The proposed causal model of exclusive breastfeeding practice among Muslim mothers

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Abstract

Purpose: This literature review aimed to describe current situation of breastfeeding (BF) practice among Muslim mothers and develop a causal model of exclusive breastfeeding (EBF) practice among Muslim mothers.

Methods: The published research articles were searched in PubMed, MEDLINE, CINAHL, Proquest, Science Direct, Cochrane Database, and GOOGLE, using the keywords exclusive breastfeeding, Muslim, influencing factors, and developing countries. Studies were limited to online published researches, performed in countries which are Muslim as the majority population, written in English and Indonesia language, and published between the years 2001-2012. There were 14 articles met the inclusion criteria for this proposed study.

Results: The results showed that the rates of breastfeeding the infants until 2 years old among Muslim mothers were 98 percent, 95.8 percent, and 86 percent among Indonesian, Egyptian, and Turkish mothers, respectively. However, the rates of EBF at least six months postpartum among Muslim mothers in Egypt and Saudi Arabia were 9 percent and 12 percent, respectively. The “non modifiable” influencing factors on BF were type of delivery, maternal age, maternal education, parity, working status, family income, and residence. The modifiable influencing factors on BF were support, attitude towards breastfeeding, formula supplementation, breastfeeding difficulties, breastfeeding initiation, and intention to BF.

Conclusion: The causal model of EBF practice among Muslim mothers was developed based on these previous studies. Understanding the proposed model will help nurses to provide nursing care to enhance the rate of EBF. Further study is needed to test for this proposed causal model with Muslim mothers.

Keywords: causal model; EBF practice; Muslim mother

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Introduction

Islam is the second largest religion in the world. Islam gives humans’ live guidance which states in Qur’aan and Haadith (The prophet Muhammads’ saying and practicing). Islam regulates all human live aspects including infant feeding. Islam recommends every infants to be breastfed (Shaikh & Ahmed, 2006). The command to breastfeed infants is stated in Holy Quran. Islam encourages Muslim mothers to breastfeed their infant until 2 years old. Weaning before infant age two years old is permitted if mutually decided on by both parents (Shaikh & Ahmed, 2006). In Islam, human milk is preferable as an infant feeding source than animal milk. When a mother cannot provide their own breast milk to feed the infant, the mother can look for a wet nurse who breastfeeds her infant until two years old (Afif & Unger, 2012). The infant’s father has responsibility to support the mother when breastfeeds her infant by providing all of the mother’s needs. In case the parent divorce, the father should provide home and financial support to the mother until breastfeeding the infant finished. Therefore, Muslim mothers were more likely to breastfeed their infants comparing to other religion mothers (Foo, Quek, Ng, Lim, & Deurenberg-Yap, 2005; McLachlan & Forster, 2006).

Commonly, Muslim mothers breastfeed their infants (Ghwass & Ahmed, 2011; Inayati et al., 2012; McLachlan & Forster, 2006). In Islam, mothers who breastfeed their infants will be given rewards by Allah for each drop of breast milk and mothers who refuse breastfeed their infants will get punishment (Shaikh & Ahmed, 2006). The breastfeeding initiation rates among Muslim mothers were 98 percent and 77.8 percent among Turkish and Saudi Arabian mothers, respectively (Amin et al., 2011; McLachlan & Forster, 2006). Current study found that the breastfeeding duration among Muslim mothers longer than that of mothers in other religion groups (Amin et al., 2011; Foo et al., 2005). Although evidence showed several benefits of exclusive breastfeeding for both infants and mothers, the EBF rates were only 9 percent and 12 percent among Egyptian mothers and Saudi Arabian mothers, respectively (Amin, Hablas & Al Qader, 2011; Ghwass & Ahmed, 2011). One possible reason that can be identified for the cause of the low EBF is the influencing factors on EBF practice of mothers.

Understanding the influencing factors on breastfeeding practice among Muslim mothers will help nurses to provide the appropriate care to enhance breastfeeding initiation, intention of EBF and EBF practice among Muslim mothers. There were several previous studies examined the influencing factors on EBF among Muslim mothers. However, these previous studies were fragmented, a correlation or prediction study, and “non modifiable” variables. Besides, there were previous studies tested the causal model of breastfeeding practice among mothers
in the United States (Duckett et al., 1998), Hong Kong (Dodgson, Henly, Duckett, & Tarrant, 2003), and Thailand (Ratananugool, 2001). Moreover, there is no previous study from Muslim countries examined the full causal model of EBF practice. Thus, the literature review and a study to investigate the causal model regarding the influencing factors on EBF among Muslim mothers are highly needed. This literature review aims to describe current situation of breastfeeding practice and propose a causal model of EBF practice among Muslim mothers.

Purpose

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Methods

Data source

The published research articles were searched in PubMed, MEDLINE, CINAHL, Proquest, Science Direct, Cochrane Database, and GOOGLE, using the keywords breastfeeding, Muslim, influencing factors, determinants and developing countries.

Study selection

Studies were limited to online published researches, performed in countries which are Muslim as the majority population, written in English and Indonesia language, and published between the years 2002-2012. There were 14 articles met the inclusion criteria for this proposed study.

Results

General description

In this review, 14 studies were analyzed, of which 5 were Asian countries, 2 Africa, and 7 were Middle East countries. All of the studies were quantitative design. All of data were collected using questionnaires.

Current breastfeeding practice among Muslim mothers

Literature review showed that the breastfeeding initiation among Muslim mothers were high. Almost all of Muslim mothers initiated breastfeeding within the first day of postpartum. The breastfeeding initiation rates were 98 percent and 77.8 percent among Turkish and Saudi Arabian mothers, respectively (Amin et al., 2011; McLachlan & Forster, 2006). The breastfeeding rates also were high. Evidence revealed that the breastfeeding rates among Muslim Indonesian, Egyptian, and Turkish mothers were 98 percent, 95.8 percent, and 86 percent, respectively (Berlian, 2010; Ghwass & Ahmed, 2011; McLachlan & Forster, 2006). However, the EBF rates among Muslim mothers were low. The EBF rates were only 9 percent and 12 percent among Egyptian mothers and Saudi Arabian mothers, respectively (Ghwass & Ahmed, 2011; McLachlan & Forster, 2006).
Factors influencing breastfeeding practice among Muslim mothers

Evidence showed that the influencing factors on EBF practice among Muslim mothers were varied and complex. Several factors related to EBF practice among Muslim mothers can be divided into “non modifiable” and “modifiable factors”.

1. “Non modifiable” factors

1.1 Type of delivery

Currently, health science and technology improvement allows a mother giving birth by a cesarean section. Type of delivery affected infant feeding in the first day of postpartum period. Cesarean section was contributed significantly to breastfeeding practice duration (OR: 2.36, 95% CI 1.17-4.78) (Khassawneh, Khader, Amarin & Alkafajei, 2006). A study reported that mothers who gave birth spontaneously vaginally were more likely to breastfeed their infants exclusively comparing to mothers who gave birth via cesarean section (OR: 1.7, 95%CI: 1.20- 2.40) (El-Gilany, Shady & Helal, 2011), probably due to cesarean section mothers need longer time to recover from the surgery and they need more nurses’ assistance in breastfeeding initiation during the first day after delivery.

1.2 Maternal age

Several previous studies reported the significant contribution of age to breastfeeding intention and practice. Older mothers were more likely to breastfeed their infants comparing to younger mothers. A study in Ethiopia revealed that the high prevalence of EBF was found in mothers age more than 35 years old (OR: 1.4, 95%CI: 0.90-2.30) (Alemayehu, Haidar & Habte, 2009). The older Saudi Arabian mothers also tend to exclusively breastfeed comparing to the younger mothers (OR: 1.14, 95%CI: 1.03–1.23) (Amin et al., 2011). The age variable was inconsistent. A study among Syrian mothers showed that younger mothers age less than 25 had higher intention to EBF than older mothers (OR: 1.7, 95%CI: 1.03-2.67) (Al-Akour, Khassawneh, Khader, Ababneh & Haddad, 2010).

1.3 Maternal education

Educational level influenced intention to breastfeed and breastfeeding practice significantly. Low educated mothers (primary or less) in Ethiopia were more likely to exclusively breastfeed comparing to the higher educated mothers (OR: 2.2, 95%CI: 1.20-4.20) (Alemayehu et al., 2009). Education level also influenced intention to breastfeed. A study showed that low educated Jordanian mothers more intended to breastfeed their infants comparing to high educated mothers (OR: 2.9, 95%CI: 1.17-7.11) (Al-Akour et al., 2010). Similar finding, Indonesian low educated mothers also breastfed exclusively their infants comparing to high educated mothers (χ2 = 12.399, p = 0.002) (Berlian, 2010). In contrast, higher educated Saudi Arabian mothers tended to breastfeed exclusively more comparing to low educated mothers (El-Gilany et al., 2011). Thus, maternal education variable was inconsistent to predict breastfeeding practice among Muslim mothers.
1.4 Parity

Number of previous pregnancy also affected mothers’ intention to perform EBF and EBF practice among Muslim mothers. Multiparous mothers in Indonesia were more likely to perform EBF (OR: 1.22, 95%CI: 1.02-1.85) (Berlian, 2010). Multiparous mothers in Malaysia had higher rate of breastfeeding practice than primiparous mothers (OR: 1.68, 95% CI: 1.17-2.42) (Tan, 2009). A study among Jordanian mothers revealed that multiparous mothers were more likely to breastfeed their infants comparing to primiparous mothers (OR: 1.19, 95%CI: 0.77-1.85) (Khassawneh et al., 2006). Conversely, another study found that mothers who had one child in Jordan were more likely to intend breastfeeding exclusively comparing to mothers who had two or more children (OR: 3.7, 95%CI: 1.41-9.52) (Al-Akour et al., 2010).

1.5 Working status

Some studies had reported a decreasing duration of breastfeeding related to maternal employment (Yilmaz, Gürakan, Akgün & Ozbek, 2002). Working status reduced the EBF rate among Ethiopian mothers. The EBF practice among non working mothers were higher than working mothers (OR: 1.2, 95%CI: 0.90-1.60) (Alemayehu, 2009). Housewife mothers in Malaysia also were more likely to breastfeeding than working mothers (OR: 3.66, 95% CI: 2.45- 5.46) (Tan, 2009). Similar findings in Saudi Arabia, mothers who stayed at home practiced EBF more than working mothers (OR: 6.8, 95%CI: 3.3–14.3) (El-Gilany et al., 2011). Jordanian female employees breastfed for shorter duration comparing to housewife mothers (OR: 3.34, 95% CI 1.60-6.98) (Khassawneh et al., 2006).

Working types also affected EBF practice. A study among Indonesian mothers showed that agricultural workers were more likely to practice EBF comparing to professional workers, industrial workers, and non working mothers (OR: 1.04, 95%CI: 1.01-1.56) (Berlian, 2010). A study investigated the influencing factors on breastfeeding practice in Malaysian working mothers. The results showed that working duration influenced breastfeeding practice. Part-time Malaysian mothers breastfed for longer duration (OR: 2.16, 95% CI: 0.53-8.82) comparing to full-time working mothers (Amin et al., 2011). Longer maternity leave duration increased EBF practice among Malaysian working mothers (OR=5.2, 95% CI: 1.70-15.90) (Amin et al., 2011). The availability of breast milk pumping facilities in the workplace also contributed significantly to EBF practice among working mothers (OR=1.8, 95% CI: 1.10-3.10) (Amin et al., 2011). Working mothers who expressed their breast milk had longer breastfeeding duration (OR 16.85; 95% CI: 4.21–67.48) (Amin et al., 2011).
1.6 Family income
Household income was contributed significantly to EBF practice among Ethiopian mothers. The highest EBF rate was mothers from the middle class wealth index (Alemayehu et al., 2009). A study in Indonesia found that low family income mothers tended to more breastfeed exclusively comparing to the middle and high family income mothers ($\chi^2 = 16.590, p = 0.000$) (Berlian, 2010). Household income influenced Syrian mothers’ intention to breastfeed. Mothers who had higher family income were higher intention to breastfeed their infant comparing to mothers who had low family income (OR: 1.8, 95% CI: 1.15-2.68) (Al-Akour et al., 2010).

1.7 Residence
Living area contributed on breastfeeding practice. Mothers who lived in a rural area were more likely to breastfeed exclusively comparing to mothers who lived in an urban area (Berlian, 2010). It might be affected by the close relationship and agricultural way of live in the rural area. Rural Malaysian mothers had a higher EBF rate comparing to urban Malaysian mothers (OR: 1.16, 95% CI: 1.03-1.89) (Tan, 2009). The similar finding, Saudi Arabian mothers who lived in a rural area were more likely to exclusively breastfeed their infants comparing to mothers who lived in an urban area (OR: 2.2, 95% CI: 1.70-2.90) (El-Gilany et al., 2011).

1.8 Previous experience
Previous experience made mothers perceived mastery to perform a behavior. Evidence showed that mothers who exclusively breastfed their infant previously would have higher intention to provide EBF to current infant. Previous experience also contributed significantly to the intention to breastfeed among Syrian and Jordanian mothers. Having another child who was breastfed exclusively increased Syrian and Jordanian mothers’ intention to provide EBF for the next child (OR: 2.2, 95% CI: 1.04-4.62; OR: 1.6, 95% CI: 1.32-2.11, respectively) (Al-Akour et al., 2010).

2. Modifiable factors
2.1 Support
Support to breastfeeding mothers increased both of breastfeeding intention and breastfeeding duration. Sources of support may vary in different population. Syrian mothers who supported by husband had higher intention to breastfeed than mothers who did not received support (OR: 2.3, 95% CI: 1.06-5.11) and Jordanian mothers also had higher intention to breastfeed when supported by their husband (OR: 2.2, 95% CI: 1.47-3.33) (Al-Akour et al., 2010). Support also may be tempered as providing time and place to express breast milk at workplace. Lack of support in the workplace also made working mothers had a shorter duration of breastfeeding (Yilmaz et al., 2002).
2.2 Attitude towards EBF
Attitude is well known as one of the intention predictor. Attitude towards breastfeeding influenced mothers’ intention to perform breastfeeding (Al-Akour et al., 2010; Khatun, Punthmatharith & Orapiriyakul, 2010). A study investigated the predictors of breastfeeding intention among Syrian and Jordanian mothers. This study revealed that there were no significant differences of attitude towards breastfeeding among Syrian and Jordanian mothers. The more positive attitude towards breastfeeding made the higher rate of breastfeeding intention among Syrian and Jordanian mothers (OR: 1.1, 95%CI: 1.05-1.13 and OR: 1.2, 95%CI: 1.15-1.30, respectively) (Al-Akour et al., 2010). The similar finding, a study showed that attitude towards breastfeeding significantly influenced EBF intention among Bangladeshi mothers (β = 0.52, p = 0.000) (Khatun et al., 2010).

2.3 Formula supplementation
World Health Organization (WHO) recommends the Baby Friendly Hospitals to ensure every infant receives breast milk only during the few first day of live. This policy aimed to increase breastfeeding initiation and breastfeeding duration. A study showed that formula supplementation in hospital significantly associated with shorter breastfeeding duration among Turkish mothers (β= 1.43, p = 0.004) (Alikasşifoğglu et al., 2001).

2.4 Breastfeeding difficulties
Mothers experienced several difficulties during maintain breastfeeding. Breastfeeding difficulties indicated as the major barrier to maintain breastfeeding. Egyptian mothers reported that breastfeeding difficulties as the main obstacles to practice EBF (OR: 1.8, 95%CI:1.04-2.14) (Ghwass & Ahmed, 2011). The common breastfeeding difficulties were insufficient breastmilk supply, sore nipple, pain during breastfeed and difficulty to lacth on position (Ghwass & Ahmed, 2011).

2.5 Breastfeeding initiation
Evidence showed that the breastfeeding initiation rate among Muslim mothers was high. Almost all of Turkish women (98 percent) initiated breastfeed their infants (McLachlan & Forster, 2006). The predictors of breastfeeding initiation among Saudi Arabian mothers were maternal age, multiparty (three or more children), and vaginal delivery (Amin et al., 2011). Early breastfeeding initiation significantly influenced breastfeeding duration among Saudi Arabian mothers (OR: 3.3, 95%CI: 2.50–4.50) (El-Gilany et al., 2011). Mothers who initiated breastfeeding would perform longer breastfeeding duration comparing to mothers who delayed breastfeeding initiation (OR: 2.6, 95%CI: 1.30-5.31) (Ghwass & Ahmed, 2011).
2.6 Breastfeeding intention

Muslim mothers’ intention to breastfeed was high. A study investigated the predictors of breastfeeding intention among Syrian and Jordanian mothers. This study revealed that there were non significant differences of breastfeeding intention among Syrian and Jordanian mothers. Seventy seven percent of Syrian and 76 percent of Jordanian mothers intended to breastfeed their infants (Al-Akour et al., 2010).

Almost all of Muslim mothers intended to breastfeed their infants. The breastfeeding intention significantly affected breastfeeding practice among Syrian and Jordanian mothers (OR: 2.4, 95%CI: 1.24-3.26) (Al-Akour et al., 2010).

Based on these literature reviews, the relationships among the influencing factors on EBF practice among Muslim mothers can be proposed as a causal model shown in Figure 1.

![Figure 1. The proposed causal model of EBF practice among Muslim mothers](image-url)
Conclusion

Despite evidence showed several benefits of EBF practice; however, the EBF rates among Muslim mothers were low. Literature review showed that several factors associated with EBF practice were found. The factors directly influenced EBF practice were type of delivery, maternal age, maternal education, parity, working status, family income, residence, support, formula supplementation, breastfeeding difficulties, and breastfeeding initiation. The factors indirectly influenced EBF via intention to EBF practice were maternal age, education, parity, family income, previous experience, support, and attitude towards breastfeeding. The proposed causal model of EBF practice among Muslim mothers was established. Further study is needed to test for this proposed causal model with Muslim mothers. By showing understanding the influencing factors on EBF practice and respect of Islamic beliefs related to infant feeding, nurses can help supporting healthy early feeding of Muslim infants, particularly during the first six months of infants’ age.

Implications

A causal model of EBF practice will provide the empirical knowledge. This empirical knowledge will be useful for nurses to provide appropriate and culturally sensitive nursing care to enhance EBF practice among Muslim mothers. The results of this review literature are expected to be gained better understanding about factors influenced EBF practice among Muslim mothers. It can be used by nurses to promote EBF at an antenatal care clinic by providing information about EBF practice, assessing mother’s attitudes toward EBF, and examining intention to perform EBF. Nurses also provide information how to overcome the breastfeeding difficulties and assess support to lactating mothers. Nurses should pay more attention to mothers who are primiparous, younger, working, low educated, post cesarean section, living in an urban area, with no previous experience of providing EBF, and high family income because these mothers tend to less likely perform EBF. Clinical nurses also require encouraging mothers to initiate breastfeeding their infant in the first day after delivery. Nurse educators can use these results as learning materials to enhance students’ knowledge about factors influenced EBF practice, particularly among Muslim mothers. It also provides evidence for further intervention studies to examine the most appropriate strategies to improve EBF practice among Muslim mothers.

References


