

博士論文（要約）

**How does peer support affect
breastfeeding satisfaction among Japanese mothers?**

A randomized controlled trial

（日本の母親における母乳育児満足度にピアサポートは
どう影響するのか？ ランダム化比較試験）

本郷寛子

Abstract

Introduction

This thesis covered 2 objectives: 1) to report how the scale was developed to measure breastfeeding satisfaction, and 2) to examine the effect of telephone-based peer support on breastfeeding satisfaction among Japanese mothers.

Methods

The revised Japanese Maternal Breastfeeding Evaluation Scale (JMBFES) was tested its reliability and validity. Breastfeeding mothers were recruited at four hospitals. Data from 114 breastfeeding mothers were analyzed after a randomized controlled trial.

Breastfeeding satisfaction was measured using the revised JMBFES at 1 month and 4 months postpartum. Mothers in the intervention group ($n = 60$) received telephone-based peer support until 4 months postpartum; mothers in the control group ($n = 54$) received conventional support. Generalized estimating equations and effect size analyses were used to examine the effect of the intervention.

Results

All three subscales in the revised JMBFES had acceptable reliability ($\alpha \geq .78$):

Maternal Satisfaction, Perceived Benefit to the Infant, and Potentially Negative Aspects.

The two “lifestyle compatibility” items belonged to Potentially Negative Aspects

subscale. That revised subscale was renamed Lifestyle Compatibility. On the revised subscale, mothers with peer support had a higher score than those without peer support: regression coefficient 1.54 (95% confidence interval [0.03, 3.04]). The effect size was 0.40 standard deviations among mothers with low and mid-level scores at baseline.

Conclusion

While peer support did not increase overall maternal satisfaction with breastfeeding, it did increase lifestyle compatibility with breastfeeding among Japanese mothers. This is evidence in favor of increasing the use of peer support.

Introduction

Breastfeeding offers many health benefits for both infants and mothers. The World Health Organization (WHO) therefore defines optimal infant feeding as exclusive breastfeeding for the first 6 months, and continued breastfeeding up to 2 years and beyond with appropriate complementary feeding. However, the global average of exclusive breastfeeding rate is 41% among infants under 6 months with limited information among high-income countries. While few women are unable to breastfeed due to medical reasons, many face breastfeeding difficulties unexpectedly such as frequent night-time feeding, fatigue, and lack of freedom. Those negative aspects sometimes make mothers feel incompatible with their lifestyle. Mothers have a sense of guilt and failure when they breastfeed shorter than anticipate. Mothers who are unable to breastfeed as anticipated may have the risk of postpartum depression. Besides the duration and exclusivity of breastfeeding, maternal satisfaction with breastfeeding is an important outcome of successful breastfeeding.

If maternal satisfaction is increased by peer support, maternal perception of breastfeeding success may enhance maternal confidence and can strengthen maternal-infant relationship. Mothers would continue breastfeeding longer, then both mothers and infants could get more health benefits. While peer support is known to increase

breastfeeding duration and exclusivity, the effect of peer support on breastfeeding satisfaction remains unclear.

This thesis covered two objectives: 1) to develop a scale to measure breastfeeding satisfaction, including items to measure lifestyle compatibility (Study 1), 2) to examine the effect of telephone-based peer support on breastfeeding satisfaction among Japanese mothers (Study 2).

Methods

In Study 1, the revised Japanese Maternal Breastfeeding evaluation Scale (JMBFES) was tested its reliability and validity among 215 Japanese mothers who were recruited from four public health centers in Tokyo. Self-administered questionnaires contained the first version of JMBFES with two items to measure lifestyle compatibility. Factor analysis was used to decide how many factors to retain, and coefficient alpha was examined. As a validation test, multiple linear regression was used to examine associations of subscale scores with prepartum breastfeeding intention and with breastfeeding outcomes.

In Study 2, a randomized controlled trial (RCT) was conducted among Japanese breastfeeding mothers after discharge from four maternity hospitals in Tokyo

and Kanagawa. Breastfeeding satisfaction was measured using the revised JMBFES.

While the study aimed to recruit 500 study participants (250 in the intervention group, 250 in the control group), only 125 mothers had submitted both the consent form and the baseline questionnaire. Data from 114 postpartum mothers were analyzed after completed questionnaires 1 month and 4 months postpartum. Mothers in the intervention group ($n = 60$) received telephone-based peer support by 48 trained peer supporters until 4 months postpartum; mothers in the control group ($n = 54$) received conventional support only. Generalized estimating equations (GEE) and effect size analyses were used to examine the effect of the intervention.

Results

In Study 1, all three subscales in the revised JMBFES had acceptable reliability ($\alpha \geq .78$): Maternal Satisfaction, Perceived Benefit to the Infant, and Potentially Negative Aspects. The two “lifestyle compatibility” items belonged to the Potentially Negative Aspects subscale. That revised subscale was renamed Lifestyle Compatibility.

In Study 2, participants’ characteristics did not differ significantly between the two groups. The mean age of the participants was 34.5 years ($SD = 4.5$) in the intervention group and 33.9 years ($SD = 4.2$) in the control group ($p = .52$). The

intervention had no statistically significant effect on the total JMBFES score. In the sub-analysis, the score of the subscale measuring lifestyle compatibility increased significantly in the intervention group compared with the control group (regression coefficient = 1.54; 95% confidence interval [0.03–3.04]). The effect size was 0.40 standard deviations among mothers with low and mid-level scores at baseline. When adjusted for study hospitals and parity, the effect of the intervention on the total JMBFES scores and subscale score remained unchanged. The influence of the study hospitals was statistically significant only on the subscale measuring perceived benefits to the infant.

Discussion

These studies (Study 1 and Study 2) add new insights into the importance of measuring maternal breastfeeding satisfaction. In Study 1, the revised JMBFES was developed to include a subscale to measure “lifestyle compatibility with breastfeeding”. Study 2 does not show strong evidence regarding the effect of the peer-support intervention on increased overall breastfeeding satisfaction. This is in line with the finding from a Canadian RCT, in which the sum of 12 items from the Maternal Breastfeeding Evaluation Scale (MBFES) was used, and no significant difference was found between

mothers with and without peer support. In Study 2, however, among three subscales of JMBFES, the peer support intervention had a positive effect on lifestyle compatibility. It is likely that summing scores from different subscales obscured the intervention's effectiveness in the lifestyle compatibility domain.

Breastfeeding status and how mothers perceive benefits to infants are more influenced by hospital environment in the study. Support from health care professionals and that from trained peer supporters may be complementary each other.

One of the Study 2's limitation is that many eligible mothers did not participate in the study after they were approached. As characteristics of mothers who did not participate were missing, the possibility of selection bias cannot be ruled out. Therefore, the findings of the study may not be generalized to the other population. Those who did not participate may have had lower JMBFES scores and a higher risk of discontinuing breastfeeding, which could have decreased the apparent effect of the intervention.

Nevertheless, this is the first study to examine the effect of peer support on maternal breastfeeding satisfaction in non-Western countries. As sub-analysis, the study explored the effect of peer support on three domains of maternal breastfeeding satisfaction separately. For future research, more focus may be needed on the individual domains of breastfeeding satisfaction rather than overall breastfeeding satisfaction.

Conclusion

The revised version of JMBFES is useful to measure different aspects of breastfeeding satisfaction, which includes lifestyle compatibility with breastfeeding. When assessing breastfeeding satisfaction in future studies, the three domains need to be assessed separately. Telephone-based peer support by trained peer supporters may be effective to increase lifestyle compatibility in Japan. This is evidence in favor of disseminating the training and the use of peer support to make mothers feel less burden with breastfeeding. These studies provide a useful base for research on peer support and maternal breastfeeding satisfaction.