Influencing Factors on Depression among Women with Baby Less than 24 Months

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Abstract

Background/Objectives: The objective of this study is to examine the correlation between fatigue, subjective sleep quality, and depression among women with baby less than 24 months. The subjects were chosen by convenience sampling.

Methods/Statistical Analysis: They responded questionnaires of fatigue, subjective sleep quality, and depression. We analyzed 107 except for the incomplete six. We analyzed data through independent t-test, One-way ANOVA, Pearson’s correlation coefficients, and multiple regression analysis. Findings: The mean score of Fatigue, Subjective sleep quality, and depression of women with baby less than 24 months was 75.71±15.00, 31.56±11.38, and 2.25±.58, respectively. The statistically significant differences in depression were not found in terms of general characteristics. This finding indicates that higher scores on fatigue are related to higher depression (r=.625, p<.001), and higher scores on subjective sleep quality are related to lower depression (r=.234, p=.015). Fatigue was the influencing factor on depression with beta of -.625, with power of 38.5%, and with statistical significance (t=-12.290, p<.001). Improvements/Applications: For the mothers to restore their mental and physical health, social supporting system and education programs targeting their physical and psychological issues is necessary.

Keywords: Depression, Fatigue, Post-Partum, Sleep Quality, Women

1. Introduction

Depression in a crisis situation during the developmental period to be converted as a mother not only threatens mother’s own health, but is closely related with the health, growth, development delay, emotional and behavioral problems, and psychiatric health of infants. Actually, the fact that depression becomes an important risk factor to adolescents’ psychiatric problems is consistently reported. Mother’s depression causes chronic results, which affect mother’s role and function, and it also can bring about negative effects on child’s health, development, and family process for the long-term.

Prior studies found that after-birth depression is affected by quality of sleep, fatigue, spouse’s support among other social factors. About 70% of mothers were reported to experience day-time drowsiness on a regular basis after birth, and first-time mothers showed much lower sleep-efficiency than experienced mothers, and their daily sleep-time greatly varied. The drastic changes in the amount and quality of the mother’s sleep starts in the late of pregnancy and it increases during postpartum, causing sleep disorder and insomnia, which are known to affect on depression.

Fatigue is a universal and defensive phenomenon affecting human’s totality, and is the state of reduced efficiency and increased discomfort due to energy consumption. Fatigue is body inability to maintain balance, when one faces with the source of stress burdening constancy mechanism and is a normal and essential reaction revealed, when human body needs a rest.

A mother experiences physical fatigue, when she is psychologically embarrassed and feels slight anxiety and tension. In reported that mother’s fatigue level affects mother’s role execution as a parent and affects child’s development or health directly. Namely mother’s fatigue symptom may negatively affect an ability to maintain...
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and enhance mother's own health and a capability to look after and play with a child and promote the child's development.

Subjective sleep quality was reported as a main factor affecting the revelation of post-natal depression\(^5\). In comparison of mothers having low subjective sleep quality with mothers having high subjective sleep quality, the mothers having low subjective sleep quality show negative tone of cognitive behaviors. Thus their children feel anxiety about their mother's behaviors and their sleep is damaged\(^12\).

Breastfeeding is known to provide all the necessary nutrition for infants' growth and development and proved to be better than artificial milk in terms of nutrition, immunity, infection, and psychology of the infant. Breastfeeding even has the long-term positive effect on the obesity and disease of the infant as well as the mother's health. For this reason, WHO recommends at least 6 month exclusive breastfeeding and upto 1 or 2 years of breastfeeding with additional nutrition from other foods.

Although breast-feeding has much strength, a breast-feeding mother feels many difficulties during the breast-feeding. The parents of infants feel lots of burden, while rearing children without other family's help, do not experience joy and satisfaction, and tend to feel stress and negative emotions\(^13\).

This study was carried out to identify the fatigue, subjective sleep quality, and depression of the mothers having infants younger than 24 months in the period when breast-feeding and child rearing are mixed, and to grasp the factors to affect depression. Ultimately, this study was conducted to provide basic data for a breast-feeding management program or an infant development management program for the mothers and the child.

2. Research Methods

2.1 Participants
The subjects were chosen by convenience sampling, among the women with baby less than 24 months from one city in Korea. A total of 107 women were chosen.

2.2 Measurements

2.2.1 Fatigue
For fatigue metric, we used the instrument used by\(^14\), who modified the R-PFS developed by\(^15\). The questionnaire consists of 19 questions, each scoring from 0 to 10 in the order of severity of fatigue. The confidence of this metric, Cronbach's alpha, was measured .97 in Piper's study, and our study measured it as .87.

2.2.2 Subjective Sleep Quality
For sleep quality, we used the Pittsburgh Sleep Quality Index (PSQI) developed by\(^16\), translated by\(^17\). The questionnaire consists of 18 questions, divided into 7 parts, each scoring from 0 to 3 in the order of increasing sleep quality. This study measured Cronbach's alpha .79 while the original study measured it .86.

2.2.3 Depression
For depression metric, we used CES-D, developed by NIMH\(^18\), and translated by\(^19\). The questionnaire consists of 20 questions, measuring the frequency of depression symptom experienced in the past week from 0 to 60. The study by\(^19\) measured Cronbach's alpha .90, while this study measured it .80.

2.3 Data Collection and Analysis
The participants for this paper were mothers with baby less than 24 months in K Province of Korea, and the survey was conducted in 2014. 107 mothers participated in the survey after informed consent. Data was collected using a structured questionnaire consisting of general characteristics, fatigue, subjective sleep quality, and depression. The data was analyzed with static analysis, and Pearson correlation coefficient.

2.4 Data Analyses
The collected data were analyzed by SPSS/WIN 20.0 statistical program. We calculated means and standard deviations by descriptive statistics. We computed differences of mean by t-tests and One-way ANOVA and correlations among variables by Pearson's correlation coefficient.

2.5 Ethical Considerations
This work was approved by the Ethics Review Board of the N university in Korea. We explained the research objectives, potential risks, benefits, and research procedures before starting the study to participants. They participated in the study with independent consent and signed a consent form.
3. Results

3.1 General Characteristics of Subjects
As shown in Table 1, the majority of mothers (53.5%) were aged from 31 to 35, followed by 26 and above, and by 36 and above. The majority of babies (39.3%) were between 7 and 12 months old, followed by those less than 7 months (35.5%), followed by those more than 12 months (25.2%). The largest fraction of subjects was college and above (75.7%), working (72.0%), with income between 3 to 4 million won (44.9%), and with one child (57.0%). 66.4% was normal delivery, and 71.0% was educated for breast-feeding. The statistically significant differences in depression were not found in terms of general characteristics.

3.2 Fatigue, Subjective Sleep Quality, and Depression of Subjects
As shown in Table 2, the mean score of Fatigue, Subjective sleep quality, and depression of women with baby less than 24 months was 75.71±15.00, 31.56±11.38, and 2.25±.58, respectively.

3.3 Correlation between Fatigue, Subjective Sleep Quality, and Depression
As shown in Table 3, this finding indicates that higher scores on fatigue are related to higher depression (r=.625, p<.001), and higher scores on subjective sleep quality are related to lower depression (r=-.234, p=.015).
### Table 3. Correlation between fatigue, subjective sleep quality, and depression (N=107)

<table>
<thead>
<tr>
<th>Subjective sleep quality</th>
<th>Depression</th>
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<tbody>
<tr>
<td></td>
<td>r (p)</td>
</tr>
<tr>
<td>Fatigue</td>
<td>-.183(.059)</td>
</tr>
<tr>
<td>Subjective sleep quality</td>
<td>-.234(.015)</td>
</tr>
</tbody>
</table>

#### 3.4 Influencing Factors on Depression among Mothers with Baby Less Than 24 Months

As shown in Table 4, fatigue was the influencing factor on depression with beta of -.625, with power of 38.5%, and with statistical significance (t=-12.290, p<.001).

### Table 4. Influencing factors on depression of subjects (N=107)

<table>
<thead>
<tr>
<th>B</th>
<th>S.E</th>
<th>B</th>
<th>t (p)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depression (Constant)</td>
<td>.401</td>
<td>.230</td>
<td>1.746(.084)</td>
</tr>
<tr>
<td>Fatigue</td>
<td>.024</td>
<td>.003</td>
<td>.625</td>
</tr>
</tbody>
</table>

F(p)=67.232(<.001), adj.R²=.385, Durbin-Watson=1.546

#### 4. Discussion

From the results of this study, depression did not show statistically significant differences according to the general characteristics of mothers having infants younger than 24 months. In researching the mothers having children aged 5 or over reported that mothers’ depression was higher, as family income was smaller. Due to low family income, mothers in charge of family economy suffer from psychological shrinkage and stress, and depression becomes high because of the responsibility to lead the home economy.

Factors on after-birth depression includes fatigue after birth, and the fatigue on the 7th, 14th, and 28th day after birth showed positive correlations with the depression. In particular, the fatigue on the 14th day after birth is the most important factor to predict the depression. The fatigue after birth worsens when the mother sleeps less than 6 hours a day, making them frequently feel exhausted.

The low quality of sleep and shortage of sleep makes negative effects on the mother’s fatigue. Fatigue during postpartum can cause negative emotions such as anxiety, anger, depression, and confusion, and resting has only minimal effect on improving them.

In relation with domestic cultural and social characteristics, mother’s low subjective sleep quality after childbirth has been accepted as a matter to bear. However, In asserted that subjective sleep quality is a major variable affecting post-natal depression and that recognition of the importance to improve and manage mother’s subjective sleep quality to reduce high prevalence of post-natal depression is needed. Although no statistical difference was revealed between primiparae and multiparae in this study, the need for management before childbirth for the primiparae with a high possibility of post-natal depression, differentiated from the multiparae, was asserted.

A social support system is essential for mental and physical health of mothers, and the biggest support system is family. Especially spouse’s support positively affects mother’s subjective sleep quality and post-natal fatigue by easing post-natal depression, helping adaptation as mother, and reducing child rearing stress, and thus its importance is huge.

In this study, fatigue was revealed to be a factor affecting mother’s depression, and thus there is a need to seek a method to manage mother’s health that can reduce mental and neural and sensitive fatigue, while a mother conducts child rearing after childbirth. The study results show that mother’s depression can be eased, when healthcare providers recognize that family’s healthy relations can be shaped, as happiness levels between husband and wife and between parents and children are higher, assess the fatigue level of mothers having infants, and make an effort to ease the fatigue.

#### 5. Conclusion

The objective of this study is to examine the correlation between a fatigue, subjective sleep quality, and depression among women with baby less than 24 months. This finding indicates that higher scores on fatigue are related to higher depression, and higher scores on subjective sleep quality are related to lower depression. We also identified the fatigue as the most influencing factor on the mother’s depression.

Therefore, for the mothers to restore their mental and physical health, social supporting system and education programs targeting their physical and psychological issues
is necessary. To devise a policy and services to prevent the depression of mothers having infants, detect it early, and actively intervene, the review of more various prediction factors, examination of the prediction factors on mother’s depression according to income bracket, and expansion of understanding are required.

6. Acknowledgment

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7. References