

## Original Articles

# Predictors of Breastfeeding Initiation Among Working Muslim Mothers in Central Java Province, Indonesia\*

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### Abstract

*Breastfeeding initiation is one of the cost-effective way to save millions infant's life in developing country. The aim of this study is to examine the factors related to breastfeeding initiation among working Muslim mothers in Central Java province, Indonesia. Two hundred and forty mothers in Semarang city, Central Java province, Indonesia were purposively selected. The data were collected using self-report questionnaires comprised of 1) the Personal Characteristics, 2) the Modified Malay-version of Breastfeeding Knowledge, 3) the Modified Family Support, 4) the Intention to Exclusive Breastfeeding, and 5) the Breastfeeding Initiation. The content validity of these questionnaires was examined by five experts. The Kuder Richardson-20 coefficient for the second questionnaire was 0.82. The Cronbach's Alpha coefficient of the third questionnaire was 0.94. The Pearson Product Moment correlation coefficients of the fourth and fifth questionnaires were 0.99 and 1, respectively. The data were analyzed using descriptive statistics, chi square, and logistic regression.*

*The chi square test result revealed that intention to exclusive breastfeeding correlated with breastfeeding initiation significantly ( $\chi^2 = 4.30, p < 0.05$ ). In addition, logistic regression test result showed that intention to exclusive breastfeeding predicted breastfeeding initiation ( $OR = 1.80, CI 95\% = 1.03 - 3.12$ ). Whereas, parity, level of education, occupation, family type, income, breastfeeding knowledge, and family support did not predict breastfeeding initiation. Nurses can promote breastfeeding initiation among working Muslim mothers by enhancing intention to exclusive breastfeeding.*

**Keywords:** related factors; breastfeeding initiation; working Muslim mothers

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## Background

The infant mortality rates in developing countries are still high. The majority of infant mortality occurs at the beginning of the infant's life. On the other hand, there is an inexpensive and easy way to save the infants as early initiation of breastfeeding.<sup>1</sup> Breastfeeding initiation saved millions of infant lives during the first few days after delivery.<sup>1</sup> According to WHO,<sup>2</sup> breastfeeding initiation should be performed within the first hour after delivery to provide several benefits for both infants and mothers.

Due to the significant effect of breastfeeding initiation, the Indonesian government encourages Indonesian women to provide early breastfeeding to infant. In fact, the breastfeeding initiation rate in Indonesia is still low. Only 10% of mothers performed breastfeeding initiation. Evidence showed that several factors influenced breastfeeding initiation, such as parity, level of education, occupation, income, type of family, breastfeeding knowledge, family support, and intention to exclusive breastfeeding. Previous study results in non-working mothers revealed that parity,<sup>3</sup> level of education, occupation,<sup>4</sup> family type,<sup>5</sup> income,<sup>6</sup> breastfeeding knowledge,<sup>7</sup> family support,<sup>8</sup> and intention to exclusive breastfeeding<sup>9</sup> significantly correlated with breastfeeding initiation. Recent statistics indicated that half of Indonesian women were working mothers.<sup>10</sup> Moreover, Indonesian post-partum mothers only have two months maternity leave after delivery. Therefore, working mother is one of the high risk groups for delaying breastfeeding initiation. Working mothers were less likely to initiate breastfeeding compared to stay at home mothers. Little is known regarding the related factors of breastfeeding initiation among working mothers in the Muslim population. Islam encourages Muslim mothers to breastfeed their infants up to two years old, however; Muslim also practices "*Tahnik*". *Tahnik* refers to the infant's father or religious leader gives honey, sweet juice, or chewed dates to the infant in the first few days after delivery.<sup>11</sup> This practice may impede breastfeeding initiation because it is performed in the first day of infant's life. Therefore, the study of the related factors of breastfeeding initiation among working Muslim mothers in Central Java, Indonesia is needed.

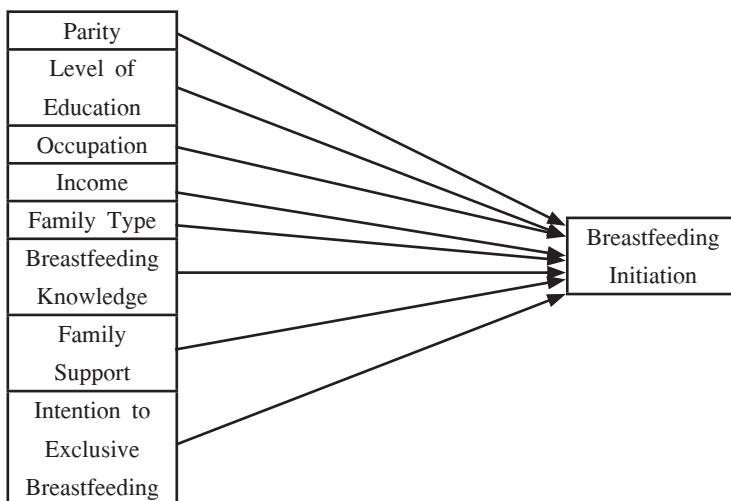
## Objectives of the study

This study aimed to examine the related factors of breastfeeding initiation among working Muslim mothers in Central Java province, Indonesia.

## Conceptual Framework

The conceptual framework used to guide this study was based on the previous studies (Figure 1). Several previous studies found that personal characteristics influence breastfeeding initiation. parity,<sup>3</sup> level of education, occupation,<sup>4</sup> family type,<sup>5</sup> and income<sup>6</sup> associated with breastfeeding initiation significantly. Evidence also showed that breastfeeding knowledge had a

significant association with breastfeeding initiation in Ethiopia. Lactating mothers who get support from their husband were more likely to initiate breastfeeding earlier.<sup>8</sup> A number of studies supported the effect of intention to actual behavior. A higher intention of the mother to breastfeed resulted in earlier breastfeeding initiation. Intention to breastfeeding had a significant correlation with breastfeeding initiation.<sup>12</sup>



**Figure 1** The conceptual framework of the study

## Materials and methods

The population in this study was working Muslim mothers with infants aged between six months and one year old who lived in Semarang, Central Java province, Indonesia. The subjects in this study were lactating working mothers who lived in Semarang, Central Java province, Indonesia. Four Primary Health Centers in Semarang, Central Java province, Indonesia were selected using a simple random sampling method. Then, mothers who had an infant aged six months up to one year old were recruited using a purposive sampling method from those four Primary Health Centers. The inclusion criteria of mothers consisted of 1) married, 2) more than 18 years of age, 3) no history of complications after delivery (e.g. postpartum hemorrhage or convulsion), and 4) working outside the home at least 8 hours per day. The inclusion criteria of infants consisted of 1) healthy, 2) full-term, 3) singleton, and 4) birth weight more than 2,500 grams. The exclusion criteria of mothers consisted of 1) drug abuse, 2) suffering diseases that may interfere with breastfeeding (e.g. HIV/AIDS, herpes simplex with breast lesions, untreated active tuberculosis, maternal syphilis, diabetes), 3) on-going treatment (e.g. radioactive therapy, chemotherapy, psychoses therapy, anti-convulsion therapy), and 4) history of inverted nipples, hypoplastic breast, or breast surgery that may interfere with breastfeeding during 6 months post-

delivery. The exclusion criteria of infants consisted of serious illness or complications that may interfere with latch-on and the breastfeeding process (e.g. cleft lip, cleft palate, esophageal atresia).

The estimated sample size was calculated using power analysis at a level of significance of 0.05, and expected power of 0.80. The effect size was estimated based on the pilot study.<sup>13</sup> The pilot study showed that the correlation coefficients of breastfeeding knowledge and breastfeeding initiation, family support and breastfeeding initiation, and intention to exclusive breastfeeding and breastfeeding initiation were -0.24, -0.28, and -0.29, respectively. The sample size in this study was between 197-126, 126-88, and 126-88, respectively.<sup>13</sup> In summary, this study needs at least 197 respondents. Since, this article was a part of the study entitled a causal model of breastfeeding duration among working Muslim mothers in Central Java province, Indonesia which consisted of 240 mothers. Thus, the sample size in this study was 240.

### **Instruments**

Five questionnaires were used: 1) The Personal Characteristics, 2) the Modified Malay-version of Breastfeeding Knowledge, 3) the Modified Family Support, 4) the Intention to Exclusive Breastfeeding Scale, and 5) the Breastfeeding Initiation Scale. Since, all questionnaires in this study were developed in English; a back translation was performed.<sup>14</sup>

#### **1. The Personal Characteristics Questionnaire**

This questionnaire was developed by the researcher based on a literature review regarding personal characteristics that influenced the exclusive breastfeeding initiation. It consisted of mother's data including age, parity, marital status, education level, occupation, family income, family type, and breastfeeding information sources. The husband's data included education level and occupation. The infant's data included age, gender, type of delivery, and place of delivery.

#### **2. The Modified Malay-version of Breastfeeding Knowledge Questionnaire**

This questionnaire was developed in Malaysia.<sup>15</sup> In this study, the researcher modified the questionnaire based on the experts' suggestions and literature review in order to better represent the concept of breastfeeding knowledge among working mothers and Javanese culture. The total items of the Modified Malay-version of Breastfeeding Knowledge Questionnaire were 49. Each item had categorical responses of correct and incorrect. The content validity, language, and cultural suitability was performed by a panel of experts and yielded content validity index (CVI) equals to 0.96. The reliability of this questionnaire was evaluated using Kuder Richardson-20 and yielded its internal consistency equals to 0.82. Thirty working mothers were recruited to test the reliability of the study questionnaires. The using and modification of The Modified Malay-version of Breastfeeding Knowledge Questionnaire was permitted by Ismail.

#### **3. The Modified Family Support Questionnaire**

This questionnaire was developed based on the concept of social support to measure family support of breastfeeding mothers.<sup>16</sup> This instrument was a 5-item Likert scale and responses

ranged from 1 (never) to 5 (always). It consisted of 22 items of positive statements. The CVI was 0.95. The internal consistency reliability of this instrument was tested and its Cronbach's alpha coefficient was 0.94.

#### 4. The Intention to Exclusive Breastfeeding Scale

The scale was developed based on the Theory of Reasoned Action.<sup>17</sup> It is a 0 to 10 point numeric rating scale containing the endpoints of "I should not exclusively breastfeed my baby for at least six months postpartum" (0) and "I should exclusively breastfeed my baby for at least six months postpartum" (10). A higher score represented a stronger intention in the third trimester of pregnancy to perform exclusive breast feeding. The reliability of the scale was evaluated using Pearson correlation and yielded the internal consistency of the scale was 0.99.

#### 5. Breastfeeding Initiation Scale

The Breastfeeding Initiation Scale was developed by the researcher based on a literature review. Breastfeeding initiation should be carried out within the first one hour after delivery. Breastfeeding initiation information was asked using one question "How many minutes/hours after delivery did you start breastfeeding the infant for the first time?" The CVI of the scale was 1. The reliability of the scale was evaluated using Pearson correlation and yielded its internal consistency equals to 1.

### **Data collection procedure**

The data collection process in this study consisted of two phases. The preparation phase consisted of requests that included an approval letter, a permission letter to conduct research, and a request for the recruitment and training of four research assistants. Two research assistants were faculty members who had experience conducting research in breastfeeding area. The two others research assistants were nurses who work in postnatal ward. The researcher trained all of research assistants. The researcher explained the respondent's criteria, recruiting the respondents, pertaining inform consent, ensuring human right, administering, checking the completeness, and receiving the questionnaires back, and managing the potential problems that may occur during filling out the questionnaire. The data collection phase consisted of approaching the potential mothers with an introduction and explanation to the mothers about the study. The mothers were asked for their willingness to participate in this study and were asked to sign the informed consent form. Then the questionnaires were explained and the mothers were asked to fill out all questionnaires completely. The questionnaires were assessed for completeness and correctness. The time required to complete the entire set of questionnaires was 60 - 90 minutes. The respondents were motivated to participate in this study by explaining that their participations were valuable in contributing to knowledge development and enhancing the nursing care.

## Ethical considerations

To ensure the protection of human rights in this study, the researchers received an approval letter from the Ethics Committee of the Faculty of Nursing, Prince of Songkla University, Thailand. Permission to access the respondents was requested from the Indonesian Ministry of Health, Central Java province Ministry of Health (No.788/91/009). The respondents were asked to sign an informed consent form and all data from the respondents were kept by the researcher and were not shown to other people who had no association with the study. The researcher explained to the respondents that a code was used for the data collection. Moreover, the researcher advised the respondents that they had the right to withdraw from the study at any time.

## Data analysis

The descriptive statistic was used to analyze the sample characteristics. The correlations between dependent and independent variables were evaluated using Chi square test. Furthermore, multivariate statistical analysis was performed using logistic regression to find the predictors of breastfeeding initiation.

## Results

The ages of 240 mothers ranged from 22 to 42 years with a mean age of 30.93 (SD = 4.16). For parity, 40% of mothers had 2 children and 36% had one child. Half of the mothers had completed a bachelor degree. Almost one-fourth of mothers (24.6%) were private sector employees. Forty-four percent of mothers had an income more than 3,400,000 Rupiah. The majority of mothers perceived that their incomes were adequate (89.6%). The majority of mothers (88.3%) lived with their husbands. There were more nuclear families (57.5%) than extended families (42.5%). Most of the relatives in the extended families were parents (51.9%). Mothers received most of their breastfeeding information from three sources: midwives (63.8%), family members (51.2%), and friends (37.9%). The numbers of male and female infants were nearly equal: male (51.75%) and female (48.3%). More than half of the infants were delivered with normal labor (61.7%). Approximately three-quarters of the mothers gave birth at hospital (74.2%).

The chi square test results showed that parity, level of education, type of occupation, income, family type, breastfeeding knowledge, and family support did not have significant correlations with breastfeeding initiation. However, intention to exclusive breastfeeding correlated with breastfeeding initiation significantly ( $\chi^2 = 4.30$ ,  $p < 0.05$ ). Furthermore, the logistic regression results showed that only intention to exclusive breastfeeding predicted breastfeeding initiation significantly ( $OR = 1.80$ , 95% CI = 1.03 – 3.12). Conversely, parity, level of education, occupation, income, family type, breastfeeding knowledge, and family support did not predict breastfeeding initiation (Table 1).

**Table 1** The logistic regression between the selected factors and breastfeeding initiation

	Breastfeeding Initiation	
	OR	95% CI
Parity	1.04	0.58 – 1.89
Level of education	1.11	0.55 – 2.21
Occupation	0.68	0.35 – 1.32
Family type	0.85	0.49 – 1.46
Income	0.87	0.48 – 1.57
Breastfeeding knowledge	1.18	0.65 – 2.15
Family support	1.44	0.83 – 2.51
Intention to exclusive breastfeeding	1.80	1.03 – 3.12

## Discussion

The study results indicated that the personal characteristics did not predict breastfeeding initiation. The study results were consistent with previous studies. Several previous studies found that parity,<sup>3</sup> level of education, and occupation,<sup>1</sup> income,<sup>6</sup> and family type,<sup>5</sup> did not predict breastfeeding initiation. The logistic regression revealed that breastfeeding knowledge did not predict breastfeeding initiation. The result of this study did not consistent with the previous study results. Breastfeeding knowledge significantly associated with breastfeeding initiation.<sup>18</sup> In addition, 97 mothers (40.4%) in this study were multiparous, they might have experienced and greater knowledge about benefit of breastfeeding. The majority of mothers in this study had high breastfeeding knowledge and multiparous, however; most of them gave birth in hospital. Some hospitals in Central Java province did not have an early breastfeeding initiation policy, so, mothers might delay breastfeeding initiation.

The social support which comes from family members is called family support.<sup>17</sup> The logistic regression test results revealed that family support did not predict breastfeeding initiation. The study finding did not congruent with some studies. Study also found that paternal support was a major factor influencing breastfeeding initiation in mothers.<sup>8</sup> In this study, 88.3% of mothers lived with their husbands and 42.5% lived with the family or relatives. Most of the relatives who lived together with the respondents were parents (51.9%). Although the majority of mothers in this study received family support, however; family support did not play a significant role during breastfeeding initiation in the hospital because family members stayed out of delivery room.

Intention to breastfeeding motivated a mother to initiate breastfeeding within the first hour after delivery.<sup>9</sup> As expected, intention to exclusive breastfeeding predicted breastfeeding initiation. The respondents in this study were working mothers and half of the mothers had completed a bachelor degree. Much evidence revealed that a higher level of education significantly affected

the intention to exclusive breastfeeding.<sup>19</sup> Previous study found that there was no significant correlation between intention to breastfeeding and breastfeeding initiation in Indonesia.<sup>20</sup> The possible reason may be probably due to the mother education level. The majority of mothers in this study had completed a bachelor degree, whereas the majority of mothers in the previous study were senior high school graduates.<sup>20</sup>

### Conclusion and recommendation

These findings provide information regarding predicting factor of breastfeeding initiation among working Muslim mothers. Intention to exclusive breastfeeding predicted breastfeeding initiation significantly. Nurses may provide a program aimed to increase intention to exclusive breastfeeding among working Muslim mothers in order to enhance breastfeeding initiation.

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