

A Literature Review of the Factors That Influence Breastfeeding: An Application of the Health Belief Model

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Abstract

Breastfeeding is beneficial for both mother and child. Exclusive breastfeeding rate and early initiation of breastfeeding has not reached desirable level in many countries. Understanding the factors that influence infant feeding will help in promotion, protecting and supporting breast feeding. *This* review identified the determinants of infant feeding practices and presented it using the Health Belief Model as a frame work. *Several* data bases were searched with specific keywords and findings reveal that maternal sociodemographic characteristic like age, education, parity, economic status, and employment may influence breastfeeding. Other factors include, antenatal attendance, multiple births, type of delivery, previous breastfeeding experience, breastfeeding support, Knowledge of individual's feeding as babies, maternal prenatal feeding intention and infant birth weight. *Women* will breastfeed as recommended if they are influenced to develop a positive perception about breastfeeding.

Keywords

Breastfeeding, Determinants, Health Belief Model, Breastfeeding Intention, Infant Feeding

1. Introduction

Suboptimal breastfeeding is responsible for the death of 1.4 million children and the disability of 44 million globally (Black et al, 2008). Therefore, it has been recommended that all women should breastfeed their infants exclusively in the first six months and subsequently with supplementary feeding for 2 years for optimal growth and development (UNICEF, 2013). The World Health Organization and UNICEF had launched several programmes like the baby friendly hospital initiative and the International Code of Marketing of Breast Milk Substitutes in order to protect, promote and support breastfeeding in response to persistent decline in the rate of breast feeding globally (Fairbank et al, 2000; UNICEF, 2013). The factors that influence infant feeding are complex and vary from one setting to another. Understanding these factors is necessary in addressing the declining rate of breastfeeding.

Exclusive Breastfeeding for six months is beneficial for women because it ensures better reproductive and postmenopausal health (NRDC, 2005; Murimi Dodge, Pope,

& Erickson, 2010). Breastfeeding has a beneficial effect on the health of women. Studies have shown that breastfeeding helps in losing pregnancy weight faster (Kramer and Kakuma 2012; Baker Gamborg, Heitmann, Lissner, et al 2008; Sanusi and Falana, 2013). A study revealed that women who breastfed lost 4.4kg within a year, while those who did not breastfeed only lost 2.4 kg ($P<0.05$) (Dewey, Heinig and Nommsen, 1993). This underlines the effectiveness of breastfeeding especially if practiced exclusively in the first six months, in reducing weight gain during pregnancy. Breastfeeding promotes uterine contraction, thereby reducing blood loss after delivery and promotes uterine involution (NRDC, 2005). Breastfeeding reduces the risk of type 2 diabetes and cardiovascular diseases (Davis, Stichler and Poeltler, 2012). It also lowers the risk of breast, endometrial and ovarian cancers (Labbok, 2001; NRDC, 2005; Centre for Community Child Health, 2006; Huo, Adebamowo, et al 2008; Sule, 2011; Davis, Stichler and Poeltler, 2012). Absence of menstruation due to breastfeeding serves as temporary contraception for some women (Kuti, Adeyemi and Owolabi, 2007). This is effective for some women who breastfed exclusively for six months (Kuti, Adeyemi and

Owolabi, 2007). Breastfeeding is cost effective as finances do not have to be set aside for infant formula (NRDC, 2005 Centre for Community Child Health, 2006). Breastfeeding gives women a sense of bonding with their babies (NRDC, 2005 Centre for Community Child Health, 2006) and promotes mental health of women (Davis, Stichler and Poeltler, 2012).

Breastfeeding is also beneficial for the infant. Adequately breastfed infants grow more rapidly and are healthier than those who were not (Ukegbu, Ebenebe and Ukegbu, 2010, Gale, Logan, et al, 2012). Breast milk confers a child with significant protection against many infectious diseases because it contains antibodies (immuno globulins) that strengthen the Childs immunity (Ukegbu, 2010; Murimi et al, 2012; Lamberti, Zakarija-Grković, et al, 2013). Breastfeeding reduces the incidence of meningitis, malaria, asthma, respiratory diseases (such as pneumonia), ear infection, diarrhoea, and urinary tract infection (Ukegbu, 2010; Murimiet al, 2012; Ibadin et al, 2012; Lamberti et al 2013). Kramer and Kakuma (2012) posited that in the first six months of life, exclusive breastfed infants are six times less likely to die from diarrhoea and 2.5 times less likely to die from acute respiratory infection. Breastfeeding lowers the risk of allergy and food intolerance and improve brain development (Centre for Community Child Health, 2006: 7). Infants exclusively breastfed for six months have higher IQ, lower risk of childhood obesity, diabetes and lower risk of mental health problems, as they enter their teenage (UNICEF, 2010, Davis, et al 2012). Breastfed children have at least six

times greater chance of survival in the early months than non-breastfed children (UNICEF, 2013). Early breastfeeding reduce infant morbidity and mortality as a result of the preventive benefits of breastfeeding in reducing long term diseases (WHO, 2007).

The aim of this review is to utilise the Health Believe Model to highlight the factors that influence breastfeeding practices globally. Understanding these factors and how they influence various infant feeding practices is important in improving breastfeeding practice through appropriately targeted and designed promotion programs.

2. Literature Search

CINAHL, GOOGLE SCHOLAR, MEDLINE through PUBMED and EBSCO were searched using the following key words; exclusive breastfeeding or formula feeding or mixed feeding and Health Belief Model, benefit of breastfeeding, breastfeeding and infant feeding practices. Articles published from 2005 to date were included. Articles with information about factors that influence infant feeding with regards to initiation, mixed feeding, formula feeding, exclusive breastfeeding and duration of feeding were also included.

Articles without key words related to the search terms were excluded. Additional literature was sourced from WHO and UNICEF websites, reference checking, and text books.

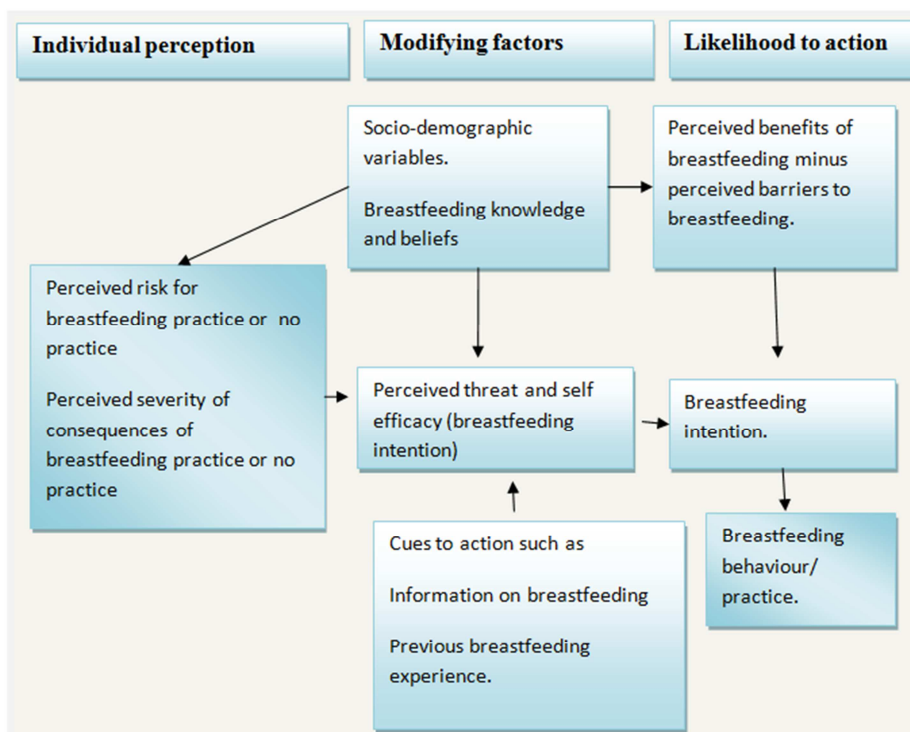


Figure 1. The Health Believe Model (Adapted from Kabiru, Beguy, Crichton, and Zulu, 2011)¹.

¹The Health Believe Model depicted in Figure 1 was originally used by Kabiru et al (2011) in a study of HIV/AIDS among youths in Kenya. For this study the topic has been changed from HIV/AIDS to breastfeeding.

3. Discussion

The Health Belief Model was developed in the 1950s to explain why medical screening programs in the US were not successful (Hayden, 2009). Hayden (2009:1) concluded that “The underlying concept of the original Health Belief Model is that, health behaviour is determined by personal beliefs or perceptions about a disease and the strategies available to decrease its occurrence”. The main constructs of the model are: perceived susceptibility (individual’s perception of exposure to danger and likelihood to contract a disease), perceived severity or seriousness (individual’s perception of the gravity of disease), perceived barriers and perceived benefits (Janz and Becker, 1984; Hayden, 2009). Three more constructs were added later resulting in the expansion of the Health Belief Model to include modifying variables, cues to action and self-efficacy (Hayden, 2009). According to Hayden (2009), the first four constructs are modified by variables such as culture, past experience, educational level, skill and motivation to produce the individual perception. The individual perception together with cues to action and self-efficacy determine the health behaviour or action (see Figure 1).

3.1. Personal Perception

Perceived seriousness, Perceived susceptibility, Perceived benefits, and Perceived barriers /cost of action are important determinants of health behaviour. The practice of breastfeeding in a particular community depends on general perception of the community about breastfeeding.

3.2. Perceived Seriousness / Perceived Susceptibility

The perception of seriousness is a function of medical information or knowledge an individual has about a disease (Hayden, 2009). It may also come from beliefs a person has about the difficulties a disease would create or the effect it would have on his or her life in general(Hayden, 2009).The tendency of engaging in behaviour to reduce risk of a disease increases with increased perceived risk of the diseases.

An adequate breastfeeding education will enable women to understand and appreciate the seriousness of health challenges associated with suboptimal breastfeeding. If women understood the degree of health challenges that may arise due to inadequate infant feeding, it is likely that they will change for the benefit of their health and that of their baby. Inadequate knowledge regarding breastfeeding negatively influence infant feeding.

3.3. Perceived Benefits

This is a person’s view of usefulness of new behaviour in reducing the risk of developing a disease; people tend to adopt healthier behaviour when they believe a new behaviour will decrease their chances of developing a disease (Hayden,

2009). If women are aware of the benefits of adequate breastfeeding for them and their infants, they may likely practice it. Most women do not practice breastfeeding as recommended probably because they are ignorant of the benefit of associated with such practice. Adequate enlightenment especially during antenatal care is vital in promotion breastfeeding.

3.4. Perceived Barrier

This is an individual’s own evaluation of the obstacles in the way of him or her adopting a new behaviour. Women have various experiences with breastfeeding (Schmied and Barlay, 1999). Mothers commonly complain of painful / sore nipple or breast (Lamontagne, Hamelin et al, 2008; Raffle, Ware et al, 2011; Jager (2012), low milk production(Lamontagne, Hamelin et al, 2008;Raffle, Ware et al, 2011; Jager, 2012; Mutekanga and Atekyereza, 2007; Muluye, 2012), Infants refusal to suck (Lamontagne, Hamelin et al, 2008; Jager (2012), breast infection, maternal illness (Doherty, Sanders et al, 2012), and Stress(Ugbaaja, Berthrand, et al, 2013). Others include exclusive breastfeeding not culturally acceptable (Ugbaaja, Berthrand, et al 2013; Ajibade, Okunlade et al, 2013), husband refusal (Ugbaaja, Berthrand et al, 2013) and delayed milk production after delivery (Mutekanga and Atekyereza, 2007). Most women can breastfeed as recommended if given the support they need to overcome barriers associated with breastfeeding (UNICEF, 2013).

3.5. Modifying Variables

The four major constructs of perception are modified by other variables such as culture, educational level, past experiences, skill, socio-demographic variables and motivation.

3.6. Maternal Age

The relationship between maternal age and infant feeding practices differs from place to place. Ogunlesi (2010) posited that maternal age is not a significant determinant of breastfeeding. On the other hand, other studies have demonstrated that maternal age at the time of birth influenced breastfeeding initiation and duration (Li, Zhang, et al 2004; Centre for Community Child Health 2006). Studies have shown that older maternal age is associated with exclusive breastfeeding and longer duration of breastfeeding (Bolton, Chow,et al 2009; Ukegbu, et al 2010), while others, associated low rates of exclusive breastfeeding with younger maternal age (Qureshi, Oche, et al, 2011; Lawoyin et al, 2001; Brown, Raynor, et al, 2011). These findings suggest that the relationship between maternal age and breastfeeding varies from place to place, therefore, health workers should understand how maternal age influence breastfeeding practices in their locality in order to plan better promotion intervention.

3.7. Education

The influence of education on infant feeding practices varies from one setting to another (Centre for Community Child Health, 2006; Ahmed, 2008; Sapna, Ameya 2009; Okeh, 2010; Ajibade et al 2013). Maternal education below secondary level contributed to prelacteal feeding and failure to practice exclusive breastfeeding (Ogunlesi, 2010). Women with low level of education are less likely to practice exclusive breastfeeding (Li, Zhang et al, 2004; Uchendu, Ikefuna, and Imodi, 2009; Qureshi, Oche et al, 2011). On the other hand, another study reported that lower maternal education attainment is related to increase in breastfeeding practices (Lawoyin, et al 2001). Highly educated women may be able to breastfeed exclusively as recommended because they are more likely to understand the benefits of breastfeeding when compared with less educated women who may not see any need for that but may breastfeed longer as a tradition. An enlightenment campaign in various languages centered on the benefits of exclusive breastfeeding could help improve practice.

3.8. Occupation/Employment

Many scholars posited that maternal employment is in a continuous competition with breastfeeding (Okeh, 2010; Raffle, Ware, et al, 2011; Muluye,) and may even be a barrier to breastfeeding (Velpuri, 2004; Ajibade, Okunlade et al 2013) especially if there is no adequate planning for breastfeeding mothers in the workplace. Women's work may have a negative impact on breastfeeding because of inadequate time to breastfeed (Ukwuani and Suchindran, 2003). Working outside the home after birth was reported to have significantly reduce the likelihood of exclusive breastfeeding at six months (Xu, Binns, et al, 2007; Qureshi, Oche, et al 2011; Chuang, Chang, et al, 2010; Matias, Nommsen-Rivers, et al 2013). Jager, Hartley, et al (2012) identified return to work as an important factor that influence breastfeeding because of the challenges women face in trying to sustain adequate infant feeding practices while working. Women who are unemployed are less likely to quit breastfeeding early when compared with women working as administrators and in manual jobs (Kimbrow, 2006) and are more likely to exclusively breastfeed (Tan, 2011). This implies that women who work many hours are likely to mix feeding. Occupation of both parents affects breastfeeding (Lawoyin, Oche et al 2001).

A study by Scott, Landers, et al (2001) reported that mothers who intended to return to full or part time work or study within 6 months of the birth were less likely to be breastfeeding at discharge (from hospital) than mothers who intended to remain at home. Because of the challenges associated with breastfeeding by working mothers (poor support for breastfeeding in the work place), WHO (2013) recommended that all women working should be supported to sustain breastfeeding when they return to work by giving them a minimum of one break per day to breastfeed or express breast milk.

3.9. Economic Status

Studies have shown that high socio-economic status was significantly related to low exclusive breastfeeding rate, and short duration of overall breastfeeding (Lawoyin, Olawuyi, et al, 2001; Okeh, 2010; Ekanem, Ekanem, et al 2012; Ajibade, Okunlade et al, 2013). This is not unconnected to the employment status of women with high economic status which has a negative impact on breast feeding. A contrary opinion was reported by Velpuri, (2004) in which women with high income status were associated with a high breastfeeding rate. Adelekan (2003) identified low economic status as one of the most important determinants of suboptimal breastfeeding (non-exclusive and short duration) and concluded that significant improvement in the socio-economic status of women could help reduce childhood malnutrition.

3.10. Marital Status

Marital status of a woman is an important determinant of infant feeding practices in some setting (Sika-Bright, 2010; Ajibade, Okunlade et al 2013). Suboptimal infant feeding is common with single mothers (Kimani-murage, Madise, et al, 2011; Tampah-Naah and Kumi-Kyereme, 2013). Studies concluded that single mothers are less likely to breastfeed adequately and longer due to absence of partners' support and confidence compared with married mothers (Lamontagne, Hamelin, et al, 2008; Ajibade, Okunlade et al 2013). This conclusion was reached following a chi-square analysis that indicated a significant relationship ($P=0.01$) between marital status and exclusive breastfeeding and duration of breastfeeding.

3.11. Parity

The effect of parity on infant feeding and breastfeeding in particular is inconclusive because in some settings multi parity has a positive impact on breastfeeding (Ukegbu, Ukegbu et al, 2010; Qureshi, Oche et al, 2011) while in other settings, the impact is negative (Uchendu, Ikefuna et al, 2009). Some studies have shown that parity did not confer any advantage to breastfeeding practice (Ogunlesi, 2010; Sapna, Ameya, 2009) meaning that breastfeeding behaviour of primiparous and multiparous women is the same (Amatayakul, Wongsawasdi et al, 1999).

3.12. Primiparity/Low Parity

Primiparous women are more likely to desire or plan to breastfeed than multiparous women (Lee, Rubio, et al 2005; Leung, Hung, et al, 2003). In some settings longer duration of breastfeeding has been associated with low parity suggesting that fewer children in the home incur less cost to women's time (Uchendu, Ikefuna et al, 2009). It has been demonstrated that primiparous women were twice as likely to be breastfeeding at discharge when compared with multiparous women; however, there was no association between parity and overall duration of breastfeeding (Scott,

Landers et al, 2001).

3.13. Multiparity/High Parity

Studies have shown that high breastfeeding rate is associated with multiparity (Ukegbu, Ukegbu et al, 2010; Qureshi, Oche et al, 2011). A study revealed that women with fewer than five children are likely to record low exclusive breastfeeding duration. (Qureshi, Oche et al, 2011). Tan, (2011) opined that multiparity is associated with the practice of exclusive breastfeeding. This means that, primiparous mothers are less likely to breastfeed exclusively (Lawoyin, Olawuyi et al, 2001).

3.14. Antenatal Care

Adequate counseling about breastfeeding during antenatal care could significantly improve breastfeeding (Sapna, Ameya 2009). Antenatal attendance is a potential determinant of infant feeding practice (Agho, et al 2009; Ghwass and Ahmed, 2011). Antenatal care increases the likelihood of early breastfeeding initiation (Ogunlesi, 2010). Mothers who did not attend antenatal clinic during pregnancy may have a poor initiation and exclusivity of breastfeeding (Ogunlesi, 2010).

3.15. Multiple Births

Mothers of twins face more challenges than mothers of singletons when it come exclusive breastfeeding. A study revealed that insufficient milk for the twins and time for breastfeeding are common causes of early cessation of breastfeeding among mothers of twins (Damato, Dowling, et al, 2005). Another study revealed that 89.4% of women with twins initiated breastfeeding and that support for mothers of twins to overcome breastfeeding problem over the first 6 weeks may result in a longer duration of breastfeeding (Damato, Dowling, et al, 2005). Mothers of twins can breastfeed for the recommended duration if supported (Damato, Dowling et al 2005).

3.16. Type of Delivery

Mothers who had a normal delivery tend to have a positive attitude towards breastfeeding and had less stressful experiences with breastfeeding than mothers who gave birth through caesarean section (Imhonde, Shaibu, et al, 2012; Carlander, Edman, et al 2009). Caesarean delivery is associated with formula feeding and low milk production (Li, Zhang et al, 2004). In a study of the effects of maternal care practice on breastfeeding, DiGirolamo, Grummer-Strawn et al, (2008) concluded that type of delivery (vaginal versus caesarean) had no influence on breastfeeding practices. Patel, Liebling et al (2003) also reported that type of delivery had no impact on breastfeeding.

3.17. Birth Weight/Infant Size

Low birth weight infants are less likely to exclusively breastfeed (Matias, Nommsen-Rivers et al 2012; Butte,

Lopez-alatcon et al, 2002) and may be associated with the belief that breast milk substitute is required to make up the low weight (Matias, Nommsen-Rivers, 2012).

4. Cue to Action/ Self Efficacy

Cues to action are events, people or things that move people or things that move people to change their behaviour e.g. illness of a family members, media report, mass media campaign while self-efficacy is belief in one's ability to do something. Self-efficacy is influenced by personal accomplishment (personal experience), vicarious experience (individual performances whether live, recorded or printed), verbal persuasion from health care professionals, peer counsellors, family members or personal friends, physiological and affective state (excitement or satisfaction, enhances self-efficacy while pain, fatigue, anxiety or stress reduces ones sense of self efficacy) (Danis, 1999).

4.1. Previous Experiences with Breastfeeding

Breastfeeding experience helps in building confidence and confidence is a potential determinant of breastfeeding (Brodribb, Fallon, et al 2008; Meedy, Fahy et al, 2010). Women with little or no previous breastfeeding experience require additional support to be able to breastfeed adequately (Kronborg, Væth, et al 2007) women with breastfeeding experience are more likely to intend to breastfeed than those who never had any experience (McInnes, Love, et al, 2001). Health beliefs, experience of friends and family could encourage or discourage breastfeeding (Raffle, Ware et al, 2011). A study reported that less confident women are four to five times more likely to experience breastfeeding failure (Dennis, 1999). Furthermore, a longitudinal study of pregnant women in Australia to determine the influence of antenatal services on breastfeeding revealed that mothers with high breastfeeding confidence were more likely to breastfeed compared with women with low breastfeeding confidence (79.3% versus 50.5%) (Blyth, Creedy et al, 2004).

4.2. Breastfeeding Support

4.2.1. Support from Family and Friends

Women who enjoyed support from family and friends are likely to breastfeed longer (Wambach and Cohen, 2009). Presence of mother in-law in the home increased breastfeeding self efficacy and has implication for continuing breastfeeding (Ku and Show, 2010). Social support by women's partners (husbands encouraging wives to breastfeed) may promote, and prolonged breastfeeding (Lamontagne, Hamelin, 2008; Meedy, Fahy et al, 2010; Scott, Landers et al, 2001; Tan, 2011; Brown, Raynor et al, 2011). Grandmothers are influential in infant feeding choices and can positively influence breastfeeding, especially if they are aware of recommended practices (Kerr, Dakishoni, et al, 2008; Grassley and Eschit, 2008).

4.2.2. Support from Health Workers

Clinicians and health workers may have an influential role in breastfeeding initiation and continuation (Li, Laung et al, 2004). Professionals can sometimes have a negative influence when they provide women with breastfeeding information and recommendations that are confusing (Lamontagne, 2008). Post natal support from experts increase breastfeeding duration (Brown, Raynor et al, 2011).

Kronborg, Væth et al, (2007) reported that home visits in the first 5 weeks following birth may prolong the duration of exclusive breastfeeding. This assertion was made after observing a significant increase in the duration of breastfeeding of breastfeeding with an intervention which focused on assisting women to overcome obstacle to breastfeeding. Ahmed (2008) identified support for mothers immediately after delivery as a way of overcoming breastfeeding problems and enhancing confidence.

4.3. Knowledge of Individuals' Feeding as Babies

Women who knew how long they were breastfed as a child showed a longer duration of exclusive breastfeeding and total breastfeeding than those who did not (Ekstrom, Widström, et al 2003; Forster, McLachlan et al, 2006). Therefore, women who do not know how they were breastfed as babies or who knew they were formula or mixed fed require counselling during antenatal care.

4.4. Maternal Prenatal Intention

Maternal prenatal intention to breastfeed has an impact on infant feeding practices (Donath, Amir and ALSPAC study Team, 2003). High intention and self efficacy increase the likelihood to breastfeed for 6 months (Wilhelm, Rodeherst, et al, 2008). All women should be guided to plan for breastfeeding of their children in the antenatal period.

Knowledge of individuals' feeding as babies

5. Conclusion

Individual perception about breastfeeding is governed by modifying variables, cues to action and self efficacy. A successful breastfeeding promotion program depends on the understanding of the factors that influence perception. Maternal sociodemographic characteristic like age, education, parity, economic status, and employment may influence breastfeeding. Other factors include, antenatal attendance, multiple births, type of delivery, previous breastfeeding experience, breastfeeding support, Knowledge of individual's feeding as babies, maternal prenatal feeding intention and infant birth weight. A positive perception about breastfeeding will result in self-efficacy and intention to breastfeed as recommended.

Recommendations

1. Enlightenment campaign about benefits of exclusive

breastfeeding for mother and child should be done using various languages in order to accommodate women who do not understand English and those with low educational level.

2. Breastfeeding counseling during antenatal care should be centered on solving problems associated with breastfeeding.
3. Government should liaise with all employers of labour to ensure and improve breastfeeding support in the work place.
4. Extending maternity leave to six months for all working mothers could promote exclusive breastfeeding for six months. The six months leave could be limited to maximum of three children.
5. Economic empowerment may improve breastfeeding in some settings.
6. Special support should be given to young mothers; women who were formula or mixed fed as babies and mothers of twins during the postnatal period.

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