

## Analysis of the Status and Influencing Factors of Father Support for Breastfeeding Self-Efficacy

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### Abstract

**Objective:** To assess the current status of breastfeeding self-efficacy among new fathers and explore its influencing factors.

**Methods:** Using convenience sampling, 220 fathers of newborns were selected from the obstetrics department of a tertiary general hospital in Guangzhou from April 2023 to December 2023. The Father Support Breastfeeding Self-Efficacy Scale-Short Form (FBSES-SF) and the Chinese version of the Parenting Sense of Competence Scale (C-PSOC) were used to assess fathers' breastfeeding self-efficacy. Non-parametric tests and a generalized linear model were used to analyze the influencing factors.

**Results:** The median FBSES-SF score was 50.00 (44.00, 56.00), and the mean C-PSOC score was  $73.53 \pm 9.60$ . The exclusive breastfeeding rate at 6 weeks postpartum was 49.1%. The FBSES-SF score showed significant positive correlations with the C-PSOC score and breastfeeding patterns at 6 weeks postpartum ( $P < 0.05$ ). Fathers' participation in breastfeeding training and breastfeeding patterns were the main factors influencing fathers' breastfeeding self-efficacy ( $P < 0.05$ ).

**Conclusion:** The low level of father support for breastfeeding self-efficacy is associated with the sense of parenting competence and exclusive breastfeeding rate at 6 weeks postpartum. Strengthening breastfeeding knowledge and skills training for expectant fathers may improve their self-efficacy in supporting breastfeeding and parenting sense of competence, potentially increasing the rate of exclusive breastfeeding.

**Keywords:** Breastfeeding; Father support; Self-efficacy; Parenting sense of competence; Influencing factors

## Introduction

Breastfeeding offers irreplaceable advantages for both infants and mothers. Breast milk is easily digested and absorbed, providing essential nutrients for an infant's growth and development, including visual function, cognitive development, and bone, muscle, and immune system health [1-3]. It is considered the optimal nutritional approach for infants and young children [4, 5]. The anti-infective substances in breast milk can protect infants from digestive and respiratory diseases, effectively reducing infant mortality [6]. Additionally, breastfeeding benefits maternal health, extends birth intervals, and reduces the incidence of various diseases [7]. However, a 2019 report by the China Development Research Foundation revealed that the exclusive breastfeeding rate for infants under 6 months old in China is only 29.2%, far below the 50% target set by the World Health Organization and the National Program of Action for Child Development in China. Increasing the exclusive breastfeeding rate is thus an urgent issue that needs to be addressed.

China implemented the universal two-child policy on January 1, 2016, and on May 31, 2021, the Political Bureau of the CPC Central Committee decided to implement the "three-child policy." As a result, the proportion of pregnant women and newborns is expected to gradually increase. The "Notification of the Breastfeeding Promotion Action Plan (2021-2025)" states that by 2025, the awareness rate of core breastfeeding knowledge in mother-infant families should reach 70%, the breastfeeding support rate of mother-infant family members should exceed 80%, and the national exclusive breastfeeding rate within 6 months should surpass 50%. On January 29, 2022, the Guangdong Provincial Health Commission and 14 other departments fully implemented these requirements, combining them with the "Regulations on the Promotion of Breastfeeding in Guangzhou" to carry out extensive breastfeeding publicity and consultation [8].

Fathers are key influencers of breastfeeding. Sherriff et al. defined father's support as including basic attributes such as learning about breastfeeding, maintaining a positive attitude towards breastfeeding, participating in the decision-making process, and providing action and emotional support. The China Development Research Foundation's survey on factors affecting breastfeeding showed that the father's attitude significantly impacts the mother's exclusive breastfeeding within 6 months [9]. The exclusive breastfeeding rate for infants within 6 months is significantly higher when fathers support breastfeeding. A systematic review by Koksal et al. demonstrated that father's support for breastfeeding can improve breastfeeding outcomes and enhance maternal breastfeeding self-efficacy. Bogale et al. suggested that fathers' participation in feeding infants and young children aged 6-24 months is very low and that health education about fathers' involvement in feeding children should be strengthened.

Although studies have shown that father support for breastfeeding self-efficacy has an important impact on the initiation and maintenance of breastfeeding, the influencing factors of this self-efficacy remain unclear. This study aimed to investigate the current status of new fathers' support for breastfeeding and explore its influencing factors to improve fathers' active participation in breastfeeding and further increase breastfeeding rates [10].

## Respondents and Methods

### Respondents

New fathers in the baby-friendly area of the obstetrics and gynecology center of a general hospital in Guangzhou from April 2023 to December 2023 were selected as respondents using convenience sampling. Inclusion criteria: ① age 18 to 60 years old; ② normal speech and basic communication skills; ③ postnatal mother willing to breastfeed. Exclusion criteria: ① cognitive impairment or mental illness preventing cooperation in completing the questionnaire; ② mother has contraindications to breastfeeding (e.g., HIV infection); ③ mother unable to breastfeed due to conditions such as nipple retraction or mammary dysplasia; ④ mother and baby separated due to reasons such as newborn transfer to NICU; ⑤ newborn has contraindications to breast-

feeding or sucking defects (e.g., cleft lip). This study was approved by the hospital ethics committee (2022-KY-234-01). All respondents participated voluntarily and provided informed consent. Based on previous studies suggesting a sample size of 10 to 15 times the number of independent variables [9], and considering 14 independent variables with a 10% non-response rate, the study planned to include 230 new fathers ( $14 \times 15 / 0.9$ ).

## Survey Tools

### General Information Questionnaire

The questionnaire, designed independently by researchers based on existing research and clinical practice, included general information about the father (age, gender, educational background, breastfeeding training participation) and the newborn (gestational age, delivery mode, birth weight, breastfeeding pattern, primary caregivers after birth).

### Father Support Breastfeeding Self-Efficacy Scale-Short Form (FBSES-SF)

The FBSES-SF, designed by Dennis et al. in 2018, assesses fathers' confidence in supporting breastfeeding. It contains 14 items rated on a 5-point Likert-type scale (1 = not at all confident, 5 = always confident). Total scores range from 14 to 70, with higher scores indicating higher levels of fathers' self-efficacy in supporting breastfeeding. Zhou Yang et al. translated this scale into Chinese in 2020. The Chinese version has a Cronbach's  $\alpha$  coefficient of 0.935 and a test-retest reliability of 0.881, making it an effective tool for assessing new fathers' confidence in breastfeeding support.

### Chinese version of Parenting Sense of Competence Scale (C-PSOC)

The Parenting Sense of Competence (PSOC) scale, developed by Gibaud-Wallston and Wandersman in 1978, assesses parenting cognitive efficacy. It includes two dimensions: Efficacy (8 items) and Satisfaction (9 items), totaling 17 items. Each item is rated on a 6-point scale (1 = strongly disagree, 6 = strongly agree), with reversed scoring for items 2-5, 8-9, 12, 14, and 16. Total scores range from 17 to 102, with higher scores indicating stronger parenting sense of competence. Yang Xiao et al. localized the scale in 2014 and tested its reliability and validity among parturients and their spouses in a Class A tertiary hospital in Guangzhou. The Cronbach's  $\alpha$  coefficients for the total scale, efficacy subscale, and satisfaction subscale were 0.82, 0.80, and 0.85, respectively. The 2-week test-retest coefficients were 0.86, 0.80, and 0.82, respectively, demonstrating good reliability and validity.

## Data Collection Method

After unified training, two researchers explained the purpose, significance, anonymity, confidentiality, and voluntary nature of the survey to respondents using standardized instructions. Upon obtaining consent, paper questionnaires were distributed on-site to parturients during their hospitalization (after giving birth and before discharge) and filled out by their spouses. Questionnaires were collected immediately after completion. Six weeks later, researchers conducted an online follow-up through the "Wen Juan Xing" platform, asking respondents to complete the questionnaires again to evaluate the test-retest reliability and investigate the exclusive breastfeeding rate. Of 230 questionnaires distributed, 225 were effectively received (97.83% recovery rate). Five questionnaires were lost during the 6-week follow-up, resulting in a final sample of 220 questionnaires (2.22% loss to follow-up rate).

## Statistical Methods

Data were analyzed using SPSS 25.0 after being entered and checked by two researchers. The Shapiro-Wilk test was used to as-

ness data normality. Normally distributed measurement data were presented as mean  $\pm$  standard deviation, while non-normally distributed data were presented as median and quartiles. Count data were presented as number of cases and percentages. As FBSES-SF scores were not normally distributed, Spearman correlation analysis was used to examine correlations among father support breastfeeding self-efficacy, parenting sense of competence, and breastfeeding patterns at 6 weeks postpartum. Mann-Whitney U test and Kruskal-Wallis H test were used for univariate analysis, while a generalized linear regression model was used for multivariate analysis. Differences were considered statistically significant at  $P < 0.05$ .

## Results

### General Information

Of 230 questionnaires distributed, 225 were effectively received (97.83% recovery rate), with 5 lost during the 6-week follow-up. The final sample included 220 respondents (2.22% loss to follow-up rate). As shown in Table 1, respondents' mean age was  $32.00 \pm 4.83$  years, 59 (26.8%) had attended breastfeeding training, and 63 (28.6%) had previous parenting experience.

### Correlation Among Father Support Breastfeeding Self-Efficacy, Parenting Sense of Competence, and Breastfeeding Patterns at 6 Weeks Postpartum

The median FBSES-SF score was 50.00 (44.00, 56.00), and the mean C-PSOC score was  $73.53 \pm 9.60$ . Breastfeeding patterns at 6 weeks postpartum were: 108 (49.1%) exclusive breastfeeding, 88 (40.0%) mixed feeding, and 24 (10.9%) artificial feeding. Correlation analysis results are shown in Table 2.

### Univariate Analysis of Father Support Breastfeeding Self-Efficacy

As shown in Table 1, father support breastfeeding self-efficacy was significantly affected by breastfeeding training participation, milk secretion conditions, and breastfeeding patterns ( $P < 0.05$ ).

### Multivariate Analysis of Fathers' Support for Breastfeeding

Using statistically significant variables from the univariate analysis as independent variables, generalized linear regression analysis showed that breastfeeding training participation and breastfeeding pattern significantly impacted father support breastfeeding self-efficacy ( $P < 0.05$ ). Fathers whose spouses had sufficient milk secretion demonstrated higher self-efficacy in supporting breastfeeding, though this was not statistically significant. Details are provided in Table 3.

### Scores of Father Support Breastfeeding Self-Efficacy and Parenting Sense of Competence with Different Breastfeeding Patterns

Fathers' support for breastfeeding self-efficacy and parenting sense of competence scores differed across breastfeeding patterns. Scores for fathers in the exclusive breastfeeding group were significantly higher than those in the mixed feeding and artificial feeding groups ( $P < 0.05$ , Table 4).

## Discussion

### Father Support Breastfeeding Self-Efficacy Needs Improvement

Our study revealed a median FBSES-SF score of 50.00 (44.00, 56.00), indicating that fathers' self-efficacy in supporting breastfeeding was not high, slightly lower than previous studies [11]. Zhou Yang et al. reported FBSES-SF scores of  $(54.97 \pm 8.18)$

among 210 new fathers. This difference may be due to the age distribution of subjects: 58.2% of our subjects were 30-40 years old, while 62.4% in Zhou Yang et al.'s study were 20-30 years old. Younger individuals may have more access to information and higher efficiency in acquiring knowledge, potentially improving self-efficacy.

Yu Rui et al. reported FBSES-SF scores of  $(51.71 \pm 8.88)$  and  $(52.50 \pm 9.79)$  at 72 hours and 2 weeks postpartum, respectively. Our lower scores might be attributed to surveying fathers immediately after birth when they were less mentally prepared and overwhelmed by the challenges of supporting breastfeeding [12, 13]. A review by Wang Xuejun et al. on spousal support for breastfeeding showed that the overall level of support from new fathers was not high. Zheng Jiaying et al. found that FBSES-SF scores for fathers of premature infants in both control and experimental groups were less than 50 points on the first day of hospitalization [14, 15].

Previous studies have shown that new fathers lack knowledge about breastfeeding-related issues and correct milking methods. These findings suggest that comprehensive measures should be taken to improve new fathers' breastfeeding support self-efficacy and parenting sense of competence, addressing both cognitive and behavioral aspects. Utilizing mass media resources to expand the coverage of breastfeeding information, combined with internet-based approaches to increase convenience and comprehensibility of knowledge, could promote improvement in father support breastfeeding self-efficacy.

### **Breastfeeding Training Can Improve Father Support Breastfeeding Self-Efficacy**

Our study indicated that breastfeeding training is a main factor affecting new fathers' self-efficacy in supporting breastfeeding, with FBSES-SF scores significantly higher among fathers who participated in relevant training (Wald  $\chi^2 = 3.642$ ,  $P = 0.036$ ). Yu Rui et al. found that breastfeeding knowledge influences new fathers' self-efficacy in supporting breastfeeding, with more comprehensive knowledge correlating to stronger support attitudes. Dong Jianan et al. showed that increasing new fathers' breastfeeding knowledge and skills significantly improved their level of self-efficacy in supporting breastfeeding. Zheng Jiaying et al. identified fathers' receipt of breastfeeding education as an independent influencing factor in father support breastfeeding self-efficacy.

As the closest family member to the mother and newborn, a father's knowledge, attitude, and behavior significantly influence breastfeeding. His emotional and behavioral support is crucial for a breastfeeding mother. New fathers can use their breastfeeding knowledge to guide their wives and provide various forms of support to increase breastfeeding practices. Breastfeeding training for fathers through short videos, instruction manuals, one-on-one guidance, and small lectures can effectively increase their breastfeeding knowledge and skills, thereby improving their self-efficacy in supporting breastfeeding [16].

Therefore, establishing a breastfeeding training team led by specialist nurses to design a comprehensive program providing integrated pre- and postpartum health education to expectant fathers is recommended. This program should guide fathers in mastering breastfeeding knowledge and skills to promote breastfeeding, helping them support breastfeeding with specific actions. This approach can increase fathers' confidence and participation in breastfeeding, promote role transformation, reduce unfamiliarity, helplessness, and frustration caused by worries and mistakes, and ultimately improve fathers' breastfeeding self-efficacy.

### **Breastfeeding Pattern Affects Father's Self-Efficacy in Supporting Breastfeeding**

New fathers are important family members influencing mothers' choices to initiate and persist in breastfeeding, with a close link between their feeding intention and attitude. Lydia Atkinson's study showed that feeding patterns are related to new fathers' involvement in the breastfeeding process. Yu Rui et al. also found that feeding pattern is a main factor influencing father support breastfeeding self-efficacy, with self-efficacy significantly higher among fathers choosing exclusive breastfeeding com-

pared to mixed feeding ( $P < 0.001$ ).

Our study corroborates these findings, showing that fathers who chose exclusive breastfeeding have higher self-efficacy in supporting breastfeeding ( $P = 0.024$ ). This may be because exclusively breastfeeding mothers and their partners have a higher level of breastfeeding knowledge, better awareness of the benefits and necessity of exclusive breastfeeding, and stronger beliefs in supporting breastfeeding, resulting in higher self-efficacy.

Moreover, our study found that the FBSES-SF score was significantly positively correlated with the C-PSOC score and breastfeeding patterns at 6 weeks postpartum. Fathers' participation in exclusive breastfeeding may increase couple communication, provide knowledge and behavioral support for breastfeeding to the mother, and help fathers better understand the challenges of breastfeeding and child-rearing, enhancing family relationships and promoting breastfeeding behaviors.

These findings suggest that improving new fathers' breastfeeding knowledge and promoting the transformation of knowledge into practice could enhance their self-efficacy in supporting breastfeeding and parenting sense of competence, potentially increasing exclusive breastfeeding rates.

## Conclusion

The low level of father support breastfeeding self-efficacy is associated with both the sense of parenting competence and the exclusive breastfeeding rate at 6 weeks postpartum. Therefore, training expectant fathers in breastfeeding knowledge and skills should be enhanced to improve their self-efficacy in supporting breastfeeding and their parenting sense of competence, ultimately increasing the rate of exclusive breastfeeding.

This study was conducted at a single hospital in Guangzhou, which may limit the representativeness of the sample. Future research should include multi-center studies to expand the sample range, thereby improving the generalizability and representativeness of the results. Additionally, the influencing factors investigated in this study were limited to micro and meso systems at the individual level. Future research should further investigate macro-system-related factors, such as policy systems, media influence, and cultural customs.

## References

1. Chowdhury R, Sinha B, Sankar MJ, et al. (2015) Breastfeeding and maternal health outcomes: a systematic review and meta-analysisJ.. *Acta Paediatr*, 104: 96-113.
2. Anderson PO (2016) Effect of breastfeeding on neonatal abstinence syndromeJ.. *Am J Health Syst Pharm*, 73: 864.
3. McGowan C, Bland R (2023) The Benefits of Breastfeeding on Child Intelligence, Behavior, and Executive Function: A Review of Recent EvidenceJ.. *Breastfeed Med*, 18: 172-87.
4. Zhang Z, Zhu Y, Zhang L, et al. (2018) What factors influence exclusive breastfeeding based on the theory of planned behaviourJ.. *Midwifery*, 62: 177-82.
5. Colombo L, Crippa BL, Consonni D, et al. (2018) Breastfeeding Determinants in Healthy Term NewbornsJ.. *Nutrients*, 10.
6. Victora CG, Bahl R, Barros AJ, et al. (2016) Breastfeeding in the 21st century: epidemiology, mechanisms, and lifelong effectJ.. *Lancet*, 387: 475-90.
7. Sattari M, Serwint JR, Levine DM (2019) Maternal Implications of Breastfeeding: A Review for the InternistJ.. *Am J Med*, 132: 912-20.
8. Sherriff N, Hall V, Panton C (2014) Engaging and supporting fathers to promote breast feeding: a concept analysisJ.. *Midwifery*, 30: 667-77.
9. Ouyang YQ, Nasrin L (2021) Father's Knowledge, Attitude and Support to Mother's Exclusive Breastfeeding Practices in Bangladesh: A Multi-Group Structural Equations Model AnalysisJ.. *Healthcare (Basel)*, 9.
10. Agrawal J, Chakole S, Sachdev C (2022) The Role of Fathers in Promoting Exclusive BreastfeedingJ.. *Cureus*, 14: e30363.
11. Koksai I, Acikgoz A, Cakirli M (2022) The Effect of a Father's Support on Breastfeeding: A Systematic ReviewJ.. *Breastfeed Med*, 2022, 17: 711-22.
12. Sherriff N, Hall V, Panton C (2014) Engaging and supporting fathers to promote breast feeding: a concept analysisJ.. *Midwifery*, 30: 667-77.
13. Denoual H, Dargentas M, Roudaut S, et al. (2015) Father's role in supporting breastfeeding of preterm infants in the neonatal intensive care unit: a qualitative studyJ.. *BMJ Open*, 6: e010470.
14. Dennis CL (2003) The breastfeeding self-efficacy scale: psychometric assessment of the short formJ.. *J Obstet Gynecol Neonatal Nurs*, 32: 734-44.
15. Atkinson L, Silverio SA, Bick D, et al. (2021) Relationships between paternal attitudes, paternal involvement, and infant-feeding outcomes: Mixed-methods findings from a global on-line survey of English-speaking fathersJ.. *Matern Child Nutr, Suppl 1*: e13147.
16. Matare CR, Craig HC, Martin SL, et al. (2019) Barriers and Opportunities for Improved Exclusive Breast-Feeding Practices in Tanzania: Household Trials With Mothers and FathersJ.. *Food Nutr Bull*, 40: 308-25.