Relationship between Pregnancy Stress and Anxiety in High-Risk Pregnant Women: The Mediating Effects of Sense of Mastery

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Abstract. This study aimed to examine the relationship between pregnancy stress and anxiety and to explore the mediating sense of mastery in this relationship among high-risk pregnant women in Korea. The data were collected between March 3 and March 30, 2015, from 118 high-risk pregnant women through structured questionnaires. Collected data were analyzed using the IBM SPSS Statistics 22 program. The mediating effect of self-esteem was analyzed using linear regressions and the Sobel test. Sense of mastery partially mediated the relationship between pregnancy stress and anxiety. The significance of this study was to decrease anxiety among increasingly high-risk pregnant women and to reinforce the need for the development and application of prenatal nursing intervention to reduce pregnancy stress through a higher sense of mastery.

Keywords: Pregnancy stress, Anxiety, Sense of mastery

1 Introduction

1.1 Background

Recently in Korea, the ages of men and women at their first marriage is getting higher, as is the age at which women get pregnant. Older age in pregnant women is a strong risk factor for high-risk pregnancy [1]. High-risk pregnancy refers to conditions skewed from normal pregnancy and incurs a risk to the health and life of pregnant women and fetuses, such as premature labor, premature membrane rupture, cervical incompetence, and placenta previa [2]. According to the statistics of the Health Insurance Review & Assessment Service, the rate of high-risk pregnancy is only 7% in pregnant women aged 25–30 but rapidly increases to 24% in those aged 35–40 and 39% in those aged over 40; 42.8% of all pregnancy was high-risk pregnancy [3].

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High-risk pregnant women experience anxiety over such concerns as the health of fetuses and themselves, physical discomfort, and childbirth prognosis [4]. Anxiety is a stress reaction that high-risk pregnant women experience and a general emotion occurring in high-risk pregnant women [5]. High-risk pregnant women cannot predict their own well-being or that of their fetuses related to the condition of high-risk pregnancy and, thus, have a difficulty in emotional bonding and express anxiety [6]. Additionally, they do not perform proper antenatal care as they are anxious about the consequence of pregnancy in the future, and they can encounter more serious health problems because they lack coping strategies in case the pregnancy is at risk [7].

The factors increasing the anxiety of high-risk pregnant women include stress variables. A previous study [8] showed that stress plays a significant role in increasing anxiety. According to the stress-diathesis model, the class of pregnant women with many vulnerability factors can easily have psychological impairments due to lack of strength to overcome stress [9]. Particularly, a high-stress experience such as high-risk pregnancy during a short period of time increases anxiety more and affects both pregnant women and fetuses and, consequently, can cause obstetrical complications [10].

On the other hand, sense of mastery refers to a positive attitude and belief that they are able to lead their lives with will and effort [11]. Particularly, one stress study has shown that sense of mastery has a great influence on emotional stability, and it has gained attention as a significant psychological resource [11]. Sense of mastery needs to be considered in order to relieve stress and anxiety of high-risk pregnant women with the increasing trend in recent years.

However, among previous domestic or international studies until the present, there are hardly any studies about sense of mastery in pregnant women experiencing high-risk pregnancy. Therefore, in exploring the association between stress and anxiety in high-risk pregnant women along with the mediating effects of sense of mastery, this study attempted to provide preliminary data for nursing interventions to increase sense of mastery of high-risk pregnant women and, consequently, alleviate their anxiety.

1.2 Purpose

The purpose of this study is to explore the mediating effects of sense of mastery in the association between stress and anxiety in high-risk pregnant women.

2 Methods

2.1 Study Design

This descriptive and cross-sectional study attempts to verify the mediating effects of sense of mastery as well as the association between stress and anxiety in high-risk pregnant women.
2.2 Participants and Data Collection

This study was conducted from March 3, 2015, to March 30, 2015, with approval of chief executives of three university hospitals and cooperation of OB/GYN clinics and labor and delivery departments. Study participants included 118 high-risk pregnant women admitted in labor and delivery departments as well as high-risk pregnant women diagnosed with high-risk pregnancy at three university hospitals located in the cities of B, D, and Y during the gestational age range of 20–38 weeks and who visited OB/GYN clinics for prenatal care. Sample size was calculated using G*power 3.1. As a result of calculating sample size with .05 significance level, 80% statistical power, .15 effect size, and three predictor variables, the minimal number of participants needed was 77, but 120 were recruited considering a 20% non-response rate. Among collected questionnaires, 118 were used in data analysis, excluding two with insufficient responses.

2.3. Instruments

Pregnancy Stress. In order to measure pregnancy stress, the instrument developed by Ahn [12] for primigravidas and revised and complemented by Jo & Kim [13] was used. This instrument included a total of 27 questions rated on a five-point Likert scale. Each question has a score range from one point, “never been stressed,” to five points, “always stressed,” and the total scores range from 27 to 135 points with higher scores indicating greater stress. The reliability of the instrument at the time of development was Cronbach’s $\alpha = .85$, and it was $\alpha = .88$ in this study.

Anxiety. In order to measure anxiety, the State Trait Anxiety Inventory developed by Spielberger [14] and adapted by Kim & Shin [15] was used. This instrument consists of a total of 20 questions rated on a four-point Likert scale. Each question has a total score range from 20 to 84, including one point, “very much”; two points, “mostly”; three points, “little”; and four points, “almost never.” Negative questions are reverse-coded, and higher scores mean greater anxiety. The reliability of this instrument was Cronbach's $\alpha = .92$ both at the time of development and in this study.

Sense of Mastery. In order to measure sense of mastery, the sense of mastery-measuring instrument developed by Pearlin et al [11] and adapted by Korean Gerontology [16] was used. This instrument consists of a total of seven questions rated on a four-point Likert scale. Each question has a range from one point, “strongly agree,” to four points, “not agree at all,” and the total scores range from 7 to 28. Negative questions are reverse-coded, and higher scores mean greater sense of mastery. At the time of development, Cronbach's $\alpha$ of this instrument was .70, and it was .74 in this study.

2.4 Data Analyses

Collected data were analyzed using the IBM SPSS Statistics 22 program. General features and obstetrical characteristics of participants were analyzed using descriptive
statistics such as frequency, percentile, mean, and standard deviation. The correlations of pregnancy stress, anxiety, and sense of mastery of participants were verified using Pearson's correlation coefficient. Multiple regression analysis was performed in order to investigate the mediating effects in the relation between pregnancy stress and anxiety of participants, and a Sobel test was used to explore the significance of mediating effects.

3 Results

It was shown that sense of mastery played a partial mediating role in the association between pregnancy stress and anxiety in high-risk pregnant women. As a result of verifying this through the Sobel test, the z-value was 4.74 (p < .001) (Table 2), indicating that the mediating effect was significant—that is, it was verified that sense of mastery had a significant partial mediating effect in the influential association between pregnancy stress and anxiety in the participants (Table 1), (Figure 1).

Table 1. Mediating Effects of Sense of Mastery

<table>
<thead>
<tr>
<th>Step 1</th>
<th>P</th>
<th>B</th>
<th>B</th>
<th>R²</th>
<th>Adj.R²</th>
<th>F</th>
<th>p</th>
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</thead>
<tbody>
<tr>
<td>Pregnancy stress → Anxiety</td>
<td>.506</td>
<td>.560</td>
<td>.314</td>
<td>.308</td>
<td>53.055</td>
<td>&lt;.001</td>
<td></td>
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<tr>
<td>Step 2</td>
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</tr>
<tr>
<td>Pregnancy stress → Sense of mastery</td>
<td>-.429</td>
<td>-.490</td>
<td>.240</td>
<td>.234</td>
<td>36.682</td>
<td>&lt;.001</td>
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</tr>
<tr>
<td>Step 3</td>
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<td></td>
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</tr>
<tr>
<td>Pregnancy stress → Anxiety</td>
<td>.330</td>
<td>.366</td>
<td>.434</td>
<td>.424</td>
<td>44.024</td>
<td>&lt;.001</td>
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</tr>
<tr>
<td>Sense of mastery → Anxiety</td>
<td>-.410</td>
<td>-.397</td>
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</tr>
</tbody>
</table>
Fig. 1. Mediating Effects of Sense of Mastery

Table 2. Sobel Test for Mediating Effects of Sense of Mastery

<table>
<thead>
<tr>
<th>Path</th>
<th>a(SEa)</th>
<th>b(SEb)</th>
<th>Zab</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pregnancy stress → Sense of mastery</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>→ Anxiety</td>
<td>-.429(.071)</td>
<td>-.595(.078)</td>
<td>4.74(p&lt;.001)</td>
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<td>Pregnancy stress → Anxiety</td>
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4 Conclusions

This study verified the mediating effects of sense of mastery in the association between pregnancy stress and anxiety in high-risk pregnant women. The significance of this study is in the empirical verification that lower pregnancy stress of high-risk pregnant women and higher sense of mastery correspond to lower anxiety. Based on the results of this study, it is necessary to develop prenatal intervention programs to prevent and manage anxiety in high-risk pregnant women, and further studies are required to verify the effects.

References