILBS with Macmillan, The Macmillan Press LTD, Houndmills, Basingstoke, Hampshire RG2 12XS, pp: 17.
- Lindley, D. V. and W. F. Scott, 1991. New Cambridge Elementary Statistical Tables, published by Cambridge University Press, Melbourne, Sydney.
- Mazumder, A. B, M. B. Khuda and T. T. Kane, 1998. Determinants of Infant and Child mortality in Rural Bangladesh, ICDDR, B Working Paper, No. 115.
- Picciano, M. F., 2001. Nutrient composition of human milk, Research Bulletin, Bangladesh Breastfeeding Foundation (BBF), Vol. 7, pp: 3
- Schanler, R. J., 2001. The use of human milk for premature infants, Research Bulletin, Bangladesh Breastfeeding Foundation (BBF), Vol. 7 pp: 2
- Shah, B. D, F Khatun, 1989. Patterns of Breastfeeding in Southern Bangladesh and its Relation to the Disease morbidity in children, Bangladesh Med. J., 18: 1.
- Statistical Year Book of Bangladesh, 1999., Published by Bangladesh Bureau of Statistics, Statistics Division, Ministry of Planning, Government of The People's Republic of Bangladesh. May, 2001.
- WHO, 1992. Indicators for Assessing Breastfeeding Practices, Bangladesh J Child Health 1991, Vol. 15 (3/4):110-112.
- Innocenti Declaration on the protection, Promotion and Support of Breastfeeding, adopted by participants and the WHO/UNICEF policy makers' meeting (Co-sponsored by USAID and SIDA) Florence, Italy, 30 July- 1 August, 1990.

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