

Factors Influencing Maternal-Fetal attachment in High-Risk Pregnancy

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Abstract. This study sought to identify factors influencing maternal-fetal attachment in high-risk pregnancy in Korea. Data were collected between March 3 and 30, 2015 via structured questionnaires completed by 118 pregnant women visiting an obstetric clinic for prenatal tests or referred to university hospitals in three metropolitan areas for pregnancy maintenance. Data were analyzed, using IBM SPSS version 22, via descriptive statistics, tests, ANOVA, Pearson's correlation coefficients, and stepwise multiple regression. Childbirth experience, antepartum care, and planned pregnancy differed significantly. Anxiety and maternal-fetal attachment were negatively correlated, while dyadic adjustment and maternal-fetal attachment were positively correlated. Anxiety, multiparity, prenatal care, and dyadic adjustment influenced maternal-fetal attachment in high-risk pregnancy. These variables explained 20.5% of the variance in maternal-fetal attachment. The results indicate a need for the development and application of nursing interventions to decrease anxiety in high-risk pregnancy and improve maternal-fetal attachment via conjugal harmony.

Keywords: Maternal-Fetal Attachment, High-Risk Pregnancy, Anxiety, Dyadic Adjustment

1 Introduction

1.1 Background

As the mean age at first marriage is currently rising in Korea, pregnancy in Korean women of advanced age is also increasing [1]. Advanced age is known to be a critical factor in high-risk pregnancy [1]. The mean age of mothers by birth order increased from 30.22 years in 2005 to 32.04 years in 2014. [2] Furthermore, the proportion of pregnant women who were older than 35 years of age was 10.6% in 2005 and doubled to 21.6% in 2014[2], while the high-risk pregnancy rate, which is 7% in women aged

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25–30 years, is 24% in those aged 35–40 years and 39% in those aged 41 years and older[3].

High-risk pregnancy exposes the pregnant woman and fetus to the risk of health conditions, such as preterm labor, premature membrane rupture, cervical incompetency, and placenta previa, leading to deviation from normal pregnancy[4]. Women with high-risk pregnancies experience anxiety due to concerns regarding their own health, the health of the fetus, physical discomfort, and birth outcomes [5]. This causes reduced confidence in the maternal role and negatively affects maternal-fetal attachment [6].

Maternal-fetal attachment refers to the interaction between the pregnant woman and fetus, which is based on an intimate relationship [7]. However, women with high-risk pregnancies are unable to recognize associated conditions and experience a high degree of anxiety due to the uncertainty surrounding the condition of the fetus. Furthermore, as high-risk conditions become more critical, anxiety increases[5]. Anxiety in pregnant women has been reported to interfere with maternal-fetal attachment and emotional communion with the fetus [6]. In contrast, emotional support from the spouse and the quality of the marital relationship are closely related to the pregnant woman's psychological reactions. High levels of marital adjustment support the maternal role and help pregnant women to experience positive pregnancy and childbirth [8]. In particular, dyadic adjustment reduces stress and anxiety in high-risk pregnancy and helps the pregnant woman to form a positive relationship with the fetus [9].

Therefore, this study sought to determine the effect of anxiety and marital adjustment on maternal-fetal attachment in women with high-risk pregnancies. The results of the study will be noteworthy as basic data in the future development of nursing interventions designed to improve maternal-fetal attachment in high-risk pregnancy.

1.2 Purpose of the study

The purpose of the study was to identify the factors that influence maternal-fetal attachment in women with high-risk pregnancies in Korea.

2 Methods

2.1 Study design

This descriptive cross-sectional study was conducted to identify the factors that influence maternal-fetal attachment in women with high-risk pregnancies.

2.2 Sample

The subjects were 118 women with high-risk pregnancies who visited an obstetric clinic for prenatal tests or entered a delivery room for pregnancy maintenance at one of three university hospitals located in three metropolitan areas. All women were at

20–38 weeks gestation. The sample size was computed using G*power 3.1, a sample size computation program, with a significance level of 0.05, statistical power of 80%, an effect size of 0.15, and three predictor variables. The minimum number of subjects required was 77; therefore, 120 subjects were recruited in consideration of a non-response rate of 20%. In total, 118 questionnaires were included in the statistical analysis, with 2 incomplete questionnaires excluded.

2.3. Instruments

2.3.1 Anxiety. An anxiety measurement tool developed by Spielberger[10] and adopted by Kim & Shin[11] was used in the study. The tool consists of 20 items, with responses provided using a 4-point Likert scale on which each item is scored as follows: 1 =always, 2 = usually, 3 =sometimes, and 4 =never. Ten negative items are reverse coded, and higher total scores indicate greater anxiety. Cronbach's α for the tool was .92 when developed and in the current study.

2.3.2 Dyadic Adjustment. A revised version of the Dyadic Adjustment Scale, developed by Spanier[12], revised by Busby, and adopted by Choi[13], was used in this study. The scale includes 14 items: 5 items measuring opinion agreement, 4 items measuring relationship satisfaction, 2 items measuring cohesiveness, and 3 items measuring affection. Each item is scored on 6-point Likert scale ranging from 1 (never) to 6 (always), and total scores range from 14 to 84. Negative items are reverse coded, and higher total scores indicate greater marital adjustment. Cronbach's α s for the scale were .93 when developed and .90 in the current study.

2.3.3 Maternal-Fetal Attachment. A maternal-fetal attachment measurement tool, developed by Cranley[6] and adopted and modified by Kim[14], was used in the study. The tool consists of 24 items, with 5 subscales including maternal-fetal differentiation, maternal-fetal interaction, fetus characteristics and intention conjecture, role acquisition, and self-devotion. Each item is scored on a 4-point Likert scale ranging from 1 (never) to 4 (always), with total scores ranging from 4 to 96. Higher total scores indicate greater marital adjustment. Cronbach's α s for the tool were .85 in Cranley's study and .90 in the current study.

2.4 Data Collection

Data collection was conducted between March 3 and 30, 2015. Researchers secured approval for the study from the relevant authorities and requested cooperation in conducting the survey. The researchers distributed and collected questionnaires personally, and the time allotted for completion of the questionnaire was approximately 10 minutes.

2.5 Data Analysis

Data were analyzed using the IBM SPSS Statistics 22 program. Means and standard deviations were calculated for subjects' general characteristics and each variable, and ttests and one-way ANOVAs were used to determine differences in maternal-fetal attachment according to general characteristics. The Duncan test was used in post-hoc analysis. Pearson's correlation coefficients were used to verify the relationships between anxiety, marital adjustment, and maternal-fetal attachment, and stepwise multiple regression was performed to identify the factors that influence maternal-fetal attachment.

3 Results

To identify the factors influencing maternal-fetal attachment, stepwise regression was performed and included multiparity, prenatal tests, planned pregnancy, anxiety, and dyadic adjustment as independent variables, as they were considered general characteristics that differ significantly according to the extent of maternal-fetal attachment developed. Factors influencing maternal-fetal attachment in women with high-risk pregnancies included anxiety, multiparity, prenatal tests, and dyadic adjustment. The most influential factor was anxiety, and these factors explained 20.5% of the overall model.

Table 1. Influencing Factors of Maternal-Fetal Attachment

Variables	B	β	t	p	R ²	Adj.R ²	F(p)
(Constants)	76.614		9.672	.000	.232	.205	8.56 ($<.001$)
Anxiety	-.328	-.243	-2.813	.009			
Multiparity ^{1)†}	-8.779	-.229	-2.720	.001			
Prenatal tests ^{2)†}	-5.831	-.228	-2.717	.007			
Dyadic adjustment	.177	.190	2.156	.033			

† Dummy coded
 Reference: ¹⁾ none or once; ²⁾ irregular

4 Conclusions

The findings of this study indicate a need for the development and application of nursing interventions designed to decrease anxiety in women with high-risk pregnancies and improve maternal-fetal attachment via conjugal harmony.

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