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Factors that positively influence breastfeeding duration to 6 months: a literature review

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Title: Factors that positively influence breastfeeding duration: a literature review

Abstract

Question: What modifiable factors positively influence breastfeeding duration?

Method: An online literature search was conducted in Medline, CINHAL, Science Direct, Maternity and infant Care, and Cochrane Database of systematic reviews. The search strategy included the following key words: breastfeeding, duration, initiation, cessation, intervention, education, partner, intention, support, confidence and self-efficacy. Additional studies were located and extracted from online publications of New South Wales Department of Health. Each study was critically examined for quality. The bio-psycho-social factors that are positively associated with prolonged breastfeeding were identified.

Results: Important, modifiable factors that affect women's breastfeeding decisions are: breastfeeding intention, social support and breastfeeding confidence. Existing midwifery breastfeeding promotion strategies often do not adequately address these factors.

Conclusion: Midwifery interventions aimed at promoting and prolonging breastfeeding should positively modify the woman's breastfeeding intention, her social support and her breastfeeding confidence.

Key words:

- Breastfeeding
- Duration
- Intention
- Support
- Confidence
- Intervention/s

Introduction

Exclusive breastfeeding to six months of age has been one of the primary aims of nutrition and public health programs across the world (World Health Organisation, 2007). Midwives and lactation consultants are actively engaged in attempting to increase women's rates of breastfeeding to at least six months post partum. Yet, in spite of these efforts, in Western countries, most women do not continue breastfeeding until six months postpartum (Callen & Pinelli, 2004). This paper reviews the research literature and summarises the bio-psycho-social factors that are positively associated with prolonged breastfeeding. These factors are discussed under the following headings: socio-demographic factors, biophysical factors, psychosocial factors and interventional factors. The factors that are potentially modifiable are the main focus of discussion.

Key terms used in this paper are 'breastfeeding', 'intention', 'support', 'confidence' and 'self-efficacy' are defined first. The key terms related to breastfeeding are defined in Table 1. 'Intention' is defined as a plan that has been formulated in order to achieve a particular goal state through certain instrumental actions (Gibbons, Gerrard, Outllette, & Burzette, 2000). Intentions about breastfeeding are formed based on a woman's inner desire to breastfeed or not. Social support according to McGrath (2000) defined as "an individual's perception of supportive behaviours from others in their social network that will ultimately be beneficial to that individual"(McGrath, 2000). For the purpose of this study breastfeeding support is women's perception of supportive behaviour from their social network. Woman's experience support when they receive care, concern, respect, understanding, advice, encouragement and practical help (Coffman and Ray cited in Willams, 2005). The word 'confidence' is usually translated to 'Self-efficacy' in the research literature. 'Self efficacy' is defined as an individual's confidence in his or her perceived ability to perform a specific task or behavior (Bandura, 1997). Self-efficacy has been reported to influence individual choices, goals, emotional reaction, coping and persistence (Gist & Mitchell, 1992).

Method

An online literature search was conducted for the years 2000-2009. Databases searched were, Medline, CINHAL, Science Direct, Maternity and Infant Care, and Cochrane Database of systematic reviews. The search strategy was based on the following key words, their synonyms and truncations: breastfeeding, duration, initiation, cessation, intervention, education, partner, intention, support, confidence and self-efficacy. Studies were limited to English language. Additional studies were located from reference lists of some systematic reviews and on line publications of New South Wales Health Department. Each study was critically examined for quality. Included were all systematic reviews, randomised controlled trials and cohort studies. Other studies that directly addressed the guiding question for this review were included.

Results

Factors that are positively associated with prolonged breastfeeding are categorised and discussed below.

Socio-demographic factors

The major socio-demographic factors that affect breastfeeding practices include age, marital status, education and income level (Dennis, 2002a; McLeod, Pullon, & Cookson, 2002). There is strong evidence that that older age (Blyth et al., 2004; Dennis, 2002a; Forster, McLachlan, & Lumley 2006; McLeod et al., 2002; NSW Department of Health, 2006; J. Scott, Landers, Hughes, & Binns, 2001), being married (Dennis, 2002a; Lande et al., 2003; McLeod et al., 2002; Taveras et al., 2003), being well educated (Blyth et al., 2004; Cernadas, Graciela, Barrera, Martinez, & Garsd, 2003; Dennis, 2002a; McLeod et al., 2002; J. Scott et al., 2001) and being in a higher income (Dennis, 2002a; McLeod et al., 2002; J. Scott et al., 2001) are each associated with longer breastfeeding duration. These factors are not amendable to change by midwives once the woman is pregnant. Knowing that successful longer term breastfeeding is inversely correlated with being young, undereducated, unmarried and living in relative poverty helps midwives to better target their education and support to these groups of women.

Biophysical factors

Biophysical factors including intrapartum experiences (Dennis, 2002a; J. Scott et al., 2001), early breastfeeding practices (Cernadas et al., 2003; DiGirolamo, Thompson, Martoel, Faden, & Grummer-Strawn, 2005; J. Scott et al., 2001) and perceived milk supply (Cooke, Sheehan, & Schmied, 2003; Dennis, 2002a; D. Hector, L. King, K. Webb, & P. Heywood, 2005; Noel-Weiss, Bassett, & Cragg, 2006) have been demonstrated to influence the initiation and duration of breastfeeding. The women's birth experiences impacts upon their breastfeeding behaviours; particularly the successful initiation of breastfeeding. For instance, there is a negative association between caesarean delivery and breastfeeding initiation (J. Scott et al., 2001) and a positive association between birth centre births and both the initiation and continuation of breastfeeding (Hodnett, Downe, Smith and Walsh (2005). Many studies have shown, however, that once breastfeeding has been established birth experiences do not have a lasting effect breastfeeding duration (Cernadas et al., 2003; Dennis, 2002a; J. Scott et al., 2001).

Similarly breastfeeding difficulties including nipple pain do affect short term breastfeeding duration but not long term duration (DiGirolamo et al., 2005; D. Hector et al., 2005). DiGirolamo et al (2005) believe that women who experience problems develop greater self-efficacy and that is positively associated with breastfeed longer as the woman develops confidence in her ability to solve breastfeeding problems. Some authors indicate that women who are positive thinkers and problem solvers, perceive breastfeeding problems as "normal", whereas women who are self-doubting, anxious and rigid in their breastfeeding practice are more likely to focus on negative aspects of breastfeeding (Dennis, 2002a).

Finally, insufficient milk supply is one of the most common reasons women give for breastfeeding cessation (D Hector, L King, K Webb, & P Heywood, 2005). This is a biological factor which has a strong psychological component. Only about 5 percent of women actually have physiologic and real insufficient milk supply although up to 50% report that they have insufficient milk for their baby (D. Hector et al., 2005). Insufficient milk supply is generally considered to be more perceived than 'real'; there must be other factors at play that cause the women to doubt their milk supply. For instance, maternal breastfeeding confidence has been reported to be associated with

perceptions of insufficient milk supply (Blyth et al., 2002; Blyth et al., 2004; Dennis, 2002a; McCarter-Spaulding & Kearney, 2001). In a cross-sectional descriptive study of 60 women, McCarter et al found a significant correlation ($r = 0.487$, $p < 0.01$) between perceived insufficient milk supply and low maternal breastfeeding confidence at 11 weeks postpartum. They also found a moderate correlation between maternal confidence and perceived sufficient milk supply. They explained that women who believe that they are able to breastfeed and to deal with any breastfeeding challenges lead to perceive that they have sufficient milk supply. However, the women who doubt their breastfeeding ability may perceive insufficient milk supply and start complementary feed (McCarter-Spaulding & Kearney, 2001).

Psychosocial factors

The psychosocial factors that influencing breastfeeding are often amendable to antenatal intervention. For instance, strength of the intention to breastfeed, the level of support from partner and family of origin and the level of the woman's breastfeeding confidence are all amenable to being strengthened by antenatal interventions (Blyth et al., 2004).

Breastfeeding intention

The most important determinant of one's behaviour is one's behavioural intention (1980) (DiGirolamo et al., 2005). Not surprisingly then, the woman's stated intention to breastfeed, is one of the strongest predictors of breastfeeding initiation and duration (Blyth et al., 2004; DiGirolamo et al., 2005; Forster et al., 2006; Ryser, 2004; Swanson & Power, 2005). It has been reported that approximately 50% to 90% of pregnant mothers decide how they will feed their child either before becoming pregnant, or very early in their pregnancy (Bailey and Sherriff cited in DiGirolamo et al, 2005). In a longitudinal study of 300 Australian women, Blyth et al found that mothers who intended to breastfeed for longer than 12 months were 2.4 times as likely to continue breastfeeding until four months compared to those who intended to breastfeed for less than six months (87.5% VS 35.7%, $\chi^2 = 33.67$ $P < 0.001$). Similarly, in a randomized controlled trial of 889 Australian women, Forster et al (2006) found significant relationship between intended and actual duration of breastfeeding among all groups of women with different socio-demographic characteristics. This finding indicates how socio-demographic factors may be operating to influence the woman's intentions about feeding initiation and duration. In the Forster et al study, if the woman had no intention to breastfeed for six months or more then this was negatively associated with feeding any breast milk at six months (Adj OR 0.47, 95% CI 0.30, 0.62) (Forster et al., 2006). Although they have reported that breastfeeding intention changes over time, Forster et al did not identify how the women's intention to breastfeed may be modified.

Breastfeeding intention is affected by both a woman's breastfeeding attitude and by the influence of people in her social network (DiGirolamo et al., 2005; J. Scott et al., 2001; J. A. Scott, Shaker, & Reid, 2004; Swanson & Power, 2005). For instance, in a longitudinal study involving 1665 women in United States, DiGirolamo et al (2005) found a significant correlation between breastfeeding intention (the length of time the woman intended to breastfeed) and breastfeeding attitudes at home ? in her family of origin ?? ($r = 0.23$, $p < 0.01$). In their study women who intended to breastfeed antenatally sustained breastfeeding for more than 20 weeks if they had positive attitude

towards breastfeeding at home, whereas women with negative attitude terminated breastfeeding practice earlier when they experienced initial breastfeeding problems.

Social support

The positive influence of support for breastfeeding initiation and duration has been well established (Blyth et al., 2004; Britton C, McCormick FM, Renfrew, Wade, & King, 2007; Bronner, Barber, Vogelhut, & Resnik, 2001; Chapman, Damio, Young, & Perez-Escamilla, 2004; Chatman et al., 2004; De Oliveria, Camache, & Tedston, 2001; Dennis, 2002a, 2002b; Falceto, Giugliani, & Fernandes, 2004; Guise et al., 2003; Hector, King, & Webb, 2004a; Hoddinott, Chalmers, & Pill, 2006; Hoddinott, Lee, & Pill, 2006; Jim Sikorski, Renfrew, Pindoria, & Wade, 2003; Sikroski, Ronfrew, Pindoria, & Wed, 2002; Win, Binns, Zhao, Scott, & Oddy, 2006; Wolfberg et al., 2004). In a Cochrane meta-analysis, Britton et al (2007) systematically reviewed 34 randomised or quasi-randomised controlled trials (29,385 mother-infant pairs) from 14 countries. They found that all forms of lay and professional support increase the duration of breastfeeding up to the first six months postpartum (0.91, 95% CI 0.86 to 0.96). A combination of lay and professional support extends the duration of any breastfeeding significantly. Although this Cochrane review found clear evidence of the benefit of support, it did not include the effect of the support from father, family members and mothers own social support networks during lactation.

Social pressure to breastfeed seems to be effective. For example, Swanson and Power (2005) reported that women who choose to breastfeed their infant feel more social pressure to breastfeed than women who choose to bottle feed. Women' s feeding attitude and practice are unquestionably influenced by specific persons in her social networks, including the baby's father, the maternal grandmother, close friends, and health care professionals (Dennis, 2002a; J. Scott et al., 2001; J. A. Scott et al., 2004; Swanson & Power, 2005). In a longitudinal study of 203 mothers in the United Kingdom, women who continued breastfeeding until 6 weeks postpartum, rated their partner, their own mother and their midwives as having more pro-breastfeeding views than women who discontinued breastfeeding at 6 weeks (Swanson & Power, 2005).

The attitude of the woman's partner to breastfeeding is crucial to both the woman's attitude and her breastfeeding behaviour. In a longitudinal study of 108 expectant couples in (UK), Scott et al (2004) reported that a woman's infant feeding attitude was significantly correlated with her partner's attitude ($r = 0.67$, $p < 0.001$). In a prospective Cohort study of 1069 Australian women, the likelihood of breastfeeding at discharge was higher among women who perceived their partner preferred them to breastfeeding compared to women who perceived their partner preferred bottle feeding or were unsure about their baby's feeding method (OR = 9.13, 95% CI 4.83–17.26). In that study women whose partner preferred breastfeeding were less likely to stop breastfeeding at any time (RR = 0.58, 95% CI 0.45–0.75) (J. Scott et al., 2001). Other studies also report that the support of the infant's father and encouragement of society in general, plays an important role in the woman's success of breastfeeding (de Montigny & Lacharite, 2004; Hector et al., 2004a; Wolfberg et al., 2004). The father's involvement enhances the wellbeing of the mother and the child considering that

“professional help cannot replace the day to day support that couples provide for each other” (de Montigny & Lacharite, 2004). De Montigny and Lacharite (2004), in their qualitative study found that the most positive experience for fathers was their sense of knowing their infants and taking care of them. However, for some fathers breastfeeding was difficult because they did not know how to help when it was needed. De Montigny and Lacharite state that it was important for fathers to share their needs and worries, to be supportive and make decisions as a couple.

Maternal breastfeeding confidence

Low maternal breastfeeding confidence is associated with early cessation of breastfeeding (Blyth et al., 2002; Blyth et al., 2004; Dennis, 1999, 2002a, 2003; Dunn, Davies, Mc Cleary, Edwards, & Gaboury, 2006; Ertem , Votto, & Levnthal, 2002; Forster et al., 2006; McCarter-Spaulding & Kearney, 2001; O'campo, Faden, Gielen, & Wang, 1992; Papinczak & Turner, 2000). In a descriptive study of 198 pregnant women, O’campo found that women with low confidence in their ability to breastfeed had 3.1 times the risk of discontinuing breastfeeding before six months postpartum when compared with women who had high confidence (95% CI= 1.39-6.76) (O'campo et al., 1992). In 1999 Dennis and Faux developed and used Breastfeeding Self-efficacy Scale (BSES) to measure maternal breastfeeding confidence. In their study maternal breastfeeding confidence was significantly related to breastfeeding at six weeks postpartum ($F = 9.89$, $P<.001$). Similarly, Forster et al found a statistically significant relationship between high BSES score and duration of breastfeeding at four months ($\lambda^2 =14.89$, $P<.001$) (Forster et al., 2006). In a phenomenological study, deterioration in breastfeeding confidence during the postnatal period was a major factor in the decision to stop breastfeeding (Dykes & Williams, 1999).

Women’s breastfeeding confidence is influenced by exposure to breastfeeding, her perception of being supported, past breastfeeding experiences and physical/mental status of women (Blyth et al., 2002; Dennis, 1999). In a qualitative research among low-income mothers lack of exposure to breastfeeding was mentioned as a failure factor to enhance confidence and commitment to successful breastfeeding (Hector et al., 2004a). The positive influence of support on breastfeeding confidence has been also reported in many studies (Blyth et al., 2004; Britton C et al., 2007; Chatman et al., 2004; De Oliveria et al., 2001; Dennis, 2002b; Hoddinott, Chalmers et al., 2006; Hoddinott, Lee et al., 2006; Martens, 2002; NSW Centre for Public Health Nutrition, 2004; Sharps, El-Mohandes, & El-Khorazaty, 2003; J. Sikorski, Boyd, Dezateux, Wade, & Rowe, 2001; Win et al., 2006; Wolfberg et al., 2004). Past breastfeeding experiences was the subject of a descriptive study of 300 women in Brisbane by Blyth et al (2002). They found a significant differences in breastfeeding self efficacy score (BSES) at the first week and 4 months postpartum ($t [298] = 2.59$, $p= 0.01$ and $t [227] = 2.51$, $p= 0.01$ respectively) between women with no breastfeeding experiences and women with previous breastfeeding experiences.

Effectiveness of Interventions

The evidence of effectiveness has been reviewed under the following headings: education, support and multifaceted interventions.

Education

Breastfeeding education has been recommended by many studies to support and promote breastfeeding practices (De Oliveria et al., 2001; Hector & King, 2005; Hector et al., 2004a; Mattar et al., 2007; McCormick, 2006; Miracle, Meier, & Bennett, 2004; Noel-Weiss et al., 2006; Preventive services Task Force, 2003; Ryser, 2004; J. Scott et al., 2001; J. Sikorski et al., 2001; The Parliament of the Commonwealth Australia, 2007; Wolfberg et al., 2004). However, educational interventions are not well defined in the literature and vary according to timing, format, contents and strategies which make them difficult to compare (Hector et al., 2004a).

Hector and et al (2004) studied nine systematic reviews in regard to effective interventions to promote and support breastfeeding. According to this study educational interventions that span boththe prenatal and postnatal periods are the most effective.. In one of their systematic review considering 37 experimental and quasi-experimental studies they found that a combination of group education sessions, home visits or individual sessions, which started in theantenatal period and continued into the postnatal period was the most effective strategy in increasing the duration of breastfeeding (De Oliveria et al., 2001). A weakness of this systematic review is that he studies do not provide information of thedetails of the interventions; for instance no detail is given about the educational strategies, the learning materials, the frequency and duration of each session, the qualification and experience of educators, nor thesettings for learning..

Some studies suggest educational strategies to increase maternal self efficacy insteadare more effective than those strategies that focus on enhancing knowledge (Dennis, 1999, 2002a, 2003; Ertem , Votto, & Levnthal, 2001). However there few strategiesthat are aimed at enhancing breastfeeding self-efficacy have been studied. In a descriptive study of 63 Canadian women, observing breastfeeding role models through videotapes and pictures significantly increased women's breastfeeding self-efficacy compared to women who did not observe those videotapes or pictures ($P < 0.01$) (Kingston, Dennis, & Sword, 2007). In an educational intervention study of 70 women in Western Australia, breastfeeding rates at six weeks postpartum were significantly increased in the intervention group who had antenatal breastfeeding education with "hands on" activities ($\chi^2 = 28.8$, df = 1, $P < 0.001$).

Support

A Cochrane review by Britton et al (2007) indicates that women who receive any form of support are less likely to stop exclusive breastfeeding before five months compared to any other form of breastfeeding after five months. However, in this review there is no

definition of 'support'. Further, the role of the women's own social network including father, family members and friends has not been addressed.

There are a small number of interventional studies targeting the partners of pregnant women.. Wolfberg et al (2004) conducted a randomized controlled trial in which 59 expecting fathers from Johns Hopkins Hospital assigned to attend a breastfeeding class and infant care (intervention) or a class on infant care only (control). The class was only for expecting fathers guided by an experienced male facilitator. In this study men were encouraged to support each other in committing themselves to be an advocate for breastfeeding. They also had role play about how they could be a supportive partner. The results of the study showed that women whose partner attended the breastfeeding classes were significantly more likely to initiate breastfeeding compared to women whose partners attended only baby care classes (74%, 41% respectively, P = 0.02). This intervention was not effective in increasing duration of breastfeeding. The intervention in this study design implemented and evaluated male partners as individuals rather than a couple as a unit. To have better results women and their partners should be involved together to explore their own strategies and make plans to support each other.

Eksrtom et al (2003) emphasizes the importance of grandparents support in increasing the duration of breastfeeding. In their study of 488 Swedish women, they found that multiparous women (n = 294) whose mother told them about their breastfeeding history breastfed longer than women whose mothers did not (P< 0.006). Ekstrom et al suggested providing an opportunity to grandmothers to discuss their breastfeeding perceptions with each mother as a helpful intervention to support breastfeeding (Ekstrom, Widsrom, & Nissen, 2003). However, interventional studies involving grandparents or women's social network are scarce in the literature.

Multifactes interventions

Compared with having a single intervention strategy, combining multiple intervention strategies is more effective in enhancing the duration of breastfeeding (De Oliveria et al., 2001; Hector & King, 2005; Hector et al., 2004a; Mattar et al., 2007; McCormick, 2006; Miracle et al., 2004; Noel-Weiss et al., 2006; Preventive services Task Force, 2003; Ryser, 2004; J. Scott et al., 2001; J. Sikorski et al., 2001; The Parliament of the Commonwealth Australia, 2007; Wolfberg et al., 2004). For instance, in a systematic review by Guise et al (2003) support alone as a single intervention increased short-term breastfeeding duration with differences of 0.11 (95% CI, 0.03-0.19). However, a combination of interventions including education and support produced a larger increase in short-term breastfeeding duration with differences of 0.37 (95% CI, 0.17-0.58).

An overview of nine systematic reviews by Hector et al (2004) about interventions to support and promote breastfeeding revealed that multifaceted interventions were more likely to be effective than single interventions in increasing the initiation and duration of breastfeeding (Hector et al., 2004a). They reported that the combination of the following strategies was an effective method in improving breastfeeding practices. The strategies that they recommend incluedeeducation of mothers, peer support and changes to hospital practices such as rooming-in and early skin-to-skin contact, staff training, policy, paid maternity leave, media campaigns/ programs.

Discussion

The literature review highlights the importance of the modifiable factors including breastfeeding intention, confidence and support in duration of breastfeeding.

This evidence emphasises the importance of maternal breastfeeding confidence in continuation of breastfeeding. Health care professionals may modify a mother's breastfeeding practice by designing interventions that respect breastfeeding self-efficacy. Self efficacy, when combined with understanding the other factors that affect breastfeeding may provide a conceptual framework to guide effective interventions.

According to Bandura's self-efficacy theory, to increase participant's self-efficacy, they must first be fully informed of the multiple health benefits:therwise, they have little reason to keep driving themselves to face challenges (Bandura, 1997). Linking breastfeeding knowledge to health promotion provides some incentive to continue breastfeeding. In order to enhance self efficacy parents need to be taught about challenges that may arise during early breastfeeding and how to overcome them.. Problem solving and role-play activities in education sessions are useful strategies to increase self-efficacy (Bandura, 2005).

This finding suggests that interventions that aim to increase women's intention to prolong breastfeeding should involve women, their partner and their broader social networks. From a midwifery perspective interventions can be designed to specifically involve fathers and/or close family members in a woman's education and support.

Educational factors in the interventional studies vary from study to another study. They are different in contents, timing, strategies and methods (Hector, King, & Webb, 2004b) . It is difficult to find the best educational strategy to prolong breastfeeding, as there is no clear explanation or definition about interaction between the women, support people and educators. Many of the educational sessions stresses on the exclusivity of breastfeeding and not on the duration of breastfeeding. It is not clear from the evidence if women learn about their options to increase duration of breastfeeding in the educational interventions.

Cochrane review clearly identify the benefits of support in duration of breastfeeding, however it does not include the support from father, family members and mothers own social support networks during lactation. Williams (2005) in her qualitative study argue that the inconsistent results in pregnancy and parenting literature regarding the role of social support are due to both inconsistencies of the definitions across the studies and lack of understanding social support within a broader experience of social interaction (Williams, 2005).

Although evidence suggests that multifaceted interventions are more effective that single intervention, it is difficult to examine the effectiveness of the each component separately to identify necessity of the component in one multifaceted intervention (Hector et al., 2004a).

Furthermore, occasionally the combination of the strategies is very close and differentiation between the components is not possible. For instance, de Oliveira and et

al (2001) argue that encouragement and reassurance in educational interventions could be considered as emotional support, however those type of supports are not studied as a stand- alone strategy.

Although education has been found to be effective in increasing initiation and short-term duration of breastfeeding, there is clear evidence that support can increase the longer-term duration of breastfeeding if it is combined with the educational component. The Cochrane review by Britton et al (2007) indicates that women who receive any form of support are less likely to stop exclusive breastfeeding before five months compared to any other form of breastfeeding after five months. However, in this review the definition of support is not clear and the role of the women's own social network including father, family members and friends has not been addressed. De Oliveria et al (2001) in their systematic review reported that for educational interventions involving pregnant women, support from mothers or someone from their social network prolongs breastfeeding duration (De Oliveria et al., 2001).

Conclusion

Breastfeeding as a health behaviour could be protected and supported by the interventions that incorporate amendable influencing factors in women's social network. In the literature breastfeeding intention, support and confidence have been reported as important factors in breastfeeding behaviour. Women who have strong desire to breastfeed for longer period of time, confident in their ability to breastfeed and well supported by their own family demonstrated positive and prolong breastfeeding behaviours. However, not many interventional studies considered these amendable factors in their procedures.

Interventional studies used to extend breastfeeding were usually combined and varied with the strategies and procedures used. The most effective interventions reported to have a combination of face to face education, support and guidance spaning both during antenatal and postnatal period. However, because of the variety of the approaches in the literature, it is difficult to identify the best intervention with the optimal effectiveness in breastfeeding duration.

It is important to develop new strategies based on the evidence and factors that may influence women's decisions to sustain breastfeeding practice. There has been no interventional study aiming to increase women's breastfeeding intention, support and confidence at the same time.

There is a need to design a unique multi-phased intervention to increase women's breastfeeding intention, confidence and to involve women's social support because still women stop breastfeeding in very early stages of postpartum period.

Table 1 Definition of terms

Terms	Definition
Any breastfeeding	A child feeding method where the child receives some breast milk but can also receive any food or liquid including non-human milk (Webb, Marks, Lund-Adams, & Abraham, 2002)
Exclusive breastfeeding	A child feeding method where the child receives only breast milk from his/her mother, or expressed breast milk, and no other liquids or solids with the exception of drops or syrups consisting of vitamins, mineral supplements or medicines (Webb et al., 2002)
Complementary feed	A child feeding method when the child receives both breast milk and breast milk substitutes (e.g., formula, cow's

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