



Original article

Study of The Relationship between Breastfeeding and Postpartum Depression in Mothers in Beni-Suef City

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Abstract

Post-partum depression (PPD), a major health concern, has harmful consequences on mothers, their children, and families. This study aimed to assess the prevalence of postpartum depression among mothers having children under 2 years old in Beni-Suef City and its relation to breastfeeding. This study was an analytical cross-sectional study conducted over nine months, from March to November 2021. Data were collected from 380 mothers attending a health service in any of the 4 health care facilities, which were randomly selected from the total number of healthcare offices and units in Beni-Suef city: (El-Kom El-Ahmar, Sherif Basha health care centers, El Ghamrawy and Sharq El-Nile health offices).

Data were collected using a self-structured questionnaire prepared in Arabic and the validated Arabic version of the Edinburgh Postnatal Depression Scale questionnaire for screening of PPD. The prevalence of PPD among

participants was 70.3%. There was a significant relationship between the high probability of PPD and being a working mother, having ≤ 2 children, having both gender of children, cesarean section labor, delayed initiation of breastfeeding after 1st hour, and presence of breast pain during breastfeeding

1. Introduction

Postpartum depression (PPD) is a mood disorder that affects women within 4-6 weeks of delivery, reaching its maximum intensity in the first six months, which may be prolonged until the end of the first postpartum year [1]. Postpartum depression affects an estimated 13% to 19% of women who have recently given birth [2]. It is characterized by a persistent low mood in new mothers, often accompanied by feelings of (sadness, worthlessness, and/or hopelessness) [3]. Postpartum depression differs from the “baby blues,” as the “baby blues” is a briefer period of emotional disturbance including (dysphoria, tearfulness, mood lability, trouble sleeping, irritability, and anxiety) that is experienced by up to 4 in 5 women within the first few days following childbirth and usually remits within 10 days [4].

While postpartum depression can be brief and remit unexpectedly, approximately 30% of women in community samples who experience postpartum depression continue to be

depressed up to two years postpartum, and 50% of women from clinical samples continue to have major depression throughout and in some cases beyond the first year postpartum [5]. Furthermore, the illness course can vary, and chronic depression for these women may consist of stable mild depression, stable major depression, or recurrent episodes of major depression without full remission between episodes [2].

The relationship between breastfeeding and postpartum depression was conceptualized to be unidirectional, with postpartum depression resulting in lower rates of breastfeeding initiation and early cessation [6]. More recently, reports indicate that the relationship may be bidirectional in nature, suggesting that while postpartum depression may reduce breastfeeding rates, not engaging in breastfeeding may increase the risk of postpartum depression. Additionally, there is some evidence that breastfeeding may protect

against postpartum depression or assist in a swifter recovery from symptoms [7].

The benefits of breastfeeding for maternal and child health are well-established in the scientific literature. Considering its importance, the World Health Organization (WHO) recommends the practice of exclusive breastfeeding (EBF) during the first six months of life, and after this period, the introduction of adequate and healthy complementary feeding together with the maintenance of breastfeeding for up to two years [8].

Recent studies have suggested an association between postpartum depression symptoms (PPD) with the early interruption of EBF [9]. Several factors have been attributed to early EBF interruption, such as socioeconomic and cultural conditions, those related to age, maternal schooling, family income, early introduction of artificial nipples, and care factors, such as the number of prenatal consultations, postpartum hospital practice, rooming-in in the maternity ward, basic health care follow-up, and others related to the conditions of birth and health of infants and the social support network [9]. There is no consensus on the association between PPD and duration of breastfeeding since some studies have not found an association between these two factors [10]. While others report that mothers with depressive symptoms are more

vulnerable to early interruption of BF, including EBF, as they could have greater difficulties and dissatisfaction with this practice [11].

2. Methods and population frame:

2.1. Study type and sampling:

This study was a cross-sectional analytical study carried out over nine months starting from March to November 2021 on mothers who have children under 2-years old attending a primary health care center or health office for any health care service during the period of data collection (2 months).

Using Epiinfo stat-calc, the sample size for the population survey was calculated at a 95% confidence level, 5% acceptable margin of error, 1 design effect, 50% expected frequency (of post-partum depression), and the minimum sample size was found to be 380 mothers. The study was conducted in two primary healthcare centers (El-Kom El-Ahmar and Sherif Basha health care centers) that were selected randomly from a total of 27 Cities' primary healthcare centers and two health offices (El Ghamrawy and Sharq El-Nile health offices) that were chosen randomly from the entire 4 health offices in Beni-Suef City.

2.2. Data Collection Methods:

There are two questionnaires used in this study for the collection of data. (1) A self-structured questionnaire prepared in Arabic covering the following parts: Sociodemographic characteristics of the participants (Age of

participating mothers, Residence, Educational level, occupation, Marital status, Number of children, Gender of children, and Family income). History of the last pregnancy among participants (Planned pregnancy, if there were pregnancy complications, type of labor, if there were labor complications, baby's health state, mode of baby's feeding).

Breastfeeding characteristics among mothers who breastfeed either exclusive or mixed feeding include (Initiation, Duration, rooming-in, and when did she breastfeed the baby).

Problems of breastfeeding among mothers who are breastfeeding either exclusive or mixed breastfeeding include (Baby having difficulty in latching or suckling, Baby didn't gain weight, Milk production wasn't enough, Nipple cracks or ulceration, Breast fullness or engorgement, Breast pain during feeding the baby, seeking medical help for these problems from a medical professional).

And (2) The validated Arabic version of the Edinburg Postnatal Depression Scale Questionnaire for screening of PPD: which consists of (10 closed-ended questions) with 4 answers, and each answer has a code for a final scoring system from 0 to 30.

A pilot study was done on 50 participants at El-Ghamrawy health office in May 2021. No modification had been performed on the structured questionnaire forms that were included in the final collected questionnaires.

2.3. Data Analysis:

According to the type of the collected data, they were managed as follows: All collected questionnaires were revised for completeness logical consistency, and items were then transferred to the Statistical Package of Social Science Software program, version 26 (SPSS) to be statistically analyzed. Incomplete ones were discarded. Description of qualitative variables by frequency and percentage. Description of quantitative variables in the form of mean and standard deviation (mean \pm SD). The data had been presented in tables, graphs, and figures and organized to satisfy the study objectives. Simple statistics were used, and bivariate analysis between those having a low probability of postpartum depression and those with a high likelihood of postpartum depression. Chi-square (χ^2) (Fisher exact) test was used to detect the association between a high probability of postpartum depression and different categorical baseline characteristics.

- Comparison between quantitative variables was carried out by using:

- Student t-test in case of two independent samples.
- Multivariable logistic regression analysis was done to detect risk factors for acquiring postpartum depression.
- For more statistical analysis: suitable statistical tests of significance were used.
- P-values ≤ 0.05 was considered statistically significant.

- Data analysis and scoring system of Edinburg Postnatal depression Scale:
 - ❖ Each answer to each question of the questionnaire has a code from 0 to 3.
 - ❖ The total EPDS Scoring from 0 to 30, [12]
 - Depression is not likely (EPDS less than 8)
 - Depression is possible (EPDS 9-11)
- Fairly high possibility of depression (EPDS 12-13)
- Probable depression (EPDS 14 and more).

2.4. Ethical Consideration:

The study was approved by the Ethical Committee of the faculty of medicine Beni-Suef University in March 2021 (Approval No: FMBSUREC/07022021/Ahmed).

Informed consent was obtained from all participants after explaining the study's objectives and they were informed that their

participation was voluntary. They were assured that their personal information would be kept confidential. Also, it was saved anonymously with a code number to maintain confidentiality of collected data.

3. Results:

The present study included 380 mothers with mean age 30.43 ± 4.54 . The prevalence of high probability of PPD was found to be 70.3% (at EPDS score 14 and higher), (figure 1).

There was significant relationship between being a working mother, having ≤ 2 children, having both gender of children, labor by Cesarean section, delayed initiation of breast feeding after the 1st hour and presence of breast pain during breastfeeding and the high probability of PPD among participants.

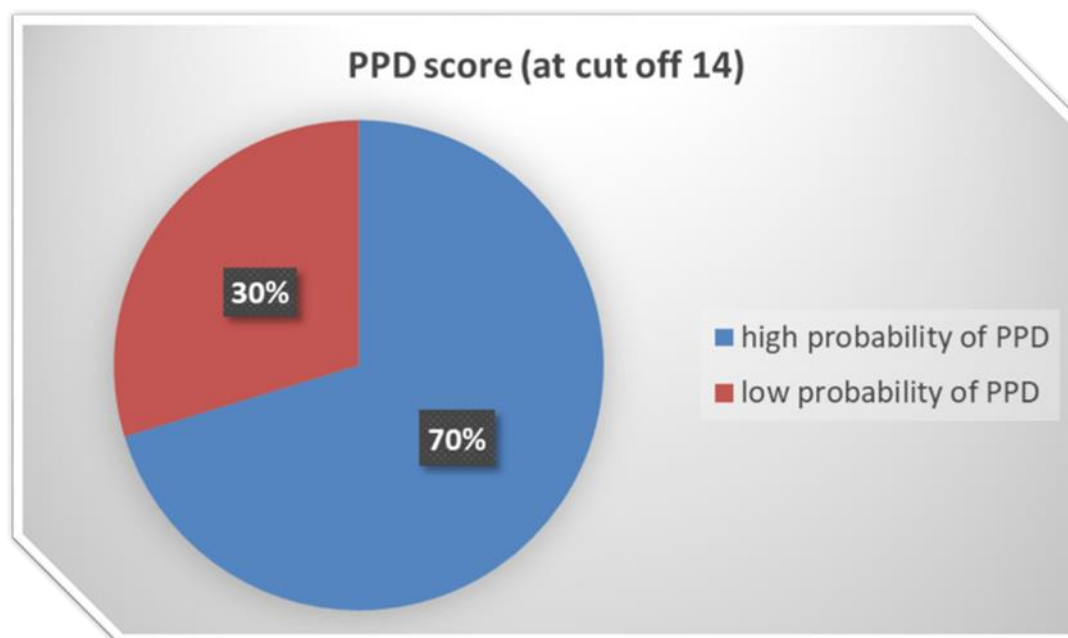


Figure No. (1) describes the postpartum depression score at the cut off 14

Table (1) The relation between postpartum depression and sociodemographic characteristics of participants:

	Low probability depression (NO=113)	High probability depression group (NO=267)	P-value
Age Mean ±SD	30.91 ± 4.655	30.23 ± 4.486	0.181
Residence Urban Rural	86 (76.1%) 27 (23.9%)	209 (78.3%) 58 (21.7%)	0.642
Educational level Illiterate Primary Secondary University	2 (1.8%) 5 (4.4%) 21 (18.6%) 85 (75.2%)	6 (2.2%) 9 (3.4%) 27 (10.1%) 225 (84.3%)	0.131
Occupation Working Not working	62 (54.9%) 51 (45.1%)	184 (68.9%) 83 (31.1%)	0.009**
Children number categories ≤2 >2	65 (57.5%) 48 (42.5%)	206 (77.2%) 61 (22.8%)	<0.001**
Gender of children Males Females Both	34 (30.1%) 17 (15%) 62 (54.9)	90 (33.7%) 70 (26.2%) 107 (40.1%)	0.014**
Marital status Married Divorced Widow	110 (97.3%) 3 (2.7%) 0 (0%)	255 (95.5%) 7 (2.6%) 5 (1.9%)	0.342
Family income Low Middle High	7 (6.2%) 85 (75.2%) 21 (18.6%)	9 (3.4%) 221 (82.8%) 37 (13.9%)	0.199

Table (2) The Relation between postpartum depression and history of the last pregnancy:

	Less probability depression group (NO=113)	High probability depression group (NO=267)	P-value
Planned pregnancy			
Yes	83 (73.5%)	184 (68.9%)	0.376
No	30 (26.5%)	83 (31.1%)	
Complications of pregnancy			
Yes	29 (25.7)	92 (34.5%)	0.093
No	84 (74.3%)	175 (65.5%)	
Type of labor			
Normal labor	35 (31%)	49 (18.4%)	0.007**
Cesarean section	78 (69%)	218 (81.6%)	
Complications of labor			
Yes	14 (12.4%)	40 (15%)	0.508
No	99 (87.6%)	227 (85%)	
Baby's health state			
Good health	99 (87.6%)	228 (85.4%)	0.568
Health problem	14 (12.4%)	39 (14.6%)	
Mode of baby's feeding			
Breastfeeding (Either exclusive or mixed)	105 (92.9%)	252 (94.4%)	0.318
Artificial feeding only	8 (7.1%)	15 (5.6%)	

Table (3) The Relation between postpartum depression and breast-feeding characteristics among mothers who breastfeed their babies:

	Less probability depression group (NO=113)	High probability depression group (NO=267)	P-value
Initiation			
First hour	52 (49.5%)	93 (36.9%)	0.021**
Delayed	53 (50.5%)	159 (63.1%)	
Duration			
< 1 month	4 (3.8%)	13 (5.2%)	0.820
1- 3 months	7 (6.7%)	22 (8.7%)	
3-6 months	11 (10.5%)	27 (10.7%)	
6-12 months	15 (14.3%)	43 (17.1%)	
+12 months	68 (64.8%)	147 (58.3%)	
Rooming in			
Yes	78 (74.3%)	174 (69%)	0.520
No	7 (6.7%)	25 (9.9%)	
Not all the time	20 (19%)	53 (21%)	
When did you feed your baby?			
When cry or hungry	74 (70.5%)	185 (73.4%)	0.571
Every 2 hours	31 (29.5%)	67 (26.6%)	

Table (4) The Relation between post-partum depression and problems with breastfeeding:

	Less probability of depression group (NO=113)	High probability of depression group (NO=267)	P-value
Baby had difficulty in latching or suckling			
Yes	35 (33.3%)	93 (36.9%)	0.521
No	70 (66.7%)	159 (63.1%)	
Baby didn't gain weight			
Yes	12 (11.4%)	39 (15.5%)	0.319
No	93 (88.6%)	213 (84.5%)	
Milk production wasn't enough			
Yes	32 (30.5%)	104 (41.3%)	0.056
No	73 (69.5%)	148 (58.7%)	
Nipple cracks or ulceration			
Yes	51 (48.6%)	136 (54%)	0.352
No	54 (51.4%)	116 (46%)	
Breast fullness or engorgement			
Yes	35 (33.3%)	111 (44%)	0.061
No	70 (66.7%)	141 (56%)	
Breast pain during feeding baby			
Yes	41 (39%)	149 (59.1%)	0.001**
No	64 (61%)	103 (40.9%)	
Seeking for medical help from a medical professional			
Yes	29 (27.6%)	92 (36.5%)	0.106
No	76 (72.4%)	160 (63.5%)	

4. Discussion:

This study revealed the prevalence of PPD (at cut-off 14 of the EPNDS) was 70.3%. In line with this finding, a similar survey in Kom-Ombo City in Aswan governorate revealed that the prevalence of PPD was 73.7% among 320 females with a mean age of 25± 5 years [13]

On the other hand, another study conducted in EL-Minia governorate on 320 females with a mean age of 23±6 years reported a lower prevalence of PPD

49.5% [14]. Another study conducted in Amman, Jordan, on 360 females with a mean age of 23±7 years found that the prevalence of PPD was 49% [15]. A third study conducted in Dhaka city in Bangladesh on 280 females with mean age of 30± 5 found that the prevalence of PPD was (29.9%) [16].

These variations in the prevalence of PPD could be attributed to methodological and cultural differences. Another possible

reason in our study may be that our studied mothers had their pregnancy and puerperium in the COVID-19 pandemic and may be worried about the health of themselves and their coming babies.

In the current study, there is a significant relationship between a mother's occupation and PPD, as the prevalence of PPD among working mothers was 68.9% compared to non-working mothers (31.1%). This finding is similar to a study conducted in Accra city in Ghana on 350 women with a mean age of 25 ± 5.6 years [17]. A possible explanation for this could be that working mothers are worried about returning to work and caring for their babies simultaneously.

On the contrary, a cohort study conducted in three primary healthcare centers in Assiut City on 257 mothers with a mean age of 27.98 ± 4.7 years reported that a mother's occupation is a protective factor against PPD [18], also a cross-sectional study conducted on 596 mothers with mean age 30.57 ± 6.3 in Ankesha District, Northwest Ethiopia, from 1 February to 2 March (2018) reported that the mother's occupation is a protective factor from PPD [19]. This may be explained by returning to social life after childbirth, and earning her own money seems protective against mood disturbances.

In the current study, there is a significant relationship between PPD and the number

of children, as those having ≤ 2 children were associated with a high probability of PPD. This finding is similar to an analytical cross-sectional study conducted in Dhaka city in Bangladesh on 291 mothers with mean age of 25 ± 5 years which found that there is a significant relationship between PPD and being a mother for the first time [20]. This may be due to lack of experience of the mother and being more meticulous towards her first baby.

This finding is contrary to the result of the study [18], which found that multiple offspring > 2 children is a significant risk factor for PPD; this may be due to increased stress and responsibilities on the mother with an increased number of children.

In our study, mothers having both (male and female) children were associated with a high probability of PPD compared to those having male only or female only.

This finding disagreed with the results of the study [18] **that** found a significant association between the male gender and PPD. This may be due to a wrong cultural concept that the male child needs more care than the female one.

On the other side, a population-based cohort study conducted in Uppsala, Sweden, on 2250 women with mean age of 30.8 ± 4.8 years found no association between children's gender and PPD [21].

This may be due to different cultures and social norms in other communities.

In our study, there is a significant relationship between the type of labor and PPD as labor by cesarean section highly increased the risk of PPD compared with normal delivery, this finding is similar to the result of the study [14] in EL-Minia governorate, which can be explained by the presence of pain, difficulty in movement, difficulty in breastfeeding the baby and delayed recovery after cesarean section which is classified as a major operation.

Contrary to our findings, a cross-sectional study conducted in Celal Bayar University Hospital, Department of Obstetrics and Gynecology, in Turkey on 318 mothers with a mean age of 27.7 ± 5 years found no association between mode of delivery and risk of PPD [22].

In our study, we found a significant relationship between PPD and delayed initiation of breastfeeding. This may be attributed to hormonal changes that occur with breastfeeding and its effect on mood elevation and protection from PPD. It may also be related to self-satisfaction that occurs when the mother successfully initiates breastfeeding her baby.

This finding agrees with a cross-sectional study conducted in India on 1600 women aged 26 ± 5.5 years [23].

In our research, there is a significant relationship between breast pain during breastfeeding and the high probability of PPD. This could be attributed to the failure of the mothers to breastfeed their babies properly due to the presence of breast pain. Their fear of depriving their babies of the benefits of breastfeeding makes them at high risk for PPD.

While the study of [24] and another study conducted in Southern Brazil on 289 mothers with a mean age of 24.5 ± 5.3 years found that proper breastfeeding and absence of breast pain are protective against PPD [25]

5. Conclusion and Recommendations

This study revealed that the prevalence of postpartum depression (PPD) among mothers who have children under 2 years old in Beni-Suef City was 70.3%.

This study concluded that: being a working mother, having ≤ 2 children, having both genders of children, labor by Cesarean section, delayed initiation of breastfeeding after the 1st hour, and presence of breast pain during breastfeeding were associated with a high probability of PPD.

This study recommended that; there should be psychological support for the mother during her pregnancy and the postpartum period, and there should be screening for PPD for mothers after labor,

and this service should be incorporated into maternal and child health programs. There should be proper health education and training of mothers on how to correctly breastfeed their babies to avoid any problem related to breastfeeding.

6. References:

1. Silva, C. S., Lima, M. C., Sequeira-de-Andrade, L. A., Oliveira, J. S., Monteiro, J. S., Lima, N., ... & Lira, P. I. (2017). Association between postpartum depression and the practice of exclusive breastfeeding in the first three months of life ☆,☆☆. *Jornal de pediatria*, 93, 356-364.
2. Petersen, I., Peltola, T., Kaski, S., Walters, K. R., & Hardoon, S. (2018). Depression, depressive symptoms and treatments in women who have recently given birth: UK cohort study. *BMJ open*, 8(10), e022152.
3. Bhatt, V. K. (2021). Mother and child health Care with Homeopathy Management of Postpartum Depression with Homeopathy.
4. Georges, Y. (2020). Screening for Depression and Anxiety Symptoms during the First two Weeks Postpartum at Rafic Hariri University Hospital in August and September 2017. *Int J Clinical & Case*, 4, 1-16.
5. Chrzan-Dętkoś, M., Walczak-Kozłowska, T., Pietkiewicz, A., & Żołośka, J. (2021). Improvement of the breastfeeding self-efficacy and postpartum mental health after lactation consultations—Observational study. *Midwifery*, 94, 102905.
6. Lara-Cinisomo, S., McKenney, K., Di Florio, A., & Meltzer-Brody, S. (2017). Associations between postpartum depression, breastfeeding, and oxytocin levels in Latina mothers. *Breastfeeding Medicine*, 12(7), 436-442.
7. Webber, E., & Benedict, J. (2019). Postpartum depression: a multi-disciplinary approach to screening, management and breastfeeding support. *Archives of psychiatric nursing*, 33(3), 284-289.
8. Silva, M. D. B., de Oliveira, R. D. V. C., Alves, D. D. S. B., & Melo, E. C. P. (2021). The effect of risk at birth on breastfeeding duration and exclusivity: A cohort study at a Brazilian referral center for high-risk neonates and infants. *Plos one*, 16(8), e0255190.
9. Islam, M. J., Broidy, L., Baird, K., Rahman, M., & Zobair, K. M. (2021). Early exclusive breastfeeding cessation and postpartum depression: Assessing the mediating and moderating role of maternal stress and social support. *PloS one*, 16(5), e0251419.
10. Aoyagi, S. S., & Tsuchiya, K. J. (2019). Does maternal postpartum depression

- affect children's developmental outcomes?. *Journal of Obstetrics and Gynaecology Research*, 45(9), 1809-1820.
11. Butler, M. S., Young, S. L., & Tuthill, E. L. (2020). Perinatal depressive symptoms and breastfeeding behaviors: A systematic literature review and biosocial research agenda. *Journal of Affective Disorders*.
 12. Park, M., Brain, U., Grunau, R. E., Diamond, A., & Oberlander, T. F. (2018). Maternal depression trajectories from pregnancy to 3 years postpartum are associated with children's behavior and executive functions at 3 and 6 years. *Archives of women's mental health*, 21(3), 353-363.
 13. Mohamed, H. A., Spencer, S. L., Al Swasy, A. H., Swidan, S. E., & Abouelenien, M. S. (2014). A social and biological approach for postpartum depression in Egypt. *Woman-Psychosomatic Gynaecology and Obstetrics*, 1, 30-39.
 14. Mohammed, E. S., Mosalem, F. A., Mahfouz, E. M., & Abd ElHameed, M. A. (2014). Predictors of postpartum depression among rural women in Minia, Egypt: an epidemiological study. *Public Health*, 128(9), 817-824.
 15. Yoneda, K., Hababeh, M., Kitamura, A., Seita, A., & Kamiya, Y. (2021). Prevalence and characteristics of Palestine refugee mothers at risk of postpartum depression in Amman, Jordan: a cross-sectional study. *The Lancet*, 398, S28.
 16. Azad, R., Fahmi, R., Shrestha, S., Joshi, H., Hasan, M., Khan, A. N. S., ... & Billah, S. M. (2019). Prevalence and risk factors of postpartum depression within one year after birth in urban slums of Dhaka, Bangladesh. *PloS one*, 14(5), e0215735.
 17. Abdulai, H. I. K. M. A. T. U. (2019). *Postpartum Depression, Breastfeeding Practices and Nutritional Status of Children at Two Health Facilities in Accra, Ghana* (Doctoral dissertation, University of Ghana).
 18. Ahmed, G. K., Elbeh, K., Shams, R. M., Malek, M. A. A., & Ibrahim, A. K. (2021). Prevalence and predictors of postpartum depression in Upper Egypt: A multicenter primary health care study. *Journal of Affective Disorders*, 290, 211-218.
 19. Shitu, S., Geda, B., & Dheresa, M. (2019). Postpartum depression and associated factors among mothers who gave birth in the last twelve months in Ankesha district, Awi zone, North West Ethiopia. *BMC pregnancy and childbirth*, 19(1), 1-9.
 20. Alam, M. M., Haque, T., Uddin, K. R., Ahmed, S., Islam, M. M., & Hawlader, M. D. H. (2021). The prevalence and

- determinants of postpartum depression (PPD) symptomatology among facility delivered mothers of Dhaka city. *Asian Journal of Psychiatry*, 62, 102673.
21. Sylvén, S. M., Papadopoulos, F. C., Mpazakidis, V., Ekselius, L., Sundström-Poromaa, I., & Skalkidou, A. (2011). Newborn gender as a predictor of postpartum mood disturbances in a sample of Swedish women. *Archives of women's mental health*, 14(3), 195-201.
22. Goker, A., Yanikkerem, E., Demet, M. M., Dikayak, S., Yildirim, Y., & Koyuncu, F. M. (2012). Postpartum depression: is mode of delivery a risk factor?. *International Scholarly Research Notices*, 2012.
23. Sheela, C. N., & Venkatesh, S. (2016). Screening for postnatal depression in a tertiary care hospital. *The Journal of Obstetrics and Gynecology of India*, 66(1), 72-76.
24. Avilla, J. C. D., Giugliani, C., Bizon, A. M. B. L., Martins, A. C. M., Senna, A. F. K. D., & Giugliani, E. R. J. (2020). Association between maternal satisfaction with breastfeeding and postpartum depression symptoms. *Plos one*, 15(11), e0242333.
25. Zubaran, C., & Foresti, K. (2013). The correlation between breastfeeding self-efficacy and maternal postpartum depression in southern Brazil. *Sexual & Reproductive Healthcare*, 4(1), 9-15.