

Research Article

The Role of Early Maladaptive Schemas in Postpartum Depression

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Purpose. The aim of this study is to examine the relationship between postpartum depression and early maladaptive schemas. **Design and Methods.** The sample of our study consists of women who gave birth in Tokat Gaziosmanpaşa University Faculty of Medicine, Department of Obstetrics and Gynecology and applied for control purposes at least in the 4th week and at the 6th month postpartum. Sociodemographic data and clinical evaluation form prepared by the researchers (the Edinburgh Postpartum Depression Scale (EDSS)) and the Young Schema Scale-Short Form (YSS-SF3) were filled in by the participants. **Findings.** In the results of our study compared with women without depression, women with PPD had schema subdimensions of disconnection (emotional deprivation, social isolation, defectiveness), impaired autonomy (failure, pessimism, vulnerability to harm/illness), impaired self-boundaries (insufficient self-control), and high standards (approval-seeking) detected. **Conclusion.** The results of our study showed that some early maladaptive schemas are more common in women diagnosed with postpartum depression. Early detection of postpartum depression is very important for its prevention and treatment. Evaluation of early maladaptive schemas in postpartum women may be helpful in determining the risk of disease.

1. Introduction

Pregnancy and birth are life events that considerably change women's lives and assign them new roles. With a newborn baby, the time that the mother has to herself decreases and is spent taking care of the baby. Therefore, the period after birth is risky in terms of the development of postpartum depression [1]. Postpartum depression is defined as a subtype of major depressive disorder that develops within the 4 weeks that follows birth [2]. While the symptoms should appear within the first four weeks according to The Diagnostic and Statistical Manual of Mental Disorders (DSMV), some resources mention a period of 3, 6, 9, and 12 months [3].

The frequency of postpartum depression varies depending on its definition, the country, and the tools of diagnosis [3–6]. Its average prevalence is reported to be 13%. Although studies show that postpartum depression is multifactorial, such as having psychological stressors [7] and

biological factors [8], for example, women who underwent IVF and/or were affected by endometriosis-associated infertility may have a psychological background that may make them more prone to developing mood disorders during the postpartum period [9, 10]. Its etiology has not yet been fully explained.

Schemas are cognitive structures that develop as a result of unmet emotional needs during childhood and influence one's relationship with oneself, one's environment and the world. Schema theory defines 18 early maladaptive schemas that lead to the development and persistence of a disease and its being chronic. These 18 schemas are separated into 5 schema domains (disconnection and rejection, impaired autonomy, impaired limits, other-directedness, over-vigilance, and inhibition) [11]. While there are studies in the literature that show the relationship between early maladaptive schemas and depressive disorder [12, 13], there are no studies that analyze the role of schemas in postpartum depression. A previous study indicated a relationship

between postpartum anxiety and early maladaptive schemas [14]. It was found out that personality traits and cognitive traits were influential in the development of postpartum depression [15]. In addition to that, it was shown that women diagnosed with postpartum depression had neurotic personality traits, lowered self-esteem, and more dysfunctional beliefs [16]. In view of all this information, we hypothesize that women diagnosed with postpartum depression have different early schemas, which play a very important role in coping with stress, than women not diagnosed with depression. Based on this hypothesis, the aim of this study is to analyze the relationship between postpartum depression and early maladaptive schemas.

2. Materials and Methods

2.1. Application. This study consists of women who delivered a baby at Gaziosmanpaşa University Faculty of Medicine Department of Gynecology and Obstetrics and scheduled an appointment for their postnatal checkup at 4 weeks postpartum at the earliest and 6 months postpartum latest. During these checkups, demographic information, such as the women's age, marital status, level of education, and employment status were obtained. In addition to that, clinical information, such as the number of previous pregnancies, live births, and miscarriages, was collected. After completing a detailed obstetric examination, the patients were evaluated by a psychiatrist at the department of psychiatry.

2.2. Criteria for Inclusion and Exclusion. The patients were informed about the study by the psychiatrist at the psychiatry department of the hospital, and an oral and written approval form was received from those who agreed to participate. Women who were between the ages of 18–40 and delivered a baby without a physical or mental abnormality were included in the study. Besides, those who did not experience complications during pregnancy, such as hypertension, diabetes, premature birth, or stillbirth, as well as those without a chronic disorder that requires treatment, were included. Those who were excluded from the study were patients who already received treatment or had a psychiatric disorder that required treatment, such as bipolar disorder, schizophrenia, other psychotic disorders accompanied by psychosis as a part of schizophrenia, obsessive compulsive disorder, and relevant disorders such as alcohol or drug abuse.

All the participants completed the sociodemographic data form during the clinical interview, Young Schema Questionnaire- Short Form and Edinburgh Postnatal Depression Scale.

2.3. Data Collection Tools

2.3.1. Sociodemographic Data and Clinical Evaluation Form. It was developed by the researchers in line with the purpose of the study. It consists of demographic information, such as age, marital status, and level of education. In addition to that,

it includes clinical evaluation questions as to whether the participant delivered a baby before, had any complications during previous deliveries or received psychiatric treatment.

2.3.2. Edinburgh Postnatal Depression Scale (EPDS). Developed by Cox and Holden (1987), this scale is used for determining the risk for postpartum depression and for measuring changes in its degree and severity [4]. It is a self-evaluation scale. It consists of a total of 10 questions. Each item is scored differently; on the one hand, items 3, 5, 6, 7, 8, 9, and 10 are scored as 3, 2, 1, 0 format. On the other hand, items 1, 2, and 4 are scored as 0, 1, 2, and 3 format. The total score of the scale is obtained by summing these item scores. The lowest possible score is 0, and the highest score is 30. The scale, whose validity and reliability were calculated by Engindeniz and Kultur, has a diagnostic cutoff score of 12/13 and a Cronbach alpha coefficient of 0.85 calculated as [17]. In our study, the cutoff score is 13.

2.3.3. Young Schema Questionnaire- Short Form (YSQ-S3). Young (1990) developed a short form of this questionnaire, which includes 75 items. Our study employed the 3rd version (YSQ-S3) of the Young Schema Questionnaire with 90 items [18]. Soygut et al. carried out the validity and reliability tests of the short form of the questionnaire using samples from a university [19]. As a result of their study, they established 5 schema domains for the Turkish version of the form and concluded that a 14-factor structure (14 schema dimensions) was appropriate. Five domains and dimensions mentioned are as follows: disconnection (emotional deprivation, social isolation/mistrust, emotional inhibition, defectiveness), impaired autonomy (enmeshment/dependency, abandonment, failure, pessimism, vulnerability to harm), impaired limits (entitlement/insufficient self-control), other-directedness (self-sacrifice, punitiveness), and unrelenting standards (unrelenting standards, approval-seeking). According to this structure, the distribution of the number of items changes; however, the total number of items remains at 90. Participants evaluate each item according to a 6-point Likert scale (1 = entirely untrue of me; 6 = describes me perfectly). The study which Soygut et al. conducted to measure the validity and reliability of the Turkish adaptation of the scale showed that the test-retest reliability of the scale ranges between $r = 66-82$ in terms of schema dimensions and between $r = 66-83$ in terms of schema areas. The internal consistency coefficient of the scale ranges between $a = 63-80$ for schema dimensions and between $a = 53-81$ for schema areas.

2.4. Statistical Analysis. All the analyses were performed using JAMOVI 2.3. The defining statistics were presented along with their frequency, percentage, average, standard deviation, median, minimum, and maximum 25%–75% percentile (Q1–Q3) values. Fisher's Exact Test was used because the expected value for the statistics of the categorical data was lower than 5 and the cell ratio was over 20%. The Bonferroni correction was used for multiple comparisons.

The normality assumption was checked through Shapiro–Wilk test and by analyzing their histogram, q-q plot, skewness, and kurtosis values. Mann–Whitney U test was used as the values obtained through the analysis of the difference between two groups did not match the normal distribution. The relationship among numeric data was analyzed via the Spearman’s correlation test. p value was considered meaningful when it was under 0.05.

3. Findings

3.1. The Analysis of the Demographic Data. A total of 200 people were interviewed for this study. One hundred and twenty-four people who agreed to participate and met the criteria for participation were included in the study. The average age of the participants was calculated to be 29.2 ± 5.82 , and the average age for the first pregnancy was 23.12 ± 4.24 . Only 7% ($n=9$) had an unwanted pregnancy. About half of the participants (51%) were high school graduates or above. Table 1 presents the demographic traits of the participants.

3.2. Scores Obtained from the Scales Applied. For all the participants, the median score from the EPDS was 6 [3–13], with a minimum score of 0 and a maximum score of 25. Table 2 presents the complementary statistics of the scores obtained via the scales that the participants were given.

3.3. Comparing the Scores of the Patients with and without Postpartum Depression. Thirty-two percent ($n=40$) of the participants had postpartum depression, while 68% ($n=84$) did not. The average age of the group with depression was calculated to be 28.78 ± 5.06 , and the average age of the group without depression was 29.4 ± 4.74 ($p=0.581$). There was no difference between groups as to whether the pregnancy was a wanted or unwanted one ($p=0.269$). A meaningful difference was found between the levels of education between the two groups. The group with depression had a lower level of education ($p=0.008$). No difference was found between the groups in the following subdimensions of the Schema scale: emotional inhibition, enmeshment, self-sacrifice, abandonment, punitiveness, and unrelenting standards (their values were respectively 0.161, 0.547, 0.102, 0.052, 0.211, and 0.399). In the other subdimensions, those with postpartum depression scored much higher (Table 3).

3.4. Spearman’s Correlation Analysis Results. Table 4 presents some demographic data obtained from both groups with and without postpartum depression as well as the correlation between the two scales. A meaningful relationship was found between the age of the first pregnancy and the emotional deprivation schema score in the group with depression ($r=-0.349$, $p=0.027$). Likewise, there is a meaningful relationship between age and insufficient self-control scores ($r=0.354$, $p=0.025$) in the same group. A meaningful relationship was identified between the EPDS scores and the emotional deprivation schema scores of the

TABLE 1: Demographic characteristics of the participants.

	Group	N	%
Postpartum depression	Yes/no	40/84	32/68
	Literate	4	3
Level of education	Primary school	57	46
	High school	32	26
	University graduate	31	25
Wanted pregnancy	Yes/no	115/9	93/7
	1	32	26
Pregnancies	2	43	35
	3	27	22
	4	15	12
	5	5	4
	6	1	1
	7	1	1

The table presents descriptive statistics as frequencies and percentages.

same group ($r=0.343$, $p=0.03$). As for the group without depression, the total number of pregnancies has a negative, meaningful relationship with insufficient self-control ($r=-0.218$, $p=0.046$) and unrelenting standards ($r=-0.278$, $p=0.011$).

4. Discussion

This study aims at comparing and analyzing early maladaptive schemas (EMS) in women with and without postpartum depression (PPD). The results of our study show that women diagnosed with PPDs have more pessimism, vulnerability to harm/illness, social isolation, approval-seeking, emotional deprivation, insufficient self-control, defectiveness, and failure schemas when compared to women without depression. In our study, the percentage of women diagnosed with PPD was 32%.

PPD prevalence varies depending on the country and the scales used in a study. Meta-analysis of the literature shows that the Middle Eastern countries have the highest rate with 26%, and the European countries have the lowest rate with 8%. The general results of the meta-analysis revealed a ratio that ranged between 12 and 17% [20]. Although the ratio in our country varies based on the stages of the pregnancy and methods of study, the percentage of postpartum depression is 15–35% [21, 22]. The ratio obtained in our study is within this range.

The literature reports that traumatic experiences during childhood and unmet needs might lead to the development of mental disorders during adulthood. PPD is more common among women with childhood trauma history [23–25]. Early maladaptive schemas are rooted in basic core beliefs caused by negative experiences during childhood [11]. Previous studies show a relationship between EMS and depression [28, 29]. Hawke and Provencher wrote that people with depression scored highly in most or all of the EMS [28]. Our results are in line with their results.

In Young’s Schema Questionnaire, subscales of pessimism, vulnerability to harm, and failure are schemas related to anxiety [18, 19]. People with these schemas believe that negative events will happen in the future and that they will not be able to cope with them. Periods of stress might trigger these schemas. Pregnancy and birth are stressful for women.

TABLE 2: Descriptive statistics of the psychological state variables.

	Ort ± SS	Median (Q1–Q3)	Min-maks
EDS	7.5 ± 5.82	6 (3–13)	0–25
YSQ-S3			
Emotional deprivation	7.98 ± 3.41	6 (5–10)	5–19
Failure	9.19 ± 3.51	8.5 (6–11)	5–21
Pessimism	8.55 ± 3.97	7.5 (5–10)	5–27
Social isolation	11.49 ± 5.1	10 (7–13.5)	6–31
Emotional inhibition	9.19 ± 4.67	8 (5–11)	5–24
Approval seeking	14.35 ± 5.61	13 (10–18)	5–31
Enmeshment	14.6 ± 5.73	13,5 (10–17)	6–34
Insufficient self-control	16.58 ± 6.78	16 (10.5–22)	7–30
Subjugation	12.24 ± 5.09	12 (8–16)	5–24
Abondanment	7.94 ± 3.63	6 (5–10)	5–18
Punitiveness	14.81 ± 5.99	15 (10–19)	5–30
Defectiveness/shame	8.44 ± 3.31	7 (6–11)	5–24
Vulnerability to harm/illness	7.84 ± 3.36	6 (5–10)	5–25
Unrelenting standards	7.21 ± 3.66	7 (4–10)	3–17

Abbreviations used in the table: Ave + SD: Average Standard Deviation; EPDS: Edinburgh Postnatal Depression Scale; YSQ- S3: Young Schema Questionnaire- Short Form 3. In the calculations, descriptive statistics are presented as average ± standard deviation, median, minimum and maximum values.

TABLE 3: Scale scores of groups with and without postpartum depression.

YSQ-S3	The group with postpartum depression			The group without postpartum depression		
	Age	Total number of pregnancy	EDS	Age	Total number of pregnancy	EDS
Emotional deprivation	0.000	0.298	0.343*	-0.082	-0.087	0.163
Failure	-0.146	-0.192	0.063	-0.090	-0.085	0.124
Pessimism	0.015	-0.102	0.279	-0.082	-0.065	0.230*
Social inhibition	0.287	0.207	0.092	-0.085	-0.110	0.167
Emotional inhibition	-0.139	-0.074	0.039	0.003	0.040	-0.010
Approval seeking	0.231	0.064	-0.025	-0.049	-0.159	-0.009
Enmeshment	-0.183	0.043	-0.112	-0.178	-0.062	0.114
Unsuiffient self-control	0.354*	0.028	-0.022	-0.050	-0.218*	-0.029
Subjugation	-0.119	0.045	-0.243	0.048	0.031	0.123
Abondanment	0.102	0.159	0.133	-0.091	0.135	0.035
Punitiveness	0.202	0.202	-0.055	0.033	-0.097	0.170
Defectiveness/shame	-0.026	0.008	0.009	-0.184	-0.035	0.161
Vulnerability to harm/illness	-0.074	0.009	0.114	-0.136	-0.080	0.214
Unrelenting standards	0.233	0.058	0.009	-0.043	-0.278*	0.176

Abbreviations used in the table: Ave + SD: Average Standard Deviation; EPDS: Edinburgh Postnatal Depression Scale; YSQ- S3: Young Schema Questionnaire- Short Form 3 Mann Whitney U Test has been used in the calculations.

Starting with pregnancy, a woman who becomes a mother might have worries concerning the pregnancy period, baby care, and health of the baby [29]. It is not surprising that people with schemas such as pessimism and vulnerability to harm/illness have concerns about pregnancy and the baby. The literature reports that prenatal anxiety disorders and depression coexist [30].

Emotional deprivation, social isolation, and defectiveness subschema dimensions associated with emotional fluctuations [18, 19]. A study that analyzed postpartum depression and early maladaptive schemas reported that they are quite important risk factors for emotional fluctuations during the postpartum. The same study indicated a relationship between PPD and early maladaptive schemas. The PPD group had higher early maladaptive schema scores [31]. The results of our study are also similar.

Our PPD group has higher scores in the subschema dimensions of emotional deprivation, social isolation, and defectiveness, which are mostly linked with emotional fluctuations.

Insufficient self-control is associated with having difficulty taking the necessary actions to achieve a goal. A study that was carried out on patients with depressive disorder found out that unipolar depressive disorder patients had higher insufficient self-control and unrelenting standards subschema dimension [32]. Our study revealed similar results.

PPD is a multifactorial disorder. There are studies showing that subthreshold psychopathology has an effect on the development of PPD. Agoraphobia/panic, depressed mood, social anxiety, and eating problems found positively associated with PPD at 3/6 months [33]. One study showed

TABLE 4: Spearman correlation analysis results.

YSQ- S3	The group with postpartum depression			The group without postpartum depression		
	Age	Total no of pregnancies	EPDS	Age	Total no of pregnancies	EPDS
Emotional deprivation	0.000	0.298	0.343*	-0.082	-0.087	0.163
Failure	-0.146	-0.192	0.063	-0.090	-0.085	0.124
Pessimism	0.015	-0.102	0.279	-0.082	-0.065	0.230*
Social isolation	0.287	0.207	0.092	-0.085	-0.110	0.167
Emotional inhibition	-0.139	-0.074	0.039	0.003	0.040	-0.010
Approval seeking	0.231	0.064	-0.025	-0.049	-0.159	-0.009
Enmeshment	-0.183	0.043	-0.112	-0.178	-0.062	0.114
Insufficient self-control	0.354*	0.028	-0.022	-0.050	-0.218*	-0.029
Sacrifice	-0.119	0.045	-0.243	0.048	0.031	0.123
Abandonment	0.102	0.159	0.133	-0.091	0.135	0.035
Punitiveness	0.202	0.202	-0.055	0.033	-0.097	0.170
Defectiveness	-0.026	0.008	0.009	-0.184	-0.035	0.161
Vulnerability to harm	-0.074	0.009	0.114	-0.136	-0.080	0.214
Unrelenting standards	0.233	0.058	0.009	-0.043	-0.278*	0.176

Abbreviations used in the table: Ave + SD: Average Standard Deviation; EPDS: Edinburgh Postnatal Depression Scale; YSQ- S3: Young Schema Questionnaire- Short Form 3. Spearman Correlation Analysis Test were used in calculations. *R* values are presented in the table. * $p < 0.05$.

that anger experience and expression is related to PPD [34]. In our study, we found that some schema scores were higher in PPD patients. It means that some EMS can be a risk factor for PPD, like subthreshold psychopathology. Identifying the factors that predispose to the development of PPD is very important to prevent the development of PPD. Therefore, more study is needed in this subject.

Our study should be reviewed, taking some limitations into consideration. These limitations are the low number of participants and the use of self-reported scales. Lastly, schema subtypes might have been mixed up with the clinical traits of depression.

5. Conclusions

As a result, we found out in our study that patients diagnosed with PPD had higher scores in some early maladaptive schemas. It is not surprising that a woman who has just delivered a baby and is faced with a new experience scores higher in schemas, such as pessimism and vulnerability to harm/illness. Defectiveness leads a person to feel defective, and vulnerability to harm/illness causes feelings of failure. Most new mothers have worries about being an inadequate mother and think about how to feed or take care of the baby [29]. If a mother has intensive failure and defectiveness schemas, she can consider herself more defective, unsuccessful, and inadequate. Therefore, just as these schemas might be active in women with PPDS as a result of depression, they might trigger depression.

Early diagnosis of postpartum depression is very important to ensure the safety of the patient and the baby and to arrange treatment. Identifying early maladaptive schemas as a risk factor for etiology is key to recognizing the PPD group in advance, understanding the risk, and early intervention.

Data Availability

The data that support the findings of this study are available from the corresponding author upon reasonable request.

Ethical Approval

This study was approved by Tokat Gaziosmanpa University Ethics Committee of Clinical Studies on 06.09.2021 with the approval number 83116987-669 and project number 21-KAEK-185.

Conflicts of Interest

The authors declare that there are no conflicts of interest.

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