Counseling on breast feeding: effectiveness of an educational intervention for health workers, in promoting breast feeding practices in the community

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Abstract

Objective: To assess the effectiveness of an intervention on knowledge and practices on breast feeding among mothers in the community and on practices at institutions.

Methodology: A quasi experimental study design was used. One of the two 'health areas' where baseline data on breast feeding practices were available, was identified as the 'study area' and the other, the 'control'. Two Base Hospitals were identified, one as the 'study hospital' and the other, the 'control'. The intervention aimed at training field and institutional health staff along with the provision of supplementary reading material to mothers, was implemented in the 'study' area and the 'study' institution. A post intervention assessment on knowledge and practices was made, six months later.

Results: During the post intervention phase, an increase in the exclusive and predominant breast feeding rate was seen with a reduction in the bottle feeding rate. There was an improvement in the knowledge especially regarding the assessment of adequacy of breast milk with the percentage of mothers with correct knowledge increasing eightfold. Improvements in the institutional practices were significant.

Conclusion: The intervention was effective in improving the knowledge and practices related to breast feeding among mothers at community level and in the institutional practices.

Key words: educational intervention, breast feeding practices

Introduction

Factors that have an influence on how women feed their infants and the length of time they breast feed have been expensively reviewed (1,2). Maternal employment (3), influence of family and husband (4), antenatal education (5), practices in the early neonatal period (6) have all been shown to influence breast feeding practices. The role of health workers in promoting breast-feeding practices has been well documented and the important negative influence of inadequate knowledge among health workers and their unhelpful attitudes have been reported (7,8).

Appropriate training of health workers both basic and in-service, is an essential requirement to improve their ability to promote proper breast-feeding practices. In recent years, much emphasis has been paid to develop such training programmes, which resulted in the development of the 'Breast feeding Counseling course', by UNICEF/WHO (9). In 1999, Rea et al (10) reported that this course has effectively increased the health workers knowledge and their clinical and counseling skills for the support of breast-feeding.

In Sri Lanka, the state is the main provider of health services and the promotive and preventive health services including maternal and child health services are provided though geographically defined areas referred to as 'health areas', with a defined population. The Medical Officer of Health and several categories of field level health workers provide services through domiciliary visits and field level clinics. The Public Heath Midwife (PHM) is the key grass root level health worker responsible for maternal and child health services. The curative health services are provided through institutions spread throughout the country ranging form the Teaching Hospitals at the highest level to Central Dispensary/Maternity Homes at the lowest. At present, over 90 percent of all deliveries take place in state sector institutions (11). Thus, both field health staff mainly the PHM and institutional staffs providing natal care and early postnatal care have an important role to play in promoting breast feeding practices. A study carried out in 14 out of the 24 districts in Sri Lanka, highlighted the need for improvement of antenatal education and postnatal practices in institutions (12).

The expected outcome of training of health workers in breast feeding counseling was to improve practices at the community level. The present study was carried out with the objective of assessing the effectiveness of an intervention based on the UNICEF/WHO BF Counseling course for health workers

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Table 1 : Percentage change in infant feeding practices in the study and control areas – pre and post intervention

Indicator	Study area				Control area			
	Pre % N=276	Post % N=247	% difference	Statistical significance	Pre % N=276	Post % N=247	% difference	Statistical significance
Exclusive BF rate	62.9 (n=188)	75.0 (n=161)	+12.1	2.469 p<0.01	62.7 (n=168	62.8 (n=165)	+0.1	0.024 NS
Predominant BF rate	7.8	90.0	+12.2	3.173 p<0.05	73.8	75.0	+1.2	0.013 NS
Bottle feeding rate	31.0	8.9	-22.1	6.809 p<0.0001	52.1	34.4	-17.7	4.143 p<0.001
% of infants who received AF	15.5	1.2	-14.3	6.447 p<0.0001	25.3	23.5	-1.8	0.478 NS
% of infants completely stopped BF before 6 months	2.03	0.08	1.95	-2.321 p< 0.05	0.72	3.8	+3.08	3.026 p<0.01

* indicates differences that are significant at p <0.05

Table 2 : Percentage change in practices promoting breast feeding practices in study and control areas – pre and post intervention

Indicator	Study area				Control area			
	Pre % N=295	Post % N=247	% difference	Statistical significance	Pre % P=276	Post % P=245	% difference	Statistical significance
First feed initiated within 1hour	72.2	91.0	+25.8	5.910 p<0.0001	74.2	80	+5.8	1.581 NS
Breast milk given as first feed	93.2	97.1	+4.18	2.151 p<0.05	93.8	94.5	+0.7	0.34 NS
Colostrum feeding practiced	86.7	97.1	+11.9	4.628 p<0.001	89.7	90.3	+0.6	0.228 NS
Antenatal education given	90.8	100	+9.2	5.467 p<0.001	90.5	92.3	+1.8	0.734 NS
Post natal education given	74.2	98.7	+24.5	9.254 p<0.0001	78.2	83.1	+4.9	1.420 NS

* indicates differences that are significant at p <0.05

Table 3 : Percentage change in mothers' knowledge on selected aspects of breast feeding

	Study area				Control area			
	Pre % N=276	Post % N=247	% difference	Statistical significance	Pre % N=276	Post % N=247	% difference	Statistical significance
Correct duration of exclusive BF	73.4	94.3	+20.9	7.048 p<0.001	70.3	68.4	-2.2	0.469 NS
Age of commencing complementary foods	70.3	84.2	+13.9	3.937 p<0.001	72.6	78.9	+6.3	1.684 NS
BM Reduces incidence of diarrhoea	89.4	97.9	+8.5	4.226 p<0.0001	90.5	88.7	-1.8	0.671 NS
Frequent suckling improves BM supply	78.0	90.0	+12.0	3.901 p<0.0001	81.3	84.0	+2.7	0.814 NS
Demand feeding will improve BM supply	56.6	60.0	+3.4	0.803 NS	63.4	62.5	-0.9	0.212 NS
Knowledge on correct positioning and attachment	60	80	+20.0	5.232 p<0.001	59.1	53.8	-5.3	1.219 NS
How to assess adequacy of breast milk	5.2	42	+36.8	10.836 p<0.0001	2.7	5.8	+3.1	1.738 NS
Knowledge on lactation during pregnancy	15.4	60.0	+44.6	1.864 p<0.0001	11	16.3	+5.3	1.755 NS

* indicates differences that are significant at p <0.05

Table 4 : Percentage change in hospital practices during the early post natal period

Indicator	Institutions in the study area				Institutions in the control area			
	Pre % N=35	Post % N=40	% difference	Statistical significance	Pre % N=30	Post % N=28	% difference	Statistical significance
Skin contact within the first half our of birth	15.7	50.0	+34.7	3.425 p<0.01	11.5	10	-1.5	0.185 NS
Breast feeding during the first hour	39.4	56.0	+16.6	1.457 NS	34.6	35	+0.4	0.032 NS
Given prelacteal feeding	13.1	2.0	-11.1	1.814 NS	11.5	13	+1.5	0.174 NS
Removal of colostrum	18.4	3.0	-15.4	2.174 p<0.05	19.2	15	-4.2	0.426 NS
Use of bottle and teats	15.0	3.0	-12.0	1.815 NS	11.5	14	+2.5	0.285 NS
Practice of correct positioning of baby at breast	18.4	70	+51.6	5.283 p<0.0001	15.3	20	+4.7	0.469 NS
Practice of correct attachment	21.0	72	+61.0	5.157 p<0.0001	15.3	22	+6.7	0.655 NS

* indicates differences that are significant at p <0.05

supplemented by printed material distributed to mothers during educational programmes conducted by field health staff, on the breast feeding practices at the community level.

Methodology

The study was carried out in Gampaha district, one of the 24 districts in Sri Lanka with a population of approximately 2,066,000. Available institutional facilities included one Teaching Hospital, 3 Base Hospitals (intermediate level hospitals), 5 District Hospitals, 3 Peripheral Units and 6 Rural Hospitals, the latter three categories of institutions providing primary medical care. For provision of preventive and promotive health services the district is divided into 14 'health areas'.

A baseline study has been carried out in the study area to assess the pattern of breast feeding and factors influencing breast feeding. This study included a sample of 1075 mothers with children under one year of age and an assessment of knowledge and practices related to breast feeding among field staff and institutional staff (13). Using the findings of the baseline study, an educational intervention aimed at field health workers and those in the institutions was planned based on the Guidelines for the WHO/UINCEF Breast Feeding (BF) Counseling Training Programme (9). In addition, a series of booklets providing information to mothers was developed to be given to mothers during educational activities by field health staff.

A quasi experimental study design with a non equivalent control was used to study the effectiveness of the intervention which aimed at improving breast feeding practices in the community through updating knowledge and practices of field health staff and institutional staff.

One of the two health areas in which the baseline study was carried out was identified as the study area (population -120,000 approximately) and the other as the control area (population -125,000 approximately). One Base Hospital was identified for the intervention as the 'study' hospital and another as the 'control'. The educational intervention was carried out for field health staff (22 PHMs) and for institutional staff (20 nurses and midwives).

Printed material providing basic information relevant to breast feeding was distributed to mothers by field health workers during the antenatal and postnatal educational programmes.

An assessment of knowledge and practices related to breast feeding was carried out six months after the intervention. The sample size was calculated based on the prevalence of breast feeding observed during the baseline study and the expected changes in the breast feeding practices. Mothers to be included in the study were identified using the same stage sampling procedure adopted in the baseline survey. A total of 247 mothers were included from the study area and 245 from the control area. In the institutions, observations made by one author (CAJ). The same study instruments were used in the baseline (pre intervention) and the post intervention assessments. The effectiveness of the intervention was assessed by comparing the findings of the pre-intervention and post intervention surveys.

Results

Table 1 presents the changes in the breast feeding practices in the study and control areas before and after the intervention.

Improvements seen in the exclusive breast feeding rate and the predominant breast feeding rate were significantly higher in the study area compared to the control area. The bottle-feeding rate showed a decline in both areas, the decline being more marked in the study area. Following the intervention, there was a decline in the small percentage of infants who received artificial feeding during the first six months in life, in both areas.

As shown in Table 2, the practices that promote breast feeding as reported by mothers (the first feed being breast milk and given within one hour, giving colostrum) have shown an increase in the study area, following the intervention. Some improvements in these practices were observed in the control area too, though not statistically significant. The percentage of mothers who received education during the antenatal and postnatal periods shows an increase, especially postnatal education. This percentage was significantly higher in the study area.

In general, there is a marked improvement in the knowledge on breast feeding among mothers in the study area (Table 3). There was a marked improvement in the knowledge of

mothers regarding the assessment of adequacy of breast milk. Following the intervention, the percentage of mothers with correct knowledge increased from 5.2 to 42 percent. This observation is of special importance as a common reason given by mothers for introduction of artificial milks is 'not having enough milk'.

The institutional data on practices during the early postnatal period were based on the observations made by one of the authors (CAJ). Significant improvements were seen in practices promoting breast feeding i.e. early skin contact, breast feeding during the first hour after birth, correct positioning and attachment (Table 4). A decline in the negative practices such as giving prelacteal feeds were also seen.

Discussion

In assessing the effectiveness of the intervention, information in the study and control areas were obtained from surveys conducted in separate samples of mothers identified from the two areas using the same sampling procedure as the baseline study. This approach eliminated any influence that the pre intervention assessment may have made on the post intervention assessment (14). The observational component of the study at institutions was carried out by the same investigator, to minimize inter-observer bias.

There was a significant improvement in seen in the breast feeding practices and the practices that promoted breast feeding, in the study area during the post intervention assessment. The control area also showed some improvements e.g. reduction in bottle feeding rate which may be due to other inputs aimed at promotion of breast feeding that are on-going (14). However, the significant improvements seen in the study area indicates the positive influence of the intervention on breast-feeding practices.

The main component of the intervention was training of health workers (field and institutional) with emphasis on how to solve problems on lactation management. In addition, booklets providing information to mothers were distributed to the mothers, by field health workers during their educational activities. It is likely that the availability of written material in the house had an additional spin off effect on the other members of the household, thus contributing to promotion of beast feeding practices.

A study conduced in Brazil has shown that training programs based on training guide for beast feeding counseling - 40 hour training course (9) had a positive influence on improving the knowledge of health workers (10). The present study has shown that such training with the additional input of documentation provided to mothers by field health workers has had a positive influence on the knowledge and practices on breast feeding, at the community level.

In a population with a high literacy rate of 86 percent (15), as among Sri Lanka women, provision of booklets would serve as an additional input to any educational activities undertaken by health workers. It must be noted that provision of documents was through the field health workers who had to take the initiative to educate the pregnant women and postnatal women on breast feeding, hence could be considered as an additional input, promoted by the health workers.

Application of an intervention is based on the ability to introduce such a programme through the usual system of service provision, with minimal inputs and disruption of the services. The study also identified that it is feasible to introduce an in-service training program based on the UNICEF/WHO course, through the existing services

Acknowledgements

We wish to thank UNICEF Sri Lanka for financial assistance for this study.

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