

# A Study on the Employment Status, Educational Level, and Breastfeeding among Korean Mothers

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## Abstract

The purpose of this study is to examine the factors influencing breastfeeding experience of Korean women. The subjects of the study were 1,063 mothers with experience of childbirth. The age of mothers ranged 21 to 49 years old. The mean age of the participants was 39.48 years; 554 (52.1%) of them were in their forties. Of the 1063 participants, 821 (77.2%) mothers had experience of breastfeeding. In breastfeeding experience according to general characteristics, there were significant differences in breastfeeding experience regarding mother's age ( $\chi^2 = 26.938$ ,  $p < .001$ ), education level of mothers ( $\chi^2 = 12.774$ ,  $p < .001$ ), employment status of mothers ( $\chi^2 = 7.761$ ,  $p = .005$ ), and subjective health status ( $\chi^2 = 6.436$ ,  $p = .040$ ). Results from logistic regression analysis showed that mother's age (OR = .555, CI = .424~.728), education (OR = 1.481, CI = 1.090~2.013), employment status of mother (OR = .697, CI = .518~.939) were found to be factors significantly influenced on the breastfeeding of mothers.

**Keywords:** Breastfeeding, Educational Level, Employment Status, Mother

## 1. Introduction

World Health Organization (WHO) defined breastfeeding as "the normal way of providing young infants with the nutrients they need for healthy growth and development. Virtually all mothers can breastfeed, provided they have accurate information, and the support of their family, the health care system and society at large". Colostrum is recommended by WHO as the perfect food for the newborn, and feeding should be initiated within the first hour after birth<sup>1</sup>. Despite the scientific evidence recommending Exclusive Breast Feeding (EBF) for the first 6 months of life<sup>2</sup>, this practice has low prevalence worldwide<sup>3-6</sup> including South Korea.

In 1991, WHO and UNICEF launched the Baby-Friendly Hospital Initiative (BFHI), which was designed to foster an environment that supports, protects and promotes breastfeeding<sup>7</sup>. Especially, UNICEF established ten steps to Successful Breastfeeding to shift a paradigm in support of breastfeeding in collaboration with national

governments worldwide<sup>7</sup>. The Healthy People 2020 included breastfeeding objective which targets of 46.2% at 3 months and 25.5% at 6months.

In Korea, breastfeeding rate was more than 90.0% in 1970s, 68.9% in 1982, 59.0% in 1985<sup>8</sup>, and it was dropped continuously in the early 2000's. In the middle of 2000's breastfeeding rate was increased as a need for breastfeeding was promoted, and the exclusive breastfeeding for the infant's first month of life was 58.2%, 37.4% for the infant's 6 months of life<sup>9</sup>. However, According to a 2010~2012 statistical research, exclusive breastfeeding rate for infants aged 1~2 months gradually decreased from 56.7% to 50.0% for infants aged 3~4 months and to 11.4% for infants aged 6~7 months. As such, breastfeeding rates rapidly decreased, as infant's age (months) increased<sup>10</sup>.

The factors associated with early EBF cessation have been the subject of several studies conducted around the world<sup>3-6,11,12</sup>. The barriers and facilitators of breastfeeding were categorized by the maternal ecosystem starting with

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the mother's personal characteristics (e.g.; insufficient breast milk, personal beliefs, way of living and intent to breastfeed), personal social relationship (physically and emotionally support from significant others or family member), community/work environment (support from health professionals), the sociocultural, policy and law<sup>13-15</sup>.

Korea's birth rate dropped from 4.53 in 1970 to 1.08 in 2005 and to 1.3 in 2012, which was actually lower than Japan's birth rate of 1.41 in 2012<sup>10</sup>. The reason can be the increase of woman's economic activity, and a trend to minimize childbirth, due to huge educational expense expenditure, and therefore mothers tend to immediately get a job after childbirth.

Affecting factors and policy options for breastfeeding in Korea<sup>10</sup> showed that the exclusive breastfeeding practice rate of employed mothers for six month after childbirth was remarkably lower than non-employed mothers. In this regard, mother's employment can be a barrier to breastfeeding. Previous studies also reported employment is one factor that makes it difficult for women to continue breastfeeding<sup>16</sup>.

However, mothers who had experience of receiving breastfeeding education and acquiring breastfeeding technique after childbirth, were analyzed to have higher breastfeeding practice rate including exclusive breastfeeding practice rate or mixed breastfeeding, compared to the mothers having no such education and technique. However, the most powerful factor among the factors affecting breastfeeding is mother's will or intention to breastfeed<sup>17</sup>.

To learn basic breastfeeding technique in order for mothers and babies to overcome difficulties of initial stage breastfeeding, and to adapt to effective breastfeeding process, it takes about 4~6 weeks<sup>18</sup>. The problems occurring upon adapting to breastfeeding are derived from the lack of breastfeeding method and knowledge, and they can be acquired through experience or learning<sup>19</sup>. The reason of breastfeeding suspension is mostly the lack of knowledge on breastfeeding, and therefore, the early stage education and enhancement program of breastfeeding are pointed out to be necessary. In this context, it is meaningful to identify the status, centered on large scale subjects, regarding their educational level that can become the background to encourage and educate mothers' intention or employment status as an external factor in order to enhance breastfeeding practice.

Previous studies examined breastfeeding-related factors or handled data, focused on some regions and small number of subjects. For such a reason, the previous

studies had limitations of small sample sizes.

The purpose of this study was to investigate the factors influencing breastfeeding among South Korean women using nationally representative data and to promote their breastfeeding practice.

## 2. Methods

### 2.1 Study Design

This study used a cross-sectional research design to analyze the experience of breastfeeding of women who have child birth.

### 2.2 Study Samples

The data were utilized the 6<sup>th</sup> Korea National Health and Nutritional Examination Survey (KNHANES) conducted in 2013. The survey subjects were 1063 middle aged women (21~49 years old) and lived in 192 regions over the nation.

### 2.3 Measurements

Participants' demographic inventory was used to gather data on age, smoking, alcohol, subjective body image, subjective health status and number of pregnancy. Level of education was used as a proxy measure for social class and categorized as follows: 1. high school or below or 2. College or above. Employment characteristic was collected, including working state ("Do you have a job?" [yes/no]). Breastfeeding was assessed as follows: "Did you ever breast-feed [child]?" [yes/no].

### 2.4 Data Collection

KNHANES is conducted to evaluate the health and nutritional status for Korean people and reflect according to the Article 16 of 'National Health Promotion Act'. The target population of KNHANES comprises non institutionalized Korean citizens residing in Korea. The sampling plan follows a multi-stage clustered probability design. In the 2013 survey, 192 regions were drawn from 576 regions, and 3,840 households were drawn from 11,520 households. After selecting regions, KNHANES does the household screening survey to select the household to be surveyed. For this, the interviewer for the Household Screening Survey checks the border and the number of the proper household in the survey region, asking for participation from the pertinent regional health center and the community center. The 6<sup>th</sup> KNHANES

has collected data from 2562 women with experiencing childbirth. Of the 2562 mothers, middle aged mothers (21~49 years old) with childbirth were 1063 women, and they were used in this analysis.

## 2.5 Data Analysis

Data were analyzed with the Statistical Package for the Social Sciences (SPSS) (version 18.0, Inc., Chicago, IL, USA) using logistic regression to investigate influencing factors on breastfeeding. Descriptive statistics were used to identify the general characteristics of the participants. Differences in demographic variables between breastfeeding and non breastfeeding were evaluated using chi-squared test. Logistic regression analyses were performed to determine the predictors of breastfeeding among Korean mothers. The significance level for all statistical analysis was pre-set at  $p < .05$ .

## 3. Results

### 3.1 Participant Characteristics

**Table 1.** General characteristics (N = 1063)

| Variables                 | Categories   | N (%)       |
|---------------------------|--------------|-------------|
| Age                       | 21~29        | 0062(05.8)  |
|                           | 30~39        | 0447(42.1)  |
|                           | 40~49        | 0554(52.1)  |
|                           | Mean age     | 39.48±5.96  |
| Education level of mother | ≤High school | 0560 (52.7) |
|                           | ≥College     | 0502(47.3)  |
| Employment status         | Yes          | 0419 (39.4) |
|                           | No           | 0644 (60.6) |
| Alcohol                   | Yes          | 0968(91.1)  |
|                           | No           | 0095 (08.9) |
| Smoking                   | Yes          | 0059(05.6)  |
|                           | No           | 1004 (94.4) |
| Subjective body figure    | Fat          | 0504 (47.4) |
|                           | Moderate     | 0443 (41.7) |
|                           | Thin         | 0116(10.9)  |
| Subjective health status  | Good         | 0406 (38.2) |
|                           | Fair         | 0525 (49.4) |
|                           | Poor         | 0132(12.4)  |
| No. of pregnancy          | One time     | 0143(13.5)  |
|                           | Two times    | 0402(37.8)  |
|                           | ≥Three times | 0280(26.3)  |
| Breast feeding            | Yes          | 0821(77.2)  |
|                           | No           | 0242(22.8)  |

\*missing data excluded.

The baseline characteristics of the study participants are shown in Table 1. All respondents were women with experiencing childbirth. The mean age of the participants was 39.48 years; 554 (52.1%) of them were in their forties. Regarding education level, 52.7% of participants were below high school graduation and 47.3% of participants were above college graduation. Of the 1063 participants, 419 (39.4%) subjects were in employment status, 968 (91.1%) women were alcohol drinker, 59 (5.6%) women were smoker. Of the study population, 504 (47.4%) individuals felt that they were fat, 525 (49.4) subjects felt that their health status was moderate level (fair). And 821 (77.2%) mothers had experience of breastfeeding .

### 3.2 Breastfeeding according to General Characteristics

Table 2 shows breastfeeding experience according to general characteristics. There were significant differences in breastfeeding experience regarding age ( $\chi^2 = 26.938$ ,  $p < .001$ ), education level of mothers ( $\chi^2 = 12.774$ ,  $p < .001$ ), employment status of mothers ( $\chi^2 = 7.761$ ,  $p = .005$ ), and subjective health status ( $\chi^2 = 6.436$ ,  $p = .040$ ). In age, a significantly greater proportion of mothers in their twenties had breastfeeding experience than in their forties. Regard to education level of mother, a significantly greater proportion of mothers with college graduation had breastfeeding experience than women with high school graduation. In employment status of mother, a significantly greater proportion of mothers without job had breastfeeding experience than mothers with job. Regard to subjective health status, a significantly greater proportion of mothers with good health condition had breastfeeding experience than women with poor health condition.

### 3.3 Factors Influencing Breast Feeding

Results from logistic regression analysis are shown in Table 3. Age (OR = .555, CI = .424~.728), education level of mother (OR = 1.481, CI = 1.090~2.013), employment status of mother (OR = .697, CI = .518~.939) were found to be factors significantly influenced on the breastfeeding experience of mothers.

**Table 2.** Breastfeeding according to general characteristics (N = 1063)

| Variables                   | Categories   | Total       | Breastfeeding |           | $\chi^2$ | p     |
|-----------------------------|--------------|-------------|---------------|-----------|----------|-------|
|                             |              |             | Yes           | No        |          |       |
| Age                         | 21~29        | 062(100.0)  | 055(88.7)     | 007(11.3) | 26.938   | <.001 |
|                             | 30~39        | 447(100.0)  | 373(83.4)     | 074(16.6) |          |       |
|                             | 40~49        | 554(100.0)  | 393(70.9)     | 161(29.1) |          |       |
| Education level of mother   | ≤High school | 560 (100.0) | 408(72.9)     | 152(27.1) | 12.774   | <.001 |
|                             | ≥College     | 502(100.0)  | 412(82.1)     | 090(17.9) |          |       |
| Employment status of mother | Yes          | 419 (100.0) | 305(72.8)     | 114(27.2) | 07.761   | .005  |
|                             | No           | 644 (100.0) | 516(80.1)     | 128(19.9) |          |       |
| Subjective body figure      | Fat          | 504 (100.0) | 388(77.0)     | 116(23.0) | 00.079   | .961  |
|                             | Moderate     | 443 (100.0) | 344(77.7)     | 099(22.3) |          |       |
|                             | Thin         | 116(100.0)  | 089(76.7)     | 027(23.3) |          |       |
| Subjective health status    | Good         | 406 (100.0) | 323(79.6)     | 083(20.4) | 06.436   | .040  |
|                             | Fair         | 525 (100.0) | 407(77.5)     | 118(22.5) |          |       |
|                             | Poor         | 132(100.0)  | 091(68.9)     | 041(31.1) |          |       |
| Number of childbirth        | One time     | 143(100.0)  | 111(77.6)     | 032(22.4) | 04.772   | .092  |
|                             | Two times    | 402(100.0)  | 324(80.6)     | 078(19.4) |          |       |
|                             | ≥Three times | 280(100.0)  | 386(74.5)     | 132(25.5) |          |       |

**Table 3.** Factors influencing on breastfeeding

| Variables                   | B     | Exp(B)  | 95% C.I. |       |
|-----------------------------|-------|---------|----------|-------|
|                             |       |         | Lower    | Upper |
| Age                         | -.588 | 0.555 * | 0.424    | 0.728 |
| Education level of mother   | .393  | 1.481*  | 1.090    | 2.013 |
| Employment status of mother | -.361 | 0.697*  | 0.518    | .939  |
| Alcohol                     | -.014 | 0.986   | 0.593    | 1.641 |
| Smoking                     | -.182 | 0.834   | 0.453    | 1.533 |
| Subjective body figure      | .022  | 1.022   | 0.820    | 1.273 |
| Subjective health status    | .152  | 1.164   | 0.928    | 1.460 |

\*p&lt;.05

## 4. Discussion

This study examined the influencing factors on breastfeeding in Korean women. Mothers' employment status is significant factor in failing breastfeeding. In addition, age and education level of mother were identified as important factors of breastfeeding. Mothers who are younger, have higher educational level and are not employed are better in breastfeeding. According to Chinelo Ogbuanu<sup>20</sup>, breastfeeding showed differences according to age, educational level, economic status and the status of smoking three months before pregnancy. This study also supported previous studies, as there

were differences in breastfeeding, according to age and educational level in this study. The results that there are differences in breastfeeding according to educational level are similar to the nationwide study results conducted by the Brazilian Ministry of Health which confirmed that mothers with higher schooling levels had exclusively breastfed for longer time<sup>11</sup>.

However, breastfeeding trend investigation result conducted in Korea in 2012 showed breastfeeding rate was lower, as education level of mothers was higher, and thus, a conflicting result with the Brazilian result was revealed. The result showing difference in breastfeeding practice according to the status of employment is the same result as the previous studies<sup>2,5</sup>. Also, the result is in the same context of the study by Chinelo Orbuang<sup>20</sup> insisting that breastfeeding practice showed difference, according to economic status.

The causes of low breastfeeding rate include women's social advance, the lack of knowledge on breastfeeding and insufficient social support system<sup>21</sup>.

Work-related issues have been repeatedly noted as a major reason for no initiation and early cessation of breastfeeding.

According to a study on breastfeeding practice predictive factors<sup>22</sup>, breastfeeding practice rate was lower, as household's monthly income was higher. That is, breastfeeding practice rate remarkably fell from 53.7% in

the case of less than South Korean Won (KRW) 1 million of household's monthly income to 48.3% in the case of less than KRW 2 million and to 20% in the case of more than KRW 2 million. However, the study did not predict breastfeeding practice rate. If household's monthly income is small, there is a possibility that the mother has no job, and there is a difficulty of purchasing infant formula milk powder, due to low economic level. However, that the economic level is not a variable affecting breastfeeding practice rate means that other variables work, rather than economic level being related with breastfeeding practice. The economic activity participation rate of Korean women aged 15~29 in 2014 was 46.0%, higher than men's 43.5%. From the age bracket in 30s, a reversal phenomenon occurred: the economic activity participation rates of women in 30s and 40s were 58.4% and 66.7%, respectively, but men's rate jumped to 93.7% in 30s, and maintained at 94.7% and 89.5% in 40s and 50s, respectively<sup>23</sup>.

Although, women's employment is social and economic demand, the fact that the breastfeeding rate of women of childbearing age, which is important in child rearing, is low in relation with employment affects future child's health. Therefore, thorough countermeasures are needed.

An institutional measure for employed mothers to practice breastfeeding is necessary. Despite the increase of employed women's economic activity, their breastfeeding rate is low, due to insufficient conditions at work, and lacking recognition on the importance of breastfeeding, together with insufficient supporting environment for breastfeeding<sup>10</sup>.

In this regard, the breastfeeding supporting environment at work including pre-childbirth breastfeeding education for working women, breastfeeding room installation for the women returning to work after childbirth, providing breastfeeding women with sufficient time, adequate space, and support from employers and coworkers should be shaped<sup>10,24</sup>.

As a result of the results in this study, younger mothers with higher educational level have been analyzed to conduct breastfeeding more. Although, offering education on breastfeeding is important, after a woman becomes an adult, as well as before and after childbirth of married women, there is a need to offer early stage education related with breastfeeding including the importance of breastfeeding from the middle and high school years, namely, the childbearing age, before they become an adult.

Even though it is important to start breastfeeding at early stage, it is also vital to continuously maintain breastfeeding. One of the reasons to halt breastfeeding is mother's having a job; however, the lack of knowledge and information conveyance on breastfeeding can be included in many cases. In this context, education on the proper nutrition and breastfeeding is required. For breastfeeding to show positive effects to babies and mothers, exclusive breastfeeding is required for six months minimum. However, such exclusive breastfeeding depends on the status of education<sup>25</sup>.

The rate of breastfeeding of 114 mothers who gave birth at one hospital was 46.5% at three months of postpartum<sup>14</sup>. And women who received guidance on breastfeeding at the maternity hospital presented a 20% lower risk of abandoning EBF during the first 6 months. Therefore, at the first prenatal appointment at hospital, the medical provider should assess the intention of mothers' breastfeeding and support breastfeeding preparation<sup>26</sup>. In addition hospitals and clinics need to develop an effective education program for the breastfeeding for both pregnant and postpartum women. Also, the role of occupational health nurses in initiating and coordinating workplace lactation programs is also needed.

## 5. Funding

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