ORIGINAL ARTICLE

Breastfeeding Practice, Support, and Self- Efficacy Among Working Mothers in a Rural Health Clinic in Selangor

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ABSTRACT

Introduction: In first six months of life, breastfeeding is the recommended form of feeding by the World Health Organisation for the growing child. To enable the working mother to continue this noble practice, adequate workplace breastfeeding support and self- efficacy is needed. This study aims to determine the prevalence of breastfeeding among working mothers of children aged three months to two years and factors associated with breastfeeding practice including workplace support and mother's self-efficacy. Method: This is a cross sectional questionnaire study carried out in a rural Health Clinic in Selangor using socio-demographic data, Workplace Breastfeeding Support Scale (WBSS), and the Breastfeeding Self-Efficacy Scale Short Form (BSES-SF). This study was conducted for a period of three months from April to June 2015. The respondents were employed Malaysian mothers of healthy infants aged three months to two years. A total of 84 participants were involved in the study. Data analysis was done with SPSS 22. Results: The prevalence of breastfeeding among working mothers were high at 97.6%. We found significant association of breastfeeding practice with workplace breastfeeding support (p=0.005) and self-efficacy (p=0.017). We also noted a significant correlation between breastfeeding workplace support and breast feeding self-efficacy (r= 0.40, p <0.01). Age, religion, ethnicity, educational level and place of employment were found to be not associated with breastfeeding practices. Conclusion: This study highlights the importance of workplace support and self-efficacy with workplace breastfeeding practices. Policymakers and stakeholders should provide a conducive and supportive environment to enhance breastfeeding among working mothers.

Keywords: Breastfeeding; Prevalence; Self-efficacy; Working Women; Workplace Support

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INTRODUCTION

According to World Health Organization (WHO), breastfeeding is one of the most natural and cost-effective processes of feeding infants aged less than 24 months to obtain the right amount of nutrition needed for healthy growth and development (1). Benefits include reduced risk of conditions such as breast cancer, cardiovascular disease and rheumatoid arthritis in the mother, whilst aiding in mother's weight reduction and enhancing close relationship with the child (1). Benefits to the newborn include good nutrient supply and immunity, decrease risk of sudden infant death and conditions such as type 1 diabetes. The baby also ultimately develops a strong

emotional bond with mother through regular skin-to-skin contact (2).

The WHO reports around 40% of children below 6 months are exclusively breastfed worldwide. The proportion varies from country to country and is highest in low income countries such as sub Saharan Africa and South Asia where continued feeding until 23 months is more than 60% (1)(3). In Malaysia, the NHMS III found 94.7 % of babies under 12 months to ever be breastfed (4).

Internationally the breastfeeding practice among working mothers varies according to region. In Singapore report of continuing breastfeeding in the workplace at 6 months is at 20% compared to non-working mothers at 30% (5).

The continuation of exclusively breastfeeding reduces as the baby ages to 6 months as compared to 3 months. Reports of exclusive breastfeeding in the workplace at 6 months are very modest at 10.3% (Ghana), and 17% (Saudi Arabia) (6,7).

If we were to group the age of 6 months and below for exclusively breastfeeding amongst working mothers, the number would raise to around 33.5% (Cuba) (8).

In Malaysia, the prevalence of breastfeeding for employed mothers is high at around 95%, however it was found that only 14.5-25.4% of employed women practiced exclusive breastfeeding with mean length of time of breastfeeding was only 26 weeks, although some mothers may carry on breastfeeding for two years or beyond (4,9).

Many factors influence breastfeeding practice among working mothers. These factors include knowledge on breastfeeding, psychological factors and other sociodemographic factors (5,9–13).

There are many psychological factors that play a role in ones confidence to breastfeed such as normative beliefs, maternal confidence, social learning, and behavioural beliefs about breastfeeding (10). Studies have shown that breastfeeding self-efficacy turns out to be one of the most essential factors that helps a mother continue this practice (10,13). Workplace support for breastfeeding has also been found to be a crucial influence to boost breastfeeding practices (9,10). However, studies on breastfeeding workplace support with self-efficacy is scarce in the local context.

Hence, the aim of this study is to determine the association of workplace support, self-efficacy and socio-demographic factors with breastfeeding practice among Malaysian working mothers. This is to ensure that working mothers are not disadvantaged in terms of breastfeeding their child.

MATERIALS AND METHODS

This was a cross sectional questionnaire study that was conducted at the Dengkil Health Clinic in Selangor, Malaysia. The duration of the study is 12 weeks, from April to June 2015. The study involved 84 employed mothers attending the clinic for paediatric follow-up of their infants. The sample size was calculated based on formula that compare proportion between two groups:

Where;

n = sample size, $P^-=(P_1+P_2)/2$, $P_1=$ estimated proportion from previous study, $P_2=$ estimated proportion from previous study. $z((1-\alpha/2))=1.96$ for 95% Confidence Interval (CI), z=1.645 for 90% CI; z=2.58 for 99% CI, $z((1-\beta))=$ power = 80% = 0.84

Ethnicity was used to estimate the proportion to calculate sample size as it is a significant variable that affects breastfeeding. Amin et al reports 57.2% Malays continued breastfeeding compared to 24% Non-Malays. Taking in consideration 20% dropout rate, the total sample size is 82 (9).

Inclusion criteria includes employed Malaysian mothers of healthy infants aged from three months to two years. The exclusion criteria for this study are mothers who have infants with congenital anomalies/serious conditions such as galactosemia whom are unable to receive milk, mothers who are unable to breastfeed due to serious infections such as HIV, human T-cell lymphotropic virus type I or II infection or active tuberculosis, mothers who are taking antiretroviral medication, prescribed cancer chemotherapy agents and those dependent on illicit drugs.

Patients were selected via the registry of mothers who attended the paediatric clinic with their children who were registered to be followed up on that day. Simple random sampling was done to select the participants. The numbers 1 to the number of patients attending (usually 20) that indicated their turn in the queue were written down on small pieces of paper and were put in a small box, then randomly picked. If they did not fulfil the inclusion criteria, the next number would be selected. The participants that fit the criteria were then asked permission to participate in the study, those who agreed were then interviewed.

Questionnaires

The instrument used in this study was a questionnaire that had three sections. This included socio-demographic data, Workplace Breastfeeding Support Scale (WBSS), and the Breastfeeding Self-Efficacy Scale Short Form (BSES-SF) (14,15).

Socio Demographic Data

The first section is on the participants' socio-demographic data which had a total of 10 questions on age, religious background, ethnicity, highest education attained, occupation, and whether or not the mother breastfed.

For the types of breastfeeding; the mothers were asked whether

- a) They exclusively breastfed their child within the first 6 months,
- b) If any supplemental food or drinks given to the child other than breast milk (mixed),
- c) If the child was given formula milk (others).

This question only applies for the first 6 months, as the child will usually start taking solids after this age.

Workplace Breastfeeding Support Scale (WBSS)

The second section consists of the WBSS questionnaire that has a total of 12 questions (Fig 2). It uses a Likert scale that reflects participants' view of workplace support on breastfeeding. The scale ranges from strongly disagree (SD) to strongly agree (SA) on a scale of 1 to 7. Higher scores correspond with increased support given at the workplace towards breastfeeding. The internal consistency (α =0.77) and reliability (r=0.86) shows it has acceptable reliability (15). This questionnaire was translated into Malay. The translated versions were pilot tested for clarity of meaning, appropriateness of the words used, and cultural acceptance of the scales. No alteration was made to the translated versions because they were found to be reliable as the Cronbach α was 0.8.

Breastfeeding Self-Efficacy Scale Short Form (BSES-SF).

The original version of the BSES had 40 questions and was later reduced made into a shorter version called the BSES-SF (14). The BSES-SF questionnaire has 14 questions to measure breastfeeding self-efficacy among working mothers (Fig 3). A 5-point Likert scale is used where a score of 1 demonstrates "no confidence at all" and a score of 5 represents "very confident". The minimum score is 14 and the maximum score of 70 with higher scores reflecting higher self-efficacy in breastfeeding their child. Internal consistency of this questionnaire is determined by a Cronbach α of 0.94 (16) . The questionnaire has been translated in several different countries which are Sweden, Poland, Canada, United Kingdom, Croatia, Brazil, Hong Kong and Spain. The Cronbach α ranged from 0.84 to 0.94. The Malay version has a Cronbach α of 0.94 and was used in this study (17).

Statistical analysis was done using the Statistical Package for Social Sciences (SPSS) version 22. The baseline characteristics of study participants as well as their scores of for the WBSS and BSES-SF were reported using descriptive statistics. Independent t-test was used to determine association between workplace breastfeeding support and breastfeeding practice. While Mann-Whitney U test was used to determine the association between self-efficacy with breastfeeding practice. Correlation between WBSS and BSES-SF were determined using Spearman's rho correlation test. The level of significance was set at p<0.05.

Ethics approval was obtained from both the Medical Research Ethics Committee of University Putra Malaysia (UPM) (FPSK (EXP15-medic) U015) and Medical Research and Ethics Committee, Ministry of Health, Malaysia.

RESULTS

A total number of 84 participants who fulfilled the inclusion criteria were approached, all of which agreed to be interviewed.

Socio-Demographic Characteristics and Breastfeeding Practices of Respondents

There were 84 respondents with an age range of 21 to 41 years old with the mean age of 31.4 ± 4.8 years old. The majority of the respondents were Malays (82.1%), Muslims (83.3%), had tertiary education (57.1%), and works in the public sector (56%). In terms of breastfeeding practice, nearly all breastfed their children with 2 (2.4%) who did not. Out of those that breastfed their child, 59.5% practiced mixed feeding (Table 1).

Association of Socio-Demographic Factors, Workplace Breastfeeding Support and Breastfeeding Self-Efficacy with Breastfeeding Practice

Table II shows the socio-demographic factors associated with breastfeeding practices. The bivariate analysis of the association between religion, ethnicity, educational level and job status with breastfeeding practice was conducted using Fisher's exact test or chi squared test. As for the age, independent t-test was used to analyse its association with breastfeeding practice.

The mean score for WBSS was 61.21 ± 10.98 with the maximum score of 81.00 and the minimum score was 35.00. The median score for BSES-SF was 60.50 (IQR= 10.75) with the score ranging from 40 to 70.

There was significant association between workplace breastfeeding support and self-efficacy and breastfeeding practice (p=0.005 and 0.017, respectively). However, when taking into consideration for ethnicity, religion, occupation and education level for multiple logistic regression, we found the results to be non-significant. (Table III)

None of the socio-demographic factors were found to be associated with breastfeeding practices. There were no significant association between socio-demographic and breastfeeding practice.

Correlation of Breastfeeding Workplace Support with Breastfeeding Self Efficacy.

Figure 1 indicates a significant moderate spearman correlation between breastfeeding workplace support with self-efficacy at r=0.40.

DISCUSSION

Socio-Demographic Characteristics of Respondents, Breastfeeding Practice and Type of Breastfeeding Practice

This study was conducted in a rural clinic but was in close proximity to several major workplace areas. The majority of the respondents were of Malay ethnicity (82.1%). Though it is not a representative distribution of the country's ethnic diversity, it is comparable to other studies done in government health clinics (9,18). This may be due to the locality of this clinic. The respondents were aged between 21 to 41 years old with the mean age of 31.4 ± 4.8 years old. The age profile of the working mothers who responded in this study is older compared to previous studies in Selangor and Pahang which had the mean age of 29 and 27 years old respectively. (9,18) Over the years, the number of employed women who received tertiary education has increased, thus delaying age of marriage and subsequently childbirth. In this study, 57.1% of the working mothers has tertiary education and 56% are working in the public sector. In general, the Malaysian female labour force participation rates (FLFPR) has rose 8.2% in 10 years between the year

2005 and 2015. In this cross-sectional study, nearly all the working mothers breastfed their infants (97.6%). This is significantly higher compared to the prevalence from similar studies among working mothers in Malaysia (9,18).

The increase in paid maternity leave days in the public sector from 60 to 90 days in 2011 may have contributed to the difference. In general, the country's "everbreastfed" prevalence had increased to 94.7% (CI: 93.0 -95.9) in 2006 from 50% in 1996 (4,19). This was greatly contributed by the active promotion and certification of baby-friendly hospitals according to WHO/UNICEF requirements throughout the country. Although breastfeeding rates are very high, in this study only 38.1% practiced exclusive breastfeeding for 6 months, with the majority of these working mothers practicing mixed feeds. The overall rate of exclusive breastfeeding in the same age group according to NHMS III in 2006 was 14.5% (4). The prevalence in this study may suggest an improvement even in working mothers, timely with more vigilant enforcement of the Code of Ethics for the Marketing of Infant Foods & Related Product which was revised and launched in 2008. It incorporates lawful

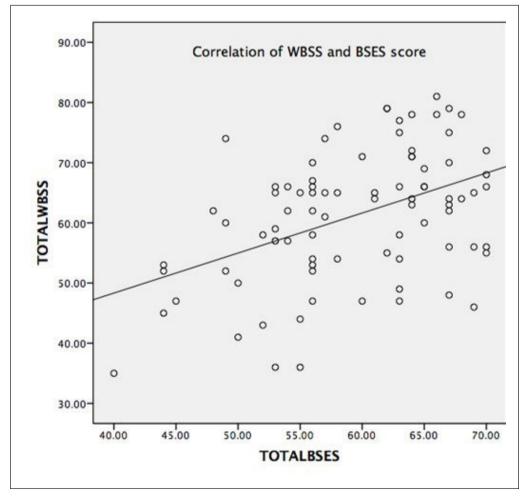


Figure 1. Correlation of WBSS and BSES Score

Directions: For each of the following statement, circle the number which show the strength of your feeling which may range from strongly disagree (SD) to strongly agree (SA). Your honest response is greatly appreciated.

		Strongly Disagree				Strongly Agree		
1.	My co-workers agree that breastfeeding is better for the baby's health than formula feeding.	1	2	3	4	5	6	7
2.	I have supportive co-workers who cover for me when I need to pump my milk.	1	2	3	4	5	6	7
3.	My co-workers do not make fun of me when I sometimes leak milk through my clothes.	1	2	3	4	5	6	7
4.	Breastfeeding is common in my workplace.	1	2	3	4	5	6	7
5.	I have a breastfeeding supportive supervisor.	1	2	3	4	5	6	7
6.	My co-workers listen to me talk about my breastfeeding experience.	1	2	3	4	5	6	7
7.	I feel comfortable taking several breaks during work hours to pump breast milk.	1	2	3	4	5	6	7
8.	In my workplace, there is a designated space (nursing room) to nurse my baby or pump breast milk.	1	2	3	4	5	6	7
9.	I can easily find a quite place other than the bathroom at my workplace to pump breast milk.	1	2	3	4	5	6	7
10.	My workplace has a refrigerator that I can use to store my milk.	1	2	3	4	5	6	7
11.	My workplace has a breast pump for nursing mothers to use.	1	2	3	4	5	6	7
12.	My workplace has an on-site day-care.	1	2	3	4	5	6	7

Figure 2. Workplace Breastfeeding Support Scale (WBSS)

Here are statements that describe the activities of breastfeeding. Please circle the number that best describes the feeling of confidence you have for each statement. There are no right or wrong answer for each statement.

1 2 3 4 5

Not at all confident Not really confident Confident Very confident

		Not					
No	STATEMENT			at all ->			
		conf	onfident		Confident		
C1	I believe I can always make sure that my baby is getting enough milk.	1	2	3	4	5	
C2	I believe I can always breastfeed my baby, the same as I do other challenging tasks.	1	2	3	4	5	
С3	I believe I can always breastfeed my baby without the need to add formulated milk.	1	2	3	4	5	
C4	I believe and am always sure that my baby is suckling in the right method, over the period of breastfeeding.	1	2	3	4	5	
C5	I believe I can always manage breastfeeding up to my satisfaction.	1	2	3	4	5	
C6	I believe I can always breastfeed, even when my baby was crying.	1	2	3	4	5	
C7	I always want to breastfeed my baby.	1	2	3	4	5	
C8	I am always comfortable breastfeeding my baby, even in the presence or in front of other family members.	1	2	3	4	5	
C9	I am always satisfied with my breastfeeding experience.	1	2	3	4	5	
C10	I can always accept the fact that breastfeeding process will take a long time.	1	2	3	4	5	
C11	I can always fully breastfeed on the same breast, before switching to the second breast.	1	2	3	4	5	
C12	I can always continue to breastfeed my baby without problems, at each feeding session.	1	2	3	4	5	
C13	I can always manage to breastfeed every time my baby asks for milk.	1	2	3	4	5	
C14	I am always able to recognize the time my baby is finished and satisfied with the breastfeeding session.	1	2	3	4	5	

Figure 3. Breastfeeding Self Efficacy Scale Short Form (BSES SF)

Table I. Socio-Demographic Characteristics and Breastfeeding Practices of Respondents (N=84)

Variables	Frequency (%)				
Age (years) Mean (<u>+</u> SD)	31.4 (4.8)				
Ethnicity					
Malay	69(82.1)				
Chinese	5(6.0)				
Indian	10(11.9)				
Religion					
Islam	70(83.3)				
Buddhist	4(4.8)				
Hindu	10(11.9)				
Educational level					
Primary	1(1.2)				
Secondary	35(41.7)				
Tertiary	48(57.1)				
Occupation					
Public	47(56.0)				
Private	31(36.9)				
Self-employed	6(7.1)				
Breastfeeding Practice					
Yes	82(97.6)				
No	2(2.4)				
Type of breastfeeding*					
Exclusive	32(38.1)				
Mixed	50(59.5)				
Others	2(2.4)				

^{*}For the first 6 months, SD: Standard deviation

action in accordance to provisions in the Food Act & Regulation (1983).

Association of Socio-demographic Characteristics, Breastfeeding Workplace Support, Self-efficacy with Breastfeeding Practice

This study showed that there were no significant association between age, religion, ethnicity, educational level nor employer status with breastfeeding practices. This reinforces the fact that mothers are always motivated to breastfeed their child despite working condition, or their socio-demographic circumstances as long as the workplace support are available to facilitate this process.

Our study indicates that the age and ethnicity of the mother were not associated with breastfeeding practice. However, some studies have touched on this issue reporting that mothers younger than 19 years of age breastfed for a shorter duration, and there was increasing association of the practice with increasing maternal age (5,20). In terms of ethnicity, a local study reports that Chinese were not likely to breastfeed compared to Malay mothers (11).

For religiosity, while we find no association, a qualitative study suggests the contrary saying that mothers who frequently attend religious activities were prone to initiate breastfeeding practice (21).

There were also no significant association between the educational level of mothers and breastfeeding practice in this study. Conversely, a local study in 2006 reports that women with higher education level were less likely to practice breastfeeding compared to those with lower educational level (11). On the contrary, other studies found that education had a positive effect on breastfeeding practice, stating more educated mothers nursed longer (5,22).

In this study, we found no significant association between working in the government or private sector (including self-employment) with breastfeeding practice. Yet, previous literature indicates otherwise (9). These policies have been implemented since 1993 following the formation of the Breastfeeding Hospital Initiative Recognition Committee (9). It could also be that breastfeeding policies during the time of the study were

Table II. Association of Socio-demographic factors, Workplace Breastfeeding Support and Breastfeeding Self-Efficacy with Breastfeeding Practice (N=84)

Variables	Breastfeedir	p value	
	Yes	No	·
Age (years)			
Mean (Standard deviation)	31.5(4.8)	28.5(0.7)	0.391#
Religion			
Muslim	69 (98.6)	1 (1.4)	0.307^{α}
Non-Muslim	13 (92.9)	1 (7.1)	
Ethnicity			
Malay	68 (98.6)	1 (1.4)	0.327^{δ}
Non- Malay	14(93.3)	1(6.7)	
Education level			
Primary and secondary	35 (97.1)	1 (2.9)	1.000^{δ}
Tertiary	47 (97.9)	1 (2.1)	
Occupation			
Public	46 (97.9)	1 (2.1)	1.000^{δ}
Private	36 (97.3)	1 (2.7)	
WBSS Score			
Mean (Standard deviation)	61.7 (10.6)	40.0 (7.1)	0.005#
BSES Score			
Median IQR	61.0 (10.25)	42.0 (9.2)	0.017*

t test, *Mann-Whitney, a Fisher's exact test, b Chi squared test

not as supportive with the period for maternity leave varying between government and private sectors. Prior to this, women working in the private sector were given maternity leave that could range from two weeks to two months while for the government sector, were given only two months maternity leave. This may have influenced the longer duration of government employed mothers to keep on breastfeeding (11). Currently the government sector allows 3 months of paid leave and can extend up to 6 months unpaid leave. The enforcement of this policy in the private sector will largely depend on the employer prerogative.

The findings of this study showed that there was a significant association between workplace support with breastfeeding practice.

An earlier study presented the negative association of continuation of breastfeeding with employment (23). Therefore, we can infer that lack of supportive environment and facilities to breastfeed can reduce the number of working mothers who breastfeed their child. From our questionnaires, the facilities and elements that were identified for improving breastfeeding practice included work sharing, decision on time to express milk, a private room with a locking door and a sink to pump milk, a fridge to store breast milk, on-site or near day-care centres, and cultural support from the organisation environment itself. It is parallel with Stewart-Glenn study in 2008 where all these stated facilities and elements

were needed for supporting breastfeeding at the workplace (19). Some studies also state that workplace support such as providing a refrigerator to store milk improves mother's confidence to breastfeed (9). It is said that the role of the employer, supervisors, union and coworkers also give an impact on breastfeeding practice by reducing the stress of balancing job and family needs. If all these workplace support mechanism are in place, the productivity of the female worker will likely increase and mothers will be less reluctant to come back to work sooner after maternity leave. There are great benefits when babies are breastfed, hence everyone has a social responsibility to support breastfeeding workers (24). Mothers may also get motivated to practice breastfeeding by listening to other mother's breastfeeding experiences whom have previously combined breastfeeding and work (23). Hence, previous workers experience is essential in co-workers motivation to breastfeed.

Self-efficacy was also found to be associated with breastfeeding practice in this study. This is supported by a published study that says a mother's personal beliefs, behaviour and view of herself, way of being, are very important in determining that breastfeeding practice are successfully carried out during employment (23). In another study on focused that self-determination, empowerment, and the spiritual connections of breastfeeding of women who breastfed, there were several findings that are related to the self-efficacy mentioned. The authors noticed that these women had strong will power to have a healthy baby will have the

Table III. Association between socio-demographic characteristic, Total WBSS and BSES SF with breastfeeding practices (breastfeeding=1, not breastfeeding=0)

Variable		Univariate analy	sis	Multivariate analysis		
	OR	95% CI	p value	OR	95% CI	p value
Age	0.878	0.649-1.187	0.396			
Ethnicity						
Malay	1.00	0.012-3.492	0.274			
Non-Malay	0.206					
Religion						
Muslim	1.00	0.011-3.207	0.248*	0.413	0.014-11.787	0.605
Non-Muslim	0.188					
Occupation						
Public	1.00	0.047-12.496	0.864			
Private	0.783					
Breastfeeding type						
Exclusive	1.00	0.009- 1.561	0.998			
Non- exclusive	0.040					
Total WBSS	0.781	0.612-0.998	0.048*	0.792	0.615-1.020	0.071
Total BSES SF	3.663	0.93-5.75	0.982			

CI: Confidence interval, OR: Odds ratio, * Significant at p value < 0.25

self determination to breastfeed their child. Breastfeeding was also connected to feeling of empowerment, satisfaction and pride and a feeling of gratefulness as the act was believed to be a gift from God (21). All these factors show that breastfeeding self-efficacy is heavily related to the practice itself. A large systematic review in Japan found that many maternal psychometric factors, including breastfeeding self-efficacy, are associated with positive breastfeeding practices (12). This is also supported by another large systematic review which concludes that breastfeeding is improved by mother's self-efficacy (25).

Although our results show a positive association of breastfeeding practice with breast feeding self-efficacy and workplace support, when taking into consideration ethnicity, age, religion, and occupation as confounding factors, we found this result to be non-significant. The possible explanation for this discrepancy is likely due to our small number of respondents. For example one study commissioned by the Australian government of more than 300 participants, found that greater workplace support for breastfeeding was significantly associated with higher rates of exclusive breastfeeding at six months (26).

We also found a positive moderate correlation of breastfeeding workplace support with self-efficacy. This was also reflected by a cross sectional study in Indonesia which found that mothers who had workplace support were 1.59 time more likely to breastfeed their child (27). A comprehensive systemic review and meta-analysis on breastfeeding intervention to improve outcomes, also reports that workplace intervention

can increase breastfeeding rates by up to 30% (28). Hence, it is undeniable the effects of workplace support in determining good breastfeeding practice amongst working mothers.

CONCLUSION

From this study, we conclude that workplace support and mothers' self-efficacy are important factors in determining breastfeeding practice among working women in Malaysia.

We found no significant association between sociodemographic factors with breastfeeding practice.

The positive correlation of breastfeeding workplace support and self-efficacy highlights that working mothers will continue to breastfeed their child if support from employers are provided which will in turn increase their self-efficacy in carrying out this practice.

We recommend policy makers and stakeholders to take into consideration these issues to increase breastfeeding practice in the workplace such as letting mothers take short intervals to breastpump, providing a clean place to breastpump with a designated refrigerator for breastmilk storage and also having an onsite day care for babies.

Since our sample size is small, it does not reflect the population as a whole, therefore we would like to suggest that a multi-centre study be done nationwide to obtain true prevalence of breastfeeding practice among working mothers, and an interventional study in the workplace carried out to prove the correlation of workplace support and self-efficacy.

ACKNOWLEDGEMENTS

We would like to thank the Director General of Health Malaysia for his permission to publish this article and the Staff of Dengkil Health Clinic for their support and help.

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