A Study of Breast Feeding Practices Among Families of Armed Forces Personnel in a Large Cantonment

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Abstract

A cross sectional epidemiological study design was undertaken on a randomly selected sample of 175 families of Armed Forces personnel staying in a large cantonment and having at least one child in the age group 3 to 24 months. The mean duration of lactational amenorrhoea was found to be 6.24 months (SD±3.25 months) and that of breast feeding was found to be 11.14 months (SD±6.37 month). The present study observed positive association between the duration of exclusive breast feeding and the duration of lactational amenorrhoea, as well as between the lack of practice of exclusive breast feeding and number of spells of upper respiratory tract infection and acute gastroenteritis. Based on the findings of the study, certain measures to promote the practice of exclusive breast feeding for the first 4-6 months of life have been suggested.

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Key Words : Breast feeding; Childhood infections; Lactational amenorrhoea

Introduction

Several workers have done studies on breast feeding practices in our country. These studies reveal the prevalence of breast feeding to be around 94% to 98% [1,2,3]. However, there seem to be gaps in the scientific knowledge about breast feeding practices among families of Armed Forces personnel in our country, which need to be studied. It was keeping in view the importance of breast feeding in the maintenance of proper health of the children, coupled with the lack of studies which have been done in this area, in the Armed Forces, that the present study was taken up, with the objectives of studying :-

- (a) The association of breast feeding with lactational amenorrhoea
- (b) The role of breast feeding in protecting the child from upper respiratory tract infection and diarrhoea.

Material and Methods

General settings and research design :

The present study was undertaken using a field based, cross-sectional epidemiological study design [4] in the settings of the general community of the Armed Forces in a large cantonment from September 1996 to December 1997. The total (reference) population on which results were intended to be generalised was defined as "families of Indian Armed Forces personnel having at least one child in the age group 3 to 24 months".

Sample size and sampling technique :

Earlier studies carried out in this field by earlier workers [5,6,7] indicated that approximately 90% of the infants are likely to be breastfed. Thus, keeping the approximate estimate of parameters as 90% ($p=0.9$, $q=0.1$) and with a view to estimate the parameter within a 95% confidence interval

of 85% to 95% (i.e. accepted deviation = 0.05) with a conventional alpha error of 5% the minimum sample size worked out on the basis of WHO guidelines [8] was calculated as 144. In fact, an even higher sample of 175 was actually studied to further increase the precision of the study. This sample was selected from the sampling frame by systematic random sampling method, starting from a randomly selected point.

Exclusion criteria :

- (a) Families who were not of personnel posted to that area but were rather casual visitors (came on temporary duty/leave/staying in separated family accommodation).
- (b) Families who could not be contacted despite three repeated visits. In such cases, the next family in the list of sampling frame, which fulfilled the inclusion criteria, was taken up.

Instruments and techniques :

A questionnaire was developed, based on advice of experts in the faculty as well as published texts [9,10]. The questionnaire was pre-tested and suitably modified through a pilot study. The data was collected using "personal interview technique", the respondent in all cases being the mother of the child. Interview was undertaken in the presence of another lady, after establishing rapport with the subjects, and assuring them of confidentiality.

Results

Socio demographic profile of the study population :

A large proportion of the mothers (46.28%) belonged to the age group 25-29 years, followed by 44.57% in the age group 20-24 years while 9.15% belonged to the 30 years and above age group. A large proportion of the mothers (87.4%) were Hindus; Muslims, Christians and Sikhs together accounting for only 12.6% of the study population. 22.8% and 28.6% of the mothers, respectively, were educated upto primary school or secondary school level, while

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28% were either graduates (21.1%) or postgraduates (6.9%). Only a small minority (4.6%) of the mothers were illiterate. 79.6% of mothers were wives of Other Ranks (OR) or Non Commissioned Officers (NCOs). Mothers who were 1st para and 2nd para constituted 34.86% and 44.57% respectively of the study population, while mothers with higher parity constituted a relatively small proportion of the study population. Majority (80%) of the mothers had spent their childhood in rural area while 20% of the mothers had spent their childhood in urban area. It was also observed that out of the 175 subjects studied, 172 (98.78%) had successful lactation while the remaining 3 experienced problems in lactation. The average duration of breast feeding was observed to be 11.14 months (SD 6.37 months)

Lactational amenorrhoea :

The mean duration of lactational amenorrhoea was 6.24 months with a standard deviation of ± 3.25 months. It was observed that out of those mothers who had lactational amenorrhoea for < 4 months, the highest proportion were those mothers who had practised exclusive breast feeding for < 4 months (32.07%), followed by those mothers who had practised exclusive breast feeding for 4-6 months (28.3%). On the other hand, out of those mothers who had lactational amenorrhoea for 4-6 months or > 6 months, the highest proportion were those mothers who had practised exclusive breast feeding for 4-6 months (64.91% and 47.69% respectively), followed by those mothers who had practised exclusive breast feeding for 6-12 months (17.54% and 36.92% respectively). It therefore seems that mothers who practised exclusive breast feeding for 4-6 months or > 6 months were more likely to have longer duration of lactational amenorrhoea as compared to mothers who practised exclusive breast feeding for < 4 months. The difference was statistically highly significant ($p < 0.01$) (Table 1).

Table 1

Practice about duration of exclusive breast feeding and its association with return of menstruation in the mother

Return of menstruation in the mother (months)	Duration of exclusive breast feeding (months)				Total %
	<4	4-6	6-12	>12	
< 4	17 (58.62%)	15 (18.07)	12 (26.09)	9 (52.94%)	53 (30.26%)
4-6	6 (20.69)	37 (44.55%)	10 (21.74%)	4 (23.53%)	57 (32.57%)
> 6	6 (20.69%)	31 (37.35%)	24 (52.17%)	4 (23.53%)	65 (37.14%)
Total (%)	29 (100%)	83 (100%)	46 (100%)	17 (100%)	175 (100%)

$\chi^2 = 27.67$; $df = 6$; $p < 0.001$ (highly significant)

Duration of exclusive breast feeding and its association with health status of the child :

The findings are presented in Table 2 and 3.

It was observed that out of the 175 children studied, 144 (82.29%) had 3 episodes per year of upper respiratory tract

Table 2

Practice about duration of exclusive breast feeding and its association with number of episodes of upper respiratory tract infection per year in the child

Duration of exclusive breast feeding (months)	No of episodes of upper respiratory tract infection per year		Total (%)
	< 3	> 3	
< 4	19 (13.19%)	10 (32.20%)	29 (16.97%)
4-6	76 (52.78%)	7 (52.58%)	83 (47.43%)
6-8	24 (16.67%)	67 (19.31%)	30 (17.14%)
> 8	25 (17.36%)	8 (25.81%)	33 (18.86%)
Total (%)	144 (100%)	31 (100%)	175 (100%)

$\chi^2 = 11.58$; $df = 3$; $p < 0.01$ (highly significant)

Table 3

Practice about duration of exclusive breast feeding and its association with number of episodes of acute gastroenteritis per year in the child

Duration of exclusive breast feeding (months)	Number of episodes of acute gastroenteritis		Total (%)
	< 3	> 3	
< 4	10 (7.14%)	19 (54.29%)	29 (16.57%)
4-6	78 (55.71%)	5 (14.24%)	83 (47.43%)
6-8	24 (17.15%)	6 (17.14%)	30 (17.14%)
> 8	28 (20.0%)	5 (14.28%)	33 (18.86%)
Total (%)	140 (100%)	35 (100%)	175 (100%)

$\chi^2 = 63.52$; $df = 3$; $p < 0.001$ (highly significant)

infection, 29 (16.57%) had 3 to 6 episodes per year of upper respiratory tract infection, while 2 (1.14%) had > 6 episodes per year of upper respiratory tract infection. Besides this, of the 175 children studied 140 (80%) had < 3 episodes per year of acute gastroenteritis, 34 (19.2%) had 3-6 episodes per year of acute gastroenteritis and 1 (0.58%) had > 6 episodes per year of acute gastroenteritis.

It is seen from Table 2 that out of those children who suffered < 3 episodes per year of upper respiratory tract infection, the highest proportion were those who had been exclusively breast fed for 4-6 months (52.78%), followed by those who were exclusively breast fed for > 8 months (17.36%). On the other hand, out of those children who suffered > 3 episodes per year of upper respiratory tract infection the highest proportion were those who were exclusively breast fed for < 4 months (32.26%). From the findings of Table 3, it seems that those children who have been exclusively breast fed for 4-6 months are likely to be well protected and suffer from lesser episodes per year of upper respiratory tract infection as compared to those who have been exclusively breast fed for < 4 months. The difference was statistically highly significant ($p < 0.01$).

It is also seen from Table 3, that out of those children who suffered < 3 episodes per year of acute gastroenteritis the highest proportion were those who had been exclusively breast fed for 4-6 months (55.71%). It was also seen that out of those children who suffered > 3 episodes per year of acute gastroenteritis the highest proportion were those who had been exclusively breast fed for < 4 months (54.29%).

From the findings of Table 3, it therefore seems, that children who have been exclusively breast fed from 4-6 months are well protected and likely to suffer much less from acute gastroenteritis as compared to children who have been exclusively breast fed for < 4 months. The difference was statistically highly significant ($p < 0.001$).

Discussion

Vestermarck et al, in 1994, in their study conducted on a Danish sample of 361 mothers, established a significant correlation between breast feeding and the duration of post partum amenorrhoea. However, lactation for more than 9 months did not extend the period of amenorrhoea [11].

Suvarna Devi et al, in 1980, carried out a study on 460 children ranging from 3 months to 1-1/2 years age and observed that the incidence of respiratory tract infections was less in entirely breast fed infants as compared to those who were artificially fed. The workers found that duration of entirely breast feeding was significantly associated with number of spells of respiratory tract infections [12].

Molbak Kare et al in 1994 from their study conducted on children in Guinea Bissau found that breast feeding had protective effect against diarrhoea in infants [13]. Kumar et al in 1981 in their study conducted in privileged urban and underprivileged rural areas also had similar observations. The workers found that diarrhoea was less common amongst the breast fed infants ($p < 0.001$), more so during the first four months of age [14].

Datta Banik in 1975 found that the proportion of successful lactation was 97.3% [6]. On the other hand, Sjolín et al in 1977 conducted a study in Sweden and found that the proportion of successful lactation was only 39.5% [15]. The difference in the findings may be due to different sociocultural beliefs and practices among mothers studied in two studies.

Huffman et al in 1980, carried out a study in rural Bangladesh and found that median duration of breast feeding was 3 months [16]. The difference between this and the present studies may be because of different sociocultural beliefs and practices among mother studied in the two studies.

From the findings of the present study it is clear that exclusive breast feeding does have a significant protective role in preventing childhood respiratory and gastrointestinal infections, besides having a positive influence by prolonging the duration of lactational amenorrhoea. However, there is also the observation

that correct habit of exclusive breast feeding for 4-6 months is present in only 50% of the mothers in Armed Forces settings (83 out of 175). The remaining ladies exclusively breast feed their babies for either too short or too long periods. This aspect needs to be addressed in the preventive programme directed towards maternal and child health care in the Armed Forces.

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