Original Article

The Relationship between Perceived Stress, Social Support, Psychological Resilience and Health Care Practices in Pregnant Women

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Abstract

Introduction: Pregnancy is a unique life period that causes important anatomical, physiological and psychological changes in a woman's life. Pregnancy can progress in a positive way psychologically, as well as in a negative direction with emotional strain and psychological disorders.
Aim: The aim of this study is to determine the relationship between perceived stress, social support, psychological resilience and health care practices in pregnant women.
Method: The research was carried out with 318 pregnant women who applied to Bartın Gynecology and Pediatrics Hospital between June 2020-November 2022. Research data were collected using "Personal Information Form", "Perceived Stress Scale (PSS)", "Multidimensional Scale of Perceived Social Support (MSPSS)", "Brief Resilience Scale (BRS)" and "Health Practices in Pregnancy Scale (HPQ)". Pearson correlation and path analysis were used in the analysis of normally distributed data.
Results: As a result of the correlation analysis, perceived stress and health care practices were negative (r= -0.242 p=0.002<0.05), perceived social support and health care practices were positive (r= 0.277 p=0.006<0.05), and perceived social support was negative. negative between perceived stress (r= -0.213 p=0.000<0.05), positive between resilience and health care practices (r=0.056 p=0.026<0.05), negative between resilience and perceived stress (r= -0.509 p=0.000<0.05), a positive (r=0.217 p=0.000<0.05) correlation was found between resilience and perceived social support. According to the results of the road analysis; ıt was determined that perceived stress negatively predicted health care practices (β= -0.187 p=0.002), and perceived social support positively predicted health care practices (β=0.126 p=0.024).
Conclusions: High stress during pregnancy may adversely affect the health care practices of pregnant women. Therefore, practices during pregnancy should focus on reducing stress and supporting psychological resilience levels. It can be said that teaching pregnant women methods of coping with stress, supporting and improving their psychological resilience levels are important factors for them to get through this process more easily and healthily.

Keywords: care, pregnancy, resilience, health, social support, stress

Introduction

Pregnancy is a unique period of life that ends with the birth of a live fetus in approximately 280 days from fertilization to delivery (DiPietro et al., 2019). This unique life period causes significant anatomical, physiological and psychological changes in the maternal organism (Kazma et al., 2020; Minglu et al., 2020; Wong et al., 2022). It is very important for a woman to adapt to these changes and to adopt motherhood to have a healthy pregnancy process, reduce maternal-infant mortality, and ensure healthy future generations. Pregnancy can progress in a positive way psychologically, as well as in a negative direction with emotional strain and psychological disorders (Molgora et al., 2020; Vehmeijer et al., 2019;). In

order for the pregnancy and postpartum process to progress positively, positive health care practices should be implemented during pregnancy (Hayman et al., 2020; Singh et al., 2019;). Health care practices in pregnancy can be defined as activities that include the health of the pregnant, fetus and newborn and affect the pregnancy outcome. Positive health behaviors and health care practices that are important for pregnancy outcomes should be identified and adopted during prenatal care. These practices are oral and dental care, balanced diet, weight gain in accordance with pre-pregnancy body mass index, regular exercise, adequate and regular sleep, participation in prenatal education, not using tobacco, alcohol and other illegal substances, and avoidance of exposure to risky sexual behaviors or other infection factors (Hadian et al., 2019; Muralidharan & Merrill, 2019).

In recent years, helping individuals adopt a healthy lifestyle and positive health behaviors has been the focus of the practices of healthcare professionals. Pregnant women constitute the key population especially for future generations to have fewer health problems. In order for pregnant women to perform positive health care practices, their perceived stress, social support and psychological resilience should be identified (Cannella et al., 2018) because these factors can increase the problems of adaptation to pregnancy, negatively affect the positive health care practices of pregnant women, cause health problems during pregnancy, and affect the time and mode of delivery (Ahmed et al., 2017; Goyal et al., 2017; Srivastava & Bhatnagar, 2020).

The literature reports that perceived stress decreases pregnant women's adequate and balanced diet, rest, exercise, and medical care, increases suicide attempts and alcohol and cigarette use, and leads to negative health behaviors such as lack of self-care and prenatal care (Ahmed et al., 2017; Goyal et al., 2017; Srivastava & Bhatnagar, 2020). It is also stated that high levels of stress perceived by pregnant women causes premature birth (Tanpradit & Kaewkiattikun, 2020).

Pregnant women with high psychological resilience are more likely to cope with the problems they encounter during pregnancy and with perceived stress, and to protect themselves against emotional distress (Verner et al., 2021). Psychological resilience, which has various effects in protecting psychological health and reducing perceived stress, is significant in increasing adaptation to traumatic situations, providing a healthier review of the process, and empowering the individual. The literature states that women who have positive experiences during pregnancy have higher psychological resilience. It has been determined that psychological resilience and social support have a positive maternal effect during pregnancy (Ma et al., 2019; Verner et al., 2020). It has been shown that the inadequacy of social support systems during pregnancy impairs the mental health of women during pregnancy and postpartum, changes their dietary habits by affecting their lifestyles, and causes an increase in alcohol and substance use (Bedaso et al., 2021; Graves et al., 2020; Racine et al., 2020).

The presence of social support is also very important in coping with stress during pregnancy. It can be stated that the perceived stress of pregnant women, which is thought to have an effect on health care practices, and the presence of social support are related to each other. Thus, it is necessary to determine the levels of stress, social support and psychological resilience that pregnant women perceive to have a healthy pregnancy process, to reduce the complication risks of the pregnant, the fetus and the newborn, and to improve health care practices for future generations to be healthy. No studies in the literature have yet investigated the relationship between perceived stress, social support, psychological resilience, and health care practices in pregnant women. This study aimed to fill this gap in the literature. It is thought that the results obtained from the study may make important contributions to women's having a quality pregnancy process, to the development of pregnant, fetus and newborn health, to the field of women's health nursing, and to public health. The hypotheses of the research are as follows:

H0: There is a negative relationship between perceived social support levels and perceived stress levels in pregnant women.

H1: There is a negative relationship between perceived stress level of pregnant women and their health care practices.

H2: There is a positive relationship between perceived social support level and health care practices in pregnant women.

H3: There is a positive relationship between psychological resilience levels and health care practices in pregnant women.

H4: There is a negative relationship between psychological resilience levels and perceived stress levels in pregnant women.

Method

Study Design: The study has a cross-sectional, analytical, and correlational design.

Population and Sample of the Study: The target population of the study consisted of the pregnant women admitted to Bartın Gynecology and Pediatrics Hospital as outpatients. No sampling procedure was followed. Data were collected between June 2020 and November 2022 using the simple random sampling method. The pregnant women who volunteered to take part in the study, could read and write, speak Turkish, had no communication barriers, had no history of psychiatric illness, had no complications during pregnancy, and did not have multiple pregnancies were included in the study.

Data Collection Process: Data were collected through face-to-face interviews with 318 pregnant women who were admitted to Bartın Gynecology and Pediatrics Hospital between June 2020 and November 2022 and who met the inclusion criteria of the study.

Data Collection Tools: Data were collected using the Personal Information Form created by the researchers and the questionnaire form consisting of the Perceived Stress Scale (PSS), the Multidimensional Scale of Perceived Social Support (MSPSS), the Brief Resilience Scale (BRS), and the Health Practices in Pregnancy Questionnaire (HPQ).

Perceived Stress Scale (PSS): The scale was developed by Cohen et al. (2004). The Turkish validity and reliability study of the scale was carried out by Erci (2006). The scale consists of 10 items rated on a five-point Likert type scale. The total score that can be obtained from the scale ranges between 10 and 50. The score is obtained by reversing responses to the four positively stated items and summing up all scale items. A score of 30 and above indicates that the individual has stress. Higher scores indicate higher levels of stress. The Cronbach's alpha of the Turkish version of the scale is 0.70 (Erci, 2006). In this study, the Cronbach's alpha was calculated as 0.843.

Multidimensional Scale of Perceived Social Support (MSPSS): The scale was developed by Zimet et al. (1988) to assess social support. The Turkish validity and reliability study of the scale was conducted by Eker and Arkar (1995). The scale consists of 12 items on a seven-point Likert type scale under three factors: family support (Items 3, 4, 8 and 11), friend support (Items 6, 7, 9 and 12), and significant other support (Items 1, 2, 5 and 10). The lowest score that can be obtained from the scale is 12 and the highest score is 84. The lowest score that can be obtained from the factors is 4, and the highest score is 28. A high score from the scale indicates high perceived social support. The Cronbach's alpha of the total scale and its factors range between 0.77-0.92 (Eker & Arkar, 1995). In this study, the Cronbach's alpha was calculated as 0.928.

Brief Resilience Scale (BRS): The scale was developed by Smith et al. (2008) to assess resilience levels. The scale was adapted to Turkish by Dogan (2015). It consists of 6 items on a five-point Likert-type scale. Three items are positively stated, while three items are negatively stated. The lowest score that can be obtained from the scale is 6 and the highest score is 30. A high score on the scale indicates high psychological resilience. The results of the factor analysis conducted within the scope of the Turkish validity study of the scale revealed a single-factor structure explaining 54% of the total variance, and the factor loads of the scale items ranged from 0.63 to 0.79. The Cronbach's alpha of the Turkish version of the scale is α=0.79 (Dogan, 2015). In this study, the Cronbach's alpha was calculated as 0.849.

The Health Practices in Pregnancy Questionnaire (HPQ): The scale was developed by Lindgren (2005), and its Turkish validity and reliability study was conducted by Er (2006). There are 34 items in the original form of the scale. However, since one item was removed in the adaptation study, the Turkish version of the scale consists of 33 items. Items from 1 to 16 are on a five-point Likert type scale from 5= always to 1=never. There are five options for items between item 17 and item 33, and these options are scored between 1 and 5. Items 6, 7, 21, 22, 23, 24, 25, 26, 32 and 33 are reverse coded. The total score of the scale is calculated by summing all the items. The highest score that can be obtained from the scale is 165, and the lowest score is 33. High scores indicate good health practices. In the Turkish validity study, the Cronbach alpha of the scale was found to be 0.74 (Er, 2006). In this study, the Cronbach's alpha was calculated as 0.845.

Ethical Considerations: Ethics committee approval (Date: 16.02.2021, No: 2021-SBB-0025) was obtained from the institution to which the authors are affiliated. In addition, permission was obtained from the developers of the scales to be used in the study. Permission was also obtained

from the institution where the research was conducted (Date: 03.07.2021, Number: E-26080346-799). Written and verbal consents were obtained from the pregnant women who participated in the study with an informed consent form.

Data Analysis: The data were analyzed using SPSS 22.0 and AMOS 22.0. Frequency and percentage analyses were conducted to determine the descriptive characteristics of the participants, and mean and standard deviation statistics were calculated in the analysis of the scales. Kurtosis and Skewness values were examined to determine whether the research variables showed normal distribution. Kurtosis and skewness values between +1.5 and -1.5 (Tabachnick & Fidell, 2013) or between +2.0 and -2.0 (George, & Mallery, 2010) are considered as normal distribution. The lowest and the highest kurtosis values of the research variables were -0.569 and 0.774, respectively. The lowest and the highest skewness values were determined as -0.527 and 0.556, respectively. It was found that the variables showed normal distribution. Relationships between variables related to the research model were analyzed using Pearson correlation and path analysis.

Results

Descriptive characteristics of the participants: The mean age of the participants was found to be 29.50±5.22. The mean duration of marriage was 5.53±4.88, and the mean week of gestation was 22.24±9.72. 46.2% of the pregnant women were high school graduates and 43.7% were housewives. 39.9% had no living children (Table 1).

It was found that 45.9% of the spouses of the participants were high school graduates, and 36.8% were self-employed. It was revealed that 56.0% of the participants had a nuclear family structure, and 71.1% had a monthly income equal to their expenses (Table 1).

19.2% of the participants stated that they got pregnant unintentionally but are happy now to be expecting a baby. 36.5% stated that the total number of pregnancies was 2. 72.6% of the participants reported that they became pregnant voluntarily, and 43.7% said that they had five or more controls during pregnancy. 46.9% of the participants stated that their spouse or family provided moderate support during pregnancy (Table 1).

Table 1. Distribution of pregnants by descriptive characteristics (N=318)

Variables	n	%
Educational level		
Primary school	42	13.2
Middle School	34	10.7
High school	147	46.2
Associate degree	49	15.4
Licence	46	14.5
Employment		
Housewife	139	43.7
Officer	61	19.2
Employee	52	16.4
Self-employment	66	20.8
Spouse's educational level		
Primary school	56	17.6
Middle school	23	7.2
High school	146	45.9
Associate degree	37	11.6
Licence	56	17.6
Spouse's employment		
Unemployed	21	6.6
Officer	57	17.9

Employee	123	38.7
Self-employment	117	36.8
Family Type		
Nuclear family	178	56.0
Extended family	126	39.6
Fragmented family	14	4.4
Perceived Income		
Income less than expenses	57	17.9
Income Equivalent to Expense	226	71.1
Income more than expenses	35	11.0
Number of Pregnancy		
1	113	35.5
2	116	36.5
3	62	19.5
4 and above	27	8.5
Number of children		
0	127	39.9
1	117	36.8
2	47	14.8
3 and above	27	8.5
Status of Planning to Conceive		
I was unintentionally pregnant	26	8.2
I conceiveed willingly	231	72.6
I conceived involuntarily but now i adopted my baby	61	19.2
Number of Check-ups During Pregnancy		
1	32	10.1
2	52	16.4
3	62	19.5
4	33	10.4
5 and above	139	43.7
Spouse or Family Support Status		
It helps a lot	64	20.1
Moderately helpful	149	46.9
Little helps	77	24.2
Doesn't help at all	28	8.8
	Mean±SD	
Age	29.509±5.228	
Marriage Period	5.535±4.880	
Pregnancy Week	22.248±9.729	

Correlation between the Scale Scores: The relationships between health care practices, perceived stress, perceived social support and psychological resilience levels of pregnant women were investigated using the Pearson correlation analysis. The results of the analysis are presented in Table 2. When the correlation between health care practices, perceived stress, perceived social support, and resilience scores is examined, a negative relationship was found between perceived stress and health care practices (r= -0.242 p=0.002<0.05). The relationship between perceived social support and health care practices is positive (r= 0.277 p=0.006<0.05). In addition, a negative relationship was found between perceived social support and perceived stress (r = -0.213 p=0.000<0.05) and a positive relationship was revealed between resilience and health care practices (r=0.056 p=0.026<0.05). The relationship between resilience and perceived stress was negative (r= -0.509 p=0.000<0.05), while the relationship between resilience and

perceived social support was positive (r=0.217 p=0.000<0.05) (Table 2).

Table 2. Correlation analysis between health care practices, perceived stress, perceived social support and resilience scores

	Alpha	Mean±SD	HPQ	PSS	MSPSS	BRS
HPQ	0.845	116.025±13.908	1.000			
PSS	0.843	32.305±6.853	-0.242**	1.000		
MSPSS	0.928	62.469±14.368	0.277**	-0.213**	1.000	
BRS	0.809	18.462±4.831	0.056*	-0.509**	0.217**	1.000

Structural Equation Model Path Analysis Results: The research model was analyzed using the structural equation model path analysis (Figure 1). The goodness-of-fit values for the structural model were as follows: $\chi 2/sd=4.71$; GFI: 0.90; AGFI: 0.90; CFI: 0.91; RMSEA: 0.05; RMR: 0.06. The standardized factor loads and t values are given below (Table 3). The results of the path analysis showed that perceived stress negatively predicted health care practices (β= -0.187 p= 0.002), while perceived social support (β=0.126 p= 0.024) and psychological resilience (β=0.024 p= 0.030) positively predicted health care practices. Independent variables explain 5.2% of the total variance in health care practices.

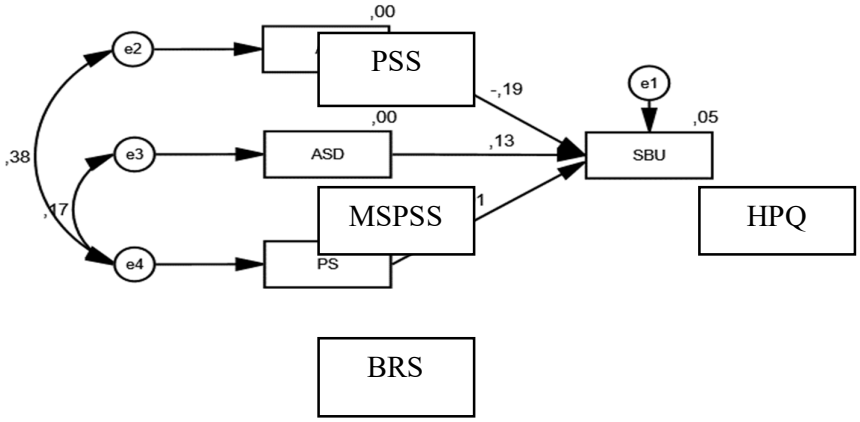

Figure 1. Path analysis

Table 3. Model regression coefficients

Substances and Factors			β	Std. β		Q.Error	t	p
HPQ	<---	PSS	-0.385	-0.187		0.123	-3.145	0.002
HPQ	<---	MSPSS	0.122	0.126		0.054	2.265	0.024
HPQ	<---	BRS	0.024	0.008		0.175	0.139	0.030

Discussion

The present study investigated the relationship between the socio-demographic characteristics of pregnant women, health care practices during pregnancy, perceived social support and stress, and the level of psychological resilience. The data were discussed in the light of the literature.

The mean PSS score was found to be 32.305±6.85. Since a mean score of 30 and above indicates that the individual has stress, it can be stated that the level of stress perceived by the participants was high. Alkin and Beydaglı (2020) reported the mean PSS score of pregnant women as 42.62±5.01, and Durmuş (2015) found the mean PSS score as 17.34±6.88. Pınar et al. (2014) found that the mean PSS score was 25.30±5.04. Yehia et al. (2019) conducted a study with 580 pregnant women and found that 74% of the participants had moderate to high stress. In parallel with the results of our study, the stress levels of pregnant women were found to be moderate to high in different studies. On the other hand, it was revealed that the perceived stress level of pregnant women with low perceived social support mean score was higher (r=-0.213p<0.01). Another study, which supports

our research finding, reported that the perceived stress level of pregnant women who stated that there is no one to support them after delivery was higher (Celik & Atasever, 2020). Another study conducted by Gulec et al. (2014) found that as the social support level of pregnant women increased, their fear of childbirth decreased. One study conducted in Canada revealed that the risk of both pregnancy and postpartum depression increased significantly in those with a low level of social support during pregnancy (Xie et al., 2009). Social support relieves pregnant women cognitively and emotionally and facilitates their transition to the role of motherhood. The lack of social support may cause pregnant women to experience higher levels of fear of childbirth and stress associated with it. Our study revealed that the perceived stress scale scores of pregnant women with low perceived social support levels were significantly higher, which supports this hypothesis.

Health practices are associated with positive pregnancy outcomes, while risky health behaviors can cause negative outcomes in pregnancy (Lindgren, 2003). In this study, the mean HPQ score of the participants was found to be 116.02±13.90. Since the highest score that can be obtained from the questionnaire is 165, it can be stated that the health care practices of the participants were at a good level. However, it is stated that the health practices of pregnant women differ and there are many factors affecting these practices. Among the factors that positively or negatively affect the health practices of pregnant women are perceived stress, perceived social support, and psychological resilience (Cannella et al., 2018). The study revealed a significant negative relationship between the stress perceived by the pregnant women and their level of health care practice ($r= -0.242$ $p<0.01$). In addition, stress levels were found to negatively predict health care practices in pregnant women ($\beta= -0.385$ $p=0.002<0.01$). Our research findings coincide with those of similar studies (Ahmed et al., 2017; Srivastava & Bhatnagar, 2020). Health practices that are important for women's pregnancy outcomes should be questioned in the prenatal period, and interventions should be initiated to improve the health behaviors of pregnant women with negative health behaviors. Nurses should evaluate pregnant women from physical and psychological aspects, recognize the symptoms of stress during pregnancy, know effective screening methods, be aware of the health perceptions and health care practices of each pregnant woman in this period, and provide pregnant-specific care (Sarihan & Nazik, 2022). Knowing the physiological and psychological effects of pregnancy is important in reducing the negative effects on mother and baby health. For this reason, it is important for nurses, who play an active role in antenatal care services, to adopt a holistic approach and make both psychological and physical evaluation during pregnancy follow-up.

One important finding of our study is that there is a positive and significant relationship between perceived social support and health care behaviors in pregnant women. Kanig and Eroglu (2020) conducted a study on 329 pregnant women and reported in parallel with our research finding that there is a positive and significant relationship between the Multidimensional Perceived Social Support Scale and the Healthy Lifestyle Behaviors Scale. Baheiraei et al. (2014) investigated the effects of sociodemographic characteristics and social support on healthy lifestyle behaviors of pregnant women. Similar to our findings, they stated that social support significantly affects each sub-dimension of healthy lifestyle behaviors, and women with higher perceived social support engage in healthier behaviors (Baheiraei et al., 2014; Nazik et al., 2015). Cannella (2006) revealed that social support increases positive health behaviors in pregnant women, and similarly, Fathnezhad-Kazemi and Hajian (2019) reported that family and social support is an important factor that enables pregnant women to choose, adopt, and keep up with positive healthy behaviors. Downs and Hausenblas (2004) stated that familial support increases the tendency of pregnant women to do exercise. In another study, Harley and Eskenazi (2006) found that social support encourages pregnant women to have a healthier diet, to take vitamin supplements, and to reduce the level of smoking. It can be said that as the perceived social support of pregnant women increases, healthy lifestyle behaviors also increase. The results in the literature support our finding.

Another variable addressed in the study is psychological resilience, which increases positive adaptation to the process by ensuring protection against psychological consequences such as stress, depression and anxiety during pregnancy (Mautner et al., 2009; Rutter, 2012; Rutter, 2013; Uzar-Ozcetin & Erkan, 2019). Psychological resilience protects psychological health and reduces perceived stress and is significant in terms of increasing adaptation to traumatic situations,

providing a healthier review of the process, and empowering the individual (Uzar-Ozcetin & Erkan, 2019). Pregnant women with high psychological resilience are more likely to cope with the problems they encounter during pregnancy and with perceived stress, and protect themselves against emotional distress (Verner et al., 2021). In the present study, the psychological resilience levels of the pregnant women were found to be moderate (18.46±4.83). The study revealed that psychological resilience was negatively related to perceived stress levels, and it was an important predictor of health care practices. When the relevant literature is reviewed, it is seen that psychological resilience is related to concepts such as optimism, low stress level, emotional intelligence, and effective coping (Uzar-Ozcetin & Erkan, 2019; Goradel et al., 2016). These concepts are important precursors for the protection and improvement of psychosocial health and for the reduction of stress levels. It is seen that our finding is compatible with the literature. In addition, given that the participants with high levels of psychological resilience have higher health care practice scores, it can be said that pregnant women with high psychological resilience experience less stress during pregnancy and give more importance to and fulfill health care practices.

Limitations: This study was conducted only with the pregnant women who were admitted to the specified state hospital. Therefore, the results of the study cannot be generalized to all pregnant women. The large sample size of the study is the strength of the study. Research results are based on the self-reports of the participants. No training program was conducted in the study to reduce the stress levels of pregnant women and to help them develop healthy lifestyle behaviors.

Conclusion: The study revealed that social support and psychological resilience in pregnant women affected their health care practices positively, while stress had a negative effect on health care practices. Nurses, as healthcare professionals who closely follow pregnant women, should be informed about healthy lifestyle behaviors and social support systems. Psychoeducation for families should be planned, and pregnant women and their spouses should actively participate in these training programs. Within the scope of these training programs, pregnant women should be taught the methods of coping with stress and pregnancy exercises. These programs should attract the attention of pregnant women to the importance of physical activity during antenatal care and encourage nurses to inform pregnant women that physical activity is a positive health behavior in improving and maintaining health during pregnancy. It can also be said that supporting and improving the psychological resilience levels of pregnant women is an important factor for pregnant women to get through this process more easily and healthily. There may be variables that play a mediating role in the relationship between perceived stress and health care practices in pregnant women. Future studies may investigate the mediating role of resilience between these two variables. Since there are limited studies in the international literature on this topic, it is recommended to conduct comprehensive descriptive and intervention studies examining the effect of social support on healthy lifestyle behaviors in pregnant women from different cultures.

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