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HOW DO BIRTH SATISFACTION, PERCEIVED STRESS, AND SOME FACTORS AFFECT THE RISK OF POSTPARTUM DEPRESSION?

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Abstract: This research was carried out to determine the effects of birth satisfaction, perceived stress level and some factors on postpartum depression (PPD). In the study; cross-sectional, descriptive, correlational and predictive research designs were used. 446 women who met the inclusion criteria participated in the study. The average age of the women was 28.48±57.14 (min-max: 19-44). While 13.9% of women were at risk of PPD and there was a negative and moderate relationship between birth satisfaction and PPD risk (r=-0.403), a negative but low-level significant relationship was obtained between perceived stress (r=-0.325). Among the socio-demographic variables, the education level has the highest impact, while among the obstetric characteristics, the disease status of the baby has the highest impact. Perceived stress has the greatest effect compared to all variables. In this study risk of PPD; It was determined that birth satisfaction had a negative effect and perceived stress had a positive effect. Among the socio-demographic characteristics; age (35 years and above), education level; place of residence, obstetric characteristics; It was concluded that pregnancy planning, pregnancy problems, baby's health, pregnancy follow-up and birth support factors are effective on the risk of PPD.

Keywords: Birth, Satisfaction, Stress, Postpartum depression, Risk, Midwife

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1. Introduction

Birth satisfaction defined as the pregnant woman being ready for birth, being respected, communicating effectively, and using methods to cope with pain, uninterrupted support, and giving birth in an appropriate position with minimum obstetric intervention. Satisfaction with birth is an important indicator in evaluating the birth experience. Determining birth satisfaction is important as it is an indicator of the quality of maternal care as well as showing the well-being of the newborn and the mother (Dağlı et al., 2023). Having a positive birth experience; It is emphasized that, in addition to increasing women's self-confidence, it will help them establish stronger relationships with their babies/children and contribute positively to their future birth planning (Reyhan et al., 2023; Dağlı et al., 2023). On the other hand, the birth experience is negative; It has been reported that it increases subsequent pregnancy and birth complications, negatively affects newborn health, causes premature birth, low birth weight, intrauterine growth retardation, especially postpartum depression (PPD) (Hain et al., 2016).

Besides birth satisfaction, stress is also an important factor that can cause PPD. A study in the literature reported that increased stress levels lead to the risk of developing PPD (Scheyer and Urizar, 2016). In addition, Yim et al. stated in their systematic review that the role of stress is important in the development of PPD (Yim et al., 2015). In addition, obstetric characteristics such as number of births, type of birth, and positive psychiatric history have been reported to be effective in the development of PPD (Galiano et al., 2019). The transition to a new life with the birth of a baby requires adjustments in many areas (such as financial, familial, physiological). These regulations can negatively affect the mother's health and increase her stress. Improving maternal health is a costly public health challenge, and the postpartum period deserves further efforts to understand factors that may impair maternal health (Cheng et al., 2009).

Postpartum depression (PPD) is a highly prevalent, debilitating mental disorder. In psychiatric diagnostic systems (DSM-V), PPD is redefined as "peripartum-onset depressive disorder" (APA, 2022). Mothers may feel helpless in the face of situations such as biological changes, genetic vulnerability, environmental stress or inadequate social support associated with motherhood blues. This situation may increase susceptibility to depression. When peripartum mortality rates are examined, suicide rates due to PPD; It was found to be greater than the mortality rates due to postpartum hemorrhage and hypertensive diseases. The postpartum period is the period when women are at the highest risk of developing psychiatric diseases, especially PPD (Dağlı

et al., 2021). 17% in Japan, 23.2% in China, 17.8% in the United Arab Emirates, 1% in Iceland 14, PPD prevalence was reported as 12.7% in Sweden, 12% in England, 6.5-12.9% in Norway, and 15.5% in Sri Lanka (Ahmed et al., 2021; Qi et al., 2021). In studies conducted in Turkey, the frequency of PPD is within a broad perspective of 23.8-61.8% (Ahmed et al., 2021; Dağlı et al., 2021). Therefore, it would be meaningful to examine birth satisfaction specifically for Turkish women.

Once it is determined which PPD risk factors women enter the postpartum period with, these women can be monitored more closely and the development of PPD can be prevented or intervened in the early period. A good understanding of risk factors for PPD will facilitate prevention and screening. In this way, diagnosis can be increased and treatment rates can be improved in high-risk women (Dağlı et al., 2021).

2. Materials and Methods

2.1. Purpose and Design

Current research; It was carried out to determine the effects of birth satisfaction, perceived stress level and other risk factors on PPD. In the study; Cross-sectional, descriptive, correlational and predictive research designs were used. The study was written according to the STROBE checklist.

2.2. Location, Time and Participants of the Research

It was conducted between June 2022 and May 2023 with women giving birth at a university hospital in a city south of Turkey. During this period, 7141 women gave birth in this hospital. The sample size of the study was determined with the G Power program. Urbanová et al. (2021) study, it was calculated that at least 412 women should be included in this study when the effect size was determined as d = 0.15, the power of the test was determined as p = 0.95, and the confidence interval was 90%. the margin of error was 5% (Urbanova et al., 2021). 446 women were included in the study. Inclusion criteria; Women two to four days postpartum were postpartum women who were past 37 weeks of gestation, had a healthy baby, were healthy, and volunteered to participate in the study.

2.3. Collection of Data

In this study, researchers collected data through face-to-face interviews. A pilot study was conducted with 30 women to determine whether the questions in the survey were clear, understandable and applicable. As a result of the pilot application, no changes were made to the questions and they were included in the sample. The time it took for participants to answer the questions was approximately 15 minutes.

2.4. Data Collection Tools

In the study, an Introductory Information Form (IIF), which was prepared by making use of the literature suitable for the purpose of the study, the Birth Satisfaction Scale Revised Form (BSS-R), the Perceived Stress Scale (PSS) and the Edinburgh Postpartum Depression Scale (EPDS) were used as data collection tools.

2.4.1. IIF: It consists of a total of 17 questions, including questions about socio-demographic and obstetric information.

2.4.2. BSS-R

It is the version developed by Hollins Martin and Fleming (2011) and revised (2014). Gokmen et al. (2018) and its validity and reliability were determined by adapting it to Turkish culture. This scale has 10 items, 3 sub-dimensions and 5-point Likert answers. The names of the subscales of DMS-R are "Care Quality (CQ)", "Stress During Childbirth (SDC)" and "Personal Characteristics of Women (PCW)". The scale is scored between 0-40. A high score from the scale is interpreted as high birth satisfaction. In adapting the scale to Turkish, the Cronbach alpha coefficient was stated as 0.72 (Hollins-Martin and Martin, 2014; Gökmen, et al., 2018). In this study, 0.76 was obtained.

2.4.3. PSS

It was developed by Cohen et al. (1983). Baltaş et al. (1998) and Eskin et al. (2013) Adapted into Turkish. The purpose of developing the scale is to determine how stressful an individual perceives certain situations in his or her life. This scale is a 5-point Likert type and has 10 items. The possible score is 0-56. There are six positively worded and four negatively worded items. A high score from the scale means that the perception of stress is high. Cronbach's alpha value was reported as 0.83 (Cohen et al., 1983; Eskin, 1993). This study, 0.85 was determined.

2.4.4. EPDS

This scale was developed by Cox et al. It was adapted into Turkish by Engindeniz and others. It is used to determine the risk of PPD and measure its level and severity. The cut-off score of the four-point Likerte scale, which has 10 items, is 12/13. The score above the cut-off point indicates the risk group. Cronbach's alpha value was reported as 0.79 (Cox et al., 1987; Engindeniz et al., 1997). The authors achieved 0.77.

2.5. Statistical Analysis

IBM SPSS 26 program was used for data analysis. Distribution is given according to the socio-demographic and obstetric characteristics of the participants. Scale scores were obtained and descriptive statistics were made. Pearson correlation was used in the relationship between the overall scores of the scale, and stated that in the interpretation of the correlation coefficient, if it is above 0.70, it is at a high level, if it is between 0.40-0.70, it is at a medium level, and if it is below 0.40, it is a low level. In addition, the hierarchical regression model (enter) method was used to examine the effects of socio-demographic, obstetric characteristics, women's birth satisfaction and perceived stress levels on PPD levels. The p significance value was accepted as 0.05.

3. Results

446 women participated in the research. The average age of women was 28.48±57.14 (min-max: 19-44). According to women's socio-demographic characteristics; It was

determined that the highest percentage of people were secondary school graduates (35.4%), not working (56.5%), living in the province (54%) and their income was less than their expenses (61%) (Table 1).

According to the obstetric characteristics of women; the highest rate was multipara (67.7%), vaginal birth (54%), the last pregnancy was planned (59.4%), no problems during pregnancy (94.2%), psychiatric disease (94.4%), chronic disease (95.3%) and babies. It was determined that there was no disease (94.2%). 53.6% of the women stated that they were not satisfied with the pregnancy follow-up, 80.5% stated that they were not accompanied by a relative during the birth, and 55.8% stated that they received adequate midwife support during the birth (Table 2).

Table 1. Distribution of women according to sociodemographic variables

Variables	Group	n (%)
Education level	Primary education and below	235(52.6)
	Secondary education and above	211(47.4)
Working status	Yes	194(43.5)
	No	252(56.5)
Place of residence	City	241(54)
	County	146(32.7)
	Village	59(13.2)
Income level	Income is less than expenses	272(61)
	Income equals expenses	124(27.8)
	Income exceeds expenses	50(11.2)

Table 2. Distribution of women according to obstetric characteristics

Variables	Group	n (%)
Number of births	Primiparous	144(32.3)
	Multiparous	302(67.7)
Whether the last pregnancy was planned	Yes	265(59.4)
	No	181(40.6)
Having problems during pregnancy	Yes	26(5.8)
	No	420(94.2)
History of psychiatric illness	Yes	25(5.6)
	No	421(94.4)
History of chronic disease	Yes	21(4.7)
	No	425(95.3)
History of illness in the baby	Yes	26(5.8)
	No	420(94.2)
Desired form of birth at the beginning of pregnancy	Vaginal birth	241(54)
	Cesarean section	140(31.4)
	No preference	65(14.6)
Satisfaction with care during pregnancy follow-up	Yes	207(46.4)
	No	239(53.6)
Preferred relative's accompaniment at birth	Yes	87(19.5)
	No	359(80.5)
Receiving adequate midwife support during birth	Yes	249(55.8)
	No	197(44.2)

Descriptive statistics for each of the scale scores are given in the table, and all scores are obtained by summing the items. The total birth satisfaction score average was 22.64±10.08, and the lowest average in the sub-dimensions was found to be the personality characteristics of the woman (X=4.89±1.92) and the highest was the time in labor (X=9.12±4.04). PSS total score average was obtained as 14.63±6.77, and it can be said that there is a moderate level of stress. The mean score of the PSA positive factor subscale was 8.95±4.11, and the mean score of the negative factor subscale was 5.68±2.76. The mean EPDS total score was 8.85±4.11. Since the EPDS cut-off score average is 13, it can be said that the group is not in the risk group. In addition, a new depression variable was obtained in the form of two categories according to the EPDS cut-off score, and it was found that there was no risk of depression for 86.1% of the women and there was a risk of depression for 13.9% (Table 3).

While there was a negative and moderate relationship

between women's birth satisfaction and PPD risk (r=-0.403), a negative but low-level significant relationship was found between perceived stress (r=-0.325). As birth satisfaction increases, PPD and perceived stress levels decrease and vice versa. Additionally, there is a positive and moderate relationship between PPD risk and perceived stress (r=0.623). As the risk of PPD increases, perceived stress levels decrease and vice versa (Table 4).

Table 3. Score averages for the scale and its sub-dimensions

	CQ	SDC	PCW	BSS-R	EPDS	Positive	Negative	PSS	EPDS	
Mean	8.63	9.12	4.89	22.64	8.85	8.95	5.68	14.63	Group	n (%)
SD.	4.24	4.04	1.92	10.08	3.78	4.11	2.76	6.77		
Min.	4	4	2	10	0	6	4	10	No	384 (86.1)
Max.	16	16	8	40	22	22	14	36	Yes	62 (13.9)

CQ= care quality, SDC= stress during childbirth, PCW= personality characteristics of women, BSS-R= birth satisfaction scale-revised, EPDS= Edinburgh postpartum depression scale, PSS= perceived stress scale.

Table 4. Correlation table

	1	2	3
1. Birth Satisfaction Scale Revised Form	1		
2. Edinburgh Postpartum Depression Scale	-.403**	1	
3. Perceived Stress Scale	-.325**	.623**	1

**P<0.01

The reference categories of socio-demographic variables, which were rearranged due to the nature of the regression analysis to be two-category, are indicated in parentheses in the table. Educational status; secondary education and above / primary education and below, employment status; yes/no, place; provincial and rural; income; income equal to expenditure & more/income less than expenditure, number of births; multiparous/primiparous, last pregnancy planned; yes/no, history of psychiatric, chronic or infant illness; no/yes, type of birth; normal/cesarean section, satisfaction with pregnancy, yes/no; being accompanied by a relative at birth; yes/no and receiving adequate midwife support at birth; All categorical variables were converted into two categories as yes/no, with the reference group (1) and the control group (0) (Table 5).

For Model 1, the effect of socio-demographic characteristics on women's PPD is significant (F=11.746, p<.01). 10.8% of the variability in PPD scores is explained by the socio-demographic characteristics of women included in model 1. Age (β=0.236, 95% CI=0.1; 0.22), education level (β=-0.19, 95% CI=-2.12;-0.76), education level (β=0.114, 95% CI=0.18; 1.57), The effect of location (β=0.098, 95% CI=0.7;1.41) variables on women's PPD risk is significant. The effect of age is positive. When there is a 1 unit increase in women's age, there is a 0.236 unit increase in their PPD scores. In addition, the PPD scores of those with secondary education and above are 0.19 units lower than those with primary education and below, the PPD scores of those who are not working are 0.114 units higher than those who are employed, and the PPD scores of those living in the province are 0.098 units higher than those living in rural areas (Table 5).

For Model 2, the effect of socio-demographic and obstetric characteristics on women's PPD risk is significant (F=16.80, p<.01). 35.9% of the variability in PPD scores is explained by the variables related to women in model 2. Compared to Model 1, the disclosure rate increased to 25.1% and this increase is significant (p <.01). Age (β=0.100, 95% CI=0.01;0.13), education level (β=-0.182, 95% CI=-1.98;-0.78), location (β=0.098, 95% CI=0.09;1.25), last pregnancy being planned (β=-0.152, 95% CI=0.53; 1.81), having problems during pregnancy (β=-0.135, 95% CI=-3.93;-0.42), history of chronic disease in the baby (β=-0.23, 95% CI = -5.27; -2.16), satisfaction with pregnancy follow-up (β = 0.105, 95% CI = 0.14; 1.45) and relative accompaniment at birth (β = 0.122, 95% CI = 0.41; 1.91). The effect is significant. The effect of age is positive. When there is a 1 unit increase in women's age, their PPD scores increase by 0.100 units. In addition, the PPD scores of those with secondary education and above are 0.182 units lower than those with primary education and below, and the PPD scores of those living in the province are 0.088 units higher than those living in rural areas. While the PPD scores of those whose last pregnancy was not planned were 0.152 units higher than those whose last pregnancy was unplanned, the PPD scores of those who had no problems with pregnancy were 0.135 units lower than those who did. While the PPD scores of those whose babies do not have a disease condition are 0.23 units lower than those whose babies do not have a disease, the PPD scores of those who are not satisfied with the care during pregnancy follow-up are 0.105 units higher, and the PPD scores of women who were not accompanied by their relatives at birth are 0.122 units higher than those who were accompanied. Among socio-demographic variables, the variable with the highest impact is education level, while among obstetric characteristics, the variable with the highest impact is the variable related to whether the last pregnancy was planned (Table 5).

Table 5. Hierarchical regression table

Model	Variable	β	%95 GA	t	P
Model 1	Age	0.236	0.1;0.22	5.13	.000
	Education (Secondary education and above)	-0.19	-2.12;-0.76	-4.139	.000
	Working status (No)	0.114	0.18;1.57	2.464	0.014
	Living place (Province)	0.098	0.07;1.41	2.175	0.03
	Income (Income equal & more than expenses)	-0.074	-1.28;0.13	-1.601	0.11
	Model statistics		F=11.746** R2=0.108		
Model 2	Age	0.1	0.01;0.13	2.231	0.026
	Education (Secondary education and above)	-0.182	-1.98;-0.78	-4.511	.000
	Working status (No)	0.058	-0.18;1.06	1.398	0.163
	Living place (Province)	0.088	0.09;1.25	2.254	0.025
	Income (Income equal & more than expenses)	0.025	-0.43;0.82	0.615	0.539
	Birth number (multipara)	0.024	-0.5;0.89	0.558	0.577
	Last pregnancy planned (No)	0.152	0.53;1.81	3.607	.000
	Problems during pregnancy (No)	-0.135	-3.93;-0.42	-2.437	0.015
	History of psychiatric illness (No)	-0.063	-2.57;0.51	-1.313	0.19
	History of chronic disease (No)	-0.018	-2.38;1.74	-0.306	0.759
	Disease status of the baby (No)	-0.23	-5.27;-2.16	-4.684	.000
	Birth type (C-section)	0.037	-0.32;0.88	0.933	0.352
	Satisfied with pregnancy follow-up care (No)	0.105	0.14;1.45	2.4	0.017
	Accompaniment by a relative at birth (No)	0.122	0.41;1.91	3.035	0.003
	Receiving adequate midwife support during birth (No)	0.086	-0.04;1.34	1.864	0.063
	Model statistics		F=16.80** R2=0.359		
Model 3	Age	0.018	-0.04;0.06	0.453	0.65
	Education (Secondary education and above)	-0.131	-1.52;-0.45	-3.63	.000
	Working status (No)	-0.015	-0.65;0.43	-0.409	0.683
	Living place (Province)	0.061	-0.05;0.96	1.79	0.074
	Income (Income equal & more than expenses)	0.052	-0.14;0.95	1.461	0.145
	Birth number (multipara)	0.018	-0.46;0.74	0.471	0.638
	Last pregnancy planned (No)	0.044	-0.23;0.9	1.169	0.243
	Problems during pregnancy (No)	-0.084	-2.88;0.17	-1.746	0.082
	History of psychiatric illness (No)	-0.038	-1.96;0.71	-0.921	0.357
	History of chronic disease (No)	-0.001	-1.8;1.75	-0.027	0.979
	Disease status of the baby (No)	-0.164	-3.99;-1.28	-3.821	.000
	Birth type (C-section)	-0.007	-0.58;0.47	-0.207	0.836
	Satisfied with pregnancy follow-up care (No)	0.115	0.3;1.43	3.003	0.003
	Accompaniment by a relative at birth (No)	0.077	0.08;1.39	2.203	0.028
	Receiving adequate midwife support during birth (No)	0.003	-0.58;0.63	0.082	0.935
	Birth satisfaction	-0.218	-0.11;-0.06	-5.943	.000
	Perceived Stress	0.396	0.17;0.27	9.206	.000
	Model statistics		F=27.800** R2=0.525		

For Model 3, the effect of socio-demographic, obstetric-related characteristics and women's birth satisfaction and perceived stress levels on PPD levels is significant (F=27.800, p<.01). 52.5% of birth satisfaction is explained by the independent variables for women in model 3. According to Model 2, the disclosure rate increased to 16.6% and this increase is significant (p <.01). Education level (β=-0.131, 95% CI=-1.52;-0.45), history of chronic disease in the baby (β=-0.164, 95% CI=-3.99;-1.28), satisfaction with care during pregnancy follow-up (β=0.115, % 95% CI=0.30;1.43), presence of relatives at birth (β=0.077, 95% CI=0.08;1.39), birth satisfaction scale scores (β=-0.218, 95% CI=-0.11;-0.06) and perceived stress. The effect of the variables (β=0.396, 95% CI=0.17;0.27) on women's PPD scores is significant. Birth satisfaction has a negative effect, while perceived stress has a positive effect. When there is a 1 unit increase in women's birth satisfaction scores, their PPD scores decrease by 0.218 units, while when there is a 1 unit increase in perceived stress scores, there is a 0.396 unit increase in PPD scores. In addition, the PPD scores of those with secondary education and above are 0.131 units lower than those with primary education and below. While the PPD scores of those whose babies do not have a disease condition are 0.164 units lower than those whose babies do not have a disease, the PPD scores

of those who are not satisfied with the care during pregnancy follow-up are 0.115 units higher, and the PPD scores of women who were not accompanied by their relatives at birth are 0.077 units higher than those who were accompanied. Among the socio-demographic variables, only the education level was found to be effective, while among the obstetric characteristics, the one with the highest impact was the disease status of the baby. Perceived stress has the greatest effect among all variables (Table 5).

4. Discussion

In this study, author examined the relationship between birth satisfaction, perceived stress, and some factors and the risk of PPD, and evaluated the impact of potential factors that may increase the risk of PPD.

Author found that birth satisfaction, perceived stress and some factors had an impact on the risk of PPD, and that birth satisfaction had a negative effect and perceived stress had a positive effect. Studies in the literature have reported that birth satisfaction is a protective factor that reduces the risk of PPD (Iwata et al., 2016). Iwata et al. (2016) observed that mothers with low satisfaction with the birth process showed 2.07 more depressive symptoms than mothers who were satisfied, and their stress levels increased as they were exposed to obstetric intervention. The birth experience is one of the factors that women may remember many years later and may affect their mental health. Changes that occur with pregnancy can create burden, anxiety, and stress for the expectant mother and cause pregnancy to result in depression (Körükcü et al., 2017). It has been stated that after a birth process in which expectations are not met, the woman feels angrier, has negative emotions and thoughts, and feels inadequate in the postpartum period. Increasing satisfaction rates with quality in birth services can lead to the formation of a "healthy mother, healthy newborn and healthy society" (Moyo and Djoda, 2020).

In the current study, the authors analyzed socio-demographic characteristics; they determined that women who are older, have lower education levels and live in cities have a higher risk of PPD. In a study conducted by Dündar, he found that the rate of PPD increases as the mother gets older, and that the higher the mother's education level, the lower the rate of PPD (Dündar 2006). Although some studies conducted with mothers in the postpartum period in our country (Vural and Akkuzu, 1999) found that there was no relationship between the education level of the mothers and depression scores, Dündar (2006) and Engindeniz (1997), similar to our study, found that as the education level of the mothers increased, the PPD score decreased (Engindeniz et al., 1997; Dündar, 2006). Additionally, similar to our study, it has been reported that the risk of PPD is higher in women living in rural areas than in women living in cities (Ege et al. 2008). It is thought that increasing age and education level positively affects mothers' adaptation and coping with the new situation in the postpartum period. As women's age and education increase, their self-expression and social sharing increase, contributing to the woman's increased effectiveness in her life and effective coping with postpartum difficulties (Bingöl and Tel, 2007). In addition, it is thought that the increased risk of PPD may be due to the stressors created by urban life.

In the study, author concluded that factors such as the health status of the pregnant woman and the baby and the support of the partner/relative during birth have an impact on the risk of PPD. Similar to our study, it is known that a difficult pregnancy due to health problems, not being accompanied by a relative during birth, and endangering the baby's life increases the risk of PPD (Ahmad et al., 2021). Every mother dreams of having a healthy baby who has completed normal growth and development. Having a baby with an anomaly may cause feelings of loss and grief for a mother expecting a healthy baby (Ruschel et al., 2014). Birth is a stressful experience. In order to have this experience in a healthy and easy way, social support such as family, spouse and relatives is very important the risk of PPD may increase in mothers who have problems during pregnancy and whose babies are not healthy, as attachment adjustment becomes difficult. During the birth process, women want to have someone from their relatives with them, as well as the support of medical personnel. These people mostly consist of family members. Having anyone (spouse, mother, sibling, female relative or an experienced female relative) with the woman during the birth process creates a positive effect and increases satisfaction (Ahmad et al., 2021).

In the current study, the authors also found that unplanned last pregnancy increased the risk of PPD. Not wanting a pregnancy suggests that the mother is not ready for the baby and the role of motherhood and may have difficulties coping with the problems that may arise. In the study conducted by Dağlı et al.. it was determined that the risk of PPD was higher in mothers who became pregnant unintentionally (Dağlı et al., 2021). As a result of many studies, depression scores were found to be higher in mothers with unplanned pregnancies (Cheng et al., 2009; Dağlı et al., 2021). A woman experiencing an unwanted pregnancy will perceive the birth process negatively and her satisfaction will decrease. Unwanted pregnancy disrupts the interaction between mother and baby after birth, and the susceptibility to PPD increases in mothers who do not accept their babies (Cheng et al., 2009).

5. Conclusion and Recommendations

In this study on the risk of PPD, it was determined that birth satisfaction had a negative effect and perceived stress had a positive effect. Among the socio-demographic characteristics; age (35 years and above), education level (primary education and below); place of residence (city), obstetric characteristics; It was concluded that pregnancy planning (unplanned),

pregnancy problems (yes), baby's health (patient), pregnancy follow-up (dissatisfaction) and birth support (not accompanied by a relative) factors are effective on the risk of PPD. Perceived stress has the greatest effect compared to all variables.

Factors causing low birth satisfaction and PPD should be investigated and improved, necessary in-service training programs should be organized, and hospital procedures and health policies should be updated in the light of scientific data. It is recommended that the current study be conducted more comprehensively with different sample groups and the results be shared. In future studies, more detailed information about the development of PPD and treatment processes can be obtained by following women who are determined to be at risk of depression.

Strengths and limitations

According to the results of the scale, women who were found to be at risk of depression were contacted again on the grounds that they were at risk of depression, and they were advised to seek support from a mental health specialist. A self-report scale was used to measure mothers' PPD status in the study, and no expert evaluation was made to diagnose depression. In addition, the cultural differences and life characteristics of the research region and the fact that it was conducted in a single hospital limit the generalization of the results to other health centers and other regions of the country.

Author Contributions

The percentage of the author contributions is presented below. The author reviewed and approved the final version of the manuscript.

	E.D.
C	100
D	100
S	100
DCP	100
DAI	100
L	100
W	100
CR	100
SR	100
PM	100

C=Concept, D= design, S= supervision, DCP= data collection and/or processing, DAI= data analysis and/or interpretation, L= literature search, W= writing, CR= critical review, SR= submission and revision, PM= project management.

Conflict of Interest

The author declared that there is no conflict of interest.

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Ethical Approval/Informed Consent

Ethics committee approval was received for the research by the decision of Çukurova University Medicine Non-Interventional Clinical Research Ethics Committee (approval date: 8 April 2022, protocol code: 121/72). Permission was received from the hospital (approval date: May 16, 2022, protocol code: 96172664). The importance of the subject of the research and how it would be carried out were explained to the individuals who would participate in the research, and an Informed Voluntary Consent Form was prepared to obtain informed consent from the women during the data collection phase.

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