

DOI: 10.5152/cjms.2021.2609

Original Article

The Effect of Preeclampsia on Breastfeeding Self-Efficacy and Postpartum Depression

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Received Date: 10.08.2020

Accepted Date: 23.10.2020

Cite this article as: Ozkardes T, Egelioglu Cetişli N. The Effect of Preeclampsia on Breastfeeding Self-Efficacy and Postpartum Depression. Cyprus J Med Sci 2021; DOI: 10.5152/cjms.2021.2609.

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ABSTRACT

Aim: The aim of the study was to determine the effect of preeclampsia on breastfeeding self-efficacy and postpartum depression.

Material and Methods: Descriptive and cross-sectional study was conducted between January 2018- May 2019 in a research and training hospital in Izmir, in Turkey. Mothers that comply with acceptance criteria, giving birth with caesarean section and has preeclampsia (n=73) were accepted in the study. Data were collected with Personal Identity Form, Edinburg Postpartum Depression Scale (EPDS) and Breastfeeding Self-efficacy Scale (BSES) in two follow-up. The first follow-up was conducted in patient room with face-to-face interview together with mothers that completed their 24 hours after the birth. The second follow-up was conducted by telephone conversation in the second month after the birth. Descriptive statistics, non-parametric tests and correlation analysis were used in data evaluation.

Results: The depression risk of preeclamptic mothers was 16.4% in the 24th hour of birth, while it was 9.6% in the second month. A positive strong correlation was found between BSES mean score of 24th hour and second month of mothers after the birth.

Conclusion: According to results found in this study, self-efficacy of preeclamptic mothers was low and postpartum depression risk of preeclamptic mothers were lower in their second month, risk was still in progress.

Keywords: preeclampsia; breastfeeding; self-efficacy; postpartum depression

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Main Points:

- The depression risk of preeclamptic mothers that participated in the study was found 16.4% for the postpartum 24th hour and 9.6% for the postpartum second month.
- The mean of BSES total score of preeclamptic mothers increased in the postpartum second month compared to their postpartum 24th hour score, the difference between them was statistically significant
- A positive strong correlation was found between the mean of BSES total scores in postpartum 24th hour and second month.

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INTRODUCTION

Preeclampsia, which is one of the pathologic process of pregnancy, is observed 3-10% in all pregnancies and one the most important factor for maternal and prenatal mortality and morbidity (1). It causes negative results such as increase of preeclampsia maternal and prenatal morbidity and mortality, intrauterine growth retardation, ablation placenta, caesarean birth, preterm birth and maternal-fetal death (2,3). Beside the negative effects on maternal fetal health through the pregnancy period, preeclampsia affect medical condition of both mother and newborn in postpartum period too. The health risk of hypertension, diabetes mellitus and cardiovascular increases for mothers that has hypertensive disorder in their pregnancy (4). Anxiety and affective disorder probability, prenatal and postnatal depression frequencies are higher in preeclamptic women (3). In addition, hypertensive disorders through pregnancy brings negative breastfeeding results by causing variation on the structure of breast milk and disrupting prolactin level. Preeclampsia has the risk of hypogalactia (decreased or deficient secretion of milk) and agalactia (the failure of the secretion of milk from any cause other than the normal ending of the lactation period). Also problems arises in starting breastfeeding and its duration because of factors being apart from newborn and decrease of mother-newborn interaction relied on the maternal or fetal complications (5,6).

Postpartum maternal health and maternal functionality affects future pregnancy results, development of maternal chronic disorders and health of newborn (7). To protect and improve mother and newborn health, it is important to determine and respond support and information need of mothers on breastfeeding anxiety and life style arrangements, newborn care, physical and emotional symptoms in postpartum period. As being known one of the risky pregnancy type, preeclampsia might cause mothers more inclined to

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depression in pregnancy and postpartum period. Depression might become severe in postpartum period as because effecting breastfeeding negatively. The studies on postpartum depression level and breastfeeding self-efficacy of preeclamptic mothers are very limited in the literature (5,8).

Health professionals should care mothers that have preeclampsia in postpartum as well as in antepartum period. They should determine their nursing requirement, aware of potential problems, diagnosis in early stage and plan appropriate intervention. The aim of this study was to analyze the effect of preeclampsia on postpartum depression and breastfeeding self-efficacy. Research questions;

1. Is there a difference in breastfeeding self-efficacy of preclamptic mothers at the postpartum 24th hour and second month?
2. Is there a difference in depression status of preclamptic mothers at the postpartum 24th hour and second month?
3. Is there a correlation between the breastfeeding self-efficacy and depression status of preeclamptic mothers at the postpartum 24th hour and second month?

MATERIALS and METHODS

The descriptive study was conducted through January 2018 - May 2019 in maternity clinic of a research and training hospital in Izmir/Turkey.

Population-Sample: The study was conducted with preeclamptic mothers that gave birth by cesarean section and appropriate for acceptance criteria. In the hospital that this study was conducted preeclamptic mothers were followed up in intensive care units for minimum 24 hours after the surgery, so breastfeeding was not efficient through this period. Through this period the newborn was given to attendant and followed up in clinics and newborn formula was given regarding to pediatric doctor's instructions. Breastfeeding could start after mother exit from intensive care unit.

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Sampling size was determined by prior power analysis GPower3.1 software. Sampling size was determined as 71 and effect size (d) was determined as 0.31 by using Edinburgh Postpartum Depression Scale (EPDS). Sample set of the study was built up by using purposive sampling method with 73 preeclamptic mothers that were in conformity with acceptance criteria. Mothers that were elder than 18, had caesarean surgery, did not have any other complication except preeclampsia, willing to attend the study, did not have any complication in postpartum period were accepted in the study.

Data Collection: Personal Identification Form, EPDS and Breastfeeding Self-efficacy Scale were used to collect data in the study. Personal Identification Form was prepared by researcher regarding the literature (3,4,8). There were 22 questions to collect data about socio-demographic and obstetric characteristics and breastfeeding situations of mothers. Edinburgh Postpartum Depression Scale (EPDS) was developed by Cox et al. to scan depression risk on women in postpartum period. EPDS is a Likert type personal evaluation scale with 10 questions, the total scoring can between 0-30. Cut off score of the scale is 12-13 (9) and in this study, participants that had score over 12 were accepted in the risky group. Engindeniz and Aydin et al conducted Turkish validity and reliability studies. Cronbach alpha value was determined 0.79 in Engindeniz's study and it was determined as 0.76 in Aydin et al's study. In this study it was determined as 0.91 (10). Breastfeeding Self-efficacy Scale (BSES) was developed by Dennis and Faux to evaluate how mothers feel about their self-efficacy about breastfeeding. The scale is 14 items and a five-point Likert type scale, minimum score is 14 and maximum score is 70. There is not a cutoff point and higher score shows higher self-efficacy level. Dennis and Faux determined the Cronbach alpha score 0.94 (11), Aluř-Tokat and Okumus, who conducted Turkish validity reliability study, found it 0.86 (12). In this study Cronbach alpha score was found as 0.88.

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The data were collected by the researcher in a research and training hospital in Izmir with conducting two follow up to mothers in the sample set. A pilot study was conducted with 10 preeclamptic mothers to evaluate the comprehensibility of data collection forms. Data were collected in two follow-ups. The preeclamptic mothers are followed up in intensive care for at least 24 hours after birth, and they start breastfeeding when they come to the service from the intensive care unit. Therefore first follow-up was conducted with mothers that completed their first postpartum 24 hours. The second follow-up was performed in the postpartum second month, since the most intense postpartum depression was felt and breastfeeding was stopped most frequently in the second month after birth. Personal Identification Form, EPDS and BSES were given to mothers in the first follow-up and EPDS and BSES were used in the second.

Ethical Considerations: Ethics committee approval was received for this study from Ethics Committee of Izmir University of Health Sciences, Tepecik Training and Research Hospital (Date:10.01.2018, IRB:23). The content of the study was explained and written consents were obtained from the participants.

Statistical Analysis: IBM SPSS 22.0 (IBM Corp., Armonk, NY, USA) statistical software was used in analysis of data collected in the study. Socio demographic characteristics of mothers in the sample set were given in arithmetic mean, number and percentage distribution. Normal distribution convenience analysis was made to analyze EPDS and BSES mean score according to sociodemographic characteristics of mothers. Wilcoxon test were used. Correlation analysis was used to analyze relationship between 24th hour and second month depression and breastfeeding self-efficacy of preeclamptic mothers. $p < 0.05$ significance level was referenced in all statistical analysis.

RESULTS

The mean age of preeclamptic mothers was 30.63 ± 6.54 years, 32.9% of mothers that had pregnancy once, 54.8% of mothers declared that they had information about breastfeeding in their pregnancy, 81.6% breastfeeding their previous baby. The ratio of starting

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breastfeeding in the first hour was 16.4%, 69.9% of mothers started breastfeeding in the first day. Nothing except mother milk was given 78.1% of newborn in the first 24 hours. All preeclamptic mothers were breastfeeding in their second month after the birth and 43.8% of newborn were feeding formula together with breastfeeding. In the study, 71.2% of mothers declared that they were feeding their babies once in every 1-3 hours, and 41.1% of mothers were planning to go on feeding up to three years (Table 1).

The depression risk of preeclamptic mothers that participated in the study was found 16.4% for the 24th hour and 9.6% for the second month. No statistically difference was found between the mean of EPDS total scores of mothers in 24th hour and second month ($z=-0.336$; $p=0.737$). The mean of BSES total score of preeclamptic mothers increased in the second month compared to their 24th hour score, the difference between them was statistically significant ($z=-7.188$; $p=0.000$) (Table 2).

No correlation was found between the mean of EPDS and BSES total scores of preeclamptic mothers in postpartum 24th hour and second month in the study. However a positive strong correlation was found between the mean of BSES total scores in 24th hour and second month ($r=0.714$; $p=0.000$) (Table 3).

DISCUSSION

Preeclampsia is relational with some complications such as preterm and low birth weight newborn. These negative complications might cause negative feelings and stress that might impair women for postpartum depression risk. Preeclampsia is a serious issue and it might support maternal depression in postpartum period (5-8). In this study, the depression risk of preeclamptic mothers was found 16.4% in the 24th hour and 9.6% in the second month. In many studies conducted in different countries, it was found that depression rate was higher in postpartum period for preeclamptic mothers compared to healthy mothers; this rate was ranging between 6.8% and 39.8% (13-17). Meltzer-Brody et al. conducted a study in Denmark to determine predictive factors that causes

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postpartum depression and postpartum psychosis and in this study, it was found that postpartum depression risk was 1.84 times higher for hypertensive mothers and 1.45 times higher for preeclamptic mothers (16). In the study, any other complication did not arise for preeclamptic mothers and both mother and newborn did not have a problem in postpartum period, also indications related about hypertension downfall. All these result in decrease of risk perception that preeclampsia caused/might cause, so depression risk decreased in the second month of preeclamptic mothers.

In the study, it was found that breastfeeding self-efficacy of preeclamptic mothers were higher in the second month compared to their 24th hour. However, it was found in the literature that breastfeeding self-efficacy of eclamptic mothers were lower compared to healthy mothers (18-20). The self-efficacy perception is decisive on a person's activities and avoiding her activities. Dennis defined breastfeeding self-efficacy perception as "efficacy perception of mother for breastfeeding" (14). It was found in the literature that mothers that had lower breastfeeding self-efficacy completed their breastfeeding in much shorter than the advised time. On the other hand mothers that had higher breastfeeding self-efficacy had less problems on starting and continuing breastfeeding (21,22). Strapasson et al. conducted a study to analyze the effect of gestational hypertension on feeding of a newborn in his/her first six months and it was found in the study that breastfeeding period of gestational hypertension mother was shorter compared to normotensive mothers and their rate was higher in giving other formulas beside the mother milk (21). In the study of Leeners et al., which was conducted to analyze breastfeeding of mothers that had hypertensive diseases in their pregnancy, it was found that 76.1% of preeclampsia mothers had breastfeeding intention, 43% continue breastfeeding in their first month and 39.9% continue in their third month (22). In the literature researches that were conducted with preeclamptic mothers, it was declared that the most important factor affecting breastfeeding was premature newborn and intensive care. In this study, the fact that most of newborns were born full-term and their birth

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weight mean were within normal limits may have affected breastfeeding self-efficacy. In addition, it is thought that the majority of mothers have been trained in breastfeeding, have supporters during breastfeeding, and that all of them want to continue breastfeeding are other factors affecting breastfeeding self-efficacy. Also Turkish culture supports breastfeeding and this condition may have a positive effect on breastfeeding self-efficacy second months after birth.

In this study, no correlation was found between 24th hour and second month depression risk and breastfeeding self-efficacy of preeclamptic mothers. No research was found in the literature that conducted for analyzing correlation between breastfeeding self-efficacy and postpartum depression of preeclamptic mothers. Kucukoglu et al. conducted a research on postpartum depression and breastfeeding self-efficacy of mothers (n=110) whose babies were inpatient in newborn clinics and no correlation was found between self-efficacy and postpartum depression (23). Haga et al. found in their study, which was conducted in postpartum period, postpartum depression level was less for mothers that had higher breastfeeding self-efficacy (24). Zubaran and Foresti found in their cross sectional study, which was conducted in Brazil to analyze correlation between breastfeeding self-efficacy and postpartum depression of healthy mothers, a negative correlation was found between postpartum depression level and breastfeeding self-efficacy (18). In another study conducted by Aslan and Ege with healthy mothers, no correlation was found between breastfeeding self-efficacy and postnatal depression (25).

Postpartum maternal health affects future pregnancy outcomes, maternal chronic disease development and infant health. Early identification and intervention of mothers' need for information and support regarding physical and emotional symptoms, baby care, breastfeeding anxieties and lifestyle arrangements are important for the protection and development of women and children health. Preeclampsia, known as one of the risky pregnancies, may cause mothers to become more prone to depression and affect breastfeeding results during pregnancy and postpartum period. Healthcare professionals

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should determine the care needs of mothers with preeclampsia in the antepartum period as well as in the postpartum period, know the problems that may arise and be able to diagnose early and plan appropriate interventions.

The Limitations of the Study

This study was a cross-sectional survey design and the results cannot be generalized all preeclamptic mothers.

CONCLUSION

This study is conducted to analyze the effect of preeclampsia on breastfeeding self-efficacy and postpartum depression. Health professionals should evaluate postpartum depression level of mothers with appropriate measuring instruments and lead the ones in risk, and they should evaluate breastfeeding self-efficacy of mothers before they were discharged from hospital. More researches should be conducted on breastfeeding self-efficacy of mothers that had diagnosed postpartum depression with wider sample sets.

Financial Disclosure: The author declared that this study has received no financial support.

Conflict of Interest: No conflict of interest has been declared by the authors.

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TABLE 1 Socio-demographic characteristics of mothers (n=73)

Variables	Mean±SD ^a	
Mean Age (year) (Min-Max)	30.63±6.54 (18-46)	
	Number (n)	Percentage (%)
Education status		
Literate	15	20.5
Primary school	24	32.9
Secondary school and higher	34	46.6
Employment status		
Working	6	8.2
Not working	67	91.8
Family type		
Nucleus	55	75.3
Extended	18	24.7
Number of pregnancy		
First	24	32.9
Second	13	17.8
Third	12	16.4
>4	24	32.9
Planned pregnancy or not		
Planned	54	74.0
Unplanned	19	26.0
Gestational week		
Term (>37. week)	50	68.5
Preterm(<37. week)	23	31.5
Sex of newborn		
Girl	40	54.8
Boy	33	45.2
	Mean±SD ^a	
Mean of newborn weight (gram) (Min-Max)	2951.31 ±517.03 (1900-4130)	
Mean of baby weight in the second month (gram) (Min-Max)	4726.42±677.98 (3520-6800)	

^a Standart deviation

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TABLE 2 Breastfeeding conditions of mothers (n=73)

Variables	Number (n)	Percentage (%)
Had training on breastfeeding		
Yes	40	54.8
No	33	45.2
Breastfeed her previous baby (n=49)		
Yes	40	81.6
No	9	18.4
Presence of social support		
Yes	54	74.0
No	19	26.0
The first time breastfeeding		
In the first hour	12	16.4
In the first day	51	69.9
In the second day	10	13.7
Formula feeding in 24 th hour		
Yes	57	78.1
No	16	21.9
Formula feeding in the 2 nd month		
Yes	32	43.8
No	41	56.2
Feeding frequency in the 2 nd month		
Whenever baby cry	17	23.3
Once in 1-3 hours	52	71.2
Once in 4-6 hours	4	5.5
How long will continue on breastfeeding?		
Till the baby cancel	17	23.3
Upto one year	3	4.1
Upto two years	23	31.5
Upto three years	30	41.1

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TABLE 3 The mean of EPDS and BSES total scores of mothers in the postpartum 24th hour and second month

Variables	Postpartum 24 th Hour Mean±SD ^a	Second Month Mean±SD ^a	z/ p ^d
EPDS ^b Total Score	5.90±5.04	5.32±4.40	-0.336 0.737
	Number (%)	Number (%)	
Depression Risk			
Yes	12 (16.4)	7 (9.6)	
No	61 (83.6)	66 (90.4)	
	Mean±SD ^a	Mean±SD ^a	
BSES ^c Total Score	52.42±8.61	62.12±4.85	-7.188 0.000

^aStandart Deviation

^bEdinburgh Postpartum Depression Scale

^cBreastfeeding Self-Efficiency Scale

^d Wilcoxon test

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TABLE 4 The relationship between the mean of EPDS and BSES total scores of preeclamptic mothers in postpartum 24th hour and 2nd month

Variables	Second Month EPDS ^a Total Score	Postpartum 24 th Hour BSES ^b Total Score	Second Month BSES Total Score
Postpartum 24 th hour EPDS Total Score	r= 0.142* p= 0.232	r= 0.055* p= 0.644	r= -0.041* p= 0.731
Second Month EPDS Total Score		r= 0.135* p= 0.255	r= -0.043* p= 0.718
Postpartum 24 th hour BSES Total Score			r= 0.714* p= 0.000

^aEdinburgh Postpartum Depression Scale

^bBreastfeeding Self-efficacy Scale

*Correlation analysis

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