

## Socio-demographic Factors associated with Duration of Exclusive Breastfeeding Practice among Mothers in East Malaysia

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**Abstract:** Breastfeeding practice is common in Malaysia. However, sustaining the duration of exclusive breastfeeding (EBF) practice for up to 6 months as recommended by World Health Organization (WHO) is a problem for mothers. Numerous factors are associated with this good practice and one of the important ones is the socio-demographic factors. The study examined the association of socio-demographic factors and duration of EBF practice among mothers in Kuching, East Malaysia. A cross-sectional study among 159 mothers of children in the age group of 6 – 24 months through purposive sampling attending Maternal and Child Health (MCH) clinics in Kuching division was conducted between April and Mei 2009. Data was collected using a set of supervised self-completed questionnaire on EBF practice and mother's socio-demographic factors. Factors related to duration of EBF practice were analysed using logistic regression analysis. 88.1% of mothers reported that they initiated and breastfeed their child exclusively. Only 44.3% of mothers breastfeed their child exclusively till 6 months and the others were not. Being unemployed [AOR = 2.96, (95% CI: (1.44, 6.06))] and Pribumi mothers (Malays and others ethnic groups in Sarawak namely Bidayuh, Iban and Melanau) [AOR = 4.53, (95% CI: (1.41, 14.50))] were independently associated with duration of EBF practice. The prevalence of EBF practice in Kuching division was higher than the national figures. Employed mothers were less likely to practice EBF up to 6 months, implying the need for longer maternity leave and to provide privacy to nursing mother in work places. Chinese mothers need to give more attention and to educate on benefits of EBF practice up to 6 months.

**Key words:** Socio-demographic factors, duration, exclusive breastfeeding, practice.

### I. Introduction

Breastfeeding practice, especially given exclusively is one of the good practices that have the greatest potential to save child lives. In 2000, World Health Organization (WHO) commissioned a thorough review of published scientific literature on the optimal duration of exclusive breastfeeding (EBF) and the conclusions led to World Health Assembly (WHA) to recommend six months of EBF as a global public health recommendation (1). Breastfeeding is a key tool in improving child survival and EBF practice up to the first six months of life can avert up to 13 percent of under-five deaths in developing countries (2). Research showed that babies who are breastfed exclusively for 6 months experience fewer illnesses because breast milk contains nutrients and substances that protect the baby from several infections, some chronic disease and it leads to improved cognitive development (3).

Despite the demonstrated benefits of breastfeeding, prevalence and duration in many countries are still lower than the international recommendation of EBF for the first six months of life. The Healthy People 2010 Initiative had set the following goals, 75% of mothers to initiate breastfeeding, 50% of mothers to be EBF at 6 months, and 25% of mothers to be breastfeeding at 12 months (4). Most babies are not exclusively breastfed and globally, only 39% of babies breastfeed exclusively even in the first 4 months of life (5). In Singapore, the National Breastfeeding Survey in 2001 found about 94.5% of the mothers attempted breastfeeding, at 1 month 71.6% were still breastfeeding, 49.6% continued to do so at 2 months, and only 29.8% persisted till 4 months and by 6 months, the breastfeeding prevalence rate fell to 21.1% (6). The average EBF duration in Xinjiang, PR China was 1.8 months (7). In Al Hassa, Saudi Arabia, only 24.4% of infants were exclusively breastfed at the age of 6 months (8). Earlier studies in Malaysia indicated that the prevalence of ever breastfed were high (9-15). However, to maintain breastfeeding practice exclusively up to 4 and 6 months were not successful and the prevalence were low (11-15).

There were many studies regarding the breastfeeding practice which highlighted multiple factors influencing low rates of EBF till 6 months. To improve the duration of exclusive breastfeeding, it is important to first understand how these multiple factors influence breastfeeding practices. Among the factors hindering EBF practice up to the 6 months duration as recommended by WHO are socio-demographic factors. With a very few exceptions, all mother should be able to exclusively breastfeed their children as recommended. In this regard, there is a need to do the study among the mothers to understand mother's socio-demographic factors that could

be associated with the duration of EBF practice because they personally play a crucial role in determining the success of this practice. Therefore the objective of this study was to determine the prevalence of EBF practice among mothers in Kuching division, East Malaysia and the association between EBF practices with socio-demographic factors.

## **II. Materials And Methods**

The study was a cross sectional study design. Prior to data collection, the questionnaire was pre-tested on 30 sample of similar population. The survey was conducted in three Maternal and Child Health (MCH) clinics in Kuching district between April and Mei 2009 using a Malay language structured questionnaire. A purposive sampling was performed. The inclusion criteria were mothers who attended these 3 clinics during the study period, who were aged between 15 to 49 years old, had at least one child aged between 6 months to 2 years old, agree to participate in the study, able to speak, read and write in Malay language and has no obstetric complications, term, vaginal delivery with healthy baby for the youngest child who is more than 6 months old of age. The exclusion criteria were those mothers who attended these 3 clinics during the study period and who are aged below 15 years old and more than 49 years old and refuse to complete the questionnaire.

The mothers fulfilling the inclusion criteria were guided and supervised by the researcher and trained community nurses in each of MCH clinic in helping them to answer the questionnaire. The questionnaire included data on socio-demographic characteristics of the mother namely age, religion, ethnicity, status, household monthly income, parity (number of children) and education level. The definitions of exclusive breastfeeding used in this study was based on standard definitions by WHO (WHO/UNICEF 1992): Breastfeeding while giving no other food or liquid, not even water, with the exception of drops or syrups consisting of vitamins, mineral supplements or medicine. The duration of EBF practice was determined based on the above definition.

All data in the questionnaire were coded and entered into Statistical Package for the Social Sciences (SPSS) for Windows version 19.0. The dependent variable was duration of EBF practice. Descriptive statistic was generated for demographic factors. Univariate associations between socio-demographic factors and duration EBF practice were identified and multiple logistic regressions were used to construct the model to examine the independent association of socio-demographic factors to duration of EBF while simultaneously controlling for potential confounders. The statistical test used was binary logistic regression and the level of significance was set at  $p < 0.05$ .

The study was conducted with the approval from the University Malaysia Sarawak Ethical Committee, State Health Director of Kuching and Kuching Divisional Health Officer. In addition, permission of the officer's in charge from each of the clinic was also obtained. All the mothers included in the study were informed about the purpose of the study and were requested to give a written consent showing their approval for voluntarily participating in this study. The identities of the participants were kept confidential.

## **III. Results And Discussion**

### **3.1 Descriptive Analysis**

A total of 159 mothers were involved in this study. Table 1 shows the characteristic of the mothers. The mean (SD) maternal age was 28.4 (5.1) years. They were divided into 2 age groups. The first age group was within 15 to 30 years old (54.1%) and second age group was within 31 to 49 years old (45.9%). The majority of the participants were Pribumi which include Malays and others ethnic groups in Sarawak namely Bidayuh, Iban and Melanau (81.8%) followed by Chinese which were categorized as Non Pribumi (18.2%). From the religious aspect, most of the participants were Muslim (46.5%), followed by Christian (41.5%) and others religion (12.0%) and categorized as non-Muslim. All the subjects were married.

At the time of study, most of them had more than 1 child (69.8%) while the rest had only 1 child (30.2%). For the education level, most of them had completed their secondary school, some of them with high education level or tertiary and only a minority completed primary school. Those who manage to go to tertiary level of education were categorized under high education (27.7%) and the rest as low education (72.7%). Even though only 28% of the mother manage to further their study to higher level of education, near half of them were working (49.1%) and the rest were not (50.9%). For household income, most of them were under low income category (66.7%) with household income less than RM 1320 and the rest were under high income category (33.3%) with household income more than RM 1320.

Table 1 Socio-demographic factors among the mothers (n= 159)

Socio-demographic factors		n	%
Age (years)	15-30	86	54.1
	> 30	73	45.9
Mean (SD) age	28.4 (5.1)		
Religion	Muslim	74	46.5
	Non-Muslim	85	53.5
Ethnicity	Pribumi	130	81.8
	Non Pribumi	29	18.2
Education level	Low	115	72.3
	High	44	27.7
Employment status	Unemployed	81	50.9
	Employed	78	49.1
Household income	Low	106	66.7
	High	53	33.3
Parity	1	48	30.2
	> 1	111	69.8

### 3.2 Breastfeeding Practice

From 159 mothers that participated in this study, 88.1% mothers reported that they breastfeed their child exclusively. Though majority of the mothers breastfeeding their child, only 44.3% of breastfeeding mothers breastfeed their child exclusively till 6 months and the others 55.7% of the mother were not breastfeed their child exclusively till 6 months. Among the mothers who were not practice exclusive breastfeeding till 6 months post-partum, 20.5% practice less than 1 month, 47.4% practiced till 2 months and 32.1% practiced till 4 months post-partum.

### 3.3 Inferential Analysis

Table 2 shows simple binary logistic regression and multiple binary logistic regressions. Bivariate analysis (simple binary logistic regression), ethnicity, education level and employment status of the mother in socio-demographic factors were found to be associated with duration of EBF practice ( $p < 0.05$ ). The other socio-demographic factors namely age, religion, household income and parity of the mothers were not associated with duration of EBF practice.

Multivariate analysis (multiple binary logistic regressions) was conducted to find the important determinants while adjusting for other factors. It was found only ethnicity and employment status of the mothers retained its significance. Unemployed mothers were 3 times more likely to breastfed their children exclusively up to 6 months than employed mothers, [adjusted OR = 2.96, (95% CI: (1.44, 6.06))]. Pribumi mothers were 5 times more likely to breastfed their children exclusively up to 6 months than Non Pribumi mothers, [adjusted OR = 4.53, (95% CI: (1.41,14.50)].

Table 2 Association between mother’s socio-demographic factors and the duration of exclusive breastfeeding

Socio-demographic factors	Breastfed status		Crude OR (95% CI)	$X^2$ (df) *	p value*	Adjusted OR (95%CI)	$X^2$ (df)**	p value**
	< 6 months n (%)	≥ 6 months n (%)						
Age (years):	> 30	36 (46.2)	33 (53.2)	1.33 (0.68,1.47)	2.59 (1)	0.4 06		
Religion:	15-30	42 (53.8)	29 (46.8)					
	Muslim	33 (42.3)	34 (54.8)	1.66 (0.85,3.24)	2.18(1)	0.1 40		
Ethnicity:	Non-Muslim	45 (57.7)	28 (45.2)					
	Pribumi	59 (75.6)	58 (93.5)	4.67(1.50,14.56)	8.81(1)	0.0 03	4.53 (1.41,14.50)	7.90 (1)
Education level:	Non Pribumi	19 (24.4)	4 (6.5)					
	Low	48 (61.5)	51 (82.3)	2.89 (1.31,6.42)	7.41(1)	0.0 06		
	High	30 (38.5)	11 (17.7)					

*Socio-demographic Factors associated with Duration of Exclusive Breastfeeding Practice among*

Employment status:	Unemployed	32 (41.0)	42 (67.7)	3.02 (1.50,6.07)	10.05 (1)	0.0 02	2.96 (1.44,6.06)	9.14 (1)	0.00 3
	Employed	46 (59.0)	20 (32.3)						
Household income:	Low	47 (60.3)	45 (72.6)	1.75 (0.85,3.58)	2.35 (1)	0.1 29			
	High	31 (39.7)	17 (27.4)						
Parity	> 1 child	53 (67.9)	51 (82.3)	2.19 (0.98,4.90)	3.80 (1)	0.0 57			
	1 child	25 (32.1)	11 (17.7)						

\*Simple binary logistic regression, \*\*multiple binary logistic regression

### 3.4 Discussion

This cross-sectional study indicated that breastfeeding practice among mothers in Kuching was common and the result for maintaining the duration of EBF was considerably good. The findings showed high percentage of mother who initiated breastfeeding at 88.1%. This is consistent with the findings from earlier local studies (10, 11-12, 14-15). It is noted that 39% of mothers continued to give EBF till 6 months, which was higher compared to National level and other studies (11-12, 14-15).

Among the socio-demographic factors assessed in this study, there were significant associations between employment status and ethnicity of the mothers with duration of EBF practice. The duration of breastfeeding was shorter among employed mothers compared to unemployed mother. The similar finding noted from the Los Angeles County Health Survey (LACHS) in United States that was done in 2002 to 2003 and found the duration of breastfeeding was short among the employed mother. The finding was also consistent with the others studies, unemployed mothers were more likely to breastfeed their babies for a longer duration (6-8,17). The study in the four peri-urban areas of Guatemala City found that the unemployed mother or housewife who was not working outside the home was the most important predictor of EBF practice (17).

From the aspect of ethnicity, Pribumi were more likely to breastfeed exclusively till 6 months compared to Non Pribumi. In Malaysia, past studies have established that ethnicity has significant effects on breastfeeding practices (11-12,14). A study by Radzniwan et al (2009) found breastfeeding practice was higher among Malays mothers. Similar finding by Tan (2007) revealed Malays breastfed the most and Chinese the least. Meanwhile Siah & Yadav (2002) noted breastfeeding was common among Malays followed by Indians and Chinese were the last one.

It was found that household income was not associated with the duration of EBF practice. A similar finding was noted by Radzniwan et al (2009). However, unlike other studies, the findings of this study do not provide convincing evidence that socio-demographic factors namely age, religion, education level and parity of the mothers affect the duration of EBF. Siah & Yadav (2002) noted older mothers have a significant association with breastfeeding with longer duration. Tan (2007) and El-Gilany et al. (2011) found breastfeeding were more common among mothers with low education. Bivariate analysis, mothers with low education level were associated with the duration of EBF practice. Possible explanation for insignificant association after multiple analyses may be was due to the different definition for the level of the education of mother was defined in this study.

### IV. Conclusion

Thus, the main recommendations derived from this study, employment or working status was a challenge to the successful of EBF. Governmental policies regarding longer maternity leave should be considered to support mother to give EBF practice till 6 months in order to get full benefits for child and mother. Consideration also should be given to provide privacy to nursing mother in work places so that the mother still can continue EBF practice. Baby friendly policies now practiced in hospitals should be expanded to workplace. The working mothers should have a proper designated area to facilitate breast milk expression and storage and mothers given breaks throughout the day for breastfeeding wherever possible.

Media programs that emphasize the advantages of EBF practice over infant formula feeding are probably the key in improving this practice and motivate mothers to continue the practice as recommended. There is a need big advertisement campaign (on buses, billboards, etc.) similarly to infant formula campaign to promote EBF practice. These findings should provide some policy guidelines to the relevant agencies keen on promoting breastfeeding among risk mothers. Programmes aimed at enhancing awareness about the importance of breastfeeding to the health and wellbeing of infants and mothers in the country should target the risk mothers in this study

Limitation of the study includes the fact that EBF practice was assessed cross-sectional, therefore a careful interpretation on the findings should be borne in mind. Selection bias is the bias of the researcher or the techniques in selection of the participants. Usually mother that came to the clinic for continuing their child antenatal checkup and willing to participate in this study were the mother with good awareness on EBF practice.

Recall bias is one of the information bias given by the participants during answering the questionnaire. In this study, the researcher tried to reduce the recall bias by limiting the participant among the mother with the youngest child up to 2 years old only. However, the chance for this bias to occur is still there and can also be reduced if the researcher can help the mothers to remember correctly the events in the past. Since the study was conducted only in 3 MCH clinics in Kuching, so the findings cannot be generalized to other population beyond these populations. The items in the questionnaire were sufficient in achieving the objectives of the study but, can be further improved by asking more detail on occupation status.

In conclusion, the rate of breastfeeding practice in general was high and the duration of EBF practice till 6 months also was relatively longer. Interventions that seek to increase EBF practice should be more focused on working and Non Pribumi mothers.

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### **References**

- [1] WHO . The optimal duration of exclusive breastfeeding: Report of an expert consultation. Geneva: Department of Nutrition for Health and Development, Department of Child and Adolescent Health and Development, *World Health Organization*, 2001, 1-10.
- [2] UNICEF . Supporting Mothers to Breastfeed will Improve Children's Chances of Survival, says UNICEF. New York, United States. *The United Nation Children's Fund*, 2008.
- [3] World Bank . Repositioning nutrition as central to development: A strategy for large- scale action. *The World Bank Report* 2006.
- [4] Healthy People 2010 on the internet: From <http://www.healthypeople.gov/document/html/objectives/16-19.htm>. [Retrieved December 12 2008]
- [5] WABA. World Breastfeeding Week; Exclusive Breastfeeding: Gold Standard Safe, Sound, Sustainable. *World Alliance for Breastfeeding Action*, 2004.
- [6] L.L. Foo, S.J.S. Quek, S.A. Ng, M.T. Lim, Y.M. Deurenberg. Breastfeeding Prevalence and Practices among Singaporean Chinese, Malay and Indian Mothers. *Health Promotion International* 20(3), 2005, 229-237.
- [7] F.Xu , C. Binns, S. Zheng, Y. Wang, Y. Zhao & A. Lee . Determinants of exclusive breastfeeding duration in Xinjiang, PR China. *Asia Pacific Journal Clinical Nutrition* 16 (2), 2007,316-321.
- [8] A-H, El-Gilany, S. Ebrahim .& H. Randa. Exclusive Breastfeeding in Al-Hassa, Saudi Arabia. *Breastfeeding Medicine* 6(4), 2011, 209-213.
- [9] S.K. Kwa . Breastfeeding and the use of maternal health services in Sarawak. *Malaysian Journal Report Health* 11(1), 1993,8-19.
- [10] A. Zulkifli, W.K. Daw , A. Rahman Isa . Breastfeeding and weaning Practice in Rural communities of Kelantan. *Malaysian Nutrition Journal* 2, 1996,148-154.
- [11] C.K. Siah & H. Yadav. Breastfeeding Practices among Mothers in an Urban Polyclinic. *Medical Journal Malaysia* 57(2), 2002,188-193.
- [12] K.L. Tan. Breastfeeding Practice in Klang District.Malaysian. *Journal of Public Health* 7(2), 2007, 10-14.
- [13] A.R. Radzniwan ,N.M. Azimah , H. Zuhra & O. Khairani. Breast Feeding Practice and Knowledge among Mothers Attending an Urban Malaysian Maternal and Child Health Clinic. *Medical & Health* 4(1), 2009, 1-7.
- [14] S. Fatimah, H. Jackie, A. Tahir, M.I. Yusof, H.N.Siti Sa'adiyah, S. Latipah & A.H. Maimunah. Breastfeeding among Children below Two Years Old. National Health and Morbidity Survey 1996, Public Health Institute, Ministry of Health Malaysia, 8, 1999.
- [15] S. Fatimah, H.N. Siti Saadiyah HN, A.Tahir, M.I. Hussain Imam & Y. Ahmad Faudzi.Breastfeeding in Malaysia: Results of the Third National Health and Morbidity Survey (NHMS III) 2006. *Malaysian Nutritional Journal* 16(2), 2010, 195 – 206.
- [16] H.Z. Lim & S.L. Mary Huang . Knowledge, attitude and practice of breastfeeding: a study among Chinese mothers who attended maternal and child health clinic in Dewan Bandaraya Kuala Lumpur. 21st Scientific Conference of the Nutrition Society of Malaysia, 2006.
- [17] K. Dearden, M. Altaye, I.D. Maza, M.D.Olive, M. Stone-Jimenez, L.A. Morrow & B.A. Burkhalter. Determinants of Optimal Breast-Feeding in Peri- Urban Guatemala City, Guatemala. *Pan American Journal of Public Health* 12(3), 2002,185 -198.