Selected determinants and sequelae of exclusive breastfeeding up to six months among infants attending chosen well baby clinics in the Colombo District

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Abstract

Objectives To ascertain determinants and impact of the duration of exclusive breastfeeding (EBF) for four to six months on growth and incidence of respiratory tract and diarrhoeal infections

Design and setting A descriptive cross-sectional study of infants aged 4-6 months, visiting selected well baby clinics in Colombo.

Measurements An interviewer administered questionnaire to determine duration and determinants of EBF and incidence of infections was used. Growth faltering was ascertained by perusing the growth chart.

Results The EBF rate for 4 months and beyond was 52.1% with only 3.6% being exclusively breastfed for 5 months and none for 6 months. 61% attending hospital clinics had EBF for 4 or more months as compared to 42% at community clinics. Higher level of maternal education, EBF of earlier child for longer duration, greater number of antenatal clinic visits, hearing the optimal duration of EBF via media, being well instructed on expressed breast milk and Caesarean section delivery were positively associated with EBF of 4 months and beyond. Being underweight for age (<3rd centile) was significantly associated with longer periods of EBF, although growth faltering was not. There was no significant association between the duration of EBF and incidence of respiratory or diarrhoeal infections.

Conclusions The EBF rate for 4 months and beyond was poor, with field clinics faring worse than hospital clinics.

Introduction

The principal problem with regard to breastfeeding in Sri Lanka lies in the prevalence and duration of exclusive breastfeeding (EBF). Sri Lanka recommended EBF for 4-6 months at the time of the study with the exact duration being determined individually. Thus local policy differed from that of the WHO which recommended EBF for 6 complete months. The aim of this study was to identify factors conducive to prolonging EBF for upto 6 months and to ascertain the effect of EBF for upto 6 months on growth and infection among Sri Lankan infants.

Methods

This was a descriptive cross-sectional study. The study population included infants attending selected hospitals and field well baby clinics (WBC) in the Colombo District. All eligible infants aged 4-6 months who visited these clinics during the study period (20.08.2003 to 18.12.2003) were included. Infants with congenital anomalies, low birth weight, prematurity, serious disease or adopted/separated from their biological mothers were excluded.

Several WBC at the De Soysa Maternity Hospital, Castle Street Hospital for Women and Colombo South Teaching Hospital along with field clinics from the Dehiwela Medical Officer of Health (MOH) area were selected. 424 infants were studied.

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A structured interviewer-administered questionnaire was used to ascertain the duration and determinants of EBF and the incidence of respiratory tract and diarrhoeal infections in the preceding 3 months. Infants were weighed on Seca scales. The growth chart of the child health development record was used to determine the appropriateness of weight for age and occurrence of growth faltering. The duration of EBF was taken as from birth to the time when any substance (except medicine) other than breast milk was given. Coriander and '*rathakalke*' were not considered as medications. Twenty four hour recall of feeding was used as a cross check to confirm the validity of the duration of EBF.

Approval was obtained from the Ethical Committee of the Sri Lanka College of Paediatricians. Permission was obtained from the directors of the hospitals, paediatricians in the selected clinics and from the chief MOH, Dehiwela. Informed written consent was obtained from mothers who participated in the study.

Results

424 infants were studied. 215 (50.7%) were males. The number of infants from the hospitals was greater (54.2%) than from the field (45.8%). 52.1% had been exclusively breastfed for at least 4 complete months (48.8% for 4 and 3.3% for 5 months). No infant in this study had EBF for 6 complete months.

A higher proportion of infants attending hospital WBC had EBF for a longer duration. The difference was statistically significant ($p<0.001$). The duration of EBF was not significantly related to the ethnicity, religion, age or employment of the mother. It was also not significantly associated with family type, income or paternal occupation. The highest level of maternal education reached was significantly associated with the duration of EBF ($P=0.02$). Mothers who had studied in the advanced level class/ passed the advanced level examination had the longest duration of EBF. The shortest duration was seen in those with primary or no schooling. Secondary and higher education had an intermediate duration between advanced level and primary/no schooling.

A greater number of mothers who exclusively breastfed their previous child (where applicable) for at least 4 months, gave EBF to the index infant for a minimum of 4 months (statistically significant at $p<0.01$). A greater number of antenatal clinic visits was significantly associated with a longer duration of EBF ($p<0.05$). However, the majority of mothers had ceased EBF on the advice of the health worker (43%), while about 15% did so due to employment.

Table 1. **Duration of exclusive breastfeeding in relation to the clinic setting at which the infant was seen**

	Duration of exclusive breastfeeding in completed months							
	<4		4		5		Total	
	n	%	n	%	n	%	n	%
Community	113	58.2	77	39.7	4	2.1	194	100
Hospital	90	39.1	130	56.5	10	4.3	230	100

Table 2. **Duration of EBF and advice from the media**

	Duration of exclusive breastfeeding in completed months							
	<4		4		5		Total	
	n	%	n	%	n	%	n	%
Heard advice over media	141	42.0	181	53.9	14	4.2	336	100
Did not hear advice over media	62	70.5	26	29.5	0	0	88	100

Table 3. **Weight for age in relation to the duration of exclusive breastfeeding**

	Duration of exclusive breastfeeding in completed months							
	<4		4		5		Total	
	n	%	n	%	n	%	n	%
Weight appropriate for age	201	99.0	204	98.6	12	85.7	417	98.3
Weight not appropriate for age	2	1.0	3	1.4	2	14.3	7	1.7

70.5% of mothers who did not hear advice over the media exclusively breastfed for less than 4 months, while all those who exclusively breastfed for 5 months had heard such advice (Table 2). This difference was significant ($p<0.001$). The television and radio were the media from which the majority of mothers received this information. Caesarean section was associated with a longer duration of EBF, while those with normal vaginal deliveries had the shortest duration. This difference was statistically significant ($p<0.05$). However, there was no significant relationship between the duration of EBF and the length of hospital stay following delivery ($p>0.05$).There was no significant association between the duration of EBF and the time of first breastfeed after delivery or the technique of breastfeeding being shown ($p>0.05$).

Being shown how to extract breast milk, store it and feed the baby using a cup or spoon was considered as the complete advice. 60.7% of those who received complete instructions exclusively breastfed their children for 4 months and beyond, compared to 44.4% who did not.

Infants who had EBF for longer weighed less than the expected for age (Table 3). This was statistically significant ($p<0.01$).

Incidence of respiratory tract infections was inversely related to the duration of EBF, but failed to reach statistical significance ($p>0.05$). The incidence of diarrhoea was also inversely related to the duration of EBF with no infant having EBF for 5 months suffering from diarrhoea, but this association did not reach statistical significance.

Discussion

It was found that only 52.1% of the infants studied were exclusively breastfed for even the minimum recommended period of 4 months. Only 3.6% were given EBF for 5 months and none for 6 months. This was inspite of the national policy at that time to do so for 4-6 months. This was an eye-opener to the fact that the message to EBF beyond 4 months had permeated very poorly, at least to the target group in the Colombo District. These findings are similar to those of the Demographic and Health Survey, which showed EBF rates of infants aged 0-1 month as 83.9%, 2-3 months 65.0%, 4-5 months 8.4% and 6-7 months 0.0% [1]. Only 42% of infants attending field WBC had EBF for at least 4 months while this rate was 61% for hospital WBC. This is unfortunate as health-related behaviour should originate and predominate at grass-root level and not be limited to higher referral points of the healthcare system. The commonest reason cited for discontinuation of EBF in this study was advice by health workers. This may be due to poor updating of knowledge on recommended practices at field level. Maternal employment was the second commonest cited reason for cessation of EBF.

A significant association between the duration of EBF of the previous and index child was seen. Thus, as mothers tend to repeat practices, correct feeding practices must be promoted and established at the earliest. Receiving advice over the media was significantly associated with duration of EBF. This implies that the media should be used to advocate correct practices.

An unusual finding in this study was the association of caesarean delivery with longer duration of EBF. As there was no significant association between period of hospital stay or maternal age with the duration of EBF, this finding was difficult to interpret. However, it has been seen that breast fullness occurred earlier following caesarean delivery, while milk production was significantly less after stressful deliveries [2].

The prevalence of infants underweight for age increased significantly with longer durations of EBF in this study. Despite a downward trend in weight-for-age percentiles, growth is satisfactory in EBF infants [4]. In this study too, there was no significant growth faltering with longer periods of EBF. This supports the view that reevaluation of energy and protein intake and allowances in infancy is merited [4]. The lack of a significant association between the period of EBF and incidence of respiratory and diarrhoeal infections in this study could be due to the dearth of mothers giving EBF beyond 4 months (3.6%).

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Correction

Fernando AD, Karunasekera W. Juvenile victimization in a group of young Sri Lankan adults. 2009; **54**: 80-4.

Page 84, final paragraph, second sentence should read as:

"Because longterm effects of childhood maltreatment could have an effect on educational outcome, our sample, which consisted of university undergraduates, could be considered biased, and it would be interesting to see whether the prevalence rates are higher in the community".