

# Randomized Controlled Trial of a Prenatal Breastfeeding Self-Efficacy Intervention in Primiparous Women in Iran

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## ABSTRACT

**Objective:** To determine the effects of a prenatal breastfeeding self-efficacy intervention on breastfeeding self-efficacy and breastfeeding outcomes.

**Design:** Randomized controlled trial.

**Setting:** Four health centers in Ahvaz, Iran.

**Participants:** A total of 120 low-risk, nulliparous women between 35 and 37 weeks gestation who intended to breastfeed their singleton infants.

**Methods:** Women were randomly assigned to receive the breastfeeding self-efficacy intervention ( $n = 60$ ) or standard care ( $n = 60$ ). The intervention was multifaceted and included two prenatal group sessions, an information package with breastfeeding images, and text messages until 8 weeks postpartum to promote exclusive breastfeeding. The primary outcome was breastfeeding self-efficacy measured with the Breastfeeding Self-Efficacy Scale–Short Form, translated into Persian, at 8 weeks postpartum. Additional outcomes included rates of breastfeeding exclusivity, duration, practices, satisfaction, and problems.

**Results:** At 8 weeks postpartum, participants in the intervention group had significantly higher mean Breastfeeding Self-Efficacy Scale–Short Form scores and rates of exclusive breastfeeding than those in the control group. No significant group differences were found with regard to breastfeeding duration.

**Conclusion:** Emerging evidence supports the use of breastfeeding self-efficacy interventions to improve breastfeeding self-efficacy and rates of exclusive breastfeeding. Further evaluation of this prenatal intervention is warranted.

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## Increased rates of exclusive breastfeeding may help reduce rates of maternal and child death among low- and middle-income countries.

and type 2 diabetes. The benefits of breastfeeding for women and children were found across geographic boundaries and irrespective of whether families had high or low income. These findings are consistent with an analysis of the health and economic effects of suboptimal breastfeeding rates in the United States (Bartick et al., 2017). Researchers found that the low breastfeeding rates in the United States were associated with more than 3,340 premature maternal and child deaths and health care costs of more than \$18 billion. Importantly, significant improvements in breastfeeding rates could prevent an estimated 823,000 child deaths and 20,000 breast cancer deaths every year (Victora et al., 2016). As such, breastfeeding could potentially be one of the top interventions for reducing mortality in children younger than 5 years of age.

Despite the compelling benefits associated with breastfeeding, many countries in the Middle East have lower rates of exclusive breastfeeding and continued breastfeeding than other low-income and middle-income countries (Victora et al., 2016). In Iran, the Demographic Health Survey (DHS) statistics from 2000 indicated that 90% of women nationwide initiated breastfeeding and that 44% exclusively breastfeed at 6 months (United Nations Children's Fund, n.d.). However, 5 years later, the rate of exclusive breastfeeding at 6 months decreased to 27% (Olang, Farivar, Heidarzadeh, Strandvik, & Yngve, 2009). The practice of exclusive breastfeeding at 6 months varies greatly among different regions of Iran (Noughabi, Tehrani, Foroushani, Nayeri, & Baheiraei, 2014; Olang et al., 2009), and many areas show downward trends (Olang et al., 2009; Olang, Heidarzadeh, Strandvik, & Yngve, 2012; Torkzahrani, 2008). Overall, these findings suggest that many infants and mothers in Iran are not receiving the optimal benefits associated with exclusive breastfeeding. This is concerning because the mortality rate for children younger than 5 years old in this country in 2010 was 19.2, considerably greater than in Canada (5.6) and the United States (7.4; Acheampong, Ejiofor, & Salinas-Miranda, 2017). Because breastfeeding can help decrease preventable infant and child deaths among low- and

middle-income countries, effective interventions are required to address suboptimal breastfeeding rates (Bartick et al., 2017; Rollins et al., 2016; Victora et al., 2016).

Major public health efforts have been initiated in Iran to enhance breastfeeding during the past decade. In particular, 466 out of 566 hospitals have been accredited as Baby Friendly Hospitals (Olang et al., 2009). The Ministry of Health also has been active in breastfeeding promotion by providing breastfeeding booklets, pamphlets, CDs, and other educational materials. Despite these efforts, breastfeeding rates vary and are suboptimal (Noughabi et al., 2014; Olang et al., 2009). Addressing individual-level determinants of breastfeeding such as breastfeeding self-efficacy may be beneficial in improving breastfeeding outcomes in addition to current public health efforts.

Breastfeeding self-efficacy, defined as a mother's confidence in her ability to breastfeed (Dennis, 1999), has consistently been found to reliably predict breastfeeding duration and exclusivity among diverse groups of women in numerous countries (Blyth et al., 2002; Dai & Dennis, 2003; Otsuka, Dennis, Tatsuoka, & Jimba, 2008; Wutke & Dennis, 2007). Breastfeeding self-efficacy is an important variable because it is potentially modifiable and amenable to intervention (McQueen, Dennis, Stremier, & Norman, 2011). In addition, low breastfeeding self-efficacy has been positively associated with perceptions of insufficient milk supply (Dykes, Moran, Burt, & Edwards, 2003; Galipeau, Dumas, & Lepage, 2017), a prevalent factor that leads to early discontinuation of breastfeeding and supplementation with formula worldwide (Balogun, Dagvadorj, Anigo, Ota, & Sasaki, 2015; Mortazavi et al., 2015; Roostaei et al., 2015). Breastfeeding self-efficacy can be measured with the Breastfeeding Self-Efficacy Scale–Short Form (BSES-SF; Dennis, 2003), which has been translated and validated in more than 20 languages, including Persian (Araban, 2015). The breastfeeding self-efficacy framework (Dennis, 1999) also provides a theoretical basis for the development of an intervention to enhance breastfeeding self-efficacy. Thus, the primary aims of our study were to develop a breastfeeding self-efficacy intervention based on breastfeeding self-efficacy theory and determine the effects of the intervention on breastfeeding outcomes including breastfeeding self-efficacy, duration, and exclusivity in women in Ahvaz, Iran.

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