

# Feeding Practices of Infants Delivered in a District Hospital During the Implementation of Baby Friendly Hospital Initiative

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## Summary

A study on infant feeding practices was conducted during the implementation of the Baby Friendly Hospital Initiative (BFHI) in a district hospital. The aim was to identify which population subgroups had lower breastfeeding rates at 4 months and the effect of attendance of antenatal breastfeeding education on breastfeeding practices. All infants delivered in May 1996 were followed-up. 204 respondents were analyzed. This study demonstrated a higher exclusive and any breastfeeding rates at 4 months than some other studies. (48% and 76% respectively). It was found that the Malays were more likely to be breastfeeding exclusively at 4 months (72%) than the Indians (32%) and the Chinese (4%). ( $P < 0.01$ ). There were more non-working mothers breastfeeding exclusively at 4 months than working mothers. (60% versus 26%)  $P < 0.01$ . Antenatal breastfeeding education in the form that was given appeared to improve breastfeeding rates at 4 months. Future efforts to promote breastfeeding should target the Chinese mothers and the working mothers.

**Key Words:** Feeding practices, Exclusive breastfeeding, Breastfeeding, Baby Friendly Hospital Initiative (BFHI), Malaysia

## Introduction

The Baby Friendly Hospital Initiative (BFHI) was launched by the World Health Organization (WHO) and the United Nations Children's Funds (UNICEF) in 1991. It is a global effort sponsored by WHO and the UNICEF to promote, protect and support breastfeeding. A Baby Friendly Hospital will encourage and help women to breastfeed their babies by adopting the "Ten Steps to Successful Breastfeeding"<sup>1</sup>. Children should be exclusively breastfed for the first four to six months of life, and a complementary diet of foods and breastmilk should be given past the child's second birthday<sup>1</sup>. Hospital Seri Manjung (HSM) started implementing

the BFHI in July, 1995. The measures taken included the adoption of "The ten steps to successful breastfeeding" and the refusal of samples of breastmilk substitutes by the hospital as required in the Code of Ethics for infant formula products by the Ministry of Health<sup>2</sup>. This study carried out 10 months after implementing the BFHI, was aimed at finding out the feeding practices of infants delivered in HSM during this period. It was also aimed to identify the population subgroups that had lower breastfeeding rates at 4 months and the effect of attendance of antenatal breastfeeding education on breastfeeding practices. It could also provide baseline data for future comparison.

## Materials and Methods

Hospital Seri Manjung (HSM) is a new district hospital serving a population of 200,000 in the district of Manjung, Perak. The ethnic distribution of the population of Manjung is Malays 50%, Chinese 34%, Indians 14% and Others 2%<sup>3</sup>.

There is an Armed Forces Hospital at the Naval Base in Lumut, 12 kilometers away, which caters for the families of Navy personnel. During the period of this study, many of the wives of the Navy personnel delivered in HSM but the infants were subsequently followed up at the Armed Forces Hospital for immunization.

All infants delivered in HSM in the month of May 1996 were included in the study. A standard questionnaire was given to the mother on discharge from the post-natal ward. Nursing staff from the government Health Centres in the district of Manjung and staff from the Armed Forces Hospital, Lumut where mothers bring their infants for immunization were briefed on the study. Some of these staff had undergone the 18-hour lactation management course recommended for all health care workers<sup>4</sup> while the rest had been briefed on the study. When infants were brought to the clinics for immunization, health staff recorded the type of infant feeding practices: (a) Exclusive breastfeeding (EBF) means no food or drinks other than breast milk; (b) Mixed feeding (MF) means breastfeeding and formula feeding; and (c) Exclusive formula feeding (EFF) means formula feeding alone. These questionnaires were collected for analysis after 2 years. Mothers who were lost to follow up were interviewed using another standard questionnaire by home visits or telephone interview. Questionnaires with incomplete data were excluded from the analysis. Patients who had moved or transferred out of the district were excluded from the study. At the end of the 2 years, the data was examined and it was found that there was a lot of missing data. Data was most complete at 4 months, therefore analysis was only carried out at this time. The data were analyzed using the statistical software Epi Info version 6.04. Categorical data was expressed as odds ratio (OR) with 95% confidence intervals (CI). Significant level was considered at P value of <0.05.

## Results

There were 324 deliveries in HSM in May, 1996. The ethnic breakdown was Malays 192 (59%), Chinese 63 (20%), Indians 58 (18%) and others 11 (3%). After two years, 119 forms were collected back from the participating Health Centres. Of these only 104 had complete data. Based on the addresses in the delivery book, home visits were done on another 95 mothers. Five other mothers were interviewed by telephone. A total of 204 respondents (63% of deliveries) were suitable for analysis at the end of the study period. Of the 204 respondents, 116 (57%) were Malays, 47 (23%) were Chinese and 21 (19%) were Indians, 2 (1%) were Others. There was no statistical significant difference between the ethnic distribution of the 324 deliveries and the 204 respondents. (Malays: P=0.64; Chinese: P=0.42; Indians: P=0.73)

All subsequent analysis was based on the 204 complete respondents. All mothers in our study were breastfeeding exclusively when mothers and babies were discharged from HSM.

At 4 months, 76% of the mothers who delivered in HSM were breastfeeding, of whom 48% were breastfeeding exclusively while 28% were giving mixed feeding. (See Table I)

Table I also shows the feeding practices of different ethnic groups at 4 months. There was a great difference in the exclusive breastfeeding rates among the different ethnic groups. At 4 months, 72% of the Malay mothers were breastfeeding exclusively compared to 31% for Indian mothers and 4% for Chinese mothers (P < 0.01).

As for any breastfeeding practices (exclusive breastfeeding and mixed feeding) at 4 months, the pattern was the same as exclusive breastfeeding. More Malay mothers breastfed at 4 months (95%) followed by Indian mothers (69%) and Chinese mothers (36%) (P < 0.05).

Table II shows the feeding practices at 4 months of working mothers and non-working mothers. Non-working mothers were more likely to breastfeed exclusively at 4 months compared to working mothers. (60% versus 26%). (OR = 4.27, 95% CI 2.25-8.15, P < 0.001). However, for any breastfeeding, there was no

**Table I**  
**Feeding practices of different ethnic groups at 4 months**

	Malays (%)	Chinese (%)	Indians (%)	Others (%)	Total (%)
EBF	83 (72)	2 (4)	12 (31)	1 (50)	98 (48)
MF	27 (23)	15 (32)	15 (38)	1 (50)	58 (28)
EFF	6 (5)	30 (64)	12 (31)	0 (0)	48 (24)
Total	116 (100)	47 (100)	39 (100)	2 (100)	204 (100)

EBF: Exclusive breastfeeding

MF: Mixed feeding

EFF: Exclusive formula feeding

**Table II**  
**The feeding practices at 4 months of working and non-working mothers**

	Working mothers (%)	Non-working mothers (%)	Total (%)
EBF	17 (26)	78 (60)	95 (48)
MF	28 (42)	27 (20)	55 (28)
EFF	21 (32)	27 (20)	48 (24)
Total	66 (100)	132 (100)	198* (100)

\*The working status of six mothers was not known.

statistically significant difference. (OR=1.88, 95% CI 0.94-3.78; P=0.053)

The ethnic compositions of working and non-working mothers and their feeding practices at 4 months were shown in Tables III and IV. Stratified analysis of the data after adjusting ethnicity as the confounding factor showed that there was statistical significant difference in exclusive breastfeeding rates among working and non-working mothers. (OR=0.24, 95% CI 0.08-0.46, P<0.001) However, there was no statistical significant difference for any breastfeeding among working and non-working mothers. (OR=0.78, 95% CI 0.32-1.84, P=0.65)

Table V shows the feeding practices at 4 months of mothers who attended or did not attend a breastfeeding talk antenatally, either at HSM or any Health Centres. The difference in exclusive breastfeeding between these two groups was not significant. (OR=1.54, 95% CI 0.62-3.91; P=0.311). The difference in any breastfeeding between these two groups was also not significant. (OR=1.43, 95% CI 0.53-3.83; P=0.434).

The ethnic composition of mothers who attended or did not attend antenatal talks on breastfeeding and their feeding practices at 4 months was shown in Table VI. Stratified analysis of this data after adjusting ethnicity as the confounding factor showed that there was significant difference in breastfeeding at 4 months between mothers who attended or did not attend antenatal talks on breastfeeding. (OR=4.58, 95% CI 1.15-26.13; P=0.03)

### Discussion

This study shows that breastfeeding at 4 months was suboptimal in Chinese and working mothers. Antenatal education in the form that was used appeared to improve breastfeeding rates at 4 months. We showed a higher exclusive breastfeeding and any breastfeeding rates at 4 months than some other studies done in Malaysia<sup>3,6,7,8</sup>.

A nation wide study in 1996 by the Public Health Institute showed the exclusive breastfeeding rate at 4 months was 29%<sup>6</sup>. A study in University Hospital, Kuala Lumpur by Chye et al<sup>7</sup> in 1996 showed an exclusive breastfeeding rate of 13% at 6 months. Kasim MS et al<sup>3</sup> from the Maternity Hospital, Kuala Lumpur, demonstrated that breastfeeding rate at 6 months was 26.5% in 1990-91. In other parts of the country, a study of 96 mothers (88/96 were Malays) in Kelantan by Yusof et al<sup>8</sup> showed 30% were exclusively breastfeeding at 6 months.

Our study also demonstrated a higher exclusive and any breastfeeding rates among the non-Malays than some other studies. Hoe et al<sup>9</sup> showed a breastfeeding rate of 7.7% for Chinese and 12.5% for Indians at 6 months in Kuala Lumpur. In the study by Kasim et al<sup>3</sup>, only 21% of the Chinese mothers were breastfeeding after 3 months. Sendut et al<sup>10</sup> demonstrated an exclusive breastfeeding rate of 3.8% for Chinese and 5.9% for Indians at 8 weeks during the implementation of BFHI. Chye et al showed an exclusive breastfeeding rate of 2% for Chinese and 15% for Indians at 6 weeks<sup>11</sup>.

**Table III**  
**The ethnic composition of working versus non-working mothers practicing exclusive breastfeeding at 4 months**

	Working mothers (%)		Non-working mothers (%)		Total (%)
	Exclusive breastfeeding	Not exclusive breastfeeding*	Exclusive breastfeeding	Not exclusive breastfeeding	
Malays	11 (65)	19 (39)	72 (89)	11 (22)	113 (57)
Chinese	1 (6)	19 (39)	1 (1)	25 (49)	46 (23)
Indians	5 (29)	11 (22)	7 (9)	14 (27)	37 (19)
Others	0 (0)	0 (0)	1 (1)	1 (2)	2 (1)
Total	17 (100)	49 (100)	81 (100)	51 (100)	198 (100)

\* Not exclusive breastfeeding included all mothers who gave mixed feeding and exclusive formula feeding.

**Table IV**  
**The ethnic composition of working versus non-working mothers and their feeding practices at 4 months**

	Working mothers (%)		Non-working mothers (%)		Total (%)
	Breastfeeding	Not breastfeeding	Breastfeeding	Not breastfeeding	
Malays	26 (60)	4 (17)	80 (78)	3 (10)	113 (57)
Chinese	8 (19)	12 (52)	7 (7)	19 (66)	46 (23)
Indians	9 (21)	7 (31)	14 (13)	7 (24)	37 (19)
Others	0 (0)	0 (0)	2 (2)	0 (0)	2 (1)
Total	43 (100)	23 (100)	103 (100)	29 (100)	198 (100)

**Table V**  
**The feeding practices at 4 months of mothers who attended or did not attend a breastfeeding talk antenatally**

	Attended talk (%)	Did not attend talk (%)	Total (%)
EBF	83 (49)	10 (38)	93 (48)
MF	46 (27)	8 (31)	54 (28)
EFF	40 (24)	8 (31)	48 (24)
Total	169 (100)	26 (100)	195* (100)

\*The attendance to antenatal talks for 9 mothers was not known

**Table VI**  
**The ethnic composition of mothers who attended or did not attend antenatal talks on breastfeeding and their feeding practices at 4 months**

	Attended talk (%)		Did not attend talk (%)		Total (%)
	Breastfeeding	Not breastfeeding	Breastfeeding	Not breastfeeding	
Malays	91 (70)	3 (8)	16 (88)	3 (38)	113 (58)
Chinese	14 (11)	26 (65)	1 (6)	3 (38)	44 (23)
Indians	23 (18)	11 (27)	0 (0)	2 (24)	36 (18)
Others	1 (1)	0 (0)	1 (6)	0 (0)	2 (1)
Total	129 (100)	40 (100)	18 (100)	8 (100)	195 (100)

Our breastfeeding rates were higher could be because we are more rural than Kuala Lumpur and the majority of our mothers were housewives. We looked at breastfeeding rates at 4 months while some of these studies looked at 6 months. The fact that breastfeeding rates were rising in the non-Malays might be because the BFHI had gained momentum and awareness of breastfeeding had risen. Efforts to promote breastfeeding were getting more intense in 1996 as it was the Ministry of Health's target to make all government hospitals baby friendly by the end of 1997.

This study shows a significant ethnic difference in the breastfeeding rates. The Malays showed the highest breastfeeding rates at 4 months (95%) followed by the Indians (69%) and then the Chinese (36%) ( $P < 0.05$ ). The exclusive breastfeeding rates showed a similar pattern ( $P < 0.01$ ). This pattern has also been shown in several other studies<sup>5, 6, 10, 11</sup>. An exception to this finding was seen in the study on infant feeding practices by doctors in Peninsular Malaysia by Krishnan et al<sup>12</sup>. It showed no difference in the prevalence of breastfeeding between the ethnic groups. He suggested that medical education probably overcame the bias against breastfeeding amongst the Chinese. This may suggest that health education may be able to eliminate social-cultural influences in the choice of infant feeding.

Studies had shown that non-working mothers breastfeed for a longer duration than working mothers<sup>13, 14</sup>. In this study, non-working mothers were 4.27 times more likely to breastfeed exclusively at 4 months compared to working mothers. (95% CI 2.25-8.15;  $P < 0.001$ ). However, for any breastfeeding, there was no statistical significant difference. (OR=1.88, 95% CI 0.94-3.78;  $P = 0.053$ ). The findings were similar after adjusting

ethnicity as the confounding factor. This finding could be due to the concept of exclusive breastfeeding being relatively new to our community at the time this study was conducted. Mothers may lack knowledge and support on expressing and storing expressed breastmilk (EBM). A study by Suleiman et al<sup>15</sup> confirmed the lack of facilities for breastfeeding mothers at the workplace.

In our study, attendance of antenatal breastfeeding talks appeared to improve breastfeeding rate at 4 months. Having adjusted ethnicity as the confounding factor, mothers who attended antenatal talks on breastfeeding were 4.58 times more likely to be breastfeeding at 4 months compared to mothers who did not. (OR=4.58, 95% CI 1.15-26.13;  $P = 0.03$ ) The mothers in our study attended the antenatal talks either in the Health Clinics or in HSM. The contents of the talk were based on step 3 in the Global Criteria for the BFHI. The talks were given by nurses who had undergone the 18-hour lactation management course. It was conducted in Malay with the help of flip charts, a breast model and a baby-sized doll. There was evidence that antenatal education was helpful and it should be given as early in pregnancy as possible<sup>16</sup>.

### Conclusion

In conclusion, this study shows that the breastfeeding practices were similar to those reported in other studies but the exclusive breastfeeding rate was higher. This might be due to the influence of the BFHI on breastfeeding. Antenatal breastfeeding education in the form that was used appeared to improve breastfeeding rates at 4 months. It would be useful to evaluate the impact of the BFHI on the infant feeding practices after it has been fully implemented and carried out for a certain period.

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