SIX-MONTH EXCLUSIVE BREASTFEEDING AMONG MYANMAR MIGRANTS IN SAMUT SAKHON PROVINCE, THAILAND

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Abstract. In order to achieve optimal growth, development and health, WHO recommends that infants should be exclusively breast fed for the first 6 months of life. The purpose of this study was to determine the prevalence and factors related to 6-month exclusive breastfeeding (EBF) among Myanmar migrant mothers having a child aged up to one year living in Samut Sakhon Province, Thailand. This cross sectional study was conducted by simple random sampling. A total of 222 lactating mothers were interviewed by structured questionnaire, and odds ratio (OR) and multiple logistic regression testing were used to analyze the data. The study population comprised lactating mothers 19-37 years of age, with a prevalence of 6-month EBF of 37%. Multiple logistic regression analysis showed three variables associated with 6-month EBF, namely, attitude (OR = 5.8; 95% CI: 1.8-18.3), husband's occupation (OR = 5.4; 95% CI: 1.8-15.7) and respondent's previous working status (OR = 5.2; 95% CI: 1.3-21.8). The study suggests that health care providers should promote EBF and develop positive attitudes towards EBF. Working mothers should receive support to continue breastfeeding when they return to work.

Keywords: exclusive breastfeeding, Myanmar migrant, Thailand

INTRODUCTION

Breastfeeding is an unequalled way of providing ideal food for healthy growth and development of infants. A UNICEF report stated that most developing countries have a breastfeeding rate of 44% and stressed that with optimal breastfeeding some 800,000 children lives can be saved every year (Victora *et al*, 2016). However, a global data on breastfeeding revealed that 35% of children are exclusively breast fed (WHO, 2014a). Even though knowing the benefits of exclusive breastfeeding (EBF), prevalence and duration of EBF have decreased in many regions of the world due to wide-ranging social, economic and cultural reasons (WHO, 2003). Globally, approximately 1.4 million newborns die annually, the majority in developing countries (Lawn *et al*, 2005).

WHO recommends that infants should be exclusively breastfed for the first 6 months of life (WHO, 2011). EBF, as defined by WHO, is no other food or drink, not even water, except breast milk for 6

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months of life, but allows the infant to receive drops and syrups (vitamins, minerals and medicine) (WHO, 2002). Over the years EBF has been an important public health issue, although consensus has been reached on the need for EBF, there is still considerable debate on its optimal duration (Kramer and Kakuma, 2009).

Myanmar, Thailand and Vietnam have the lowest prevalence of EBF among regional countries (OECD and WHO, 2012). As developing countries, Myanmar and Thailand are experiencing rapid changes with regards to social, economic and cultural development. The most important are changes from rural to urban way of life and increasing modernization, which have impacted greatly on family life. Breastfeeding is also affected and is declining due to those changes (Durongdej, 1998). In Myanmar, 23.6% of children are exclusively breast fed up to six months, with prevalence of EBF from1.3% and 40.6% (Ministry of National Planning and Economic Development *et al*, 2011). At present, the Ministry of Health is the main driver for breastfeeding promotion in Myanmar. Health education has to play a supportive role to achieve community awareness and participation in breastfeeding promotion. However, the practice of feeding honey, water and other fluids to infants before 6 months is widespread (Ministry of National Planning and Economic Development *et al*, 2012).

Migrants' health problems are of major concern worldwide. Migrant populations as a whole are vulnerable to engage in risky behaviors. Many migrants do not have access to primary health care or to antenatal services due to such barriers as misunderstanding or lack of proper knowledge, limited access to health services especially set up for unregistered migrants, language differences and concern of arrest or harassment (Raks Thai Foundation, 2011).

The study site of this research was Samut Sakhon Province, one of Myanmar migrant areas in Thailand. The total migrant population in this province was estimated to be 140,000-200,000, including women and children, the latter exceeding 6,000 with estimates of up to 2,000 births a year in this area (Press, 2004). As numerous barriers limit migrants' access to proper health services and information, migrants are generally unable to seek proper testing and antenatal care, and some may perform unsafe practices. Most of the migrant women were employed, unlike those living in Myanmar. These women faced conflict between working and staying at home to look after their children. A previous study in 2006 showed EBF among Myanmar migrant mothers in this province was 15.56%, which was low compared with regional data (Phyo, 2006).

Poor EBF practice poses a major health threat to maternal and child health. Given this low rate, the goal of increasing breastfeeding among working migrant mothers is important. Hence, the aim of the study was to determine the prevalence and factors related to EBF under current conditions in Samut Sakhon Province and whether the rate had changed to implement appropriate baby healthcare programs, which would allow collaboration with existing health care providers, NGOs and policy makers. The findings of this research will be helpful to promote breastfeeding programs, to mitigate the high rates of infant mortality and morbidity.

MATERIALS AND METHODS

Study location and population

The study was conducted among Myanmar migrant mothers in Mahachai

Sub-district, Samut Sakhon Province. The target population was Myanmar migrant mothers aged 18-49 years having a child aged up to 12 months. Enrollment of lactating mothers was based on a set of inclusion criteria and a random sampling using the following formula (Daniel, 2005) to calculate sample size:

$$n = \frac{Z^2_{a/2}P(1-P)}{d^2}$$

where n is the estimated sample size and P is the proportion of EBF in target population (0.1556) (Phyo, 2006). In order to compensate for possible attrition, 10% of the minimal sample size was included. Thus, a total of 222 mothers were needed for the study. Ten out of the 40 blocks in Mahachai Sub-district were randomly selected by means of selecting every 4th block from a name list. The selected blocks were Pu-si, Kaunt-sa-mu, Ta-la-ku, Thai-unit, Way-la, Ban-par, Sa-phan-par, Hta-cha-lon, Ban-ya-phat, and Wat-yone. Then 22 or 23 respondents from each selected block were interviewed according to the listed register number of their household with the help of interpreters. Participation was strictly voluntary and written informed consent was obtained. If there was an absent individual or the subject did not agree to participate in the study, the interviewer would choose the closest volunteer. Data collection was conducted during February and March 2012.

Methodology

A structured questionnaire was used as the instrument for data collection designed based on extensive literature review and supported by the study's conceptual framework, the PRECEDE-PROCEED model (Green and Kreuter, 2005). The questionnaire was composed of five parts: Part 1) general characteristics of the mother and husband, Part 2) predisposing factors, namely, knowledge and attitude toward EBF, Part 3) reinforcing factors, namely, social, informational, psychological and mass media support, Part 4) enabling factors, namely, accessibility and availability of breastfeeding services and working conditions, and Part 5) EBF prevalence.

Data analysis

The collected data were analyzed using mean, standard deviation (SD), percentage, and minimum and maximum values to describe dependent and independent variables. The chi-square test was used as inferential statistics to analyze the association between independent and dependent variables. Statistical significance for all analyses was set at a p-value < 0.05 for two-tailed tests. Chi-square tests and odds ratios (OR) using 95% confidence intervals (95% CI) were performed for categorical variables. Differences in means and 95% CIs estimations were employed for continuous variables. All significant independent variables were considered for multi-variation logistic regression analysis to determine the significant predictors for EBF by controlling other variables. Adjusted OR and 95% CI are reported in the final model. All analyses were conducted using SPSS statistical software (SPSS, version 18.0, IBM, Armonk, NY).

Ethical considerations

The study was conducted under approval of the Ethics Review Committee for Human Research, Faculty of Public Health, Mahidol University (COA. No. MUPH 2012-056). Permission to conduct the study was obtained from the Mahachai District Health Authority (Raks Thai Foundation), Thailand.

RESULTS

Of 222 respondents, age ranged from 19 to 37 years with an average (± SD) of 27 (± 4) years. The major age group (73%) was ≤ 30 years old, a working age group. Sixty-one percent of migrant mothers had only one child. More than 95% of respondents were Buddhist. Despite the fact that primary education is compulsory, still 3% were illiterate. Seventy-one percent of respondents had lower than high school level of education and 29% high school or higher. Fifty-five percent of the respondents could speak Thai.

Regarding occupation, 77% of respondents were homemakers, followed by factory workers (18%) and laborers in private sectors (4%), *eg*, fish market. Almost all respondents (96%) had their main source of income from husband, with a monthly income of 3,500-17,000 THB (Thai Baht) (35 THB = 1 USD) with an average (± SD) of 10,204 (± 3,026) THB. Regarding the duration of stay in Thailand, 40% had resided > 6 years, followed by 4-6 years (36%) and < 3 years (24%).

Regarding general characteristics of the husbands, 216/222 were legally married. As for educational level, 63% finished lower than high school, and only 37% finished high school or higher. Their jobs comprised equally laborers in the private sector and factory workers.

There were a total of 138 children, of whom 62% were ≥ 6 months old and the remaining < 6 months old. Their age ranged from 1 to 12 months with an average (± SD) of 7 (± 3) months. Fifty-seven percent of the children were female.

Among 138 mothers with children ≥ 6 months of age, 37% practiced EBF for 6 months. An association was found between maternal education and EBF ($p = 0.014$) (Table 1). More than 50% of mothers who finished high school or higher education practiced EBF for 6 months. On the other hand, 30% of mothers who had education level lower than high school practiced EBF. An association was found between occupation status and EBF ($p = 0.034$). In all, 43% of unemployed mothers gave EBF while only 24% of those who had jobs did. Duration of stay in Thailand was association with EBF ($p = 0.002$). Results also show significant associations between average family income ($p = 0.021$), husband's education ($p = 0.001$) and husband's occupation ($p < 0.001$) and 6-month EBF.

Predisposing factors such as knowledge and attitude are significantly associated with EBF (Table 2). A strong association was observed between attitude toward EBF and 6-month EBF practice ($p < 0.001$). Reinforcing factors, such as social support from husband, family members, friends and health care providers, were not found to be associated with 6-month EBF ($p = 0.217$). On the other hand, a strong association was observed between informational and psychological support and EBF of 6 months ($p < 0.001$ and 0.001, respectively).

For enabling factors, no association was found between accessibility and availability of breastfeeding services and EBF ($p = 0.627$). However, the respondent's previous working status was strongly associated with EBF ($p < 0.001$) but maternity leave was not ($p = 0.126$).

Multivariate analysis with multiple logistic regression by enter method was employed to calculate adjusted OR with 95% CI for associations between predictors and 6-month EBF when controlled for the effects of other variables. After adjusting all associated variables, only three variables are significantly associated with 6-month EBF, namely, husband's occupation as factory worker (> 5 times

Table 1
Association between demographic factors and 6-month exclusive breastfeeding (EBF) among Myanmar migrant mothers (n = 138).

Factor	Breastfeeding practice		OR	95% CI	p-value
	EBF No. (%)	Non-EBF No. (%)			
Age (years)					0.744
≤30	35 (36)	62 (64)	0.9	0.4-1.9	
>30	16 (39)	25 (61)	1		
Respondent's education					0.014
High school or higher	24 (51)	23 (49)	2.5	1.2-5.1	
Lower than high school	27 (30)	64 (70)	1		
Respondent's occupation					0.034
Unemployed	41 (44)	55 (57)	2.4	1.2-5.4	
Employed	10 (24)	32 (76)	1		
Duration of stay in Thailand (years)					0.002
1-5	37 (48)	40 (52)	3.1	1.5-6.5	
6-15	14 (23)	47 (77)	1		
Average family income (THB)					0.021
8,000-17,000 (high)	45 (42)	62 (58)	3.0	1.1-8.0	
<8,000 (low)	6 (19)	25 (81)	1		
Husband's education level					0.001
High school or higher	29 (54)	25 (46)	3.4	1.6-7.1	
Lower than high school	20 (25)	59 (75)	1		
Husband's occupation					<0.001
Factory worker	35 (57)	26 (43)	5.6	2.6-12.1	
Private job	14 (19)	58 (81)	1		

CI, confidence interval; OR, odds ratio; THB=Thai Baht.

more likely than those working as laborers in private sector, *eg*, fish market (adjusted OR=5.4; 95% CI: 1.8-15.7, $p = 0.002$), positive attitude (6 times more likely) (adjusted OR=5.8; 95% CI: 1.8-18.3, ($p = 0.003$), and respondent's previous working status (5 times more if jobless) (adjusted OR=5.2; 95% CI: 1.3-21.8, $p = 0.023$) (Table 3).

DISCUSSION

More than one-third of the respondents practiced EBF for up to 6 months among 138 respondents who had a child aged 6-12 months. The prevalence of 6-month EBF in this study was higher than among native Myanmar people (24%) (WHO, 2014b). The rate was the same as global 6-month EBF prevalence (37%) but was twice as high as Thailand's EBF rate (15%) (WHO, 2015; National Statistical Office Thailand, MOPH and UNFPA, 2010). This might be due to economic factors: giving breast milk is the cheapest and easiest method for feeding a child.

Many studies have found a significant association between high education and breastfeeding practice (Uchendu *et al*, 2009; Ajibade *et al*, 2013; Jessri *et al*, 2013). The rate of EBF in this study was 2.5 times

Table 2
Association between predisposing, reinforcing and enabling factors and 6-month exclusive breastfeeding (EBF) among Myanmar migrant mothers (n = 138).

Factor	Breastfeeding practice		OR	95% CI	p-value
	EBF No. (%)	Non-EBF No. (%)			
Predisposing factor					
Knowledge about EBF					0.028
Good	31 (46)	36 (54)	2.2	1.1-4.4	
Moderate and need to improve	20 (28)	51 (72)	1		
Attitude toward EBF					<0.001
Positive	43 (56)	34 (44)	8.4	3.5-20.0	
Negative to neutral	20 (13)	51 (87)	1		
Reinforcing factor					
Social support					0.217
Good	29 (43)	39 (57)	1.6	0.8-3.3	
Moderate and need to improve	22 (3)	48 (69)	1		
Informational support					<0.001
Good	23 (77)	7 (23)	9.47	3.6-24.3	
Moderate and need to improve	28 (26)	80 (74)	1		
Psychological support					0.001
Good	27 (55)	22 (45)	3.3	1.6-6.9	
Moderate and need to improve	24 (27)	65 (73)	1		
Enabling factor					
Accessibility and availability of breastfeeding services					0.627
Yes	47 (38)	78 (62)	1.4	0.4-4.6	
No	4 (31)	9 (69)	1		
Previous working status					<0.001
Unemployed	36 (52)	33 (48)	3.9	1.9-8.2	
Employed	15 (22)	54 (78)	1		
Maternity leave (n = 69)					0.126
Yes	13 (27)	35 (73)	3.5	0.7-17.3	
No	2 (9)	19 (91)	1		

Fisher's exact test; CI, confidence interval; OR, odds ratio.

higher among mothers with higher level of education than those with a lower level. Another important factor for EBF was the husband's level of education, those with higher education level had wives who were three times more likely to practice EBF than those with husbands with lower education levels. This was similar to the study conducted by Ogbeidee *et al* (2004). However, Phyo (2006) showed no association between the husband's education level and wife's practice of EBF. An educated husband can advise his wife concerning her health and educated people have access to more information related to health. Moreover, the educated have greater opportunity to obtain good quality jobs and can sufficiently support their families.

Table 3
Adjusted odds ratios (ORs) for 6-month exclusive breastfeeding (EBF) by multiple logistic regression analysis.

Variable	Crude		Adjusted		*p*-value
	OR	95% CI	OR	95% CI	
Respondent's education					
≥ High school	2.5	1.2-5.1	1.3	0.4 - 4.3	0.672
< High school	1		1		
Respondent's current occupation					
Unemployed	2.4	1.2-5.4	1.2	0.3 - 5.6	0.798
Employed	1		1		
Duration of stay in Thailand (years)					
1-5	3.1	1.5-6.5	2.4	0.9 - 6.4	0.087
6-15	1		1		
Average family income THB					
8,000-17,0000 (high)	3	1.1-8.0	1.8	0.5 - 7.2	0.391
< 8,000 (low)	1		1		
Husband's education					
≥ High school	3.4	1.6-7.1	0.8	0.3 - 2.7	0.759
< High school	1		1		
Husband's occupation					
Factory worker	5.6	2.6-12.1	5.4	1.8 - 15.7	0.002
Laborer at private sector	1		1		
Place of baby's delivery					
Government hospital	3.3	1.0-10.3	1.8	0.4 - 7.7	0.422
Other	1		1		
Knowledge about EBF					
Good	2.2	1.1-4.4	0.6	0.2 - 2.0	0.429
Moderate and need to improve	1		1		
Attitude toward EBF					
Positive	8.4	3.5-20.0	5.8	1.8 - 18.3	0.003
Negative to neutral	1		1		
Informational support					
Good	9.47	3.6-24.3	2.1	0.5 - 9.9	0.335
Moderate and need to improve	1		1		
Psychological support					
Good	3.3	1.6-6.9	0.5	0.1 - 1.9	0.307
Moderate and need to improve	1		1		
Respondent's previous working status					
Unemployed	3.9	1.9-8.2	5.2	1.3 - 21.8	0.023
Employed	1		1		

CI, confidence interval.

A significant association was found between mother's occupation and EBF. Homemakers had double the rate of EBF than those employed. Hence, lack of time and opportunity might be factors for terminating EBF for working mothers. Many studies have found similar association between maternal occupation and EBF (Ong *et al*, 2005; Sika-Bright, 2010; Ajibade *et al*, 2013). The study of Phyo

(2006) showed that the reason the majority (69%) of Myanmar migrant mothers for discontinuing breastfeeding is to return to work. For a typical Myanmar family, the husband is the main source of the family's income and, thus, the occupation of the husband becomes an important factor that affects family income, wife's occupation and family living status. Our study showed that the husband's occupation was strongly associated with wife's 6-month EBF. A husband with a permanent job had a wife practicing 6-month EBF five times more often than those without, and that a wife of a husband who worked as a laborer in the private sector practiced EBF more (81%) than a wife with a husband working as a factory worker. The reason for the difference between our findings and those of Phyo (2006) might be that in recent years, migrant workers can obtain nearly the same economic benefits including salary and job opportunity as local Thai workers.

Our study showed that migrant mothers who lived less than six years in Thailand were three times more likely to practice EBF compared with those who lived longer than six years. According to Myanmar culture, women have to give their breast milk to their babies after giving birth, but when they move to other countries they have to adjust to the culture and habits of their countries of residence without worrying of projecting a bad image of not giving breast milk to their babies. Another reason was that they had more concern about their economic problems. Therefore, giving EBF to a baby became a less important goal among mothers staying longer in Thailand.

The monthly family income is one of the determinant factors of breastfeeding practice. This study showed that the high income group had three times higher 6-month EBF practice compared with low income group. This result was consistent with the study in Lao PDR in which family income is significantly associated with breastfeeding patterns of mothers (Chanthalangsay *et al*, 2003), which showed that women from the high income group exclusively breast fed more than those from the lower income group. This might be because women from the lower income group need to perform outside extra-work to supplement their income.

Predisposing factors included knowledge about EBF, a very important driver of EBF practice. A significant association was found between maternal knowledge and EBF. This finding was consistent with studies conducted by Ekambaram *et al* (2010) and Phyo (2006). Positive attitudes toward EBF are required for behavioral change. A significant association was found between mother's attitude and EBF practice. The attitude of mothers influences the decision to practice EBF. The finding was consistent with the study conducted by Wojcicki *et al* (2010). However, Chatman *et al* (2005) found no difference between exclusive and non-exclusive breastfeeding among mothers in terms of attitude towards breastfeeding. Positive attitude alone does not guarantee successful EBF as support from family members and health professionals also plays an important role in encouraging mothers to continue breastfeeding. Findings by Tema (2000) in Ethiopia revealed that despite adequate knowledge and positive attitude the practice of giving prelacteal feed, *eg*, cow's milk, sugar solution and water, still continues.

As regards reinforcing factors, the results of our study was contrary to the study by Doung *et al* (2004) in Vietnam demonstrating support from husband and maternal grandmother have an influence

on breastfeeding practice. Another study reported that inadequate support from the husband was a dominant constraint to EBF practice (Agunbiade and Ogunleye, 2012).

In this study, no association was observed between social support and EBF. Nevertheless, lack of psychological support, a concern expressed by the participating mothers, was found to reinforce specific worries and made it less likely that a woman would attempt breastfeeding. This study showed that mothers who received good psychological support practiced EBF up to six months were three times more than those who did not obtain such support. Good psychological support can sustain EBF for a longer period.

Supportive information has been identified as an important element for encouragement and success of lactation (Chin and Amir, 2008; Hauck *et al*, 2011). In this study EBF rate was more than nine times higher among those who received sound information than those having no information. Usually, health workers are the most important source of information concerning EBF for mothers (Dehinde, 2010). Our survey found the majority of mothers received health knowledge from reading pamphlets and posters that were given by the Raks Thai Foundation written in Burmese and from Myanmar newspapers that were available in the Myanmar migrant library in Samut Sakhon Province.

In this study, no association was observed between accessibility and availability of breastfeeding services and EBF practice**.** The previous study of Al-Sahab *et al* (2010) on working status of mothers showed that non-working mothers are more than two times likely to continue breastfeeding for 4 months compared with working mothers. We found a non-working mothers had nearly four times the rate of 6-month EBF than working mothers. Working mothers usually try to terminate breastfeeding before the end of their maternity leave, especially when there is a lack of facilities allowing collecting breast milk at the work place. Phyo (2006) reported the main reason for discontinuing breastfeeding among most Myanmar migrant mothers is to return to work. However, maternity leave is an important factor for ensuring that babies are breast fed exclusively (UNICEF, 2013). However, this study revealed no association between maternity leave and EBF practice up to six months. Although a full pay 12-week maternity leave is a legal right in Thailand, the desire of returning to work is an important factor for discontinuing breastfeeding. Moreover, no facilities are available for breastfeeding at their work place such as a crèche, break time for breastfeeding or baby care center.

Multiple logistic regression analysis indicated that after adjusting for all other variables, factors significantly associated with EBF practice are respondent's attitude, previous working status and husband's occupation. Lactating mothers who had positive attitude were 5.8 times higher in 6-month EBF prevalence than those who lacked such attitude. Previous non-working mothers were nearly five times higher in giving EBF than mothers with prior work. The reason is that working mothers usually try to terminate breastfeeding before the end of their maternity leave. Laborers in the private sector had no definite working hours because their jobs depended on market demand. This also was true for fathers but some worked as fishermen and remained at sea for at least three months each time. For their income, however, the majority were below the poverty line compared

with Thai standard. On the other hand, husbands who had permanent jobs and stable salary, such as factory workers were 5 times higher among mothers practicing 6-month EBF as they were able to support their family than those who were laborers in the private sector where their salary depended on market price and demand of products. As 96% of the main source of family income came from the husband, it was not surprising that the husband's occupation was the dominant factor in determining the EBF status of the wife.

By applying the PRECEDE-PROCEED model, only predisposing factors such as attitude toward EBF, and enabling factors such as respondent's previous working status, are significantly associated with 6-month EBF. Predisposing factors exert their effects before the behavior occurred by increasing or decreasing a person's or population's motivation. Enabling factors refer to factors that make it possible for individuals or populations to change their behavior or their environment. Therefore, these two significant factors are important to change the target behavior and could motivate mothers to increase the EBF rate.

As the study design was cross sectional, it had many limitations and was difficult to investigate cause and effect within a short survey period. Thus, in order to undercover more information a more comprehensive study should be conducted employing in-depth interviews and focus group discussions. Nonetheless, it can be concluded that many socio-demographic and other factors have a definite relationship with duration of breastfeeding practices among Myanmar migrant mothers. Health care policy makers and providers must bear those factors in mind when formulating programs for breastfeeding promotion.

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