MCBU SBED
MANİSA CELAL BAYAR ÜNİVERSİTESİ SAĞLIK BİLİMLERİ ENSTİTÜSÜ DERGİSİ
MANISA CELAL BAYAR UNIVERSITY JOURNAL OF INSTITUTE OF HEALTH SCIENCE
ISSN: 2147-9607

ARAŞTIRMA MAKALESİ
RESEARCH ARTICLE
CBU-SBED, 2025, 12 (3)322-334

Covid-19 Pandemi Döneminde Gebelerde Stres ve Stresi Etkileyen Faktörlerin İncelenmesi

Investigation of Stress and the Factors Affecting Stress in Pregnant Women during the Covid-19 Pandemic Period

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Gönderim Tarihi / Received:10.11.2023
Kabul Tarihi / Accepted: 15.12.2023
DOI: 10.34087/cbusbed.1388038

Öz

Giriş ve Amaç: Bu çalışmanın amacı gebelerde stres ve stresi etkileyen faktörlerin incelenmesidir.
Gereç ve Yöntemler: Bu araştırma Kütahya ilinde bir devlet hastanesinde gerçekleştirilmiş, veriler Ocak 2021-Haziran 2021 tarihleri arasında toplanmıştır. Araştırmanın evrenini 2019 yılında Kütahya ilinde bir devlet hastanesine başvuran 629 gebe oluşturmuştur. Araştırmanın minimum örneklem büyüklüğü evreni bilinen formül (n=629) ile standart sapma değeri %5 ve güven aralığı %95 alınarak hesaplanmıştır. Araştırmanın örneklemini 238 kadın oluşturmuştur. Araştırmada veriler kadınların tanıtıcı özellikleri soru formu, risk değerlendirme formu ve Gebelikte Stres Değerlendirme Ölçeği kullanılarak hastaneye başvuran gebe kadınlar ile online toplanmıştır.
Bulgular: Araştırmada Gebelikte Stres Değerlendirme Ölçeği toplam puan ortalaması 43,3±17,2 olup, bu puan ortalaması 27 yaş ve altında olan, çekirdek aileye sahip olan, il merkezinde yaşayan ve gebelikte problem yaşayan kadınlarda istatistiksel anlamlı olarak yüksek bulunmuştur. Doktor kontrolüne göre riskli gebelik olarak tanımlanan gebeler, stres ölçeğinin alt boyutlarından biri olan gebelik, doğum ve doğum sürecinde anne ve çocuk için güvenli geçiş arayışından kaynaklanan stresi, risksiz gebelere göre istatistiksel olarak anlamlı düzeyde daha fazla yaşamışlardır.
Sonuç: Stres yaşayan kadınlara gebelik sürecinde gerekli psikolojik ve tıbbi destek verilmesi gebe ve bebeklerin bu dönemi daha olumlu geçirmelerine yardımcı olabilir.

Anahtar kelimeler: Gebelikte stres, riskli gebelikler, gebelikte stres değerlendirme ölçeği, Covid-19

Abstract

Aim: The aim of this study was to investigate stress and the factors affecting stress in pregnant women.
Method: This research was carried out in a state hospital in Kütahya province, and the data were collected between January 2021 and June 2021. The universe of the study consisted of 629 pregnant women who applied to the hospital in 2019. The minimum sample size of the study was calculated using the known formula (n=629) with a standard deviation value of 5% and a confidence interval of 95%. The sample of the research consisted of 238 women. In the study, data were collected online with pregnant women who applied to the hospital using the women's introductory characteristics questionnaire, risk assessment form, and the Pregnancy Stress Rating Scale.
Results: The mean total score of the Pregnancy Stress Rating Scale was determined as 43.3±17.2. The total mean score of the scale was found to be statistically significantly higher in women who were 27 years of age or younger, who had a nuclear family, who lived in the city center, and who had problems during pregnancy. Pregnant women who were identified as risky pregnancies according to doctor control experienced stress from

seeking safe passage for mother and child through pregnancy, labor, and delivery, one of the sub-dimensions of the stress scale, statistically significantly more than no risky pregnant women.
Conclusion: Providing the necessary psychological and medical support to women experiencing stress during pregnancy may help pregnant women and babies to spend this period more positively.

Keywords: Stress in pregnancy, high-risk pregnancies, pregnancy stress rating scale, Covid-19.

1. Introduction

Stress, which began to be defined in the 17th century, today poses a problem for almost every age group. Stress affects many systems, from the skin to the endocrine system, from the gastrointestinal system to the immune system [1]. An individual who is faced with a stressful situation may experience headaches, irregular sleep, backaches, jaw clenching, teeth grinding, constipation, diarrhea, colitis, rash, muscle aches, indigestion, ulcers, high blood pressure, heart attack, excessive sweating, changes in appetite and physical symptoms (fatigue, loss of energy and increase in accidents). In case of stress, emotional symptoms such as anxiety, depression, crying easily, rapid and constant change of mood, irritability, tension, decreased self-confidence, hypersensitivity, easily offended, tantrums, aggression, hostility, and feeling emotionally exhausted may be observed. [1,2].

Although the pregnancy period which has a significant and long-term impact on the mother's life, is a natural event, it causes anatomical, physiological, and psychological changes in the woman [3,4]. These changes occur to maintain the health of both the mother and the fetus in the best possible way, to meet the metabolic needs of the fetus, and to adapt to anatomical changes during labor. Due to these changes experienced during pregnancy, many women may face stress during the adaptation process to these changes [5], and the anxiety and worry narrow the line between health and disease and create an extra risk factor for pregnant women [5,9].

As a result of a woman's pregnancy, her bio-psycho-social balance is disrupted, family and work roles change, a process in which the parenting relationship is established between the baby and the mother begins, and therefore the pregnancy is considered a critical period [10,11]. Pregnancy alone can be a source of stress for women. In addition, some situations such as insufficient social support, stressful living conditions, anxiety, and incompatibility between spouses can cause stress during pregnancy [9,11]. The stress that occurs during pregnancy, when mood changes are common, is also defined as "pregnancy-related stress" because it originates from the pregnancy and birth process [3,12]. Hormonal changes during pregnancy can lead to psychological changes in women. While some pregnant women can easily adapt to the developing psychological change, some pregnant women experience mild, moderate, and high psychological problems [7,10]. Stress occurring during pregnancy significantly affects health of the baby as well as health of the pregnant woman [5,11,13].

Stress, defined as a response that enables adaptation to demands from the environment, emerges as a result of the conflict between people's body functions and the environment. If this process is prolonged and not resolved, body resistance decreases, paving the way for diseases [1]. During pregnancy, when mood changes are common, internal and external stressors, psychological, biological, and sociocultural factors that occur during this process, relationships with family, and emotions experienced by the woman can negatively affect women [14]. However, women's stress levels may increase due to increased expectations from mothers regarding baby care [12,15,16]. Uncontrolled stress can negatively affect fetal development and cause birth complications [14].

When the studies on this subject were examined; it was stated that factors such as previous depression, negative life experience due to stress experienced during the prenatal period [9,13] history of abortion and stillbirth, unwanted pregnancies, low self-esteem, mother's education level and employment status [17], pregnancy and birth experiences [9], number of children [9], exposure to domestic violence, substance use and weight gain [18], social relations, quality of support status of women, and level of knowledge about the pregnancy period were effective [9]. Therefore, it is important for women to receive support during pregnancy [9,19].

As a result of chronic stress in the mother, birth may occur earlier than expected, and as a result, the woman finds herself in this process before she is ready for birth [20]. In case of chronic stress, the hypothalamic axis is stimulated and pathological Corticotropin Relaxing Hormone (CRH) begins to be secreted instead of placental-derived CRH, which normally begins to be released from the 16th week onwards and increases regularly until the end of pregnancy. This pathological hormone causes uterine contraction to occur before the expected time and causes labor to begin [9]. The possibility of mental illness in women increases if the woman cannot adequately cope with the changes and stress she experiences [21].

When the research on the subject was examined; a study in Ankara found that the rate of high-risk pregnant women who experienced stress in the last year before pregnancy was high. In the study, it was determined that the average perceived stress score

was statistically significantly higher in risky pregnant women than in non-risky [22]. In a study in Izmir, it was found that high-risk pregnant women had higher anxiety and stress levels than healthy pregnant women [23]. It was determined in Istanbul, that problems occurring during pregnancy increased the risk level in women with risky pregnancies [24]. Studies conducted in China determined that pregnancy complications were more common in women who experience stress [25] that the mother's lifestyle and negative life experiences affect women's stress and anxiety levels, that stress reduces sleep quality [26] that prenatal diagnostic tests applied to older pregnancies increase the anxiety and fear experienced by women [27]. For this reason, it has been suggested that psychological factors should be considered as a whole and the necessary support should be provided [27]. In one study, it was stated that pregnancy depression and anxiety symptoms were more common in women with a history of chronic and psychiatric diseases [17]. In a study conducted with Taiwanese pregnant women (n=300), it was found that stress was a risk factor for prenatal depression, and the risk of prenatal depression was higher in primigravida pregnant women [3].

In the literature, it was determined that prenatal stress increased perinatal depression, the quality of care of babies decreased [21], smoking was more common in these women [22], and the risk of birth complications, preterm labor, low birth weight and intrauterine growth retardation increased [22]. It was stated that babies of women experiencing prenatal stress were more restless and slept less, behavioral and emotional problems in children increased, and symptoms such as hyperactivity and inattention were more common [16,21]. As seen from the studies, stress experienced during pregnancy not only negatively affects the health of the mother, but also can negatively affect the physical, behavioral, emotional, and neurodevelopmental health of the baby. For this reason, evaluating stress and its affecting factors in pregnant women and providing psychosocial support to women experiencing stress is important for the pregnancy process and mother and baby health [21]. The aim of this study was to examine stress and factors affecting stress in pregnant women. In line with the results of this research, health professionals' provision of psychosocial support to pregnant women experiencing stress and awareness of the factors affecting stress will contribute to a healthier pregnancy for the mother and baby.

2. Methods

2.1. Type of the research

This study was a cross-sectional study.

2.2. Place and duration of the research

This research was conducted in a public hospital in Kütahya. Research data was collected between January 2021 and June 2021.

2.3. Population and sample of the research

The population of the research consisted of 629 pregnant women who applied to a public hospital in Kütahya in 2019. The minimum sample size in the study was determined as 238 women, using the EPI Info 2000 program and the formula with a known population (n=629), with a standard deviation value of 5% and a confidence interval of 95%.

2.4. Inclusion criteria of the research

Women who volunteered to participate in the study, who could speak and understand Turkish, who were 18 years of age and above, who could read and write, and who had a smartphone were included in the study.

2.5. Exclusion criteria from the study

Pregnant women with a psychiatric history, diagnosed with depression, and using antidepressants were excluded from the study.

2.6. Dependent variables of the research

The mean score of the total and sub-dimensions of the Pregnancy Stress Rating Scale was the dependent variable of the study.

2.7. Independent variables of the research

Some descriptive characteristics of the pregnant women (age, education, income, employment status, obstetric characteristics, etc.) and the risk status during pregnancy determined by the Ministry of Health Risk Assessment Questionnaire were the independent variables of the study.

2.8. Research question

What are the factors affecting stress and stress in pregnant women during the Covid-19 pandemic?

2.9. Data collection tools

Data collection tools in the research consist of three parts. The first section included the "Questionnaire on Descriptive Characteristics of Women" which consisted of 15 questions. In this section, the descriptive characteristics of women and their spouses (age, education, employment and income status, smoking and alcohol use status, etc.) and the obstetric characteristics of the woman (pregnancy, number of births, gestational age, etc.) were examined.

In the second part, the "Risk Assessment Form" consisting of 24 items was used by the Ministry of Health to identify high-risk pregnant women [28].

The last section included the Pregnancy Stress Rating Scale, developed by Chen [29] in 2015, which

contains 36 items and has a Cronbach's Alpha value of 0.92. The Turkish validity and reliability study of the scale was conducted by Aksoy et al. [30] and Cronbach's Alpha value was determined as 0.94. This scale has five subscales: "stress from seeking safe passage for mother and child through pregnancy, labor, and delivery", "stress from baby care and changing family relationships", "stress from maternal role identification", "stress from social support seeking" and " stress from altered physical appearance and function". All items of this five-point Likert-type scale are positive and are scored as no (0), mild (1), moderate (2), severe (3), and very severe (4) in the Likert evaluation. The prenatal stress score is determined by the sum of all items and a minimum of 0 and a maximum of 144 points are obtained from this scale (30). An increase in the score obtained from the scale indicates that the stress experienced is high [29,30]. In this study, the Cronbach alpha value of the scale was found to be 0.936.

2.10. Data collection

This study was conducted during the Covid-19 pandemic period. The purpose of the research was explained to the women who applied to the hospital, and after the telephone numbers and e-mail addresses of the pregnant women who agreed to participate in the study were requested, the link created by the researcher in the Google form was sent to the women via their WhatsApp or e-mail addresses. Women were asked to answer the questionnaires via the link sent, thus preventing the woman and the researcher from touching objects such as paper and pencil due to the Covid-19 pandemic. It took approximately 15-20 minutes to answer the questionnaires.

2.11. Analysis of data

Data analysis was done with the SPSS 20.0 program. Descriptive analyses (mean, number, and percentage) were used for the descriptive characteristics of women. The homogeneous distribution of the data was evaluated with the Kolmogorov-Smirnov test. Since the data did not show a homogeneous distribution, the relationship between dependent and independent variables was analyzed with Mann Whitney U and Kruskal-Walis tests. Bonferroni correction was used as Post hoc analysis in data sets with more than two variables.

2.12. Ethics of the research

Ethical approval was received from Manisa Celal Bayar University Faculty of Medicine Health Sciences Ethics Committee (30/12/2020, number: 20478456). Permission to use the scale from Resmiye Özdilek, written permission from the hospital and Provincial Health Directorate where the research was conducted and written informed consent from the pregnant women were obtained.

2.13. Limitations of the Research

Since this study was conducted with pregnant women who applied to only one hospital, the findings cannot be generalized to our country. Another limitation of the study was that this research was conducted during the pandemic period.

3. Results and Discussion

3.1. Descriptive characteristics of women

In the research, 64.3% of women were 27 years old and under, 41.8% were primary school graduates and 59% were not working. Overall, 82.8% of the pregnant women participating in the study had an income equal to their expenses, 91.0% had a nuclear family and 66.4% lived in the district (Table 1).

3.2. The relationship between descriptive characteristics of women and the total and sub-dimensions of the Pregnancy Stress Rating Scale

The mean score of stress from seeking safe passage for mother and child through pregnancy, labor, and delivery, which is the sub-dimension of the Pregnancy Stress Rating Scale, was found to be statistically significantly higher in women aged 27 and under than in women over 27 years of age ($p<0.05$).

The stress from maternal role identification subscale mean score was found higher in women living in a nuclear family than in women living in an extended family, and in women living in the city center than in women living in districts and villages, and the difference was statistically significant ($p<0.05$).

The stress from social support seeking mean score was higher in women with a university degree or higher than in women with high school or primary education degrees, and the difference was found to be statistically significant ($p<0.05$). The seeking social support stress subscale mean score was higher in those living in a nuclear family than in those living in an extended family and in those living in the city center was found to be statistically significantly higher than those living in districts and villages ($p<0.05$).

The mean of stress from altered physical appearance and function score was determined to be higher in those living in the city center than in those living in districts and villages, and there was a statistically significant difference between the mean scores of the groups ($p<0.05$).

The mean score of stress from baby care and changing family relationships in women who had problems during pregnancy was found to be statistically significant higher than in women who did not ($p<0.05$).

A significant relationship was determined between the participants' family type and the mean total score of the Pregnancy Stress Rating Scale ($p<0.05$) (Table 1).

3.3. Fertility characteristics of women

Overall, 89.0% of the pregnant women participating in the study stated that they were planning their pregnancy, 70.0% were pregnant for the first time and 89.3% did not experience any problems during pregnancy. Of the women, 64.9% had no miscarriage, 94.6% had no stillbirth, and 79.7% had no history of curettage (Table 2).

3.2. The relationship between fertility characteristics of women and the total and sub-dimensions of the Pregnancy Stress Rating Scale

The mean stress from seeking safe passage for mother and child through pregnancy, labor, and delivery score of pregnant women who experienced stillbirth and neonatal loss in their previous pregnancy was statistically significantly higher ($p<0.05$).The mean score of stress from baby care and changing family relationships was high in women with diagnosed or suspected multiple pregnancies ($p<0.05$), and women with Rh incompatibility in their current or previous pregnancies ($p<0.05$). A statistically significant relationship was determined between women being younger than 18 years of age and their mean score of stress from social support seeking ($p<0.05$).

According to the examination results, a statistically significant relationship was found between the presence of a risk situation and the mean of stress from seeking safe passage for mother and child through pregnancy, labor, and delivery score ($p<0.05$). A statistically significant relationship was determined between women experiencing problems during pregnancy and the mean total score of the Pregnancy Stress Rating Scale ($p<0.05$) (Table 2).

In this study, the relationship between the total and sub-dimensions of the Pregnancy Stress Rating Scale and the descriptive characteristics of women was examined. In this study, the mean total score of the Pregnancy Stress Rating Scale was determined as 43.3±17.2. The mean sub-dimension scores of the Pregnancy Stress Rating Scale were 9.0±4.1 for stress from seeking safe passage for mother and child through pregnancy, labor, and delivery, 10.5±5.5 for stress from baby care and changing family relationships, 10.6±5.2 for stress from maternal role identification, 4.1±2.3 for stress from social support seeking and 6.4±2.8 for stress from altered physical appearance and function. In Istanbul, the mean of the subscales score was found to be higher than the findings of this research [16]. The reason for this finding may be that the study was conducted during the Covid-19 pandemic and that women experienced less stress due to being at home. In addition, since the research was conducted in a small residential area, the cultural support of the family and the environment of the woman may have led to a decrease in the stress experienced. The mean total score of the scale was found to be statistically significantly higher in women who were 27 years old and under, had a nuclear family, lived in the city center, and reported having problems during pregnancy. In a study conducted in a training and research hospital, the perceived stress levels of pregnant women who had an extended family and had problems during pregnancy were found to be high, while an inverse proportion was determined between the women's age and their stress levels [31]. In a study in China, the probability of experiencing prenatal stress was found to be 1.82 times higher in unemployed women than in working women [32]. In Erzurum, it was determined that the level of distress was high in pregnant women who were younger, whose spouses were unemployed, and whose education level was high [33]. In Canada, it was found that pregnant women with low income levels had higher risk levels and, accordingly, their stress levels increased [34].

In the literature, no study was evaluated the relationship between the Pregnancy Stress Rating Scale sub-dimensions and the descriptive characteristics of women. In the study, the mean stress from seeking safe passage for mother and child through pregnancy, labor, and delivery score, one of the subscales of the Pregnancy Stress Rating Scale, was found to be statistically significantly higher in women under 27 years of age than in women over 27 years of age. Young mothers may experience more stress because they are inexperienced in the pregnancy process. For this reason, it is important for healthcare professionals to support young mothers with stress from seeking safe passage for mother and child through pregnancy, labor, and delivery. In a study conducted at a university hospital in the east of our country, it was determined that perceived stress levels decreased as women's age increased [35]. Studies conducted in Australia [36] and Istanbul [7] found that exposure to stress and coping methods in pregnant women did not vary according to age group.

Table 1. ***The Relationship between Descriptive Characteristics of Women and the Total and Sub-Dimensions of the Pregnancy Stress Rating Scale***

Sub-Dimensions of the Pregnancy Stress Rating Scale							
Characteristics of Women	**n (%)**	**Stress from seeking safe passage for mother and child through pregnancy, labor, and delivery**		**Stress from baby care and changing family relationships**		**Stress from maternal role identification**	
		Median (IQR)	***Test and p value**	**Median (IQR)**	***Test and p value**	**Median (IQR)**	***Test and p value**
Age groups							
≤27	157 (64.3)	10.0 (4.0)	MU=5661.0	12.0 (6.0)	MU=5847.0	11.0 (6.0)	MU=5871.0
>27	87 (35.7)	9.0 (6.0)	p=**0.026**	10.0 (10.0)	p= 0.062	10.0 (6.0)	p =0.069
Education status							
Primary education (a)	102 (41.8)	9.5 (5.3)	KW=1.0	12.0 (7.3)	KW= 0.3	11.0 (7.0)	KW= 5.8
High school (b)	74 (30.2)	9.0 (5.0)	p =0.662	11.5 (6.5)	p= 0.844	10.5 (6.0)	p= 0.055
University and above (c)	68 (28.0)	10.0 (5.0)		11.0 (7.5)		12.0 (7.0)	
Working status							
Yes	144 (59.0)	10.0 (3.0)	MU=7117.5	12.0 (6.0)	MU=7187.0	11.0 (5.8)	MU= 7098.0
No	100 (41.0)	9.0 (6.0)	p=0.878	11.0 (9.0)	p= 0.981	11.0 (8.0)	p =0.850
Income status							
Income is less than expenses	25 (10.2)	10.0 (5.0)	KW=3.2	11.0 (4.0)	KW= 0.8	14.0 (7.5)	KW= 3.7
Income equals expenses	202 (82.8)	10.0 (4.3)	p= 0.207	12.0 (7.3)	p= 0.660	11.0 (5.3)	p= 0.156
Income is higher than expenses	17 (7.0)	9.0 (6.0)		11.0 (7.3)		12.0 (5.3)	
Family type							
Nuclear	222 (91.0)	9.0 (4.3)	MU=2072.5	11.0 (7.0)	MU= 2144.0	11.0 (6.0)	MU= 1710.0
Extended	22 (9.0)	9.0 (6.3)	p=0.239	12.0 (11.5)	p= 0.344	8.5 (6.5)	p = **0.020**
Place of residence							
City (a)	72 (29.5)	9.0 (4.0)	KW=0.1	12.0(7.0)	KW= 1.6	12.0 (5.8)	KW =10.3
District (b)	162 (66.4)	10.0 (5.0)	p =0.941	11.0 (7.3)	p= 0.441	11.0 (7.0)	p = **0.006**
Village (c)	10 (4.1)	9.5 (5.6)		11.0 (8.0)		7.5 (8.8)	**b, c >a***

***KW=** Kruskal Wallis *Bonferroni correction **MU=** Mann Whitney U test

Table 1-Continued the Relationship between Descriptive Characteristics of Women and the Total and Sub-Dimensions of the Pregnancy Stress Rating Scale

	Sub-Dimensions of the Pregnancy Stress Rating Scale					
Characteristics of Women	**Stress from social support seeking**		**Stress from altered physical appearance and function**		**Total**	
	Median (IQR)	***Test and p value**	**Median (IQR)**	***Test and p value**	**Median (IQR)**	***Test and p value**
Age groups						
≤27	4.0 (2.0)	MU=5948.0	7.0 (4.0)	MU=6433.5	48.0 (9.5)	MU= 5676.5
>27	4.0 (3.0)	p =0.091	7.0 (3.0)	p= 0.450	44.0 (24.0)	**p= 0.029**
Education status						
Primary education (a)	4.0 (2.0)	KW= 12.5	6.5 (3.0)	KW= 5.8	47.0 (19.0)	KW=0.65
High school (b)	4.0 (3.0)	p **=0.002**	6.0 (3.0)	p= 0.055	45.0 (21.0)	p= 0.206
University and above (c)	5.0 (4.0)	c>a,b*	7.0 (3.0)		47.0 (25.3)	
Working status						
Yes	4.0 (2.0)	MU= 7147.5	7.0 (3.0)	MU=6500.0	47.0 (15.8)	MU= 7123.5
No	4.0 (3.0)	p =0.922	6.0 (5.0)		46.0 (28.0)	p= 0.888
Income status				p= 0.194		
Income is less than expenses	5.0 (4.5)	KW=0.781	7.0 (4.0)	KW=0.6	47.0 (24.5)	KW= 0.930
Income equals expenses	4.0 (2.0)	p =0.677	7.0 (3.0)	p= 0.742	46.0 (19.0)	p= 0.628
Income is higher than expenses	4.0 (3.0)		7.0 (3.5)		45.0 (28.0)	
Family type						
Nuclear	4.0 (2.0)	MU= 1794.0	7.0 (3.3)	MU=1916.5	47.0 (20.3)	MU= 1800.000
Extended	3.0 (1.3)	p **=0.038**	5.5 (6.3)	p= 0.094	43.0 (31.3)	**p= 0.042**
Place of residence						
City (a)	5.0 (2.0)	KW= 15.6	8.0 (3.0)	KW=13.3	48.5 (15.0)	KW= 6.86
District (b)	4.0 (2.0)	p **=0.001**	6.0 (3.3)	**p= 0.001**	45.0 (21.3)	**p= 0.032**
Village (c)	3.0 (2.3)	b,c>a*	6.0 (4.5)			a>b, c*

***KW=** Kruskal Wallis *Bonferroni correction **MU=** Mann Whitney U testi

In this study, no statistically significant relationship was found between women's fertility characteristics (planning pregnancy, having problems during pregnancy, getting pregnant for the first time, number and trimester of pregnancy, miscarriage, and stillbirth, having curettage) and the mean of score of stress from seeking safe passage for mother and child through pregnancy, labor, and delivery. In a study conducted in Erzurum using the Concerns about Birth and Postpartum Period Scale, it was determined that stress levels were higher in primiparous women [37]. In a study conducted in Izmir using the Anxiety and Depression Scale, situational anxiety and stress were found to be higher in primiparas [38]. In a study conducted in Erzurum, no statistically significant difference was found between the number of children and pregnancies and the level of distress [33]. The reason for the difference between the study findings and the results of previous studies may be due to the difference in the research population and the scales used. In the current study, the mean stress from seeking safe passage for mother and child through pregnancy, labor, and delivery score of women who experienced stillbirth and neonatal loss in previous pregnancies was statistically significantly higher than that of women who did not. Pregnant women who have previously had negative birth experiences and losses are concerned about the stress of the safe process, so getting the necessary support will help pregnant women go through this process more easily. In a study in Atlanta, it was stated that 36% of women who had a stillbirth had serious stress symptoms, and the frequency of serious symptoms in these women was three times higher than in women who had a live birth [39]. In a study conducted in Australia, it was determined that women who had a previous pregnancy loss were more likely to experience sadness, depressive state, excessive anxiety, and stress in their subsequent pregnancies [40]. It was emphasized in the literature that recurrent miscarriages and in-utero fetal losses were in the risky pregnancy category and that more stress was experienced in these pregnancies due to uncertainty about the process [41]. Therefore, it may be beneficial for healthcare professionals to prioritize women who have experienced stillbirth and neonatal loss in previous pregnancies in terms of stress, and for the family and healthcare professionals to support the woman during the pregnancy process.

Reasons such as the woman's diagnosis of a risky pregnancy, the presence of a risk-related or risk-independent danger sign, or the emergence of negative pregnancy-related situations are major sources of stress in high-risk pregnant women [41,42]. Therefore, determining the causes of stress in high-risk pregnancies and providing appropriate approaches is important for the health of the mother and baby. According to the doctor's control, in this study, it was determined that high-risk pregnant women experience more stress from seeking safe passage for mother and child through pregnancy, labor, and delivery compared to non-risk pregnant women. It was determined in Bayburt that the perceived stress level increased when pregnant women felt inadequate in terms of physical health [43]. Health experts can help women minimize their stress levels by giving the necessary support regarding safe process stress.

In the present study, the mean score of the sub-dimension "Stress from maternal role identification" was found higher in those living in a nuclear family than in those living in an extended family. The women living in the village and in a district were found to lower the mean score of the sub-dimension than those living in the city center. In a study, the mean score of "stress from maternal role identification" was found to be statistically significantly higher in multiparous pregnant women aged 18-25 compared to those in the 36-45 age groups [16]. In the study, the mean score of stress from maternal role identification was higher in those who had problems during pregnancy than in those who did not. In a study conducted by Schmiege and Russo in America, the risk and stress levels of pregnant women living in large families were determined to be higher [44].

In the study, the mean score of stress from social support-seeking sub-dimension was statistically significantly higher in nuclear families, those living in the city center, and women receiving a university education or higher. The reason why the average score for social support-seeking stress was found to be higher in women with a university education or higher may be because these women mostly live in the city center and have a nuclear family structure. Unlike the findings of this study, one study found that pregnant women with higher education levels coped with stress better and their stress levels were determined lower [16]. A study in Gaziantep found that stress levels decreased in women with higher education levels and that these women could use more effective methods of coping with stress [45]. In a study conducted in the Mediterranean region, no significant relationship was found between the education levels of pregnant women and their stress levels [46]. In a study in Izmir, it was determined that the perceived stress levels of pregnant women living in the village were statistically significantly higher because they thought that they would have difficulty reaching health centers if they had any problems [47].

In this study, the relationship between having problems during pregnancy and the mean score of the scale sub-dimensions was examined. The mean score of stress from baby care and changing family relationships was determined to be higher in women who had problems during pregnancy than in women who did not. Since the mean scores of stress from seeking safe passage for mother and child through pregnancy, labor, and delivery and stress from baby care and changing family relationships were found to be high in women who had problems during pregnancy, it is important to support these women in the prenatal period.

4. Conclusion

In this study conducted during the Covid-19 pandemic period by using the Pregnancy Stress Rating Scale, it was determined that pregnant women with a high level of education, living in the city center, and having a nuclear family experienced more stress from social support seeking. For this reason, women should be helped to receive support from their families, and family members should be made aware of this issue. In this study, the mean score of women who had problems during their pregnancies was found to be high in terms of stress from maternal role identification and stress from social support seeking. Pregnant women need to seek more social support in case of problems arising from medical history such as multiple pregnancies, stillbirths, and neonatal loss. The stress experienced by
pregnant women can be reduced by providing the necessary support regarding stress from seeking safe passage for mother and child through pregnancy, labor, and delivery to women with risky pregnancies by health professionals. In addition, women can be helped to strengthen their methods of coping with stress by providing information and counseling about the problems and concerns experienced during this process, and by providing the necessary support from their spouses and family. Women should be made aware of how to be more beneficial to themselves and their babies in fulfilling their maternal role by receiving the necessary support from their environment and health professionals. In order to reduce the stress from baby care and changing family relationships, the stress experienced by women can be reduced with the support of the family in baby care.

5. Acknowledgment

We thank all the pregnant women who participated in the study.

Table 2. ***The Relationship between Fertility Characteristics of Women and the Total and Sub-Dimensions of the Pregnancy Stress Rating Scale***

Sub-Dimensions of the Pregnancy Stress Rating Scale							
Fertility Characteristics of Women	**N (%)**	**Stress from seeking safe passage for mother and child through pregnancy, labor, and delivery**		**Stress from baby care and changing family relationships**		**Stress from maternal role identification**	
		Median (IQR)	***Test and p value**	**Median (IQR)**	***Test and p value**	**Median (IQR)**	***Test and p value**
Planned pregnancy							
Yes	217 (89.0)	9.0 (4.0)	MU= 2779.5	11.0 (7.0)	MU= 2867.5	11.0 (6.0)	MU= 2417.0
No	27 (11.0)	10.0 (5.0)	p= 0.663	12.0 (12.0)	p= 0.857	9.0 (7.0)	p =0.137
Primiparous							
Yes	165 (70.0)	9.0 (4.0)	MU=6514.0	2.0 (7.0)	MU= 6189.0	12.0 (6.0)	MU= 6297.5
No	79 (30.0)	9.0 (5.0)	P= 0.995	11.0 (8.0)	p= 0.523	11.0 (7.0)	p =0.669
Number of pregnancy							
1 pregnancy	171 (70.0)	9.0 (4.0)	MU= 6514.0	12.0 (6.0)	KW= 3.130	11.0 (6.0)	KW= 2.807
2 pregnancy	44 (18.1)	9.0 (5.5)	p= 0.995	10.0 (9.8)	p= 0.209	9.0 (8.0)	p= 0.246
3 pregnancy	29 (11.9)	9.0 (6.5)		10.0 (8.5)		9.0 (10.0)	
Having miscarriage							
Yes	26 (35.1)	10.0 (7.5)	KW= 0.520	10.5 (10.3)	MU= 2614.5	11.5 (7.8)	MU= 480.50
No	48 (64.9)	9.0 (6.0)	p= 0.771	11.5 (7.0)	p= 0.518	9.0 (9.0)	p= 0.167
Having stillbirth							
Yes	48 (5.4)	9.5 (7.3)	MU= 72.000	13.0	MU= 395.5	11.5 (7.8)	MU=84.500
No	70 (94.6)	9.0 (4.0)	p= 0.343	10.0 (9.0)	p= 0.545	9.0 (9.0)	p =0.433
Having induced abortion							
Yes	14 (20.3)	10.0 (5.0)	MU=396.000	12.5 (10.8)	MU= 1360.0	12.0	MU=2249.0
No	60 (79.7)	9.0 (5.0)	P =0.740	11.0 (7.0)	p= 0.328	9.0 (9.0)	**p=0.035**
Having problems during pregnancy							
Yes	26 (10.7)	11.5 (5.3)	MU= 1728.5	15.0 (7.0)	MU= 1687.0	12.0 (6.0)	MU=348.00
No	218 (89.3)	9.0 (5.0)	p= **0.001**	11.0 (8.0)	**p= 0.001**	11.0 (7.0)	p=0.319
Pregnancy trimester							
1. trimester	19 (7.8)	8.0 (7.0)	MU= 1588.5	11.0 (13.0)	KW= 1.321	10.0 (11.0)	KW=0.945
2. trimester	170 (70.6)	9.5 (3.0)	p= 0.772	12.0 (6.0)	p= 0.516	11.0 (6.0)	p= 0.623
3. trimester	55 (26.4)	9.0 (7.0)		10.0 (11.0)		9.0 (7.0)	
Risky pregnancy							
Yes	11 (4.5)	10.5 (4.8)	MU= 729.5	11.0 (6.3)	MU= 1049.5	11.5 (8.3)	MU=1004.0
No	233 (95.5)	9.0 (5.0)	**p= 0.043**	12.0 (8.0)	p= 0.580	11.0 (6.3)	p= 0.447

Table 2-Continued ***The Relationship between Fertility Characteristics of Women and the Total and Sub-Dimensions of the Pregnancy Stress Rating Scale***

Sub-Dimensions of the Pregnancy Stress Rating Scale						
Fertility Characteristics of Women	**Stress from social support seeking**		**Stress from altered physical appearance and function**		**Total**	
	Median (IQR)	***Test and p value**	**Median (IQR)**	***Test and p value**	**Median (IQR)**	***Test and p value**
Planned pregnancy						
Yes	4.0 (2.0)	MU=2545.0	7.0 (3.5)	MU=2545.0	47.0 (19.0)	MU=2608.5
No	3.0 (2.0)	p =0.263	6.0 (5.0)	p=0.263	45.0 (29.0)	p=0.353
Primiparous						
Yes	4.0 (2.0)	MU=5742.0	7.0 (3.0)	MU=5742.0	47.0 (18.0)	MU=3016.0
No	4.0 (2.0)	p= 0.263	6.0 (5.0)	p=0.130	45.0 (25.0)	p=0.267
Number of pregnancy						
1 pregnancy	4.0 (2.0)	KW=6.402	7.0 (4.0)	KW=6.402	47.0 (18.0)	KW=2.4
2 pregnancy	3.5 (2.3)	p= 0.041	6.0 (5.8)	**p=0.041**	42.0 (32.3)	p=0.307
3 pregnancy	4.0 (4.0)	a>c	6.0 (4.5)		41.0 (28.0)	
Having miscarriage						
Yes	5.0 (2.8)	MU=503.50	6.5 (5.0)	MU=503.50	43.0 (31.8)	MU=464.500
No	3.0 (3.0)	p=0.263	5.0 (5.0)	p=0.263	40.0 (31.3)	p=0.118
Having stillbirth						
Yes	5.0	MU=101.0	7.0	MU=101.0	48.5	MU=82.500
No	4.0 (3.0)	p=0.880	6.0 (5.0)	p=0.880	41.0 (31.0)	p=0.511
Having induced abortion						
Yes	5.0 (2.0)	MU=2239.0	8.0 (3.3)	MU=2239.0	48.5 (34.3)	MU=320.000
No	4.0 (2.0)	p=0.078	7.0 (3.0)	p=0.078	40.0 (29.3)	p=0.167
Having problems during pregnancy						
Yes	4.9 (3.2)	MU=291.00	7.5 (4.3)	MU=291.0	53.0 (21.0)	MU=1850.0
No	4.0 (3.0)	p=0.740	5.0 (5.0)	p=0.740	46.0 (19.5)	**p=0.004**
Pregnancy trimester						
1. trimester	4.0 (3.0)	KW=1.646	7.0 (8.0)	KW=1.646	42.3 (43.0)	KW=0.2
2. trimester	4.0 (2.0)	p=0.439	7.0 (3.0)	p=0.439	47.0 (17.3)	p=0.915
3. trimester	4.0 (4.0)		6.0 (5.0)		45.3 (33.0)	MU=2608.5
Risky pregnancy						
Yes	5.0 (2.5)	MU= 889.0	6,0 (2.8)	MU=1033.0	40.3 (18.7)	KW=212.00
No	4.0 (2.0)	p= 0.193	7.0 (3.3)	p= 0.528	45.0 (21.2)	P=0.532

*** KW=** Kruskal Wallis **MU=** Mann Whitney U test

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