

Development and Validation of a Self-efficacy Theory-based Instrument to Measure Prenatal Breastfeeding Self-efficacy and Breastfeeding Intention among Pregnant Women

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Abstract

Breastfeeding offers tremendous benefits to both the infant and mother. Individuals choose tasks they feel are within the boundaries of ability. The choice to engage in breastfeeding may be related to the level of self-efficacy a woman has to complete the task.

Theoretical constructs have been operationalized to measure perceived self-efficacy for breastfeeding in pregnant populations; however, a guideline based, self-efficacy theory driven, valid, and reliable instrument is lacking. The purposes of this study were to create, test, and validate a new scale to measure prenatal breastfeeding self-efficacy, test the reliability of the scale, determine the correlation between prenatal breastfeeding self-efficacy and breastfeeding intention, and assess the differences in prenatal breastfeeding self-efficacy by the sociodemographic factors.

One-hundred and twenty-four pregnant women, 18 years or older, participated in this cross-sectional survey.

Confirmatory factor analysis did not confirm the proposed model; therefore, an exploratory factor analysis was conducted to examine the construct validity using maximum likelihood factor analysis with varimax rotation. This revealed a valid ($\alpha=.980$) and reliable ($r=0.920$) four factor questionnaire for total prenatal breastfeeding self-efficacy – The Prenatal Rating of Efficacy in Preparation to Breastfeed (PREP to BF) Scale.

Total PREP to BF score was significantly correlated to breastfeeding intention ($r=.615$; $P<.001$). Women who had at least some college education ($P=.003$), were currently married ($P=.027$), had breastfed previously ($P=.035$), and planned to deliver vaginally ($P=.043$) had significantly greater PREP to BF scores than their counterparts.

Measuring the level of breastfeeding self-efficacy at the prenatal stage could alert prenatal women and health professionals to particular individual skill sets needed to successfully initiate breastfeeding after birth. A strong understanding of which pregnant women may or may not be at risk for non-initiation of breastfeeding may help healthcare professionals create and provide the most appropriate support to their patients.

Background

- Breastfeeding self-efficacy, as well as breastfeeding intention, are two modifiable factors that influence rates of breastfeeding initiation. Maternal breastfeeding confidence is an important factor influencing breastfeeding duration, as well.
- Prenatal women with low confidence are more likely to discontinue breastfeeding in the first week postpartum compared to women with higher self-confidence.
- Theoretical constructs have been operationalized to measure perceived self-efficacy for breastfeeding in pregnant populations; however, a guideline based, self-efficacy theory driven, valid, and reliable instrument is lacking.
- The purpose of this current study was to develop a scale to measure prenatal breastfeeding self-efficacy using constructs of self-efficacy theory, test its psychometric properties, determine internal consistency and reliability, and assess correlation between prenatal breastfeeding self-efficacy and breastfeeding intention.

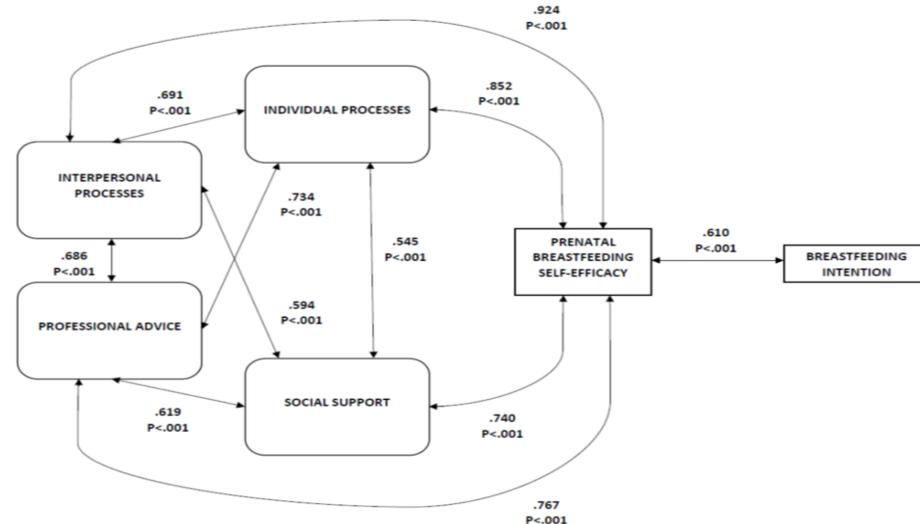
Subjects and Methods

Subjects:

- A total of 395 women were approached, and 145 (36.7%) women were fully qualified to participate in the study. Of those who were eligible to participate, 133 (91.7%) completed the survey on site.
- On average, the participants were 26.2 years \pm 4.68 years with a range of 18 to 38 years.
- A higher percentage of the women were African-American (55.6%), unmarried (66.1%), and in their third trimester of pregnancy (49.2%).
- Thirty eight percent (38.7%) of the participants had completed some college education, while 16.1% held a Bachelor's degree or higher.
- A third of the women (33.1%) indicated their current pregnancy would be their first child.
- Among the women who had children already ($n=82$), 58.5% indicated they had prior experience breastfeeding a child.
- The institutional review boards at UA and within the College of Community Health Science approved this study to be completed at the OB/GYN clinic at the University Medical Center on the campus of UA in the spring of 2017.

Methods:

- Participants completed an 88-question survey.
- Breastfeeding intention was measured with three questions. The questions asked about participant's intention to breastfeed after birth with each question beginning with either the phrase "I expect to," "I want to," or "I intend to breastfeed."
- The 39 items on the prenatal breastfeeding self-efficacy scale were developed following a review of the literature on breastfeeding, breastfeeding self-efficacy, self-efficacy scale creation, and previously created breastfeeding self-efficacy scales.
- Initially six subscales reflecting the constructs of self-efficacy theory were included – performance accomplishment (6 items), vicarious experience (5 items), verbal persuasion (10 items), physiological cues (7 items), cognitive processes (5 items), and affective processes (6 items). The scale utilized a 10-point response scale, ranging in 1-unit intervals from 0 ("Cannot do"); through 5 ("Moderately can do"); to 10 ("Highly certain can do").
- Respondents were asked to rate how confident they were with each scale item "as of right now" to reflect their present level of perceived self-efficacy for preparing to possibly engage in breastfeeding behavior after giving birth.



Results

- Cronbach's alpha for the 39-item self-efficacy scale was .980 with an item-to-total correlation range of 0.536 to 0.784. After a test-retest analysis, the Cronbach's alpha for the scale was .973.
- Among the 39 instrument items, there were four factors extracted with an eigenvalue of 1.00 or greater. The first factor explained 59.53% of the variance with the four factors explaining a total of 74.05% of the variance. The item loadings were all above 0.412.
- The underlying dimensions identified by each factor are as follows: I) Individual Processes, II) Interpersonal Processes, III) Professional Advice, and IV) Social Support.

Factors and Variables

Individual Processes (14 items)	Interpersonal Processes (16 items)	
Overcome any anxiety you may feel about breastfeeding?	Discuss breastfeeding with other mothers or pregnant women?	
Manage your time so you can breastfeed?	Ask another breastfeeding mother questions about breastfeeding?	
See yourself as a breastfeeding mother?	Talk about breastfeeding with your close friends?	
Manage the possible challenges that may come with breastfeeding?	Accept advice about breastfeeding from those who are not friends, family, or a health care provider?	
Commit to breastfeeding your baby?	Talk about breastfeeding with those who are not friends, family, or a health care provider?	
Visualize yourself being successful at breastfeeding?	Explain the benefits of breastfeeding to another person?	
Mentally prepare yourself to breastfeed your baby?	Explain how to breastfeed a child to another person?	
Overcome any stress you may feel about breastfeeding?	Accept advice about breastfeeding from close friends?	
Accept that breastfeeding takes time?	Imitate another woman breastfeeding a baby (using a doll or other prop)?	
Set goals for yourself to be successful at breastfeeding your baby?	Obtain opportunities to watch other women breastfeed?	
Solve problems that may keep you from breastfeeding your baby?	Locate breastfeeding support in your community?	
Accept that breastfeeding will not always be easy?	Talk about breastfeeding with family members?	
Overcome any fear you may feel about breastfeeding?	Accept advice about breastfeeding from your partner?	
Accept others opinions (positive or negative) about breastfeeding?	Obtain opportunities to watch other women, who look like you, breastfeed?	
Social Support (5 items)		
Depend on your friends to support decisions you make about infant feeding?	Talk about breastfeeding with your partner?	
Count on your family to support the decisions you make about infant feeding?	Accept advice about breastfeeding from family members?	
Count on your family to support the decisions you make about your baby?	Professional Advice (4 items)	
Depend on your friends to support the decisions you make about your baby?	Talk about breastfeeding with your health care provider?	
Handle friends or family that do not support breastfeeding?	Accept advice from your health care provider about breastfeeding?	
	Find the answers to your questions about breastfeeding?	
<i>Note. All questions began with the root: "Thinking about your life right now, how well can you..."</i>		
	Gather information to help you make a decision about breastfeeding?	

Conclusions and Implications

- The Prenatal Rating of Efficacy in Preparation to Breastfeed (PREP to BF) Scale is a valid and reliable measure of self-efficacy toward BF during the prenatal period.
- The instrument may be used by both clinicians and researchers to measure a prenatal woman's self-efficacy as well as reveal areas she may need to address such as goal setting skills or overcoming barriers before she gives birth to ensure she commits to her decision to initiate breastfeeding.
- Results from this study suggest that prenatal breastfeeding self-efficacy is highly correlated to level of breastfeeding intention.
- Educational programs are needed aimed at increasing pregnant mothers' confidence through goal setting, overcoming barriers, increasing comfort with BF, and developing communication skills to properly discuss BF with health professionals, family, and friends.