Original Article

Pattern and determinants of breast feeding and contraceptive practices among mothers within six months postpartum

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Summary **The present study aims to determine the patterns of breast feeding, return of menstruation, and contraceptive practices in the first six months postpartum in women visiting the outpatient department at a teaching hospital in Lucknow, Northern India. Mothers of infants between six to eight months of age visiting the outpatient department of Era's Lucknow Medical College were interviewed regarding breast feeding practices, return of menstruation, sexual activity, and contraceptive practices within the first six months postpartum using a structured questionnaire. Of all women interviewed only 75.8% practiced exclusive breast feeding with the mean duration of exclusive breast feeding (EBF) being 3.5 months with only 41% practicing EBF for six months, 28% were sexually active within six weeks postpartum, 64.5% women had a return of menstruation within six months. Contraception was practiced by only 54.4% women with a barrier method such as a condom, being the most common. Better education was the only factor significantly affecting EBF ($p < 0.004$) and use of contraception ($p < 0.027$). There were a total of 10 pregnancies within six months postpartum. In conclusion, optimal breast feeding practices are poor in this part of the country and lactational amenorrhoea cannot be effectively and reliably used as a method of contraception. Therefore, optimal breast feeding practices, timely introduction of contraception and institutional delivery need to be encouraged.**

Keywords: Breast feeding practices, postpartum contraception, lactational amenorrhoea

1. Introduction

National family health survey-3 (NFHS-3) from India reports that 96% of children (under the age of 5 years) in India are ever breast-fed. However, the median length of exclusive breast feeding is relatively low *i.e.*, only 2 months (*1*). It is the exclusive and optimal breast feeding practice that has a bearing on the nutrition of the infant and has an added contraceptive advantage for the mother.

A recent ecological risk assessment study concluded that globally there are as many as 1.45 million deaths due to suboptimal breastfeeding in developing countries (*2*). Also, it is recommended that postpartum initiation of contraception should be done in the third postpartum month in fully breast fed and third postpartum week in partial or no breast feeding cases (*3*). The level of effectiveness of contraception by lactational amenorrhoea method will depend on the nutritional status of the mother, the frequency and intensity of suckling and the extent to which supplemental food is introduced (*4*). The present study was undertaken to: (*i*) study prevailing breast feeding practices, along with the timing of initiation of sexual activity and use of any other contraception besides duration of lactational amenorrhoea within the first six months postpartum; (*ii*) define the socio-demographic factors affecting exclusive breast feeding practices and contraception use in the first six months postpartum; and (*iii*) determine whether lactational ammenorhoea can be used as a method of contraception.

2. Materials and Methods

A cross-sectional hospital based survey was conducted

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between January 2009 to October 2009 in Era's Lucknow Medical College and Hospital, Lucknow, Uttar Pradesh, India. The state of Uttar Pradesh is the second largest state in India with Lucknow being the capital city. Uttar Pradesh has one of the highest total fertility rates (3.8) and the highest infant mortality rate of 73 per thousand live births (*1*).

According to the 2001 census Lucknow has a total population of 3,681,000 with a 63.62% urban population (*5*). Era's Lucknow Medical College and Hospital falls on the outskirts of the city with a local area which caters mostly to a semi-urban population.

Mothers of infants between six to eight months of age visiting the gynecology out patient department were interviewed. Informed consent was obtained prior to the interview. Ethical approval for the study was from the ethical committee of the hospital.

The questionnaire was developed and refined on the basis of peer review and pilot studies. The questionnaire had the following social and demographic variables: age, occupation of head of family, socioeconomic status, educational status of parents, parity, and place of delivery. Data on infant feeding practices included exclusive breast feeding (EBF) practices, time of initiation of breast feeding and method of top feeding were taken. The approximate time of start of sexual activity, return of menstruation and contraceptive practices within the first six months after delivery were also recorded.

3. Results

A total of 272 mothers were interviewed. The overall mean age was 25.56 ± 4.32 years. The age of the respondents ranged between 18 and 45 years. Majority of respondents belonged to the Hindu community, *i.e.*, 60.3% and the rest (39.7%) to the Muslim community. Average per capita income was Rs.1,326.27 ($28.9) (± Rs.2,545.3). The majority belonged to the middle socioeconomic class, *i.e.*, 66.2%. Out of the total women interviewed 22% were illiterate, and 19.5% were graduates (Table 1). All women were housewives except six who were working and 1.5% had unemployed partners. Most (74.3%) had hospital deliveries while 25.2% had delivered at home.

3.1. *Breast feeding*

Only 202 women remembered when they had initiated breast feeding after delivery. Of all the mothers most initiated breast feeding within 1-6 h after delivery for a total of 40.3% (n = 88) while 27% initiated after 24 h (n = 56).

Of all, 97% had breast fed their child. EBF was not practiced by 24.2%. The mean duration of EBF was 3.53 ± 2.51 months. Only 41.3% practiced exclusive breast feeding for 6 months. After applying bivariate analysis (chi-square test) between socio-demographic factors and exclusive breast feeding for six months, only educational status of more than the tenth standard was significantly related to exclusive breast feeding practice (Table 2). Bottle feeding was the most common method of top feeding (80.8%) while bowl and spoon were used by 18%, and 1% of women practiced both methods.

3.2. *Sexual activity*

The mean start of sexual activity after delivery was 2.8 ± 1.7 months with the range being from 12 days to 240 days, 28% woman were sexually active within six weeks postpartum and this rose to 93.3% by the end of 6 months (Table 3). There was a significant difference in mean consummation with mode of delivery. Mean start of sexual activity is much earlier in vaginal than in caesarean section (t = 1.97, p = 0.045).

Table 1. Characteristics of mothers

Characteristics of mothers	*n*	%
Religion		
Hindu	164	60.3
Muslim	108	39.7
Age groups		
< 19	25	9.2
20-25	140	51.4
26-30	81	29.8
> 30	26	9.6
Socioeconomic status		
Lower	63	26.6
Middle	157	66.2
Upper	17	7.2
Educational status of women		
Illiterate	59	21.7
Primary	25	9.2
Middle	43	15.8
High school	41	15.1
Intermediate	30	11.0
Graduate	52	19.1
Postgraduate	16	5.9
Professional	4	1.5
Place of delivery		
Home	70	25.7
Hospital	202	74.3
Parity		
1	117	43.0
2-3	130	47.8
> 3	25	9.2

Table 2. Socio-demographic variables affecting exclusive breast feeding

Variable		Yes	No	*p*
Age	≤ 25	64	61	0.066
	> 25	49	27	
Religion	Hindu	69	55	0.835
	Muslim	44	33	
Parity	< 2	49	46	0.209
	≥ 2	64	42	
Literacy	≤ 10th	57	62	0.004
	> 10th	56	26	
Delivery	Hospital	89	63	0.206
	Home	20	22	

Table 3. Duration of exclusive breast feeding, return of menses, start of sexual activity and contraception

Postpartum (completed) weeks	Exclusive breast feeding *n* (%)	Sexual activity *n* (%)	Return of menstruation *n* (%)	Contraception *n* (%)
Up to 6	187 (68.8)	77 (28.3)	78 (28)	17 (6.2)
Up to 12	170 (62.4)	202 (74.3)	147 (54)	99 (36.3)
Up to 18	133 (48.8)	224 (82.3)	162 (59.5)	109 (40)
Up to 24	112 (41.3)	254 (93.3)	175 (64.2)	148 (54.4)

3.3. *Return of menstruation*

Of the total respondents interviewed 28% had a return of menses within six weeks postpartum which increased to 64.5% at the end of six months while the rest *i.e.*, 35.5% of respondents had lactational amenorrhoea at the end of six months (Table 3).

3.4. *Contraception*

Only 54.4 % (n = 148) of respondents were using some method of contraception. Of these 148 the majority, 85.6% (n = 126) were using condoms. Only 1.8% (n = 3) were using intrauterine contraceptive devices (all 3 insertions were done 4 to 6 months postpartum) and 10% (n = 15) of respondents had undergone sterilization, all were ligations at the time of caesarean section except one which was done along with a medical termination of pregnancy. Oral contraceptives were used by 1.8% (n = 3), and 1% (n = 1) were using coitus interruptus (Table 4). Contraceptive usage was only 14% in six weeks postpartum and rose to 54.4% until the end of six months postpartum (Table 3). On bivariate analysis woman's educational status was the only variable which was related to use of contraception (p = 0.004) (Table 5). There were 10 (3.7%) pregnancies within six months of delivery in the women interviewed.

Table 4. Type of contraception used

Type of contraception	*n* (%)
Pills	2 (1.8%)
IUCD	2 (1.8%)
Injectable/implants	0 (0.0%)
Condom	95 (85.6%)
Permanent	11 (9.9%)
Natural	1 (0.9%)

Table 5. Socio-demographic variables affecting contraception use

Variable		Yes	No	*p*
Age	≤ 25	63	84	0.462
	> 25	35	57	
Religion	Hindu	58	90	0.411
	Muslim	41	51	
Parity	< 2	46	59	0.477
	≥ 2	53	82	
Literacy	≤ 10th	52	94	0.027
	> 10th	47	47	
Delivery	Hospital	76	100	0.209
	Home	20	39	

4. Discussion

Breast feeding initiation should ideally be started within 30 min. Early initiation of breast feeding is important for mother-infant bonding, helps in establishment of longer and more successful breastfeeding and also helps in uterine contractions after delivery by causing release of oxytocin.

In our study there was a poor rate of early initiation (within 1 h) *i.e.,* only a total of 19% and approximately 28% initiated after 24 h. This is quite a contrast compared to other studies conducted in India which show a much higher early initiation of breast feeding (*7*). It is a well-known fact that exclusive breast feeding protects the child from malnutrition and infection. A Dhaka study showed that when EBF rates at 6 months were increased from 39% to 70% there was a reduction in infant mortality by 32% which is quite significant (*8*). The Bellagio Child Survival Study Group also stressed the advantages of exclusive breast feeding and said that universal exclusive breast feeding for the first six months could reduce infant mortality rate by 13% (*9*). Our study showed that only 41.3% practiced EBF for six months. This is even below the national average of 46.4% (*1*) and well below the rate of 70% from a study from Nigeria (*10*).

A striking fact here is the use of bottle feeding by 80% of mothers even though the WHO discourages bottle feeding because it is difficult to sterilize the nipple properly (*11*).

Postpartum sexual abstinence is traditionally practiced especially in some African societies. Although there is no published data for a period of postpartum sexual abstinence it is commonly believed in India that abstinence should be practiced for a period of about the first six weeks after delivery. In our study the mean start of sexual activity after delivery was 2.8 months with 28% having intercourse within puerperium. This was late as compared to a study from Thailand in which 35% of women had resumed sexual activity within six weeks postpartum (*12*) and a Uganda study in which 49.3% had resumed intercourse within this period (*13*).

Breast feeding has a positive influence on duration of lactational amenorrhoea. Though 68.8% were still exclusively breast feeding by the end of the first six weeks, 28% had resumed menstruation; this could be

the result of poor exclusive breast feeding practice and reduced intensity of breast feeding. In our study 64.5% of women had a return of menses within six months as compared to 70.2% in a similar study from Africa (*14*).

Contraceptive demand is not constant throughout the reproductive life of a woman, postpartum period being the most crucial as appropriate birth spacing can improve the maternal and infant mortality rates (*15*). The contraceptive practice in our study was comparable to NFHS-3 national data (56.3%) (*1*), and higher than a Sri Lankan study published in 2009 which found contraceptive practice to be only 41.1% among 129 mothers interviewed (*16*). However, a study from Turkey showed a much higher (76%) contraceptive use in postpartum women with an intrauterine contraceptive device being the most common method of contraception (*17*), but in our study the most commonly used method was condoms which have a much higher failure rate.

Not only increasing the use of contraception, but also timely introduction of contraception is important. Because only 6.2% of the women were using contraception within six weeks postpartum while 28% had resumed menstruation and the same percentage were sexually active within the same time frame and therefore were unprotected and at risk of conception (Table 4).

Since this is a retrospective study there could be a recall bias especially for breast feeding initiation and resumption of sexual activity. As most women were using a barrier method and its use was irregular it was difficult to ascertain the timing of initiation of contraception.

5. Conclusion

The first and foremost inference of this study is that optimal breast feeding rates and contraceptive practice rates are poor in India and even worse in this part of the country. Increasing awareness regarding use of "exclusive" breast feeding and not only merely stating benefits of breast feeding is required to be incorporated in breast feeding awareness campaigns. Secondly, emphasis on institutional delivery will go a long way to bring down maternal and infant mortality rates. Lastly, contraception counselling should start early, preferably during antenatal or the immediate postpartum period because lactational ammenorhoea is not a very reliable method for contraception and especially so for this part of the world.

Acknowledgements

Authors are grateful to Dr. Vikram. S. Yadav, Dr. Vipin Singh, and Dr. Ankita for helping in data entry.

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(Received April 10, 2010; Revised May 6, 2010; Accepted May 18, 2010)