

# FACTORS ASSOCIATED WITH FORMULA FEEDING DURING THE PERIOD OF EXCLUSIVE BREAST FEEDING

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## INTRODUCTION

Exclusive Breast Feeding (EBF) means infants receive only breast milk and not even water, other liquids, tea, herbal preparations or foods during the first six months of life (during EBF period) with the exception of vitamins, mineral supplements or medicines (World Health Organization (WHO), 2008). Although breast feeding is the best method of nourishing the infants during the first six months of life, some mothers start formula feeding during this period. Helsing and King (1985) defined formula as “powdered animal milk which has been adapted to human needs” (p.237). In general, goat’s, sheep’s and cow’s milk are used in preparation of formula (Henshel and Inch, 1996).

Formula feeding during the EBF period creates many health risks to the baby. Formula feeding increases the risk of death from diarrhea and incidence of acute respiratory tract infections in infants (Victoria *et al.*, 1989; Al-Sharbatti and AlJumma, 2012). Further, WHO (2003) has confirmed that 1.5 million infants who die each year could have been saved if they had been breast fed. In addition, mothers also receive benefits from EBF as it helps to keep space between children and reduce the risk of ovarian and breast cancers (Dhammika and Gunawardhana, 2009). Many factors are associated with early initiation of formula feeding such as mothers’ employment, length of maternity leave, inadequate knowledge on breast feeding, lack of familial and or social support and lack of self confidence in breast feeding (Cameron and Hofvande, 1983; Helsing and King, 1985).

As formula feeding makes many health risks to both the mother and the baby, it is important to identify the factors associated with formula feeding during the period of EBF within Sri Lankan context. The findings of this study will be helpful to take necessary interventions to address the identified factors that are associated with EBF appropriately. Therefore, the purpose of this study is to describe the factors associated with formula feeding during the period of EBF. The specific objectives of the study were to describe mothers’ social, work and health related factors, and their knowledge, attitudes and misconceptions associated with formula feeding during the period of EBF.

## METHODOLOGY

Quantitative research approach and descriptive design were used for the study. Data were collected by using a self administered, structured questionnaire. The content validity of the questionnaire was assured by referring to the standard literature and by obtaining expert opinion. The questionnaire was pre- tested for reliability and understandability with five mothers who did not participate in the study. The data analysis was done by using descriptive statistics and data were managed by using Microsoft Excel.

This study was conducted in five medical wards in Lady Ridgeway Hospital for Children (LRH) and two pediatric wards in Colombo South Teaching hospital (CSTH). The sample was taken from the mothers who were admitted to the wards with their children for treatments in LRH and CSTH. Purposive sampling method was used to select a sample of 100 mothers who fed formula for their infants during the period of EBF. Ethical approval was obtained

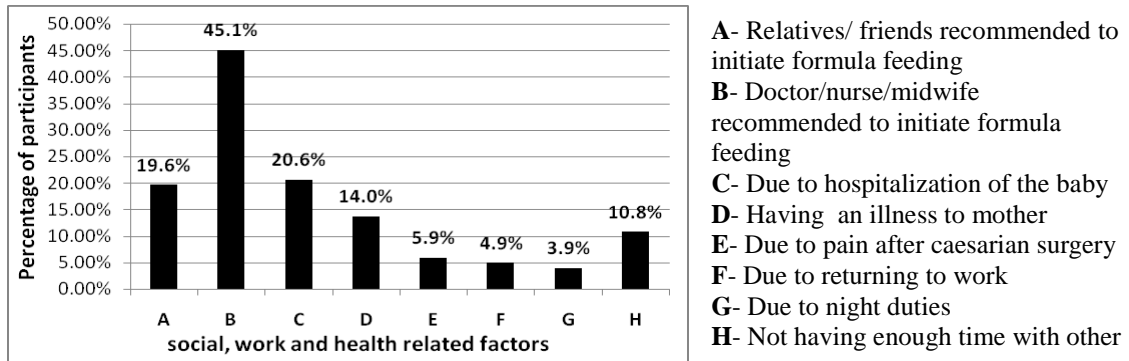
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from the Ethics Review Committees of LRH and Csth. Voluntary participation was encouraged and written informed consent from each participant was obtained prior to data collection.

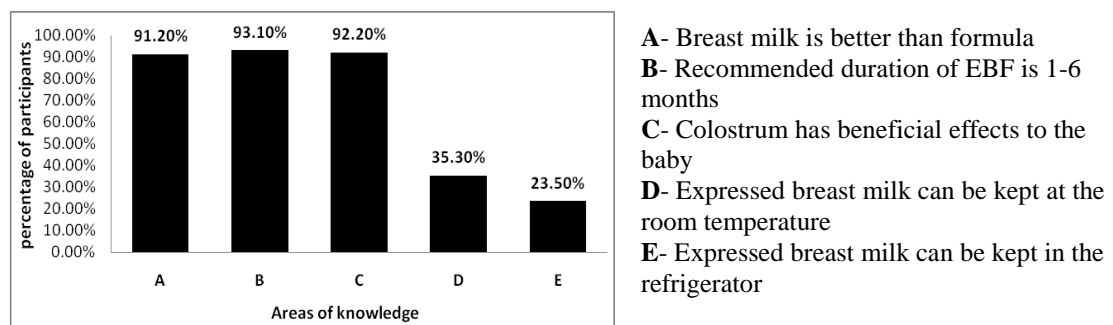
## RESULTS AND DISCUSSION

The response rate of the study was 98.1%. A majority of the participants were Sinhalese (62.7%) and 18.6% and 11.6% were Tamils and Muslims respectively. Among the participants, majority (42.2%) had studied up to Advanced Level and 63.7% was unemployed. Amongst them, 78.4% fed their babies with both breast milk and formula while 21.6% fed only with formula. Almost half (51.0%) of the participants have had their first baby.



**Figure 1.** Social, work and health related factors for initiation of formula feeding

A majority of the participants (64.7%) had started formula feeding as they were influenced by others such as doctors, nurses, midwives relatives and friends. Almost 20.5% had started formula feeding during hospitalized period of their infant and they had continued formula feeding afterwards. Among the participants who are employed, only 4.9% had started formula feeding due to returning to work whereas it was 76.7% in the study conducted by Perera, *et al.* (2010). Amongst the other factors, the mother being ill (14.0%) and not having enough time for breast feeding (10.8%) were the reasons for initiation of formula which is similar to the findings revealed in the study of Williams, *et al.* (1993) (Figure 1).



**Figure 2.** Knowledge on EBF

Most of the participants had adequate knowledge regarding breast feeding although they fed their children with formula feeds. A vast majority (91.2%) agreed that the breast milk is better for their children than formulas and similar finding was observed by Motee, *et al.* (2013). From the sample, 93.1% knew about the recommended duration for EBF which is similar to the findings of Dhammika and Gunawardana (2009). More than half of the sample knew that the baby will acquire some diseases due to formula feeding as identified by Sowden, Marais and Beukes (2009). In addition, the current study showed that most of participants (92.1%) had knowledge regarding the value of colostrum. Only 35.3% and 23.5% of participants knew that the expressed breast milk can be kept at room temperature and refrigerator respectively (Figure 2).

With regard to attitudes on EBF, 98.03% of the participants did not respond to the statement that breast feeding is repulsive. However, it is different from previous studies (Sowden, Marais and Beukes, 2009). Among participants, 46.7% held the attitude that their babies were not satisfying with breast feeding. Some other attitudes regarding initiation of formula feeding were babies' reluctance in sucking (35%) and having flat, inverted nipple or breast engorgement (6.3%). Garbarino *et al.* (2013) in Italy also highlighted similar findings. Among participants, 24.5% stated that they felt embarrassed to breast feed in public places. In contrast Sowden, Marais and Beukes (2009) observed different results (70.9%). Most Muslim mothers (58.3%) indicated that breast feeding in a public place is extremely sensitive to cultural norms and it was a barrier for breast feeding.

There were some misconceptions held by participants who fed formula during the period of EBF. A majority of participants (61.8%) believed that they do have not enough breast milk to feed their babies which is similar to the findings of Garbarino *et al.* (2013). Almost a half of the participants (52.9%) believed that the breast milk is less nutritious when they are not taking nutritious foods during the period of EBF. Similar findings were reported by Bonia *et al.* (2010) and Dhammika and Gunawardana (2009). Among the participants, 34.3% believed that production of breast milk is affected by their age. Only 19.6% believed that their youthful figure will get affected due to breast feeding. Nearly 30% believed that the size and shape of their breast will affect the production of breast milk.

## **CONCLUSIONS/RECOMMENDATIONS**

Most of the participants had given both breast milk and formula milk while few mothers had given only formula feeding for their babies. First time mothers were more likely to have difficulties in establishing breast feeding. The reason may be inexperience and related anxiety of first time mothers. Maternal knowledge about EBF and recommended EBF period (6 months) was adequate but they had inadequate knowledge regarding storage of expressed breast milk. Most of the participants were influenced by the others to feed their babies with formula. Some of the major misconceptions that seem to have affected formula feeding were mothers' belief of insufficient breast milk production and belief that breast milk is less nutritious when they are not taking nutritious foods. Therefore, it is recommended to educate the women on EBF before their delivery, specially on the areas identified by the current study in order to increase their knowledge and eliminate their misconceptions. It is also recommended to take necessary interventions and use strategies to overcome social, work and health related barriers in EBF. Further, replicating this study with a larger sample representing other hospitals and community set-up is also recommended.

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