Factors Predicting Exclusive Breastfeeding among The First Time Chinese Mothers

Hongwei Wan, Sujitra Tiansawad, Susanha Yimyam, Punpilai Sriaporn

Abstract: This study examined the factors that predict exclusive breastfeeding at 4 months and 6 months among the first-time Chinese mothers. Based on the theory of planned behavior, a descriptive and correlational research design was utilized. A systematic random sampling method was applied and a total of 272 first-time Chinese mothers who gave birth at a hospital in Shanghai were recruited. Three instruments, the Breastfeeding Attrition Prediction Tool, the Breastfeeding Knowledge Scale, and a Demographic Questionnaire were used to measure breastfeeding knowledge, attitude, subjective norm, perceived control, and breastfeeding practice. The data were analyzed using descriptive statistics, Point-biserial, Pearson's product moment correlation, and Logistic regression analysis.

Results revealed that the breastfeeding initiation rate was 93.75%, but exclusive breastfeeding rates at 4 months and 6 months had reduced to 34.19% and 3.31%, respectively. There were significant positive relationships between exclusive breastfeeding at 4 months and breastfeeding knowledge, attitude, subjective norm, and perceived breastfeeding control. A negative relationship was found between exclusive breastfeeding at 4 months and working status. A logistic regression analysis indicated that all of five breastfeeding factors could significantly predict exclusive breastfeeding at 4 months. The implication of this study to nursing practice lies in that nurses should provide enough breastfeeding knowledge, encourage new mothers' positive breastfeeding attitude, change their significant others, and strengthen their breastfeeding control.

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Introduction

Breastfeeding is a relatively basic, simple and cost-effective means of nourishing a baby with a significant impact on establishing a lifetime foundation of optimal health. Breast milk has all the nutrients babies need to stay healthy and grow. The benefits of breastfeeding over formula feeding have been studied widely.[1,2] Exclusive breastfeeding (EBF) is defined

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as feeding infants with only breast milk (including breast milk that has been expressed or from a wet nurse) and nothing else, except for oral rehydration salts solution, medicines and vitamins and minerals.[3] Breastfeeding, especially EBF for infants under two years of age has the greatest potential impact on child survival, and is estimated to prevent over 800,000 deaths (13% of all deaths) in children under five in the developing world.[1] Furthermore, breastfeeding also benefits mothers.[2,4] The World Health Organization (WHO) and the United Nation Children's Fund (UNICEF) have issued global recommendations for optimal infant feeding to be EBF for six months, and continued breastfeeding up to 2 years age and above.[5] In China, the target set in the National Program of Action for Children Development in 1990s was that the exclusive breastfeeding rate at 4-6 months should be 80%.[6]

Despite these recommendations regarding EBF, a high proportion of women worldwide are still choosing to formula feed their children.[5] Breastfeeding situations internationally have been found to be different within and across countries, and over time. In China, a 2010 report stated that the EBF rate at 4 months was only 26.7%.[7] Moreover the breastfeeding rates, especially EBF rates, cannot meet the recommendations of the WHO and UNICEF as well as the Chinese government. Because of low EBF rates internationally, including China, factors that influence EBF need to be identified to provide information and references to guide effective promotional breastfeeding interventions to prolong EBF. The main inhibiting factors on breastfeeding have already been found according to a large body of studies internationally.[8,9] Unfortunately, these factors have not been well studied yet in China.

Literature Review

The benefits of breastfeeding over formula feeding have been studied widely. Breastfeeding, especially EBF, during the first 6 months of life is an important factor in reducing infant and childhood morbidity and mortality.[1] One obvious physical benefit of exclusive breastfeeding lies in its greater immunity for the infants' health for breast fed babies have fewer tendencies to develop allergic diseases and infections because breast milk contains hundreds of health-enhancing antibodies and enzymes.[10] The benefits of breastfeeding on mothers' early postpartum heath include a faster postpartum involution of the uterus, and a decreased risk for iron deficiency anemia.[3] The long-term benefits of breastfeeding to mothers include protective effects against breast cancer in pre-menopausal women, ovarian cancer, endometrial cancer, and less risk of osteoporosis.[2] In addition, EBF has a significantly reduced risk of some episodes of infant gastrointestinal infection in the first 12 months of life than the mixed breastfeeding.[10]

Although there is overwhelming evidence related to the benefits of EBF for 4 to 6 months, only a few mothers comply with the recommendations on EBF for at least 4 months. In western countries, great differences exist in breastfeeding prevalence and duration. For example, 15% of babies are breastfed at three months of age in France, whilst the figures for Poland and Italy were 27% and 46% respectively, and in Scandinavian countries, much higher rates in Norway and Sweden have been reported as 98% and 70%, respectively.[11]

In China, according to the currently national survey, the EBF rates at four months were 33.0% in Shanghai and 39.0% in other eight cities.[12] In Guangzhou, a survey among 1754 young children showed that at 4 months, the EBF rate was 29.82%.[13] In summary, only a few cities and provinces in China could achieve the goals of both the WHO and the national target for EBF rate.

It seems that sustaining EBF for 4 months or longer still poses many difficulties for lots of mothers. Contributing to this problem are many correlated factors which have the potential to influence breastfeeding practice and often play an important role in shorter and unsatisfied EBF duration. A vast body of studies internationally concerned a large number of specific

risk factors which impede a mother's ability to sustain longer EBF. These factors are as follows: Firstly, demographic factors including age, education level, marital situation, and family yearly income were reported to be significantly associated with breastfeeding duration.[13] In general, women who are older, better educated, in more stable marital situations, and have higher incomes and levels of educational attainment are more likely to breastfeed for a longer period.[9,14] Secondly, breastfeeding knowledge and access to sources of breastfeeding information have been demonstrated to be associated significantly with periods of breastfeeding.[15] Women should be educated on the importance of EBF with regard to the nutritional adequacy of breast milk and long-term benefits for mother and children so as to improve breastfeeding duration.[16] Thirdly, breastfeeding attitude significantly influenced breastfeeding initiation and duration.[17] In China, the attitude towards breastfeeding and formula feeding was reported as an important predictor for breastfeeding intention and duration.[18] Fourthly, breastfeeding control was reported as a significant factor associated with breastfeeding.[19] It was identified from 199 postnatal Chinese women that maternal confidence was an independent and significant predictor of breastfeeding duration and exclusivity.[20] Fifthly, breastfeeding subjective norms can play an important role in predicting how much longer women would breastfeed their babies. The development of a practical model of optimal breastfeeding should take into account father support.[21] Finally, mothers' working status was another significant factor influencing breastfeeding. Mothers who had employment usually gave breastfeeding with short duration.[22] In China, unfortunately, these factors have not been well studied yet. With little evidence-based data illustrating the extent to which these inhibiting factors can predict breastfeeding practice, a more detailed understanding of the influencing factors in China is really needed to be explored, which will provide enough information in order to develop effective and efficient breastfeeding promotional interventions.

Therefore, a two-phase research project was proposed with a descriptive-correlational design in the first phase and experimental design in the second phase. This paper presents the results of the first phase study, of which research questions were (1) Is there any relationship between the factors of breastfeeding knowledge, attitude, subjective norm, perceived control, mother's age, and working status, and EBF practice at 4-month and 6-month postpartum among the first time Chinese mothers?; and (2) To what degree can breastfeeding knowledge, attitude, subjective norm, perceived control, mother's age, and working status predict EBF practice at 4-months and 6 months postpartum among the first-time Chinese mothers?

Conceptual Framework

The conceptual framework of the study was mainly based on the theory of planned behavior (TPB) and the evidence-based findings of previous studies.[23] This TPB was chosen because it has been proved useful in breastfeeding research and is relevant for understanding specific action-oriented behaviors such as breastfeeding.[23] The TPB has been partly used as a mediating model to explain breastfeeding behavior with three constructs, breastfeeding attitude, breastfeeding subjective norm, and perceived breastfeeding control. These three factors have been shown to predict breastfeeding initiation and maintenance of breastfeeding for 6 months.[24] The adequacy of TPB to explain breastfeeding was supported by the study result in a prospective cohort study with 151 breastfeeding mothers in the United States.[23]

According to the TPB, three factors influence a person's intention to perform a behavior (EBF in this study): the attitude towards the behavior, the subjective norm, and the perceived control. A person's attitude toward EBF is a multiplicative function of an individual's positive or negative evaluation of EBF and beliefs about its consequences. The subjective norms are a multiplicative function of an individual's

perception of normative belief on EBF and motivation to comply with those beliefs about EBF. Finally, breastfeeding control refers to a women's belief in her own ability to control EB. So, it was hypothesized that the first-time Chinese mothers with more positive breastfeeding attitude, more supportive subjective norms, and higher level of breastfeeding control would be more likely to continue EBF until 4-6 months postpartum.

Additionally, according to the evidence-based previous studies, other factors like breastfeeding knowledge, mother's age, and working status can predict EBF.[14] Breastfeeding knowledge was demonstrated to be associated significantly with longer periods of breastfeeding.[25] Mothers' working status was associated with the termination of breastfeeding and was named as one of the main reasons for less than ideal breastfeeding practices.[26]

Therefore, there were six factors selected in this study: breastfeeding attitude, breastfeeding subjective norm, breastfeeding control, breastfeeding knowledge, mother's age, and mothers' working status.

Methodology

Design: A descriptive correlational design was used in this study.

Ethical Considerations: Approval was obtained from the Research Ethics Review Committee of Faculty of Nursing, Chiang Mai University, and the Ethics Committee of Shanghai First Maternity and Infant Hospital, Shanghai, China. Participation in this study was entirely voluntary. Participants were given written information explaining about purpose of the study, procedures, confidentiality and anonymity preserved. They were also informed about their right to withdraw from the study at any time without losing any benefits of their health care service. Then written consents were obtained.

Setting: The study was conducted at Shanghai First Maternity and Infant Hospital, Shanghai, China. It is a teaching hospital accredited as an "AAA" tertiary care specialty hospital with average of 15-17,000 births per year.

Samples: Participants were the first-time Chinese mothers with the following inclusion criteria: (1) being four months postpartum; (2) not having any complications such as breast illnesses or other serious diseases that affect breastfeeding process; and (3) their babies had no medical problems that could affect breastfeeding.

The sample size was estimated according to the statistical analysis of logistic regression.[27] Considering that there were altogether 7 variables to be examined, based on the guideline of sample size for logistical regression with a ratio of 30 observations for each factor, the sample size was (30*7 + 50%* 30*7), considering a 50% refusal rate that equaled 315 possible participants. Systematic random sampling method was used to select participants among all the first-time Chinese mothers at 4-month postpartum. The list of all eligible participants was obtained from the hospital. In order to achieve the sample size of 315, they were selected by taking every 4 person from about 1600 eligible mothers during the month surveyed. The first participant was chosen by a simple sampling method using a randomized figure table on the Internet. Two hundred and seventy two questionnaires were effectively completed from four hundred delivered questionnaires with a response rate of 68%, and these 272 questionnaires were used for data analysis.

Instruments: Three instruments were employed for data collection. They were the modified Breastfeeding Attrition Prediction Tool (BAPT), Breastfeeding Knowledge Scale (BKS), and Demographic Questionnaire.

The Modified BAPT

The original English version of BAPT was developed and revised by Janke.[28] It was modified and translated into Chinese by the principal investigator using back translation approach.[29] Then this Chinese version was back-translated into English by a bilingual nurse who is a Chinese native speaker. Then the

back-translated version was compared with the original English version for semantic and conceptual equivalence. Minor modification was then performed for cultural appropriateness. The modifications included deleting the items of breastfeeding subjective norms that did not fit for Chinese culture and using a 5-point Likert scale instead of 6-point Likert scale. These modifications were permitted by the developer. Then the modified BAPT had 47 items with three subscales. They are the breastfeeding attitude subscale with 29 items including positive and negative breastfeeding sentiment attitudinal, breastfeeding subjective norm subscale with 8 items, and breastfeeding control subscale with 10 items. The 5-point Likert scale is (1) strongly disagree to (5) strongly agree; or (1) not at all important to me to (5) very important to me. For example, an item in the subscale of breastfeeding attitude is "Breastfeeding is more convenient than formula feeding". An item in the subscale of breastfeeding subjective norm is "The baby's father thinks I should breastfeed my baby". The item in the subscale of breastfeeding control is "I have the necessary skills to breastfeed". Higher scores indicate higher positive breastfeeding attitudes, supportive breastfeeding subjective norm, and breastfeeding control. The Cronbach's alpha coefficient of the modified BAPT pilot-tested with 25 participants was 0.85. The reliabilities of subscales of breastfeeding attitude, breastfeeding subjective norm, and breastfeeding control were 0.75, 0.85, and 0.91 respectively. The Cronbach's alpha coefficient with 272 samples in this study showed that the overall reliability of modified BAPT was 0.88, and coefficients of the subscales of breastfeeding attitude, breastfeeding subjective norm, and breastfeeding control were 0.81, 0.91, and 0.92, respectively.

The Modified BKS

The BKS was developed and modified by Zhu, Wan, and Huang.[12,30] The original BKS is a self-report scale contained 17 items mainly covering advantages of exclusive breastfeeding and knowledge of breastfeeding skills in Chinese version. The modified BKQ is a five-point Likert scale to score each question with 5 meaning extremely agreeable and 1 meaning extremely disagreeable. It contains 25 items covering five main issues: advantages of breastfeeding to babies; advantages of breastfeeding to mothers; knowledge about practice for breastfeeding initiation; knowledge about breast milk feeding requirements; and knowledge on breast milk storage and use. For example, one item is "Breastfeeding is the best way to feed babies within 4-6 months" with 1 (strongly disagree) to 5 (strongly agree). Higher scores indicate more knowledge about breastfeeding. The content validity index (CVI) was 1.00 determined by 5 experts. The Cronbach's alpha coefficient of the modified BKS pilot-tested with 25 participants was 0.82. The reliability of the modified BKS with the whole group of 272 participants was 0.80.

The Demographic Questionnaire

The demographic questionnaire was developed by the researchers. It mainly includes breast feeding practice, mother's age, marital status, educational level, family yearly income, and mothers' working status. Three questions were used for obtaining participants' EBF practice. The first was "Do you currently breastfeed?". If the response was "yes", two additional questions were asked regarding how and what the mother had fed her infant, then the type of breastfeeding practice was identified by the researcher. For mothers who answered "no", additional questions on the reasons of weaning were asked.

Data Collection Procedure: A package was prepared and sent to all the potential participants at the same time. This included an informed consent form, information about the study, all the questionnaires, 20 RMB, and a stamped pre-printed post envelope with the researcher's address. The participants were requested to complete forms and then return to the researcher in the enclosed envelope within 2 weeks. Completion of all questionnaires took about 30 minutes. Two hundred seventy two participants from

450 delivered questionnaires (a response rate of 60.44%), returned the completed questionnaire on time and no follow up mail or call was performed at 4-month postpartum. For the data collection on breastfeeding practice at 6 months postpartum, the researcher telephoned 272 participants who previously returned all questionnaires and asked them about breastfeeding practice during the 6 months.

Data Analysis: Data were analyzed using descriptive statistics, Point-biserial, Pearson's product moment correlation, chi-square test, and logistic regression with software of SPSS 17.0. The significance level was set at $p<0.05$. Analysis of descriptive statistics was used firstly to illustrate data by using range of score, mean and standard deviation, frequency, and percentage to delineate characteristics of the sample. Analysis of bivariate descriptive statistics was used to examine the correlations among breastfeeding variables and exclusive breastfeeding at both 4 months and 6 months postpartum. Chi-square tested the difference of breastfeeding practice between 4 months and 6 months postpartum. Logistic regression was employed to evaluate if and how much the selected factors could predict exclusive breastfeeding at 4-month postpartum.

Results

There were 272 mothers who participated in this study. Their average age was 29.03 years old (SD=2.92). More than half gave birth normally. The majority (75%) had an associate degree or bachelor degree and around half (52.57%) had annual family earnings of >200,000 RMB (around US$32,000). Most participants were employed (69.12%). The demographic characteristics of the sample are presented in Table 1.

Table 1 Demographic Characteristics of the Sample (n=272)

Characteristics	Number	Percentage
Age (years) (Mean=29.03 SD=2.92 Range=22-37)	272	
20-24	15	5.51
25-29	137	50.36
30-34	110	40.44
35-40	10	3.68
Marital status		
Married	269	98.90
Unmarried	3	1.10
Education level		
Secondary technical certificate & lower	36	13.24
Associate & bachelor degree	204	75.00
Master degree & above	32	11.76
Family yearly earning (thousand RMB)		
Less than 50	4	1.47
50-99	41	15.07
100-200	84	30.88
More than 200	143	52.57
Working status		
Employed	188	69.12
Unemployed	84	30.88

Almost of all mothers (93.75%) initiated breastfeeding after birth. However, the EB rate at 4 months postpartum was only 34.19% and it sharply decreased to 3.31% at 6 months postpartum. However, the EBF rate at 4 months postpartum was statistically significantly higher than that of 6 months postpartum with χ^2 =85.14 (p<.01). Breastfeeding practices at 4 months and 6 months postpartum are presented in Table 2.

Table 2 Breastfeeding Practices at 4-month and 6-month Postpartum (n=272)

Type of feeding	4-month		6-month		χ^2	p
	Frequency	Percentage	Frequency	Percentage		
Exclusive BF	93	34.19	9	3.31	85.14	<.01
Mixed BF	87	31.99	94	34.56		
Formula	92	33.82	169	62.13		

Note: BF= Breastfeeding

The main reason chosen for breastfeeding weaning was answered by those mothers who stopped any breastfeeding at 4 months postpartum. The most common reason of early breastfeeding attrition was reported as working (34.78%), followed by perceived insufficient breast milk (29.34%), worrying about insufficient nutrition of breast milk (11.96%) as well as breast problems and infants' suckling problems (see Table 3).

Table 3 Main Reason of Breastfeeding Attrition at 4 months Postpartum (N=92)

Reasons	N	Percentage
Working	32	34.78
Perceived insufficient breast milk	27	29.34
Worrying about nutrition of breast milk	11	11.96
Breast problems	10	10.87
Infants' sucking problems	7	7.61
Others	5	5.43

Mean scores of breastfeeding knowledge, breastfeeding attitude, subjective norm, and perceived control were 95.51 (SD= 14.51), 97.89 (SD=14.51), 32.83 (SD= 6.37), and 40.07 (SD= 8.99), respectively. The scores indicated that these four breastfeeding variables were at moderate to relatively high level (approximately 67% to 82%) as compared to the possible maximum scores. The description of breastfeeding variables are displayed in Table 4.

Table 4 Range and Mean Score of Breastfeeding Variables (N=272)

Variable	Possible Range	Actual Range	Mean	SD
BF knowledge	25-125	68-123	95.51	12.19
BF attitude	29-145	69-136	97.89	14.51
BF subjective norm	8-40	12-40	32.83	6.37
BF control	10-50	17-50	40.07	8.99

Note: BF= Breastfeeding

Results of the Point-biserial analysis are illustrated in Table 5. Results demonstrated that EBF practice at 4-month postpartum was significantly correlated with five variables of breastfeeding knowledge, attitude, subjective norm, perceived control, and working status with point-biserial correlation coefficient of .572, .607, .515, .537, and -.206, respectively (p< .001). EBF at 6-month was significantly correlated with these five variables with point-biserial correlation coefficient of .335, .313, .176, .193, and -.277 respectively (p<.01). Correlations of EBF practices at 4-month and 6-month postpartum with breastfeeding knowledge, attitude, subjective norm, and perceived control were positive. However, correlations with working status were negative which meant that the employed mothers were more likely to discontinue EBF.

Table 5 Correlations Matrix of Exclusive Breastfeeding with other Variables

Variables	Point-biserial Correlation Coefficient	
	EBF at 4 months	EBF at 6 months
Breastfeeding knowledge	.572**	.335**
Breastfeeding attitude	.607**	.313**
Breastfeeding subjective norm	.515**	.176**
Breastfeeding control	.537**	.193**
Working status	-.206**	-.277**
Age	.044	.005

Note: *: p ≤.05 **: p ≤.001 EBF= Exclusive breastfeeding

The five variables significantly predicted EBF at 4-month postpartum. Breastfeeding knowledge, attitude, subjective norm, breastfeeding control, and mother's working status positively and significantly predicted EBF practice among the first time Chinese mothers during their 4-month postpartum with odds ratio of 1.087 (CI=1.038 to 1.140), 1.063 (CI=1.017 to 1.120), 1.194 (CI=1.083 to 1.316), 1.101 (CI=1.009 to 1.201), and .221. (CI=.088 to .555), respectively. Interpreted this means that those first-time Chinese mothers with more knowledge about breastfeeding, a more positive attitude towards breastfeeding, more perceived support from their significant others regarding breastfeeding, and stronger breastfeeding perceived control, were more likely to conduct EBF practice during their 4-month postpartum. However, mother's age could not significantly predict EBF practice at 4-month among the first time Chinese mothers. The result of factors predicting EBF practice is illustrated in the Table 6.

Table 6 Summary of Logistic Regression Analysis of Breastfeeding Variables Predicting Exclusive Breastfeeding at 4-month Postpartum

Variables	B	SE	Wald	Exp(B)	Exp (95% CI)		Sig
					Lower	Upper	
BF knowledge	.084	.024	12.315	1.087	1.038	1.140	.000
BF attitude	.061	.023	7.251	1.063	1.017	1.120	.007
BF subjective norm	.177	.050	12.741	1.194	1.083	1.316	.000
BF control	.096	.044	4.713	1.101	1.009	1.201	.030
Working status	-1.509	.470	10.326	.221	.088	.555	.001
Age	.077	.076	1.032	1.080	.931	1.254	.310

Note: BF= Breastfeeding

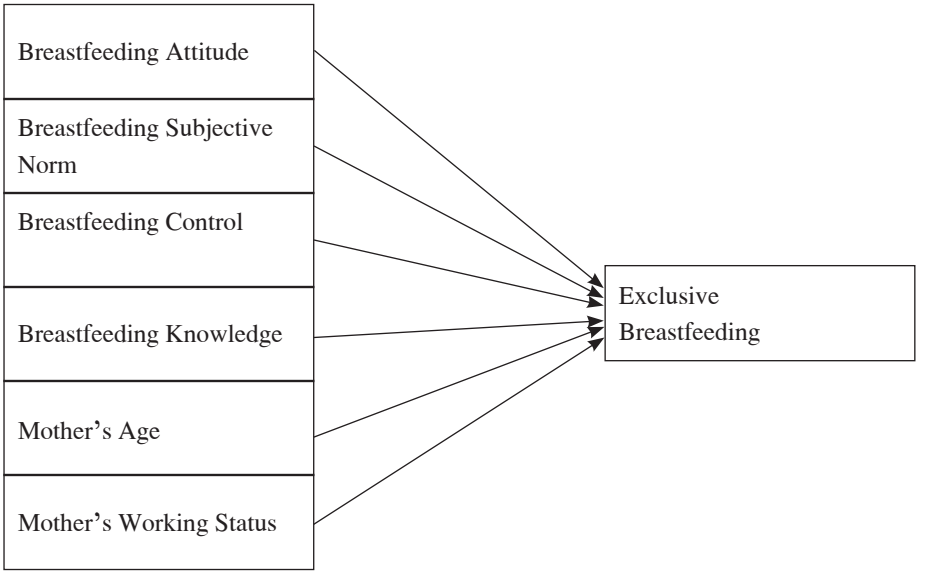

Figure 1 Conceptual Framework for the Study

As regard to 6-month postpartum breastfeeding, this could not be tested by logistic regression for the predicting effect because the EB rate at 6-month postpartum was low at 3.3%.

Discussion

Although almost all of the first-time Chinese mothers in this study breastfed their infants after birth, most had discontinued breastfeeding, especially EBF, by 4 months. The EBF rate at 4 months was 34.19% and it sharply decreased to only 3.31% at 6 months. There were various reasons for these low rates of EBF but the main reason was that the mothers began working. This reason seems to be closely related to the mothers' working status and length of maternity leave. In China, employed mothers are allowed to have maternity leave for 4 months.[31] A recent study in Xinjiang, China found that duration of EBF decreased when a mother returned to paid employment.[32] Other reasons reported by some mothers in this study were perceived insufficient breast milk and worrying about insufficient nutrition of breast milk. These reasons were similar to that cited by some mothers as reasons to give infant formula feeding in a recent study in an urban city, Wuhan, China[33] and in another study in Hongkong.[34]

EBF practices at both 4 and 6 months postpartum in this study were significantly positively correlated breastfeeding knowledge, attitude, subjective norm, and perceived control, but were negatively associated with working status (Table 5). Result of the logistic regression analysis revealed that these 5 correlated factors were significant predictors of EBF at 4-month postpartum. The results revealed that by increasing one unit of the mother's breastfeeding knowledge, attitude, subjective norm, and perceived control, the mother's likelihood to give EBF at 4 months would increase 8.7 %, 6.3%, 19.4%, and 10.1%, respectively. On the other hand, employed mothers would be 77.9% less likely to give EBF than unemployed mothers (Table 6). Although this predicting model could not be compared with findings of previous studies because different variables were examined in each study and different aspects of EBF were measured, findings of each predictor of this study could either partly support or be consistent with findings of previous studies in China and other countries. For example, in a recent

study in China, breastfeeding knowledge was found to be positively associated with breastfeeding duration and misinformation about breastfeeding could inhibit EBF practice.[15] Another study in China reported that attitudes towards breastfeeding was an important predictor of long-term breastfeeding.[18] A 2-year retrospective study in Canada found that a positive breastfeeding attitude significantly increased the likelihood of breastfeeding up to 6 months postpartum.[17] Another longitudinal study conducted in Canada based on the TPB found that perceived subjective norms and perceived control, but not attitude, influenced 9-month breastfeeding duration.[35] In China, it was reported that 50% of mothers deemed that family members' opinion played an important role in their decision on giving breastfeeding practices.[36] Unfortunately, another study found that some Chinese mothers wished to stop breastfeeding due to their relationship conflicts with their husbands, mothers, or mothers-in-law.[37] Several studies in western countries reported perceived control or self-efficacy about breastfeeding was positively associated with breastfeeding duration.[38] In China, however, a report indicated that weak breastfeeding control was common in Chinese pregnant women, but amenable to be strengthened by interventions.

The strongest predictor of EBF in this study was mothers' working status since Chinese mothers have only 4 months for maternity leave that influenced their EBF practice at 4-month postpartum. A previous study in Xinjiang, China reported that the average duration of EBF was only 1.8 months and noted that the earlier the mother returned to work, the less likely she continued EBF.[32] In this study mother's age was not associated with EBF practice. A plausible explanation was homogeneity of the studied sample. All of them were adults with average age of 29.03; no one was less than 20 years old. In addition, they were highly educated. Their high education may have contributed to their delay of childbearing as well as their breastfeeding practice. Therefore, findings of this study should be cautiously considered when comparing these with other age groups.

Finally, the result of this study could be evidence to support validity of the TPB. Breastfeeding is complex and constructed within the social environment in which women live. This study demonstrated that the first-time Chinese mothers who were with more positive attitude toward breastfeeding, got more support from their significant others on breastfeeding, and stronger breastfeeding control, they would more likely and exclusively breastfeed their babies at four months postpartum. Three constructs of TPB were demonstrated previously as predictors for the behavior of breastfeeding, which were consistent with this study.[18, 23]

Conclusions

The results of the study answered the two research questions. The findings offer greater insight into the breastfeeding practice, reasons of early breastfeeding cessation, breastfeeding correlated factors, and predicting factors. The EBF rate was sharply decreased from 4-month to 6-month postpartum. Neither of EB rates at 4-month nor at 6-month postpartum met the requirements of WHO and the government in China. This study identified that EBF practice at both 4-month and 6-month postpartum were significantly correlated with breastfeeding knowledge, attitude, subjective norm, perceived control, and working status. Furthermore, the study demonstrated that there were five predictors including breastfeeding knowledge, attitude, subjective norm, perceived control, and working status significantly predicted EBF practice at 4-month postpartum among the first time Chinese mothers. Therefore, the predicting variables based on this study should be selected for developing an intervention in which to help provide necessary knowledge on breastfeeding, improve positive attitude, change subjective norms to support women for EBF, improve their perceived control, and overcome various barriers with working. Findings can help nurses to design an effective breastfeeding promotion intervention for further study.

Limitation and Recommendation

One main limitation of this study is about the sample which was recruited in only one setting in Shanghai, China that is an urban area so generalizing findings to other areas should be cautiously considered. It is recommended that further studies be conducted in other settings and locations in China that have different cultures or socioeconomic background. Another limitation of the study is about measurement on breastfeeding knowledge. The instrument of breastfeeding knowledge scale evaluated the degree breastfeeding knowledge instead of "yes" or "no" answer. It may have influenced the internal validity of the study. It is recommended that a reliable and valid instrument on breastfeeding knowledge to be developed and used to evaluate breastfeeding related variables.

Implication for nursing practice

The implication of this study to nursing practice lies in that nurses should pay more attention to providing enough breastfeeding knowledge, encourage new mothers' positive attitude towards breastfeeding, change their significant others, and strengthen their breastfeeding control in order to improve EBF in the end. Furthermore, returning to work is the greatest barrier to EBF, nursing education should be targeted towards how to maintain a breast milk supply and work. There are policy implications for work environments should facilitate mothers being able to maintain their milk supply by expressing their breast milk for later feeding to their infants. Work places should make allowances for this to happen.

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ปัจจัยทำนายการให้นมมารดาอย่างเดียวในสตรีชาวจีนที่เป็นมารดาครั้งแรก

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บทคัดย่อ : การศึกษาแบบบรรยายเชิงหาความสัมพันธ์นี้มีวัตถุประสงค์เพื่อศึกษาปัจจัยที่ทำนายการให้นมมารดาอย่างเดียวในระยะ 4 เดือนและ 6 เดือนภายหลังคลอดของสตรีชาวจีนที่เป็นมารดาครั้งแรก โดยใช้ทฤษฎีพฤติกรรมตามที่วางแผนเป็นกรอบแนวคิด กลุ่มตัวอย่าง คือ สตรีชาวจีนจำนวน 272 คน ที่คลอดบุตรคนแรกที่โรงพยาบาลแห่งหนึ่งในกรุงเซี่ยงไฮ้ และได้รับการสุ่มอย่างเป็นระบบ เครื่องมือวิจัยประกอบด้วย แบบสอบถามข้อมูลส่วนบุคคล แบบประเมินการทำนายการลดการให้นมมารดา และแบบวัดความรู้เกี่ยวกับการให้นมมารดา ใช้รวบรวมข้อมูลการปฏิบัติในการให้นมมารดา ความรู้ ทัศนคติ บรรทัดฐานกลุ่มอ้างอิง และการควบคุมเกี่ยวกับการให้นมมารดา วิเคราะห์ข้อมูลโดยใช้สถิติบรรยาย การวิเคราะห์ความสัมพันธ์พอยท์-ไบซีเรียลและเพียร์สัน และการวิเคราะห์การถดถอยโลจิสติก

ผลการศึกษาพบว่าอัตราการเริ่มให้นมมารดาภายหลังคลอดของกลุ่มตัวอย่างคือร้อยละ 93.75 แต่อัตราการให้นมมารดาอย่างเดียวภายหลังคลอด 4 เดือนและ 6 เดือน เท่ากับร้อยละ 34.19 และ 3.31 การให้นมมารดาอย่างเดียวภายหลังคลอด 4 เดือนมีความสัมพันธ์เชิงบวกอย่างมีนัยสำคัญกับความรู้ ทัศนคติ บรรทัดฐานกลุ่มอ้างอิง และการควบคุมเกี่ยวกับการให้นมมารดา ส่วนสถานภาพการทำงานมีความสัมพันธ์เชิงลบกับการให้นมมารดาอย่างเดียวภายหลังคลอด 4 เดือน ผลการวิเคราะห์การถดถอยโลจิสติก พบว่าทั้ง 5 ปัจจัยสามารถทำนายการให้นมมารดาอย่างเดียวภายหลังคลอด 4 เดือนได้

ผลการวิจัยนี้เสนอแนะว่า การจัดกิจกรรมส่งเสริมการให้นมมารดาควรครอบคลุมการพัฒนาความรู้ ทัศนคติ บรรทัดฐานกลุ่มอ้างอิง และการควบคุมการให้นมมารดา และที่สำคัญคือการจัดการเกี่ยวกับน้ำนมมารดาในระยะทำงาน ผลการวิจัยนี้จะช่วยให้พยาบาลนักวิจัยสามารถออกแบบกิจกรรมการส่งเสริมการให้นมมารดาที่มีประสิทธิผลได้

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คำสำคัญ: การให้นมมารดา การให้นมมารดาอย่างเดียว มารดาครั้งแรก ปัจจัยทำนาย ทฤษฎีพฤติกรรมที่มีการวางแผน

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