LIKELIHOOD OF BREASTFEEDING IN PENINSULAR MALAYSIA

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ABSTRACT

This is a study which investigates the association between the likelihood of breastfeeding and demographic and socioeconomic factors. Data was analyzed from the Fourth Malaysian Population and Family Survey (MPFS-4), 2004 by the National Population and Family Development Board (NPFDB). In this study, we select our sample women with a last child below 6 years at the date of interview (*N=1846*). About 88 percent of mothers answered that they breastfed their children. For further analysis, a logistics regression was used to analyse the likelihood of breastfeeding among mothers in Peninsular Malaysia. Factors that significantly associated with the likelihood of breastfeeding are ethnicity and the number of children. However, further study should be conducted as there are some important characteristic were not discussed in this study such as birth characteristics and paternal characteristics.

Keywords: breastfeeding, MPFS-4, logistic regression, nutrition

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Introduction

Human breast milk is the healthiest form of milk for human babies. Breastfeeding promotes health, helps to prevent disease, and reduces health care and feeding costs. Despite great benefits from breastfeeding, the demands of modern living have seemingly affected breastfeeding practices including duration in many developing countries (WHO, 1982). The Ministry of Health, Malaysia, in response, introduced a National Breastfeeding Policy in 1993 which also followed the Baby Friendly Hospital Initiative introduced by the United Nations Children's Fund (UNICEF) and the World Health Organisation (WHO) in 1991. The Policy was revised 12 years later in accordance with the World Health Assembly Resolution which recommends exclusive breastfeeding for the first six months of life and continued up to two years with complementary foods in line with UNICEF and WHO's Guidelines for Infant Feeding.

Despite these initiatives, the prevalence of exclusive breastfeeding below six month was only 14.5%, according to Malaysia Third National Health and Morbidity Survey (NHMS III), 2006. Apart from exclusive breastfeeding, mothers are exposed to other forms of feeding which are strongly promoted by companies through mass media and their representatives. Demographic factors such as age, ethnicity and strata are among the predictive of breastfeeding (*Renata et al, 2001*). Earlier studies in Malaysia have documented that breastfeeding is widely practiced in rural areas, particularly among Malays (*Teoh, 1975; Pathmanathan, 1975; Balakrishnan and Hasbullah, 1977*). The findings from Kemaman,Terengganu reported that although breastfeeding is widely practiced, their duration has dwindled, and early introduction of solid foods is widespread (*Wan A Manan, 1995*). Older women are more likely to breastfeed than are younger women and Malay mothers are more likely to breastfeed than non-Malay mothers (*Haaga , 1986*). Similar differences between ethnic groups have been found in other studies (*Da Vanzo and Haaga 1982; Pathmanathan, 1978; Chander, et al, 1977*). Because the Chinese are the most urbanized of Malaysia's ethnic groups, this ethnic difference partly overlaps with differences in breastfeeding prevalence among rural areas, small towns and metropolitan areas (*Haaga J, 1986*).

For socio-economic characteristic as predictor variables to likelihood of breastfeeding, women's education and income also influence breastfeeding. More income and more educated women are

more likely to breastfeed than their less educated counterparts (*John et al., 1986; Gabriel et al., 1986; Roe et al., 1999; Humphreys et al., 1998; Tan, 2009*). Many studies have found a negative relationship between employment and breastfeeding (*Tan, 2009; Forster et al., 2006; Gabriel et al., 1986; Lindberg, 1997; Wright et al., 1988; John et al., 1986*). Working mothers are less likely to breastfeed their children as unemployed mothers primarily because of time constraints and job requirements *(Ryan AS and Martinez GA, 1989; Hirschman et al., 1981; Bryant, 1982; Roe et al., 1999*).

Thus, recognizing the needs for further studies on breastfeeding, this paper examines the relationship between the likelihood of breastfeeding and the socio-demographic and socio-economic of mothers aged 15 to 49 years in Peninsular Malaysia.

Methods

Data

For this study we analyzed data from the Fourth Malaysian Population and Family Survey (MPFS-4), 2004. These data were collected by the National Population and Family Development Board (NPFDB) and include a national sample of women of childbearing age. To reduced recall error in analyzing factors with the breastfeeding decision, we limited our sample to women with a last child below 6 years at the date of interview (*N=1846*). Statistical Package for Social Science (SPSS) version 16 was used for analyses.

Both bivariate and multivariate analyses have been applied to see the relationship between likelihood of breastfeeding and the characteristics of mothers. The first part; the descriptive analysis will explain the percentages of mothers who have last children below 6 years according to their characteristics. Then, the bivariate correlations were used to determine whether the socio-demographic and socio-economic variables involved correlate significantly with the dependent variable. Finally, logistic regression analyses were performed to study the relationship between the dependent and the independent variables.

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177

Dependent variable

Because the dependent variable was dichotomous (measured as 1 if breastfed, 0 otherwise), the breastfeeding model was estimated using logistic regression techniques. Data shows that, about 88 percent of mothers with children below 6 years answered that they breastfed their children. In our analyses, the coefficients represent the increase or decrease in the log odds of ever breastfeeding (versus not) associated with a unit or category change in an independent variable. Taking the exponent of the coefficients (log odds) gives the odds ratios (odds of breastfeeding versus not) and it is these odds that are reported in the tables.

Independent variables

The variables of interest for the model are age, ethnics, Region, strata, educational level, work status, work pattern, income, want to have more children and number of children. The description and distribution of all independent variables is shown in Table 1.

Background Characteristic

Based on MPFS-4, 2004, we observed factors that influenced the breastfeeding decision. Table 1 is summarizing various socio-demographic and socioeconomic variables that might affect the likelihood of breastfeeding. Demographic factors that measure was age of women, ethnicity, region and stratum. Maternal characteristic consist of socioeconomic factors such as education level, income, work status and work pattern. Number of children and also desire for children variable is included in Table 1.

Table 1: Characteristics of Women who have last children below 6 years MPFS-4, 2004

Woman Characteristics	Description	Categories	Percentage
Age	Categorical variable indicating age of women	15-19	0.7
		20-24	8.7
		25-29	22.3
		30-34	27.8
		35-39	24.9
		40-44	13
		45-49	2.5
Ethnicity	Categorical variable indicating ethnicity of women	Malay	67.4
		Chinese	21
		Indian	8.6
Region	Categorical variable indicating place of residence of women	North	25.9
		Central	32.2
		South	22.7
		East	19.2
Stratum	Dichotomous variable indicating whether the women live in rural or urban area	Urban	62
		Rural	38
Educational Level	Categorical variable indicating educational level of women	No Schooling	1.8
		Primary School	13.6
		Lower Secondary	26.6
		Upper Secondary	39.4
		Form 6	5.6
		Tertiary	13.1
Work Status	Dichotomous variable indicating whether the women currently	Working	56.2
		Not Working	43.8

		working or not working	
Work Pattern	Categorical variable indicating work pattern of women	Never Work	7.8
		Work Before Married Only	26.3
		Work After Married Only	6.3
		Work Before and After Married	59.6
Income	Categorical variable indicating income among working women	<500	67.7
		500-999	11
		1000-1499	7.9
		1500-1999	5.6
		2000+	7.7
Number of children	Categorical variable indicating the number of children that woman has ever had	1 children	18.2
		2 children	24.7
		3 children	22.4
		4 children	14.8
		5 children and more	20.0
Want More Children?	Dichotomous variable indicating whether the women currently want more children or not	Want more children	46.7
		Do not want more children	53.3

Overall, 87.8 percent of woman had breastfed their children at least once. Table 2 presents the percentage of woman who had breastfed their children. Young women (age 15-19) with lower education level and never work were more likely to breastfeed their children. Malay woman, woman with five or more child and who's living in rural area has high tendency of breastfeeding their children. Working status and desire for more children seems do not affect the likelihood of breastfeeding.

Table 2: Percentage of women who breastfed their children by Socio-Demographic and Socio-Economic Characteristics

Woman Characteristics	Categories	Percentage
Total		**87.8**
Age	15-19	92.3
	20-24	84.6
	25-29	87.6
	30-34	88.5
	35-39	87.0
	40-44	89.6
	45-49	91.5
Ethnicity	Malay	95.5
	Chinese	63.9
	Indian	85.0
Region	North	87.8
	Central	85.2
	South	87.1
	East	93.2
Stratum	Urban	85.3
	Rural	92.0
Educational Level	No Schooling	94.1
	Primary School	88.4
	Lower Secondary	83.7

	Upper Secondary	89.8
	Form 6	90.3
	Tertiary	87.5
Work Status	Working	87.9
	Not Working	87.9

Work Pattern	Never Work	95.8
	Work Before Married Only	86.0
	Work After Married Only	92.3
	Work Before and After Married	87.2
Income	<500	88.2
	500-999	91.6
	1000-1499	87.1
	1500-1999	84.6
	2000+	82.9
Number of children	1 children	81.8
	2 children	85.1
	3 children	87.7
	4 children	88.6
	5 children and more	96.2
Want More Children?	Want more children	86.0
	Do not want more children	89.5

Results

Pearson Chi-Square Test was conducted to examine the association of the likelihood of breastfeeding and independent variables. Table 3 shows that there is a significant association between ethnicity, region, stratum, educational level, work pattern, desire for children and number of children towards the likelihood of breastfeeding. However, there is no association between age, working status and income towards the likelihood of breastfeeding.

Table 3: Chi-Square Test Result of the Demographic and Socioeconomic Characteristics

Characteristics	Variable	Pearson Chi-Square	P-Value
Demographic	Age	3.692	0.718
	Ethnic	275.356	0.000*
	Region	13.744	0.003*
	Stratum	18.361	0.000*
Socio-Economic	Educational Level	12.389	0.030*
	Work Status	0.000	0.997
	Work Pattern	12.811	0.005*
	Income	7.218	0.125
	WantChild	5.491	0.019*
	NumChild	38.987	0.000*

* Significant at 0.05 level

For logistic regression analysis section, two models were assessed. Demographic variables, namely ethnicity, region and stratum that were significant in Table 3 were included in Model 1. While in Model 2, all variables in Model 1 were combined with all socioeconomic variables to assess the association between women's characteristics and their likelihood of breastfeeding.

Based on Table 4, only ethnicity is significant in Model 1. Compared with Malay woman, Chinese are 0.919 (1-0.081) times while Indian woman are 0.733 (1-0.267) times less likely to breastfeed their children. When all the socio-economic variables were added into Model 2, ethnicity remained significant in the model and for socio-economic variable; only number of children was significant. For ethnicity, Chinese are 0.91 (1-0.090) times while Indian woman are 0.692 (1-0.308) times less likely to breastfeed their children. Woman with two, three and four children are about two times more likely to breastfeed their children than the woman with one child. Furthermore, woman with five or more child are 4.120 times more likely to breastfeed their children than the woman with one child.

Table 4: Logistic Regression Analysis of the Effect of Woman's Characteristics on Likelihood of Breastfeeding

Woman Characteristics	Categories	Exp(B)	
		Model 1	Model 2
Ethnicity	Malay (RC)	-	-
	Chinese	0.081*	0.090*
	Indian	0.267*	0.308*
Region	North (RC)	-	-
	Central	1.050	1.065
	South	1.222	1.268
	East	0.978	0.951
Stratum	Urban (RC)	-	-
	Rural	1.003	0.970
Educational Level	No Schooling (RC)	-	-
	Primary School	-	0.634
	Lower Secondary	-	0.567
	Upper Secondary	-	0.739
	Form 6	-	0.650

Woman Characteristics	Categories	Exp(B)	
		Model 1	Model 2
	Tertiary	-	1.109
Work Status	Working (RC)	-	-
	Not Working	-	0.706
Work Pattern	Never Work (RC)	-	-
	Work Before Married Only	-	0.601
	Work After Married Only	-	0.750
	Work Before and After Married	-	0.817
Income	<500 (RC)	-	-
	500-999	-	2.027
	1000-1499	-	1.265
	1500-1999	-	0.741
	2000+	-	0.885
Number of children	1 children (RC)	-	-
	2 children	-	1.977*
	3 children	-	2.048*
	4 children	-	2.000*
	5 children and more	-	4.120*
Want More Children?	Want more children (RC)	-	-
	Do not want more children	-	1.036
Constant		15.248	20.667

* significant at 0.05

(RC) Reference Category

Conclusion

This study found that of all mother with last children aged 6 years and younger, about 88 percent breastfed. The highest percentage of breastfeeding is among Malays (95.5%) followed by Indian (85.0%) and only 63.9 percent among Chinese. Rural women are more likely to breastfeed their children than urban woman. Percentage of breastfeeding among woman with more children is higher than woman with fewer children.

Our modeling indicates that, only ethnicity and number of children woman ever had are associated with the likelihood of breastfeeding. Chinese and Indians women are less likely to breastfeed their children. A similar finding was demonstrated by Haaga (1986), Manan (1995), Chan and Asirvatham (2001), and Siah and Yadav (2002). Women with more children are more likely to breastfeed their babies. Surprisingly, other variables such as stratum, income and education level that were suspected to be associated with the likelihood of breastfeeding according to previous studies were not significant in this study.

Despite Malaysia has already implemented a policy on breastfeeding, there is still room for improvements. The policy should give more focus to private hospitals and clinics that provide maternity services as recent statistics shows that number of private hospitals that provide maternity services exceeded public hospitals (*MOH,2011*). This study suggests a programme of advocating mothers on the important of breastfeeding by giving more concentration to Non-Malays and especially younger mothers. This study also suggests that employers should give a flexi time to working mothers to breastfeed their babies.

There is a need for more study on breastfeeding issue specifically in Malaysia. The relevant studies can be extent to examine more factors affecting breastfeeding behavior such as birth characteristic, paternal characteristic, cultural and some other relevant factors.

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186

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187

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188