

The Efficacy of Breastfeeding in Chinese Women with Different Intrapartum Experiences: a Hong Kong Study

Carrie YC LEE RN, RM, BSc (N), MN

Department of Obstetrics and Gynaecology, Princess Margaret Hospital, Lai Chi Kok, Kowloon, Hong Kong

Wan Yim IP RN, RMN, BN (Hons), MPhil, PhD

The Nethersole School of Nursing, The Chinese University of Hong Kong, Shatin, Hong Kong

Objectives:

To explore the objective and subjective breastfeeding efficacy and their relationship with breastfeeding outcomes at 8 weeks' postpartum.

Methods:

A prospective, descriptive, and longitudinal design using survey approach was carried out in an obstetric unit of a regional hospital in Hong Kong. Convenience sampling was used, with 127 women completed the 2-month telephone follow-up. Inclusion criteria include healthy breastfeeding mothers being able to read and understand Chinese, with uncomplicated pregnancies and labours, had a singleton birth, and delivery of normal, healthy full-term infants.

Results:

The mean LATCH (latch, audible swallowing, type of nipple, comfort, and hold) score and Breastfeeding Self-efficacy Scale (BSES) score were 8.3 and 113.1 respectively. Rates of exclusive breastfeeding at discharge and 8 weeks' postpartum were 65% and 36% respectively. Higher maternal age ($p=0.04$), caesarean delivery ($p=0.02$), and longer length of hospital stay ($p<0.001$) were associated with higher objective breastfeeding efficacy (LATCH scores). While lower level of education ($p<0.01$), homemaker ($p<0.01$), multiparity ($p<0.001$), use of Entonox inhalation or without using pain-relieving methods during delivery ($p=0.04$), and lower risk of discontinuing breastfeeding at 8 weeks' postpartum were associated with higher subjective breastfeeding efficacy (BSES scores). No correlation between objective and subjective breastfeeding efficacy was found.

Conclusion:

Education designed to foster maternal confidence in breastfeeding should be targeted to first-time mothers, and the technique of breastfeeding in women with vaginal delivery should be emphasised.

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Keywords: Breast feeding; Education; Maternal behavior

Introduction

Breast milk is the optimal nutrition for the newborn, and World Health Organization (WHO¹) suggests that exclusive breastfeeding should continue for up to 6 months of age, with the addition of complimentary food for up to 2 years of age. Many international and national organisations make efforts to increase breastfeeding rate. Breastfeeding initiation rate had much increased when compared to last decade, however, the breastfeeding duration rate is still far below the WHO's recommendation. Therefore, many studies

have been done in western countries to investigate the reasons associated with early cessation of breastfeeding, and some instruments have been developed to help health care professionals to identify those at risk of discontinued breastfeeding. This study aimed to explore the objective and subjective breastfeeding efficacy with respect to the socio-demographic and clinical variables,

Correspondence to: Ms Carrie Lee, Department of Obstetrics and Gynaecology, Princess Margaret Hospital, Lai Chi Kok, Kowloon, Hong Kong

Email: yclee@alumni.cuhk.net

intrapartum experiences, and breastfeeding outcome at 8 weeks' postpartum.

Methods

A prospective, descriptive, and longitudinal design using survey approach was adopted for this study, which was undertaken in an obstetric unit of a regional, public hospital in Hong Kong which actively promotes breastfeeding.

A convenience sampling was used to recruit participants, with 127 women completed the 2-month telephone follow-up. Inclusion criteria of participants were healthy breastfeeding mothers who were able to read and understand Chinese, with uncomplicated term pregnancies and labours, who intended to breastfeed her baby antenatally, had a singleton birth, with delivery of normal, healthy full-term infants with normal birth weights (2.5-4.0 kg) and Apgar scores of 9 or 10 at 5 minutes. All mothers and babies should be discharged home without complications.

A modified traditional-Chinese version of the Breastfeeding Self-efficacy Scale (BSES)² was administered to participants to evaluate their subjective breastfeeding efficacy (maternal breastfeeding confidence) on the day of discharge, with their objective breastfeeding efficacy (effectiveness of breastfeeding) measured by the researcher using the LATCH (latch, audible swallowing, type of nipple, comfort, and hold) breastfeeding documentation tool³. A demographic data sheet was also used to collect the socio-demographic and clinical data of participants. Telephone interview was conducted at 2 months' postpartum to determine their breastfeeding pattern, duration, and their corresponding reasons.

Statistical Analysis

Non-parametric tests such as Spearman's rank order correlation, Mann-Whitney *U* test, and Kruskal-Wallis test were used for analyses involving LATCH scores because of non-normality of the data, and parametric tests such as Pearson product-moment correlation, independent-samples *t*-test, and ANOVA were used for analyses involving the BSES scores. Multivariate Cox proportional hazard model was used to determine the variables which significantly related to breastfeeding outcome at 2 months' postpartum.

Results

The mean LATCH score (reflecting effectiveness of breastfeeding as rated by the researcher) and BSES score (reflecting maternal breastfeeding confidence) in this sample were 8.3 and 113.1 respectively. Rates of exclusive breastfeeding at discharge and 8 weeks' postpartum were 65% and 36% respectively. The following variables were found to be associated with higher objective breastfeeding efficacy (measured by LATCH scores): higher maternal age ($p=0.04$), caesarean delivery ($p=0.02$), and longer length of hospital stay after delivery ($p<0.001$). The following variables were found to be associated with higher subjective breastfeeding efficacy (measured by BSES scores): lower level of education ($p<0.01$), homemaker ($p<0.01$), multiparity ($p<0.001$), use of entonox inhalation or without using pain-relieving methods during delivery ($p=0.04$), and lower risk of discontinuing breastfeeding at 8 weeks' postpartum. However, no correlation between objective and subjective breastfeeding efficacy was found.

Discussion

In this study, 65% of mothers exclusively breastfed and 35% partially breastfed their babies upon discharge. At 2 months' postpartum, the rate of exclusive breastfeeding decreased to 36%, partial breastfeeding 22%, and 42% gave up any form of breastfeeding. The finding in breastfeeding duration rate is comparable to that of the United States⁴, Canada⁵, and United Kingdom⁶. Thus the rate and duration of exclusive breastfeeding is still far below the WHO's recommendation that exclusive breastfeeding should continue for up to 6 months of age. The finding of this study suggests that we still have a lot of room for improvement in breastfeeding education in order to keep the sustainability of breastfeeding. Before we can deliver appropriate and effective education, factors which may hinder the breastfeeding duration should be identified, which is also the purpose of this study.

The results of this study indicated that several socio-demographic and clinical variables were associated with objective breastfeeding efficacy or subjective breastfeeding efficacy. When the breastfeeding efficacy was measured by midwives objectively using the LATCH tool, the results showed that breastfeeding technique of older women was better than younger women. When the breastfeeding efficacy was measured subjectively

using the BSES, no significant difference could be found across ages. The results revealed that although both younger and older women have similar confidence towards breastfeeding, younger women may need more guidance and assistance in acquiring the breastfeeding skill effectively. Moreover, higher maternal age was significantly related to longer duration of breastfeeding in the univariate Cox proportional hazard model, but this factor became borderline significant when entered into the multivariate Cox regression model. This means that when the parity and subjective breastfeeding efficacy are being controlled, age alone became borderline significant to the duration of breastfeeding. This is unlike other studies⁷⁻¹⁰, where babies of younger women were found to wean much earlier, and increasing maternal age was associated with longer duration of any breastfeeding (including exclusive and partial breastfeeding)⁶. Although age is a non-modifiable variable, it is useful for the prediction of risk for breastfeeding skill competency.

In relation to occupation, subjective breastfeeding efficacy in homemaker is higher than women working in clerical or service sector. No significant difference was found in the objective breastfeeding efficacy between different occupations. This may be due to the fact that homemakers usually have more time to stay at home and therefore they have higher breastfeeding self-efficacy and are able to breastfeed longer. In Hong Kong, 10 weeks' maternity leave is provided by the employers. This may be a reason contributing to a lower level of subjective breastfeeding efficacy in working women. This is unlike other western countries, where the maternity leave can be as long as 450 days in Sweden. Sweden is one of the countries within the European Union that had the highest rate of breastfeeding. Therefore, the government policy also plays a part in promoting the sustainability of breastfeeding.

Although there is no significant difference in the objective breastfeeding efficacy among primiparous and multiparous women, the subjective breastfeeding efficacy in multiparous women is significantly higher than that in primiparous women. The number of multiparous women who can sustain their breastfeeding duration longer is also significantly higher than that in primiparous women. This may be due to the fact that 89% of the multiparous women had breastfeeding experience. The result could be explained by Bandura's

self-efficacy theory¹¹ that enactive attainment strengthens self-efficacy belief. The breastfeeding self-efficacy study done by Dennis and Faux¹² also reported similar findings in relation to parity. Another study in the United States¹³ also reported that suboptimal infant-breastfeeding behaviour and delayed onset of lactation of more than 72 hours were significantly associated with primiparity. From these findings we should pay more attention to the first-time mothers. On one hand we should encourage their breastfeeding initiation in those primiparous women, and on the other hand to promote their subjective breastfeeding efficacy (breastfeeding confidence), such as developing a confidence-building workshop, so that the sustainability of breastfeeding can also be achieved in the primiparous women. After they have gained successful experience in breastfeeding they will surely have more confidence in breastfeeding in the next pregnancy, which is also revealed from the findings of this study.

The objective breastfeeding efficacy in women with caesarean delivery is slightly higher than those with vaginal delivery. Moreover, the length of hospital stay after delivery was found significantly related to the objective breastfeeding efficacy in this study. A possible reason would be that women with caesarean delivery usually stay longer in hospital than those with vaginal delivery (mean length of stay, 4.52 vs 2.38 days respectively), thus they are able to receive more breastfeeding support and advice from health care professionals; this contributes to the improvement in objective breastfeeding efficacy. Results of this study further explained that with different modes of delivery, the length of stay in hospital will also be different, and these in turn influence the objective breastfeeding efficacy, but not subjective breastfeeding efficacy.

In consideration of different pain-relieving methods, only the subjective breastfeeding efficacy in women who did not use any medication or only use entonox inhalation during delivery is significantly higher than those who had received intramuscular pethidine injection. No differences were found in the objective breastfeeding efficacy between different groups of intrapartum pain-relieving methods. When the breastfeeding outcome at 8 weeks' postpartum was taken into consideration, no differences could be found between different groups of intrapartum pain-relieving methods

and breastfeeding outcome. The results generated from this study are different from previous studies¹⁴, which may be due to the small sample size in some pain-relieving methods, especially in the spinal analgesia group (n=7) and epidural analgesia group (n=3). Furthermore, it may also be due to the setting of this study, which promoted breastfeeding, and therefore the effect of different pain-relieving methods on breastfeeding efficacy (both objective and subjective) and also the breastfeeding duration were thus minimised¹⁵.

The breastfeeding outcome is significantly related to the subjective breastfeeding efficacy. The subjective breastfeeding efficacy in women who can breastfeed for longer than 1 month is significantly higher than those who breastfeed for less than 1 month. This is consistent with Dennis and Faux's study¹² which demonstrates a positive correlation between BSES scores and infant-feeding patterns at 6 weeks' postpartum. Furthermore, at 8 weeks' postpartum, the BSES score in the still-exclusive-breastfeeding group is significantly higher than the give-up-any-form-of-breastfeeding group. This result supports the predictive validity of this instrument. Although the objective breastfeeding efficacy, when measured by using the LATCH tool, was a modest predictor of breastfeeding duration in other studies¹⁶⁻¹⁸, similar results were not demonstrated in the present study. This may be due to the different time points of the LATCH scores used for this study. For example, in Kumar et al's study¹⁷, most of the LATCH scores were obtained for analysis within 48 hours after delivery. Whereas in this study, although the breastfeeding assessment was done on a daily basis, only the LATCH scores on the day of discharge (usually at day 3 for vaginal deliveries, and at day 5 or 7 for caesarean deliveries) were collected and analysed.

This is the first study conducted to compare the objective breastfeeding efficacy (breastfeeding performance) with subjective breastfeeding efficacy (breastfeeding confidence). The results showed that the mothers who scored well on the BSES (which reflects subjective breastfeeding efficacy) might not simultaneously scored well on the LATCH tool (which reflects objective breastfeeding efficacy). However, when the breastfeeding outcome was also taken into consideration, higher subjective breastfeeding efficacy is significantly associated with longer breastfeeding

duration, while the objective breastfeeding efficacy is not. Therefore, the results of this study illustrated that when a woman is confident in breastfeeding, she will breastfeed longer even though the breastfeeding performance may not be good when measured (using the LATCH tool) on the day of discharge. According to Bandura's self-efficacy theory¹¹, what an individual thinks, believes, and feels affects how he / she behaves. Highly efficacious individuals are more likely to persevere in their efforts, even when they are facing difficulties, until mastery is achieved¹⁹. Therefore, the results of this study are consistent with Bandura's self-efficacy theory¹¹. It is important for us to deliver breastfeeding education, not only to state the benefits and technique, but also to enhance woman's confidence in breastfeeding as well.

The lack of correlation between objective breastfeeding efficacy and subjective breastfeeding efficacy in this study demonstrated that breastfeeding may 'score' well on a breastfeeding assessment form, but if the mother is not psychologically well prepared, the breastfeeding experience and interaction may not be successful²⁰. This study provides the evidence that the evaluation tool used by health care professionals may provide us with a score that may not be a true reflection of the breastfeeding interaction. Breastfeeding is a unique and complex interaction of physiological and psychosocial responses and is difficult to break down into very specific defined areas for analyses²⁰.

Conclusions

Although the relationship between breastfeeding efficacy, intrapartum experience, and breastfeeding outcomes were not clearly answered in this study, the objective and subjective assessment of breastfeeding did provide us with a more comprehensive understanding in the complex breastfeeding behaviour of mother-baby dyads. Objective evaluation of breastfeeding by using the LATCH assessment tool is useful for health care professionals in detecting problems and aiding teaching, whilst subjective assessment of breastfeeding using the BSES would enable us to provide sensitively delivered woman-centred individualised care and to develop interventions for reinforcing self-efficacy in breastfeeding. This is the first study carried out to examine both objective breastfeeding efficacy and subjective breastfeeding efficacy. Mode of delivery appeared to be associated with objective

breastfeeding efficacy (effectiveness of breastfeeding), but not subjective breastfeeding efficacy (maternal breastfeeding confidence). Intrapartum pain-relieving methods used is associated with subjective breastfeeding efficacy (maternal breastfeeding confidence), but not objective breastfeeding efficacy (effectiveness of breastfeeding). Higher subjective breastfeeding efficacy (maternal breastfeeding confidence) and multiparity are

significantly associated with lower risk of discontinuing breastfeeding at 8 weeks' postpartum. Moreover, no relationships could be demonstrated between objective and subjective breastfeeding efficacy. Education designed to foster maternal confidence in breastfeeding should be targeted to first-time mothers, and the technique of breastfeeding in women with vaginal delivery should be emphasised.

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