Predicting Factors of Antenatal Depression among Women of Advanced Maternal Age

Sung Hee Lee¹, Eun Ja Jung²*

¹Professor, College of Nursing, Kyungpook National University, Daegu, S. Korea
²Doctoral Candidate, College of Nursing, Kyungpook National University, Daegu, S. Korea
*Corresponding author: Eun Ja Jung, College of Nursing, Kyungpook National University, Tel: +82-54-770-3618, Email: wendy1208@naver.com

Abstract. This study explored the predicting factors of antenatal depression among women of advanced maternal age. One-hundred sixteen pregnant women aged 35 years and older were recruited from two obstetric clinics located in D city, Korea. Self-esteem, spousal support, and antenatal depression were assessed using structured questionnaires. Antenatal depression was measured with the Edinburgh Postnatal Depression Scale. A bivariate logistic analysis was used to identify the predictors of antenatal depression. Of the participants, 42.2% screened positive on the scale with a cut-off point of 12/13. Factors that predicted antenatal depression included a history of childbirth, lower self-esteem, and lower spousal support. It is critical that the prevention and management of antenatal depression consider these findings when developing interventions for pregnant women of advanced maternal age.

Keywords: Advanced maternal age, antenatal depression, self-esteem, spousal support, women

1 Introduction

1.1 Background

Recently, Korea has experienced an increase in the average age that women give birth to their first child. This is due to an increase in late marriages. The age of women when they first give birth has increased from 28.8 years in 2004 to 30 years in 2014, and the rate of pregnant women of advanced maternal age (aged 35 years and older) more than doubled over the last 10 years, from 9.4% in 2004 to 21.6% in 2014 [1].

Antenatal depression is associated with morning sickness from sudden hormonal changes due to pregnancy and physical discomfort, such as weight gain. Moreover, it is associated with low sleep quality, the child's sex, and the future burden of childrearing [2].

However, not all pregnant women of advanced maternal age experience antenatal depression. One study suggested that self-esteem and spousal support were factors that protected pregnant women from antenatal depression. Mercer and colleagues [3] suggested that pregnant women with higher self-esteem and higher spousal support...
had lower levels of antenatal depression. Pregnant women who have higher self-esteem are able to assess that they can control the events that cause stress during pregnancy, thereby enabling them to experience less negative feelings such as depression [4].

It was also reported that spousal support had an even stronger influence on depression in pregnant women in a vulnerable state such as being unwed or having a high-risk pregnancy [4].

Accordingly, this study identified the need for prevention and management of antenatal depression by examining the levels of antenatal depression in pregnant women of advanced maternal age and identifying its predictive factors.

1.2 Objectives

1) Investigate participants’ general and obstetric characteristics and identify the differences between normal pregnant women and antenatal depression groups.

2) Investigate participants’ levels of self-esteem and spousal support and identify the differences between normal pregnant women and antenatal depression groups.

3) Identify the predictive factors of antenatal depression in the participants.

2 Methods

2.1 Participants

The participants consisted of 116 pregnant women aged 35 years and older who had visited two women’s clinics in “D” city, South Korea for antenatal care. The sample size was calculated using G*Power 3.1. In the multiple regression analysis on the five independent variables, a sample size of 92 was required with significance level of .05, effect size of .15, and statistical power of .80.

2.2 Instruments

2.2.1 Self-esteem. The self-esteem assessment tool that was used was developed by Rosenberg [5] and modified by Jeon [6]. This tool consisted of 10 questions scored on a 4-point Likert scale from 1 (not at all) to 4 (very much so), and negative questions were reverse coded. The total score range was 10–40 points and higher scores indicated higher levels of self-esteem. The Cronbach’s α values of this tool in Jeon [6] and this study were .80 and .88, respectively.

2.2.2 Spousal support. For spousal support, this study used the Spousal Support Scale that was based on a social support scale developed by House [7], modified for spousal support in pregnant women, and adapted to the Korean language by Cho [8]. This tool consisted of 20 questions: 15 positive and 5 negative questions. Each question was
scored on a 5-point Likert scale from 1 (not at all) to 5 (very much so), and negative questions were reverse coded. The total score range was 20–100, with higher scores indicating higher spousal support. The Cronbach's α values of this tool in Cho [8] and in this study were .84 and .87, respectively.

2.2.3 Antenatal Depression. For antenatal depression, this study used the Korean version of the Edinburgh Postnatal Depression Scale (EPDS) that was developed by Cox et al. [9] modified, and adapted by Han et al. [10]. This tool consisted of 10 questions concerning the mothers' emotional state in the most recent week including depression, anxiety, and suicidal ideations. This tool used a 4-point Likert scale from 0 point (very much so), to 3 (not at all). The total score ranged between 0 and 30 points with higher scores indicating higher level of antenatal depression. This study used a score of 12/13 as the cut-off point for discriminating antenatal depression [10], with an EPDS score ≥ 12 being classified as the normal group and ≥ 13 as the antenatal depression group. The Cronbach's α values of this tool at the time of its development [9] and in this study were .87 and .82, respectively.

2.3 Procedure

Data collection was conducted between January 15 and February 15, 2015. For data collection, surveys were conducted after a researcher personally visited the participating hospitals to request the cooperation of the hospital administrators. The questionnaires were distributed personally to the participants by a researcher and 2 trained research assistants, and the questionnaires were retrieved on site. The required time for the participant to complete the questionnaire was approximately 15 minutes.

2.4 Data Analyses

Data analysis was performed using the IBM SPSS Statistics 20.0 program bivariate logistic regression analysis was performed for identification of the predictive factors of antenatal depression.

3 Results

3.1 The Predictors of Antenatal Depression Among Women of Advanced Maternal Age

The results of a bivariate logistic regression analysis to investigate the predictive factors of antenatal depression in pregnant women of advanced maternal age are shown in Table 1.

Among the obstetric characteristics of the participants, probability of antenatal depression was higher in participants with no history of childbirth, as compared to
those with a history of childbirth (≥2 times; AOR: 8.53, \( p = .032 \)). Moreover, a lower self-esteem score was correlated with higher probability of antenatal depression (AOR: 0.85, \( p = .011 \)). Lower spousal support score was also correlated with higher probability of antenatal depression (AOR: 0.92, \( p = .003 \)). Therefore, low self-esteem and spousal support were found to be the predictive factors of antenatal depression for those with no history of childbirth.

**Table 1.** Predictors of Antenatal Depression Among Women of Advanced Maternal Age (N = 116)

<table>
<thead>
<tr>
<th>Predictors</th>
<th>Adjusted odds ratio</th>
<th>95% Confidence interval</th>
<th>( p )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (yr) (Reference: ≥ 37)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>35–36</td>
<td>1.36</td>
<td>.54</td>
<td>.347</td>
</tr>
<tr>
<td>37–38</td>
<td>2.13</td>
<td>.87</td>
<td>.586</td>
</tr>
<tr>
<td>Education (Reference: ≥ University)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>≤ High school</td>
<td>3.84</td>
<td>.63</td>
<td>23.34</td>
</tr>
<tr>
<td>College</td>
<td>1.03</td>
<td>.41</td>
<td>2.61</td>
</tr>
<tr>
<td>Occupation (Reference: No)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>1.20</td>
<td>.50</td>
<td>2.90</td>
</tr>
<tr>
<td>Family income (≥ 401)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt; 400</td>
<td>0.97</td>
<td>.39</td>
<td>2.42</td>
</tr>
<tr>
<td>≥ 400</td>
<td>1.01</td>
<td>.41</td>
<td>2.61</td>
</tr>
<tr>
<td>Gestational age (Reference: ≥ 29)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>≤ 28</td>
<td>0.89</td>
<td>.23</td>
<td>3.42</td>
</tr>
<tr>
<td>History of childbirth (Reference: ≥ 2)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>8.53</td>
<td>1.20</td>
<td>60.88</td>
</tr>
<tr>
<td>1</td>
<td>2.41</td>
<td>.38</td>
<td>15.36</td>
</tr>
<tr>
<td>Wanted pregnancy (Reference: No)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>0.94</td>
<td>.25</td>
<td>3.54</td>
</tr>
<tr>
<td>0</td>
<td>0.95</td>
<td>.26</td>
<td>3.56</td>
</tr>
<tr>
<td>Self-esteem</td>
<td>0.85</td>
<td>.75</td>
<td>.96</td>
</tr>
<tr>
<td>Spousal support</td>
<td>0.92</td>
<td>.87</td>
<td>.97</td>
</tr>
</tbody>
</table>

-2 Log likelihood                        | 129.893             |                         |       |
\( \chi^2 \)                               | 28.113 (\( p = .003 \)) |                     |       |
Cox & Snelle \( R^2 \)/Nagelkerke\( R^2 \)| .215/.289             |                         |       |
Predicted group membership                | 68.1                |                         |       |
4 Conclusion

From the results, when women had no prior history of childbirth, lower self-esteem, and lower spousal support, they had a higher probability of developing antenatal depression. Consequently, the following three recommendations require implementation: first, education on the importance of discovering and managing antenatal depression in pregnant women of advanced maternal age is needed for medical professionals; second, an intervention program for the prevention and management of antenatal depression in pregnant women of advanced maternal age should be developed based on the predictive factors identified in this study; third, the effects of such an intervention program require validation in future literature.

References