Original Article

Factors associated with prenatal distress levels of pregnant women

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Abstract

Objectives: This study aimed to determine the association between prenatal distress levels and sociodemographic characteristics, pregnancy-related factors, and resilience levels of pregnant women.

Methods: This study was carried out at the gynecology and obstetrics clinics of a maternity and children hospital in Giresun (n=243). The data were collected using an Information Form, Revised Prenatal Distress Questionnaire, and Resilience Scale for Adults. Spearman correlation analysis and binary logistic regression analysis were used in data analysis.

Results: The mean prenatal distress total score of the women was 11.63±6.40. The concerns about baby care and postpartum life had the highest score. Prenatal distress levels of pregnant women with a risky pregnancy, a chronic disease, a health problem during pregnancy, and who used medication due to this problem were high (p<0.05). There was a negative weak correlation between the prenatal distress levels and the resilience levels of pregnant women (p<0.05).

Conclusion: Pregnant women who experience pregnancy-related problems have higher prenatal distress levels. In particular, prenatal distress includes concerns about baby care and postpartum life. These results are similar to those in the literature. Nurses' awareness of factors affecting prenatal distress can guide them in giving sufficient psychosocial care and support during pregnancy.

Keywords: Nursing; pregnancy-related factors; prenatal distress; resilience; sociodemographic factors.

What is known on this subject?

• Studies show that pregnant women's prenatal distress levels decrease, sleep quality and coping levels increase, and risk of preterm delivery decrease as their psychological resilience levels increase.

What is the contribution of this paper?

• This study found that risky pregnancy, chronic disease, experiencing a health problem during pregnancy, and using medication due to this problem increased the prenatal distress levels of pregnant women and there was a negative weak correlation between the prenatal distress levels and the resilience levels of pregnant women.

What is its contribution to the practice?

• The results of this study will contribute to the planning required to promote pregnant women's mental well-being by highlighting the factors that pose a risk for prenatal distress.

Pregnancy is a life event which includes physical and psychosocial changes that most women experience as very stressful. The stress specific to pregnancy is defined as prenatal distress. Prenatal distress is defined as the anxiety and concerns caused by the changes in a woman's body, lifestyle, roles, relationships with people, and responsibilities due to pregnancy.[1] Increased prenatal distress may affect the occurrence of problems such as preterm delivery, low birth weight, or delayed fetal growth and development.[2–4] Prenatal distress also negatively affects maternal-fetal attachment and causes postpartum depression.[4,5]

Pregnant women's coping strategies are important to maintain their psychological well-being and manage their stress levels, in other words, to have a low prenatal distress level.

[6–8] Psychological resilience, which is accepted as a coping skill, is defined as the ability to overcome negative circumstances and adapt.[9,10] The literature indicates a relationship between prenatal distress level and psychological resilience level. In a study, pregnant women's prenatal distress levels decrease and sleep quality increase as their psychological resilience level increase.[11] Another study reported that the pregnant women with high psychological resilience levels have lower depression levels than those with low psychological resilience levels.[12] Nie et al.[13] (2017) found that the pregnant women with high psychological resilience levels cope with the risk of preterm delivery more actively, have a more positive affect, and have lower depression levels. Bhatia et al.[14] (2015) determined that women with low psychological resilience levels have a higher risk of preterm delivery.

Along with psychological resilience, the sociodemographic characteristics such as age, education level, income level, spouses' occupation, employment status of the pregnant women, and the families' monthly income; the obstetric characteristics such as gestational week, number of pregnancies, having problems during the previous pregnancy, having obstetric problems during the current pregnancy, and hospitalization due to these problems; and the familial characteristics such as a history of chronic diseases in the family are reported to affect the prenatal distress level.[15–17]

The present study aims to determine whether there is a relationship between the pregnant women's prenatal distress levels and sociodemographic characteristics, and between the obstetric factors and psychological resilience levels. For this purpose, the following study questions were addressed.

1. Do pregnant women's prenatal distress levels change depending on their sociodemographic characteristics?

2. Do pregnant women's prenatal distress levels change depending on their obstetric characteristics?

3. Is there a relationship between pregnant women's prenatal distress and psychological resilience?

Materials and Method

Study Design

This is a descriptive and correlational study.

Study Population and Sample

The study population consisted of all women referred to the Gynecology and Obstetrics Clinics of Giresun Maternity and Children's Hospital, the only public hospital in the Giresun city center, between January 1 and March 30, 2016. The participants were selected using the random sampling method. The study sample consisted of 243 women who met the inclusion criteria and agreed to participate in the study between these dates. The inclusion criteria were 18 years of age or older, being married, and voluntarily participating in the study. The exclusion criteria were having a psychiatric diagnosis or any problem that prevented the women from communicating.

Data Collection Tools

The data were collected using an Information Form, Revised Prenatal Distress Questionnaire, and Resilience Scale for Adult through face-to-face interviews that lasted 35 to 45 minutes.

The Information Form included questions regarding the pregnant women's age, number of children, family type, place of residence, education level of the women and their spouses, social security, and income level, as well as regarding stillbirth, preterm delivery, risky pregnancy, planned pregnancy, intended (unplanned but wanted) pregnancy, chronic disease, health problems, and medication use.

The Revised Prenatal Distress Questionnaire (NuPDQ) was developed by Yali and Lobel[18] and tested by Yüksel et al.[19] for reliability and validity in Turkish. The questionnaire consists of 17 items of 3-point Likert type in 4 subscales: physical and social changes due to pregnancy, concerns about the baby and childbirth (1, 3, 4, 6, 7, 8, 10, 11, and 12), concerns about the healthcare quality and health status (2, 9, and 17), concerns about baby care and postpartum life (13, 15, and 16), and financial concerns (5 and 14). The minimum and maximum scores on the questionnaire are 0 and 34, respectively. Higher scores indicate higher prenatal distress levels. The Cronbach's alpha coefficient was 0.79 for the original questionnaire and 0.82 for the present study.

The Resilience Scale for Adult (RSA) was developed by Friborg et al.[20] and tested by Basım and Çetin[21] for reliability and validity in Turkish. The scale is a 5-Point Likert type, and the items 1, 3, 4, 8, 11, 12, 13, 14, 15, 16, 23, 24, 25, 27, 31, and 33 were scored as 5-4-3-2-1 whereas the other items were scored as 1-2-3-4-5. The scale had 33 items and the minimum and maximum total scores are 33 and 165. Lower scores indicate higher psychological resilience levels. The Cronbach's alpha coefficient was 0.86 for the original questionnaire and 0.90 for the present study.

The first researcher, who informed the women about the study, collected the data and administered the questionnaires to those who agreed to participate. The data were collected while the women were waiting in the corridor for the polyclinic service or during the Non-Stress Test. The forms were completed in 25 to 30 minutes.

Ethical Consideration

Before starting the study, permissions from the institution and the Ethics Committee of the Secretariat General of Giresun Public Hospitals Union (dated 12.29.2015 numbered 6019-9031) were obtained. The pregnant women were informed about the study and that they could leave the study whenever they want. Then, their written and verbal consents were obtained as per the Declaration of Helsinki.

Statistical Analysis

The data were analyzed using the SPSS 16 package. The participants' sociodemographic and obstetric characteristics were indicated in numbers and percentages. The Kolmogorov-Smirnov test was used to determine whether the numeric variables were normally distributed; and the variables were found to abnormally distributed ($p<0.05$). Mann-Whitney U and Kruskal-Wallis tests were used to analyze the factors that affect the pregnant women's prenatal distress levels. The Spearman Correlation test was used to determine the relationship between prenatal distress levels and psychological resilience levels. The binary logistic regression analysis was used to determine whether sociodemographic and obstetric characteristics affected prenatal distress levels. The binary logistic regression analysis is used to determine the cause and effect relationship between the dependent variable and the independent variables when the dependent variable is binary or ordered.[22] It is recommended as a powerful method to analyze categorical variables. It does not require a normal distribution of the variables as in the other regression analyses. The significance threshold was $p<0.05$.

Results

Sociodemographic Characteristics

The average age of the participants was 27.85±6.09. Table 1 shows the sociodemographic characteristics of the pregnant women in the study. Of them, 68.3% had a nuclear family, 46.1% lived in the district, and 53.9% graduated from primary school. Of their spouses, 58.4% graduated from primary school. Of the participants, 77.4% were unemployed and 90.5% of their spouses were employed. Of the pregnant women, 86.4% had social security and 63.4% had an income equal to their expenses.

Obstetric Characteristics

Of the pregnant women, 77.8% were in the third stage of pregnancy, 31.7% experienced their second pregnancy, 29.6% experienced their first pregnancy, 35.4% had another child, 16.5% had a history of stillbirth, 11.1% had a history of preterm delivery, 12.3% had a risky pregnancy, 74.5% had a planned pregnancy, and 78.6% had an intended (unplanned but wanted) pregnancy. Of the participants, 14.0% had a chronic disease, 14.4% experienced a health problem during their pregnancy, and 10.7% used medications due to this problem.

RSA and NuPDQ Mean Scores

Table 2 shows the pregnant women's RSA and NuPDQ mean scores. The participants' prenatal distress total mean score was 11.63±6.40, and their mean score was 7.78±3.97 for the "physical and social changes due to pregnancy, concerns about the baby and childbirth" subscale, 1.32±1.40 for the "concerns about the healthcare quality and health status" subscale,

Table 1. Pregnant women's sociodemographic characteristics (n=243)

Sociodemographic characteristics	n	%
Family type		
Nuclear	166	68.3
Extended	77	31.7
Place of residence		
Village	49	20.2
District	112	46.1
City	82	33.7
Education level		
Illiterate	24	9.9
Primary/middle school	131	53.9
High school and higher	88	36.2
Employment status		
Employed	55	22.6
Unemployed	188	77.4
Education level of the spouse		
Primary/middle school	142	58.4
High school and higher	101	41.6
Employment status of the spouse		
Employed	220	90.5
Unemployed	23	9.5
Social security		
Yes	210	86.4
No	33	13.6
Income level		
Income equal to expenses	154	63.4
Income lower than expenses	57	23.5
Income higher than expenses	32	13.2

1.42±1.49 for the "concerns about baby care and postpartum life" subscale, and 1.10±1.21 for the "financial concerns" subscale. Their RSA mean score was 123.37±22.12.

The Relationship Between Prenatal Distress and Psychological Resilience

Table 3 shows the relationship between the pregnant women's RSA and NuPDQ mean scores. A negative weak relationship was found between pregnant women's psychological resilience and prenatal distress levels ($r=0.241$, $p<0.05$). The pregnant women's psychological resilience levels had a negative weak relationship with the physical and social changes due to pregnancy, concerns about the baby and childbirth subscale, the healthcare quality and health status subscale, the concerns about baby care and postpartum life subscale, and the financial concerns subscale ($r=0.167$, $r=0.225$, $r=0.150$, and $r=0.227$, respectively, $p<0.05$).

Factors that Affect Prenatal Distress Level

Table 4 shows the factors that affect prenatal distress level.

Table 2. Pregnant women's mean scores on the RSA and NuPDQ (n=243)

	Mean±SD	Median	Quarter 25	Quarter 50	Quarter 75
Factor 1: Physical and social changes due to pregnancy, concerns about the baby and childbirth	7.78±3.97	8.00	5.00	8.00	10.00
Factor 2: Concerns about the healthcare quality and health status	1.32±1.40	1.00	.00	1.00	2.00
Factor 3: Concerns about baby care and postpartum life	1.42±1.49	1.00	.00	1.00	2.00
Factor 4: Financial concerns	1.10±1.21	1.00	.00	1.00	2.00
Total mean score on prenatal distress	11.63±6.40	12.00	7.00	12.00	15.00
Total mean score on psychological resilience	123.37±22.12	123.00	105.00	123.00	140.00

RSA: Resilience Scale for Adults; NuPDQ; Revised Prenatal Distress Questionnaire; SD: Standard deviation.

Table 3. The relationship between pregnant women's mean scores on the RSA and NuPDQ (n=243)

The RSA mean scores	The NuPDQ mean scores	
	r	p*
Physical and social changes due to pregnancy, concerns about the baby and childbirth	-0.167	0.009
Concerns about the healthcare quality and health status	-0.225	0.000
Concerns about baby care and postpartum life	-0.150	0.020
Financial concerns	-0.227	0.000
Total mean score on prenatal distress	-0.241	0.000

*Spearman correlation test. RSA: Resilience Scale for Adults; NuPDQ; Revised Prenatal Distress Questionnaire.

The regression analysis results indicated that the pregnant women who had a risky pregnancy, had a chronic disease, experienced a health problem during pregnancy, and used medication due to this problem were more likely to have prenatal distress ($p < 0.05$). The variables such as age, employment status, gestational week, history of stillbirth, risk of preterm delivery, planned pregnancy, and intended pregnancy were not related to prenatal distress ($p > 0.05$).

Discussion

This study indicated that pregnant women had moderate levels of prenatal distress and psychological resilience. The correlation results showed that pregnant women's prenatal distress levels increased as their psychological resilience levels decreased. The pregnant women who had a risky pregnancy, had a chronic disease, experienced a health problem during pregnancy, and used medication due to this problem had higher prenatal distress.

A negative weak relationship was found between pregnant women's psychological resilience and prenatal distress levels. The literature includes studies that also have reported a relationship between pregnant women's psychological resilience and prenatal distress.[11–14] As the pregnant women's psychological resilience levels increase, their prenatal distress lev-

els decrease and sleep quality increase,[11] depression scores decrease,[12] coping levels increase, depressive emotions decrease,[13] and the risk for preterm delivery decrease.[14] The present study found a weak relationship between psychological resilience and prenatal distress; a majority of the participants reported that they did not have a risky pregnancy, a chronic disease, or a health problem during their pregnancy. Experience of a life stressor and trying to cope with this stressor is important in the development of psychological resilience. Therefore, comprehensive studies are recommended with pregnant women who have a more serious health problem due to pregnancy to better identify the relationship between pregnant women's psychological resilience and prenatal distress levels.

Another factor that affects pregnant women's prenatal distress levels is the experience of risky pregnancy. In this study, the pregnant women who had a risky pregnancy obtained higher mean scores on the NuPDQ and its physical and social changes due to pregnancy, concerns about the baby and childbirth subscale and concerns about the healthcare quality and health status subscale. Yuksel et al.[16] found that the pregnant women who have problems during pregnancy have higher prenatal distress levels than those who did not have problems. Kang et al.[23] reported that the pregnant women with anemia and hypertension during pregnancy have higher levels of anxiety. Another study indicated that the pregnant

Table 4. Factors that affect pregnant women's prenatal distress level

Demographic variables	Prenatal distress		Estimated relative risk (95% CI)
	No (%)	Yes (%)	
Age			
18 to 25 (n=100)	80.0	20.0	Referans: 1.00
26 to 35 (n=111)	87.4	12.6	1.08 (0.39–2.98)
36 to 43 (n=32)	81.3	18.8	0.62 (0.21–1.78)
Employment status			
Employed (n=55)	78.2	21.8	Referans: 1.00
Unemployed (n=188)	85.1	14.9	1.59 (0.74–3.39)
Income level			
Income equal to expenses (n=154)	83.1	16.9	Referans: 1.00
Income lower than expenses (n=57)	82.5	17.5	1.42 (0.46–4.39)
Income higher than expenses (n=32)	87.5	12.5	1.49 (0.42–5.20)
Gestational week			
1st trimester (n=25)	68.0	32.0	Referans: 1.00
2nd trimester (n=28)	78.6	21.4	3.08 (1.20–7.90)
3rd trimester (n=189)	86.8	13.2	1.78 (0.66–4.84)
Previous stillbirth			
Yes (n=40)	87.5	12.5	Referans: 1.00
No (n=203)	82.8	17.2	0.69 (0.25–1.87)
Previous preterm delivery			
Yes (n=27)	81.5	18.5	Referans: 1.00
No (n=216)	83.8	16.2	1.17 (0.41–3.31)
Risky pregnancy**			
Yes (n=30)	63.3	36.7	Referans: 1.00
No (n=213)	86.4	13.6	3.67 (1.58–8.50)
Planned pregnancy			
Yes (n=181)	85.6	14.4	Referans: 1.00
No (n=62)	77.4	22.6	0.57 (0.28–1.19)
Intended pregnancy			
Yes (n=191)	84.3	15.7	Referans: 1.00
No (n=52)	80.8	19.2	0.78 (0.35–1.72)
Chronic disease*			
Yes (n=34)	67.6	32.4	Referans: 1.00
No (n=209)	86.1	13.9	2.96 (1.30–6.73)
Health problem during pregnancy*			
Yes (n=35)	57.1	42.9	Referans: 1.00
No (n=208)	88.0	12.0	5.49 (2.49–12.08)
Medication due to this health problem*			
Yes (n=25)	52.0	48.0	Referans: 1.00
No (n=218)	87.2	12.8	6.26 (2.60–15.08)

*p<0.05. CI: Confidence Interval.

women with a risky pregnancy have a poorer psychosocial health and higher anxiety and stress levels.[24] This suggests that risky pregnancy is an important factor that increases prenatal distress levels.

The present study found that pregnant women who had a chronic disease obtained a higher mean score on the physical and social changes due to pregnancy, concerns about the baby and childbirth subscale and a total mean prenatal distress score than those who did not have a chronic disease. Dağlar and Nur[25] determined that pregnant women with a chronic disease have higher anxiety levels. Körükçü et al.[26] found that pregnant women with a health problem before pregnancy have higher prenatal distress levels. Another study

compared the pregnant women with and without diabetes and found that those with diabetes have higher psychological stress levels than those without diabetes.[27] Chronic diseases may have increased pregnant women's distress levels because they disrupt physical and social functionality, negatively affect the quality of life, and require long-term use of medication.

The present study found that the pregnant women who had a health problem during pregnancy obtained a higher mean prenatal distress score. Furthermore, the prenatal distress levels of those who used medication due to this problem were also high. Ertekin-Pınar et al.[28] found that the pregnant women whose sleep quality deteriorated during pregnancy had higher perceived stress levels. Yanıkkerem et al.[29] conducted a study with pregnant women with hyperemesis gravidarum and indicated that it negatively affects their daily life activities, relationships with their spouses, and psychological states. The psychological stress level was higher among the pregnant women with severe hypertension due to pregnancy than among those who had milder hypertension.[30] The results of previous studies are similar to the results of the present study. These findings suggest that nurses have significant responsibilities in identifying pregnant women's prenatal distress levels and guiding the pregnant women with serious distress to receive psychological aid.

Conclusion

This study determined the pregnant women's prenatal distress levels were increased by the factors such as a risky pregnancy, a chronic disease, a health problem during pregnancy, and using medication due to these problems. In addition, a negative weak relationship was found between pregnant women's psychological resilience and prenatal distress levels. Therefore, psychosocial intervention studies are recommended to reduce the stress levels of pregnant women with a risky condition or a chronic disease during pregnancy, or to help them cope with the stressors more efficiently. Qualitative studies regarding the effects of problems experienced during pregnancy on prenatal distress levels may also contribute to the intervention studies. In addition, the relationship between prenatal distress and psychological resilience should be examined on larger samples.

Study Limitations

Because the study had a small sample size, its results cannot be generalized to the entire population. The study found the prenatal distress levels to be high for those who had a chronic disease, experienced health problems during the pregnancy, and used medication due to these problems. However, the participants were not asked what chronic disease they had, the health problem they experienced, the medication used due to this problem, and whether they continued these medicines when they participated in the study. This is a limitation of the study.

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