Behavior Outcomes of Breastfeeding-Friendly Policies Among Thai Mothers Working in a Factory: A Descriptive Study

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Abstract: The prevalence of exclusive breastfeeding in Thailand is the lowest in all of Asia. This study aimed to examine if breastfeeding-friendly policies in a factory influenced breastfeeding behaviors among Thai working mothers. Descriptive data was collected from 216 eligible factory-working mothers of children aged 6-12 months. Data collected included the Demographic Characteristic Questionnaire and the Breastfeeding in the Workplace Survey. Questions included: awareness of factory breastfeeding-friendly policies, breastfeeding behaviors, pumping in the workplace, social support for breastfeeding behaviors during work. Data were analyzed by descriptive statistics.

The majority of mothers (93.1%) intended to breastfeed with 93.1% also reporting shift work. Most of them rated the factory's support as excellent and very good. The rate of exclusive breastfeeding declined from 76.9% at one month to 46.3% at three months, then sharply dropped to 16.2% at four months and 7.4% at six months. Reasons for breastfeeding discontinuation included: maternal report of insufficient milk (36%), infant sent to live with grandmother in other areas (31%), and returning to work (12%).

Breastfeeding-friendly policies in factories could improve breastfeeding rates during first three months. However, working mothers may need continued information and resources such as why continued breastfeeding is important, how to maintain sufficient milk supply, on-site child care facilities, and managing family life. Occupational health nurses could provide onsite breastfeeding training and/or intervention programs to improve exclusivity and duration of breastfeeding, instructions on use of breast pumps, and lactation support programs in the workplace, especially for women who work shifts.

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Introduction

Breastfeeding is an important health issue because of its numerous health benefits for both mothers and infants.[1] For mothers, breastfeeding can decrease risk of diabetes, breast cancer, and ovarian cancer.[2,3] For infants, it can reduce infections, improved cognitive development, and protect them from becoming

overweight later in life.[3] The World Health Organization (WHO) has recommended that mothers exclusively breastfeed their infants for the first 6 months of life and continue to breastfeed until at least 2 years.[4] Although the benefits of breastfeeding are clear, several factors have an impact on early discontinuation of breastfeeding, including individual factors, infant factors, family support, social situation and context, and support from healthcare professionals.[5, 6] The WHO reported the global rate of exclusive breastfeeding (EBF) for the first 6 months at 40% in 2018.[7] In the United States, EBF was reported at 24.6% in 2018.[8] The EBF rates at 6 months were reported at 25% in Europe and 36% in Africa in 2014.[9] In Asia, which includes the countries Thailand, Myanmar, Philippines, Lao People's Democratic Republic, Indonesia, India, and Cambodia, the EBF rates at 6 months were 24%, 34%, 40.4%, 42%, 46%, and 74%, respectively.[10,11] Thailand has the lowest EBF rate in Asia,[10] although it has increased from 15.1% in 2005 to 23.1% in 2016.[10,12-15]

Thailand has experienced rapid social and economic changes over recent decades.[16,17] During this period, women have entered the workforce in greater numbers. According to a labor force survey, the female workforce increased from 44% in 1980 to 59.2% in 2019.[18,19] And nearly half were in factories.[20] Among all working women in 2012, the mean work hours were 45 hours per week, with about 34% working 40-49 hours per week and 23% working over 50 hours per week.[21] Mothers return to work after giving birth at six weeks in the private sector and three months in the government sector, and are likely to discontinue breastfeeding upon returning to work.[16] Working remains one of the most important barriers to EBF and is a major cause of the lower rates of EBF in Thailand. Breastfeeding support policies were established in 2006 in co-operation between the Thai Breastfeeding Center Foundation, the Department of Health, Ministry of Public Health, and the Department of Labor Protection and Welfare, Ministry of Labor.[20] Breastfeeding support policies in factories recommend that a factory should provide lactation rooms, breastfeeding training during pregnancy, breast pumps and free breastfeeding supplies, break time for pumping, and delivery of pumped milk to their infants.[20] The rate of EBF for six months increased to 28% after breastfeeding support policies were implemented in 17 factories across Thailand.[20] Ten years after this policy was initiated, less than 1% of factories (1,230 of 350,863) in Thailand implemented the breastfeeding support policy.[20] In 2019, the breastfeeding support policy was implemented in up to 2,300 factories.[22]

The evidence suggests that workplace support of breastfeeding may encourage working Thai women to continue EBF after returning to work. Previous studies have examined workplace breastfeeding practices among Thai working women.[17,18,23,24] These studies found that workplace support allows breastfeeding to be balanced with women's work responsibilities and is believed to have a positive impact on EBF among women employed full-time outside the home. Although many studies have investigated factors associated with EBF in Thailand, no studies have examined the effects of the breastfeeding-friendly policies at factories in Thailand and how work-related factors influence the breastfeeding practices of working mothers. To fill this gap in the literature, we explored the implementation of breastfeeding-friendly policies at one Thai factory along with the perspectives and breastfeeding behaviors of the employed postpartum women.

Review of Literature

As mentioned above Thailand has the lowest prevalence of EBF in Asia.[10] In 2003, the goal of six months of EBF was met by 30% of postpartum mothers.[16, 25] The rate of 6-month EBF among these women varied by population subgroup and area, ranging between 12.3% and 23.10%.[12-15] Subsequently, the overall 6-month EBF rates in Thailand in 2005, 2009, 2013, and 2016 were 14.5%, 15.1%, 12.3%,

and 23.10%, respectively.[10,12-15] The median duration of breastfeeding of any type in Thailand decreased from 14.5 months in 1987 to 6.5 months in 2012.[4,26]

Previous studies have found that returning to work after childbirth was a significant factor affecting EBF, as working women were more likely to discontinue breastfeeding.[1,10,14,24,26,27] In 1993, the Thai government launched maternity leave legislation to support breastfeeding for employed women[28] and mothers now have the right to 90 days of paid maternity leave for public employees. Women receive 90 days of leave, but only 45 days are paid by the employer and another 45 days are paid by the social security office. The wage women receive from the social security office is set at 15,000 Baht per month (approx. USD480). For the government sector, mothers can take an additional 180 days of leave without payment.[28] It does not provide enough paid time to cover 180 days of EBF.[4,20] Therefore, workplace support may encourage women to continue EBF after returning to work. Previous studies have examined breastfeeding practices in the workplace among employed Thai women and working Thai women's cultural perspectives toward breastfeeding.[17,18,23,24]

The ecological model (EM) developed by McLeroy and others in 1988 was used as the theoretical framework for the study.[29] The EM posits that individual behavior is influenced by many factors both individual and social environmental factors.[29] According to EM behavior is the outcome of interest, it is determined by five levels of environments: intrapersonal, interpersonal, institutional, community, and public policy.[29]

This study focused on the influence of three levels of the environments regarding breastfeeding behavior: the intrapersonal, interpersonal, and institutional levels. The investigators considered this breastfeeding support policy as an institutional level because it is neither national in scope nor mandatory for employers to comply with.[20] Also, the community level is beyond the scope of this study because the investigators addressed the relationships among organizations and groups within a defined area.[29] In this study, the intrapersonal level included characteristics, encompassing their relationships with supervisors, coworkers, occupational health nurse, friends, family members, and spouse. The institutional level included organizational characteristics such as workplace rules and regulations, breastfeeding-friendly policies, breastfeeding knowledge, breastfeeding rooms, equipment, and storage facilities. Therefore, this study explored 6-month EBF among Thai working mothers and the supportive roles of the factory workplace for mothers.

Methods

Design: A descriptive study.

Sample and Setting: The inclusion criteria were mothers of the children aged 6-12 months, who worked at company A and had taken maternity leave between June and December 2016. Exclusion criteria were mothers employed in the factory who did not take maternity leave during this period. The investigators approached Human Resource personnel to ask mothers to contact potential participants to ask if the principal investigator (PI) could contact them. The factory had more than 20,000 employees, 83% are female, with an average 500 births per year. The breastfeeding corner program of this factory, which operates on two shifts (day and night), provides breastfeeding rooms containing milk expression equipment and storage facilities.

Initially, five factories were identified that have been recognized for successfully providing workplace breastfeeding support for 4 or more years. These factories all adhere to the breastfeeding support policy disseminated by the Thai Breastfeeding Center Foundation in 2016.[20] The number of employees in the factories ranges from 2,000 to over 20,000 workers. One factory, Company A, having slightly over 20,000 employees was selected for the study because of the number of working mothers. Since 2013, this factory, located near Bangkok, has followed a breastfeeding-friendly policy, involving a "breastfeeding corner" program.

Ethical Considerations: This study had ethics approval from institutional review boards at University of Illinois at Chicago, The United State of America (#2017-0539) and Boromarajonani College of Nursing, Khon Kaen, Thailand (#BCNKK_E_06052560_3). The rights of participants were protected throughout the study and they were informed of their rights to confidentiality, privacy and ability to withdraw from the study at any time. They all signed a consent form.

Instruments: These were a demographic questionnaire and a Breastfeeding in the Workplace Survey Questionnaire (BWSQ) instrument. The demographic questionnaire was developed by the researchers. It asked about age, parity, mode of delivery, date of delivery, baby term status, breastfeeding of the previous child, marital status, religion, educational level, income, work position, shift work, work hours, break time, flextime, maternity leave duration, and length of employment at the factory. Each participant also completed the survey instrument. The Ecological Model (EM) developed by McLeroy and others in 1988 was used as the theoretical framework for instrument preparation.[29] To prepare an instrument for the Thai factory setting, the BWSQ was developed from two existing tools addressing workplace breastfeeding support developed by Chen and others in 2006[30] and Spatz and others in 2014.[31] After selecting applicable items, the investigators assembled them into an appropriate format, translated them into Thai, and modified some items for cultural appropriateness. An expert committee on breastfeeding consisting of an American and a Thai university professor of nursing science reviewed the instrument and Thai translation, recommended improvements to the investigators, and approved the final version. The final survey instrument consisted of 46 items (including open-ended questions) in eight parts addressing (1) awareness of factory breastfeeding support (breastfeeding-friendly) policy, (2) breastfeeding preparation, (3) breastfeeding behaviors, (4) pumping in the workplace, (5) evaluation of the pumping space, (6) evaluation of pumping time in the factory, (7) social support of breastfeeding behaviors during work, and (8) some women's choice not to breast pump at work.

Data Collection: After study approval the PI contacted the Thai Breastfeeding Center Foundation, which provided factory contact information. After obtaining permission from Company A to collect data in the factory, the PI arranged a meeting with the factory management and the breastfeeding support team to explain the purpose and methods of the study. Subsequently the PI posted study flyers in women's bathrooms, break rooms, lactation rooms, and other public areas of the factory. The study flyer stated the purpose of the study, benefits and risks of participation, and the PI's contact information and invited employed mothers who were interested in participating to telephone the PI. In addition, using a master list of telephone numbers provided by human resource personnel at Company A, the PI called employed mothers to invite them to participate in the study, orally informing them of its purpose and the benefits and risks of participation. During each telephone contact, the PI screened the individual for eligibility to participate based on the inclusion criteria; for eligible employed mothers, the researcher confirmed their telephone numbers. The PI distributed folders containing an informed consent form, a demographic questionnaire, and the BWSQ in the factory's central lactation room during shift change hours. After picking up their folders, participants completed the study documents on their leisure time and then returned the folders directly to the PI in the central lactation room within one to three days.

Data Analysis: Statistical analyses were performed using SPSS version 24.[32] Descriptive statistics (percentages, means, and standard deviations) were used to describe the demographic characteristics of the sample and data of eight parts in the questionnaire (1) awareness of factory breastfeeding-friendly policies, (2) breastfeeding preparation, (3) breastfeeding behaviors, (4) pumping

in the workplace, (5) evaluation of the pumping space, (6) evaluation of pumping time in the factory, (7) social support of breastfeeding behaviors during work, and (8) some women's choice not to pump at work.

Results

All 216 women completed the survey questionnaires.

Demographic characteristics: These are presented in Table 1. All mothers were Thai, and about half (51.9%) had been working in the factory between 5-9 years. Most (70.8%) were between 25-34 years, 53.2% had vaginal births, 44% had cesarean sections, while 64% had delivered at term and 31% delivered preterm. Most participants were Buddhists (99.1%), married (87%), and living with their husbands (60.2%). More than half (56.9%) had completed high school and 87% had an income between 10,000 (300 USD) and 19,999 (600 USD) baht per month. The Thai minimum wage rate is 300 Baht per day.[33] Average daily working hours were 11.4, and they worked 5.02 days per week. Most women (96.3%) did shift work, had an average of two breaks per day for approximately 46 minutes per break, and 66.2% had flexible time each day.

Table 1 Demographic characteristics of participants (n = 216)

Characteristics	% (n)
Years of work in factory	
0-4	34.3% (74)
5-9	51.9% (112)
10-14	12.0% (26)
15-19	0.9% (2)
20-24	0.9% (2)
Age (years)	
<25	5.6% (12)
25-29	38.4% (83)
30-34	32.4% (70)
35-39	20.4% (44)
≥40	3.2% (7)
Type of delivery	
Normal vaginal	53.2% (115)
Forceps-assisted	0.5% (1)
Vacuum-assisted	2.3% (5)
Cesarean section	44.0% (95)
Term of delivery	
Preterm	31.0% (67)
Term	63.9% (138)
Post-term	5.1% (11)
Relationship status	
Single	10.6% (23)

Table 1 Demographic characteristics of participants (n = 216) (Cont.)

Characteristics		% (n)
Separated/divorced		2.3% (5)
Married		87.0% (188)
Religion		
Buddhist		99.1% (214)
Muslim		0.9% (2)
Education		
Less than high school		15.3% (33)
Completed high school		56.9% (123)
Vocational		21.8% (47)
Bachelor's degree and higher		6.0% (13)
Income (Baht/Month)		
<10,000		10.6% (23)
10,000-19,999		87.0% (188)
20,000-29,999		0.9% (2)
≥30,000		1.4% (3)
Position		
Office		3.2% (7)
Floor		95.8% (207)
Support		0.9% (2)
Shift Work		
Yes		96.3% (208)
No		3.7% (8)
Flexible Time		
Yes		66.2% (143)
No		33.8% (73)
Work time	Mean (SD)	Range
Work (hours/day)	11.40 (1.25)	8-12
Work (days/week)	5.02 (0.27)	4-6
Break Time		
Number of breaks/day	2 (0.93)	1-3
Average break time (minutes)	46.20 (7.20)	20-65

Breastfeeding Behaviors

Before giving birth, 93.1% intended to breastfeed (see Table 2). However, only 61.3% did this for the first 6 months, and levels of breastfeeding ranged from "exclusively" to "partially" (human milk was less than half of feedings). Otherwise, 5.1% of participants reported only "token" breastfeeding and 33.6% reported no breastfeeding at all during their baby's first six months. At the time of data collection, the babies were 6 to 12 months, only 8.8% of women were still breastfeeding. Of all the mothers, 76.9% breastfed exclusively during the first month. The rate

of EBF declined from 76.9% in the first month to 46.3% in the third month, then sharply dropped to 16.2% in the fourth month and 7.4% in the sixth month. (see Table 3).

Table 2 Awareness and usage of factory breastfeeding support (n=216)

		% (n)
Awareness of factory breastfeeding support		
Know about breastfeeding policy in factory		
Yes		99.5% (215)
No		0.5% (1)
Know about pumping room in factory		
Yes		99.5% (215)
No		0.5% (1)
Know about break time for pumping		
Yes		87.5% (189)
No		12.5% (27)
Know about refrigeration for storage		
Yes		96.3% (208)
No		3.7% (8)
Know about breastfeeding training		
Yes		94.0% (203)
No		6.0% (13)
Planned to breastfeed before giving birth		
Yes		93.1% (201)
No		6.9% (15)
Usage of factory breastfeeding support		
Attended breastfeeding training		
Yes		84.3% (182)
No		15.7% (34)
Used lactation rooms at factory		
Yes		14.8% (32)
No		85.2% (184)
Having to find a substitute worker (n=91)		
Yes		73.6% (67)
No		26.4% (24)
Purchased personal pump		
Yes		59.3% (128)
No		40.7% (88)
Break time for pumping	Mean (SD)	Range
Number of breaks/day	2.5 (0.91)	1-4
Average break time(minutes)	27.75 (13.51)	10-90

Table 3 Breastfeeding patterns (n=216)

Month	Exclusively %(n)	Partial High %(n)	Partial Medium %(n)	Partial Low %(n)	Token %(n)	No Human Milk %(n)
1	76.9% (166)	9.7% (21)	4.2% (9)	0.9% (2)	5.1% (11)	3.2% (7)
2	61.1% (132)	18.5% (40)	5.1% (11)	2.8% (6)	3.2% (7)	9.3% (20)
3	46.3% (100)	20.8% (45)	10.6% (23)	1.4% (3)	2.8% (6)	18.1% (39)
4	16.2% (35)	14.4% (31)	10.6% (23)	6.5% (14)	5.6% (12)	46.8% (101)
5	9.3% (20)	7.4% (16)	10.2% (22)	6.5% (14)	6.5% (14)	60.2% (130)
6	7.4% (16)	5.1% (11)	10.2% (22)	6.0% (13)	6.9% (15)	64.4% (139)

In responding to open-ended survey questions, 184 participants (85.18%) reported that the first drink or food (besides human milk) they gave their baby were formula (29.9%), infant cereal (20.7%), water (19%), banana (10.9%), mashed rice (10.3%), a warm mixture of banana and mashed rice (6.5%), and orange juice (2.7%). The ages at which they began giving these ranged from one day after birth to 9 months of age. Women also reported that their baby began habitually (two to three times a week) consuming these drinks or foods from the age of 1 to 12 months postpartum and at an average of 6 months; habitual drinking and eating were defined as 2-3 per week.

Awareness and Usage of Factory Breastfeeding Support

The participants were asked about their awareness of the factory's breastfeeding support policy before giving birth. All but one (99.5%) had known about breastfeeding support policy. Most knew about the breastfeeding room made available for pumping (99.5%), break time for pumping (87.5%), refrigerator for milk storage (96.3%), and the breastfeeding training program (94%). Of all the mothers, 84.3% participated in the breastfeeding support program, but only14.8% actually used the breastfeeding room, and well over half (59.3%) purchased their own personal breast pump, either electric (55.7%), manual (26%), both an electric and manual pump (12%), or a battery-powered breast pump (3.1%).

Among those participants reporting using a breast pump at work during the first few months, they pumped 1-4 times per day for an average of 2.5 times per day and 28 minutes (10-90 minutes) each time. If they wanted to pump, their supervisor would fill in for them for their factory work (see Table 2).

Reasons and Times for Discontinuing Pumping and Breastfeeding

Participants expressed several reasons for discontinuing pumping and breastfeeding: insufficient milk (36%), baby living with the grandmother in a rural area (31%), returning to work (12%), and "other" reasons (21%) (see Table 4). Cessation of feeding human milk to their baby ranged from <7 days (6.5%) to 12 months (3.2%), whilst 38.4% stopped breastfeeding at the end of the third month.

Table 4 Explanations for why women stopped pumping entirely (n=216)

	% (n)
Insufficient milk (less milk)	36% (78)
Baby lives with grandma in rural area (another city, too far)	31% (67)
Returning to work	12% (25)
Others	21% (46)

Social Support for Breastfeeding Behaviors During Work

Regarding the factory's levels of breastfeeding support, about a quarter of participants (26.1%) rated it as excellent, with the majority (59%) rating it as very good. Most reported that their supervisor supported their breastfeeding and pumping very much (50.5%) or somewhat (48.4%). In terms of co-worker support, 48.2% reported being very much supported and 49.7% received somewhat support. The participants felt very much supported (40.3%) and somewhat supported (55%) by nurses at the factory. In addition, they felt very much supported from spouse (55%) and from family members (52.9%) (see Table 5).

Table 5 Social support for breastfeeding behavior during work

	% (n)
Factory Support	(n=188)
Excellent	26.1% (49)
Very good	59.0% (111)
Good	11.7% (22)
Fair	3.2% (6)
Supervisor Support	(n=192)
Very much supported	50.5% (97)
Somewhat supported	48.4% (93)
Did not supported	1.0% (2)
Coworker support	(n=191)
Very much supported	48.2% (92)
Somewhat supported	49.7% (95)
Did not supported	2.1% (4)
Nurse support	(n=191)
Very much supported	40.3% (77)
Somewhat supported	55.0% (105)
Did not supported	4.7% (9)
Partner support	(n=191)
Very much supported	55.0% (105)
Somewhat supported	42.9% (82)
Did not supported	2.1% (4)
Other family members support	(n=191)
Very much supported	52.9% (101)
Somewhat supported	45.5% (87)
Did not supported	1.6% (3)

Discussion

The purpose of this study was to explore the breastfeeding behavior outcomes of women working in a factory in Thailand which used a workplace breastfeeding support policy. The results showed almost half of the participants (46.3%) breastfed exclusively for three months. However, this decreased sharply to 16.2% in the fourth month, 9.3% and 7.4% in the fifth and sixth months respectively. Working mothers' awareness of the policies before giving birth was found to be important to breastfeeding and pumping success. Of all participants, 83.4% attended breastfeeding training program during pregnancy. This is consistent with a study finding that institutional interventions and advertising campaigns were effective in promoting a lactation support program for hospital employees.[31] Specifically, the researchers found that most female

employees surveyed were aware of the hospital's lactation program and took advantage of the breast pump services offered. Furthermore, Chen found that working mothers' awareness of breastfeeding-friendly policies significantly increased the rate of breastfeeding continuation in the workplace after their return to work.[30] These findings indicate that effective advertising and promotion of breastfeeding support policies in the workplace are essential to create awareness of those policies, particularly in large facilities such as Company A.

We found that factory breastfeeding-friendly policies were associated with higher-than-national rates of EBF among mothers before they returned to work. Specifically, the participants' EBF rates 1, 2, and 3 months postpartum were 76.9%, 61.1%, and 46.3%, respectively, significantly higher than the national averages of 30%, 15%, and 12.3%.[34] These findings are similar to a Taiwanese study where breastfeeding-friendly policy support increased working mothers' breastfeeding rate at 1 month postpartum; subsequently, the breastfeeding rate dropped below the national average at 3 months postpartum, possibly because breastfeeding after returning to work was a new practice in that country.[30]

In contrast, a USA revealed that after implementation of a workplace breastfeeding support program, the participants' EBF rates at 6 months postpartum were significantly higher than those observed before program implementation and were higher than the national average.[31] In a study[17] exploring the effects of a workplace breastfeeding support model results revealed that the rate of 6-month EBF after implementing the program was higher (57.6%) than those before implementing the program(29.2%). Therefore, the EBF rates of the participants were impressive while they were on maternity leave, indicating that the factory's pre-delivery breastfeeding training was effective.

In our study, the EBF rates of the participants were also impressive during the first three months, indicating that the factory's pre-delivery breastfeeding training was effective. However, the sharp drop in EBF after returning to work, coupled with participants' low utilization of the lactation rooms, indicate the need for additional, breastfeeding support activities such as breastfeeding class or consultation about benefits of breastfeeding; how to maintain sufficient milk supply; child care facilities; and how mothers could manage their family life to raise the child by themselves. Such training could re-emphasize the availability of pumping facilities in the factory as well as the health benefits of EBF. In addition, current pre-delivery training emphasizes acquisition of breastfeeding and pumping knowledge among the mothers, but post-delivery training could emphasize development of breastfeeding and pumping self-efficacy. In a community-based breastfeeding promotion intervention in Thailand, the intervention was successful in enhancing breastfeeding self-efficacy in an intervention group, which then exhibited a significantly higher EBF rate and longer duration than a comparison group.[24] As a supplement to the training, mothers experiencing milk expression and pumping problems need access to knowledgeable nurses for assistance, but the factory's occupational health nurses lack expertise in breastfeeding practices. To address this need, Company A and other Thai factories could recommend that their employees take advantage of the breastfeeding services offered by the Thai Breastfeeding Center Foundation, which are accessible by website, email, and instant messaging using a smart phone application.

The International Labour Organization (ILO) has recommended that maternity leave last for at least 14 weeks.[35] In Thailand, maternity leave legislation gives public employees the right to up to 12 weeks of fully paid maternity leave.[36] For private employees, however, most Thai business owners provide fully paid maternity leave for only 6 weeks; for the following 6 weeks, a lesser amount is received from the National Social Security Fund.[36] In the case of Company A, the employer provided fully paid maternity leave for 8 weeks before delivery and 12 weeks after delivery

as a component of its breastfeeding-friendly policies. Elsewhere in Asia, only Vietnam has enacted a better maternity leave policy; since May 2013, Vietnamese mothers have the rights to leave for six months with payment after giving birth to support continuation of breastfeeding.[37] As a result of this national policy, the EBF rate in Vietnam increased from 17% in 2012 to 24.3% in 2014.[38,39] The breastfeeding outcomes in Vietnam as well as the factory study's findings argue that to effectively promote EBF, the government of Thailand should explore the possibility of enacting a national policy that provides for longer fully paid maternity leave for all working mothers, possibly up to 6 months.

Finally, 36% of mothers in this study reported insufficient milk production. The main reason for participants' discontinuing pumping and breastfeeding after returning to work was that their babies lived with grandmothers in distant rural areas (31%), with participants' mothers living in areas over 6 hours' drive from the factory. Thus, it was difficult to deliver frozen milk packages for their babies, even with factory assistance. Furthermore, a 2016 government report stated that many Thai mothers who returned to work in urban areas did not pump their milk, especially mothers whose babies lived with grandparents in rural areas.[36] As an additional consideration, many of those study participants indicated that their mothers who were taking care of their babies were willing to support breastfeeding efforts, but did not understand how to properly manage the frozen milk. Notably, if Thai grandmothers had adequate knowledge of new breastfeeding practices, they would be a key person to promote and support breastfeeding.[40] One possible means of addressing these issues is to involve primary care units located in rural areas in the milk delivery process and associated training. Specifically, community nurses working in these units could provide grandparents information about how to manage frozen human milk.

Breastfeeding-friendly policies in Thai factories can be effective in promoting breastfeeding practices, including EBF as well as breastfeeding initiation and continuation. For example, EBF rates among mothers working at Company A were higher than the national average for the first 3 months postpartum while they were on maternity leave. However, these rates dropped quickly over the next 3 months after mothers returned to work. Because many participants indicated that they had felt it necessary to place their babies with their own mothers living in distant areas, consequently reducing their inclination to breastfeed, further exploration of alternative childcare practices would be worthwhile. If childcare services were offered in factories, working mothers may have more breastfeeding success and bond with their babies and may be able to avoid placing their child with their grandparents. Overall, the study results illustrate the role that supportive workplace policies play in promoting breastfeeding and suggest directions for future research on development of more effective national policies for optimal maternity leave and workplace breastfeeding support.

Limitation

Limitation of this study should be acknowledged. Data collection was conducted in only one breastfeeding-friendly factory manufacturing electronics or one study design thus may not have captured factors influencing breastfeeding in other types of Thai factories with and without breastfeeding support programs. Thus, the generalizability of the findings may be limited.

Conclusions and Implications for Nursing Practice

Breastfeeding support programs and facilities in the factory can enhance and promote breastfeeding continuation for the first three months. In contrast, three main factors to discontinue breastfeeding of working mothers included the most important cause of discontinuation of breastfeeding that is insufficient milk, mothers left children lived with grandma in

rural area, and the mothers returned to work. The study results provide baseline data on workplace support for breastfeeding continuation that can be used to guide future research of working mothers as well as to inform maternity leave and workplace policy development.

This study was to explore the impact of the breastfeeding support policy in a factory setting in Thailand. Further studies should be conducted to explore and assess relationships between breastfeeding support policies and breastfeeding behaviors in a variety of factories and other workplaces, such as government offices, banks, and public and private schools and hospitals. In addition, researchers should examine and compare breastfeeding outcomes in various types of workplaces with and without breastfeeding support policies. Given the need for further research, the results of this study can be used to support policy development in Thailand to promote EBF among working mothers, such as a policy providing longer maternity leave duration or onsite childcare.

Regarding clinical implications for future interventions to increase the EBF rate, health providers working in prenatal and postnatal clinics should advise both mothers and their partners and/or family members to participate in breastfeeding training and support programs, especially mothers who plan to return to work after maternity leave. Moreover, these providers should follow up with mothers during home visits extending to 6 months postpartum; such visits would allow them to answer questions and address problems regarding breastfeeding. Finally, healthcare professionals should collaborate with employers to establish breastfeeding support policies for the workplace such as childcare facilities could be instituted to promote EBF and breastfeeding continuation among working mothers, and this particularly needs to involve nurses and midwives with breastfeeding expertise.

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ผลลัพธ์ของนโยบายส่งเสริมการเลี้ยงลูกด้วยนมแม่ต่อพฤติกรรมการส่งเสริมการเลี้ยงลูกด้วยนมแม่ของหญิงไทยที่ทำงานในโรงงานแห่งหนึ่ง: การศึกษาเชิงพรรณนา

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บทคัดย่อ: ในประเทศไทย พบว่า อัตราการเลี้ยงลูกด้วยนมแม่เพียงอย่างเดียว 6 เดือนต่ำที่สุดในทวีปเอเชียและร้อยละ 48 ของหญิงไทยทั้งหมดทำงานในโรงงาน การศึกษานี้จึงมีวัตถุประสงค์เพื่อศึกษาผลลัพธ์ของนโยบายส่งเสริมการเลี้ยงลูกด้วยนมแม่ต่อพฤติกรรมการเลี้ยงลูกด้วยนมแม่ของหญิงที่ทำงานในโรงงานแห่งหนึ่ง การศึกษานี้เป็นการศึกษาเชิงพรรณนา กลุ่มตัวอย่าง คือ มารดาที่ทำงานในโรงงาน จำนวน 216 คน และมีบุตรอยู่ในช่วงอายุ 6 เดือนถึง 1 ปี เก็บรวบรวมข้อมูลโดยใช้แบบสอบถาม 2 ชุด ได้แก่ แบบสอบถามข้อมูลทั่วไปและแบบสำรวจการเลี้ยงลูกด้วยนมแม่ในที่ทำงาน ซึ่งประกอบด้วยเนื้อหา การตระหนักรู้ต่อนโยบายส่งเสริมการเลี้ยงลูกด้วยนมแม่ในโรงงาน พฤติกรรมการเลี้ยงลูกด้วยนมแม่ การปั๊มน้ำนมในที่ทำงาน การสนับสนุนทางสังคมต่อพฤติกรรมการเลี้ยงลูกด้วยนมแม่ในระหว่างทำงาน วิเคราะห์ข้อมูลโดยใช้สถิติเชิงพรรณนา

ผลการศึกษา พบว่า มารดาส่วนใหญ่จำนวน 201 คน (93.1%) ตั้งใจเลี้ยงลูกด้วยนมแม่และทำงานเป็นผลัดมารดาจำนวน 160 คน (85.1%) ให้การประเมินการสนับสนุนการเลี้ยงลูกด้วยนมแม่ของโรงงานอยู่ในระดับยอดเยี่ยมและดีมาก สถิติอัตราการเลี้ยงลูกด้วยนมแม่อย่างเดียวในเดือนแรก เดือนที่สาม เดือนที่สี่ และเดือนที่หกหลังคลอดพบว่ามีการลดลงอย่างต่อเนื่องตามลำดับ ดังนี้ 76.9%, 46.3%, 16.2% และ 7.4% เหตุผลในการหยุดให้นมบุตรได้แก่ มารดามีน้ำนมไม่เพียงพอ (36%) ส่งทารกไปอยู่กับยายในพื้นที่อื่น (31%) และการกลับไปทำงานหลังจากลาคลอด (12%)

นโยบายส่งเสริมการเลี้ยงลูกด้วยนมแม่ในโรงงานสามารถสนับสนุนอัตราการเลี้ยงลูกด้วยนมแม่อย่างเดียวในช่วงสามเดือนแรก อย่างไรก็ตามหญิงที่ทำงานอาจต้องการข้อมูลและทรัพยากรอื่น ๆ เพื่อรับการสนับสนุนอย่างต่อเนื่อง เช่น การให้ความรู้ว่าทำไมการเลี้ยงลูกด้วยนมแม่อย่างต่อเนื่องจึงมีความสำคัญ ทำอย่างไรจะรักษาปริมาณน้ำนมให้เพียงพอ การสนับสนุนสถานที่ดูแลเด็กในสถานที่ทำงาน การบริหารจัดการชีวิตครอบครัว นอกจากนี้พยาบาลอาชีวอนามัยในโรงงานสามารถส่งเสริมสนับสนุนการเลี้ยงลูกด้วยนมแม่อย่างเดียวให้ยาวนานขึ้น โดยการจัดอบรมโปรแกรมการเลี้ยงลูกด้วยนมแม่ในสถานที่ทำงานและหรือจัดกิจกรรมต่าง ๆ เพื่อส่งเสริมการเลี้ยงลูกด้วยนมแม่ การให้คำแนะนำในการใช้เครื่องปั๊มนมและโปรแกรมสนับสนุนการให้นมบุตรในสถานที่ทำงานโดยเฉพาะอย่างยิ่งหญิงทำงานที่ทำงานเป็นผลัด

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คำสำคัญ: นโยบายส่งเสริมการเลี้ยงลูกด้วยนมแม่ การให้นมบุตรไม่ต่อเนื่อง การเลี้ยงลูกด้วยนมแม่อย่างเดียว การสนับสนุนจากที่ทำงาน หญิงทำงาน

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