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Research Article

Postpartum Depression Outcome of Perinatal Predictors: Retrospective Analysis of a Study

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ABSTRACT

The most common type of postpartum disorder found at the postpartum stage insignificant number of women is baby blues which is a mood disorder. This study aimed to improvisation of the prophylactic program by pre-delivery identification of risk factors that can trigger postpartum mood disorders in women. The medical data of women after delivery obtained from Warsaw during 2010-2017 was the basis of research material. The data of 604 patients who took the Edinburgh Postnatal Depression Scale (EPDS) after delivery were analyzed. 75 women were included in the study group who showed 12 % of the group results with 12 points in EPDS. Whereas the control group with 75 women showed a maximum of 5 points in EPDS. The results show a significant correlation between postpartum mood disorder vs parity and their sequence. High risked women had early delivery as compared to women with low risk with a 37-week length of the gestation period and 39-week gestation period, respectively. The premature rupturing of membrane did not correlate with long gestation periods. Women with premature delivery and primigravida should undergo perinatal screening as results showed them to be more prone to postpartum mood disorders.

Keywords: Baby blues, Postpartum mood disorders, Edinburgh Postnatal Depression Scale

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INTRODUCTION

Postpartum depression has been the most common area of interest for researchers regarding mental disorders of women in labor. Nevertheless, the careful analysis of statistical data showed that women were more frequently affected by baby blues after delivery (Hanley J, 2013). This occurrence of baby blues has been cited as an adjustment behavior to stressful postpartum depressive mood by the Diagnostic and Statistical Manual of Mental Disorders 5th edition issued by the American Psychiatric Association (APA) (Takahashi YU and Tamakoshi KO, 2014; American Psychiatric Association, 2013). Developed countries have a high occurrence of baby blues ranging from 55 to 85 percent. Postpartum depression eventually develops in over 20 percent of women (O'Hara MW and Wisner KL, 2014; Zanardo V, *et al.*, 2020). The occurrence of postpartum depression relies upon the number of factors as test type, a scale for the measurement of depression, or the role of the country and its management for such disorders. Countries with prenatal and postpartum screenings can reduce the frequency of postpartum disorders. Whereas countries with poor health care systems like Bangladesh may increase the chances up to 39 % (Azad R, *et al.*, 2019).

Baby blues has also been cited by some authors as a psychological fight in women going through major changes in their life motherhood (Kitzinger S, 2012). Blues have been recognized as a disorder with mild length and mostly starts in the first week after delivery and can end up to 6 to 9 weeks. The symptom appears 3 to 4 days after postpartum which includes worsening of mood, crying, heightened emotion, grumpiness, grouchiness, headaches, low focus, disturbance in sleep pattern, and hunger (Eleonora BB, 2006).

The causes and triggers for baby blues are not fully explained yet. Several factors can trigger its onset either biological, psychological, or environmental (Hanley J, 2013; Manjunath NG and Giriyappa RV, 2011). Women go through many biological changes during and after pregnancy. Most prominent are hormonal changes. The type and amount of specific hormones can trigger different emotional responses. During postpartum Prolactin increases while Estrogen and Progesterone decrease approx. up to 90% to 96% (Jaeschke R, *et al.*, 2012; Kaźmierczak M, *et al.*, 2010; O'Hara MW, *et al.*, 1991). Psychological changes also play a significant role as mental health play important role in the fight against mental disorders. Long time occurrence of anxieties, repetitive episode of depressions is the main factors to analyses environmental (Hanley J, 2013; Lancaster CA, *et al.*, 2010; Ghaedrahmati M, *et al.*, 2017). Women go through such mental challenges way before pregnancies as disturbed menstrual cycles and PMS has been shown to affect mental health and trigger mood swings in women (Kripa B, 2020; Buttner MM, *et al.*, 2013; Robertson E, *et al.*, 2004; Seyfried LS and Marcus SM, 2003). Fear of uncertainty of future life of women and child pay major role (Ghaedrahmati M, *et al.*, 2017; Zauderer C, 2009).

All the studies conducted so far had some variables affecting the results like different sociocultural backgrounds and periods. Thus, the review of such studies has uncertainty in results (Hapgood CC, *et al.*, 1988).

MATERIALS AND METHODS

The goal of the study

The analysis is based on the identification of the factors of psychological problems in women after 1st week of delivery. The questionnaire was as follows:

- The demographical factors in the development of psychological mood changes during the post-partum period
- The factors in the gynecological and obstetric history are interlinked and are the reasons for developing post-partum mood swings in females after delivery
- The effect of smoking on the females after delivery

• The psychological issues with the women during and before pregnancy as associated with the danger of developing a postpartum depressive disorder

Materials

This is comparative and retrospective research. We took the medical records and took the data and retrieved and evaluated them to find out our results and analyze them for prevention in the future. We took the data from the children's complex hospital, Multan. The records were found out based on demographic data, general health values, history of the female during pregnancy, and the general lifestyle of females affecting postpartum depression. We found the EPDS scale attached with every record in the hospital. The women in the hospital filled the questionnaire during their postpartum history. The reason for this activity was to find out the reasons, factors, and variables of postpartum depression. The women on the days between 2 to 4 after surgery were asked to fill the form. Our study aims to find out the mindset of females after delivery. It is essential to provide the females a special forum to support their postpartum depression.

The questionnaire was not asked to fill by force but with consent. The EPDS test was taken from the consented patients. The consent was obtained verbally and confirmed via filling the questionnaire. The exclusion criterion was based on the people with no knowledge of Polish. All of the participants gave their consent all fill the survey. The research was conducted according to the Ethics Committee international.

The other group in the study was the control group. The selection method used was pairwise selection. The criterion of selection was the age, residents, marriage status, and EPDS score of less than 5. The data of 600 patients were evaluated. The study group consisted of 75 women who took 12 points in EPDS. It constituted 13% of the total group. The control group was 75% who got not more than 5 points on the EPDS scale.

Research tool

EPDS is the most important tool which is used in the screening test of risk evaluation of postpartum depressive disorder. It is explained by Cox, Holden, and Sadowski (Cox JL, *et al.*, 1987; Cox JL, *et al.*, 2014). In our research, we used the Polish Version which is described by Maria Bnińska, MSc, Ph.D. The EPDS authors and psychiatry British journals, who were the owners of copyright, agree to the usage and repetition of the tool, with the source being cited (Cox JL, *et al.*, 1987). The scale tests the frame of mind over the last week, before the test. It is a short scale. EPDS consists of ten statements that describe the frame of a women's mind, for example, anhedonia, guilt, tension, panic attacks, tiredness, insomnia, depression, fright, and suicidal thoughts. The sum of all points gives a general score. Higher scores mean higher chances of postpartum depression in the person. The margining score, even with some care, to develop the risk of depression was expected to be 11/12 points. However, some specialists recommended keeping a watch even in the lower points (Cox JL, *et al.*, 2014; Lanes A, *et al.*, 2011). In some special cases, even with the low EPDS value, the person is subjected to necessary care when she reports some intense suicidal thoughts (Cox JL, *et al.*, 1987).

EPDS is identified by some good psychometric properties. According to the genuine research, this tool was 85% sensitive, 76% specific, with a 0.87 coefficient of Cronbach's alpha.

Statistical analysis

To access the risk of developing postpartum depression mood, a pairwise selection method was chosen. The variables of the process were age, literacy, and marital status. The lowest p-value was assumed to be 0.05 calculated regression analysis was performed. But no significant risk was observed. Therefore the results were not added to the paper. The normal distribution of variables was not obtained. Hence the comparative pairwise analysis was performed by using non-parametric tests. The IBM SPSS Statistics for Windows, v24.0 was used to conduct the study.

RESULTS

Population data

The patients of the study were at the age of 19 to 46. The average age of those patients was 31. The standard deviation is equal to 4.8 among the patients; the majority of them about 67% had taken tertiary education. A lot of patients were married and more than half lived in the urban area. *Table 1* below shows the whole data in detail. There is no connection found between the demographic region and the postpartum depressive disorders. Other variables of the demographic area were not tested. There were no inclusion criteria for any control group.

Table 1: The total number of patients was 150 in the whole study

Variable	N	%
Education		
Primary	6	3.8
Secondary	43	25.1
Tertiary	101	69.3
Marital status		
Married	122	82
Unmarried	25	17
Divorced	3	1
Place of residence		
City	81	55.8
Town	39	26.2
Village	30	3

The present history of pregnancy

A considerable relation between the duration of pregnancy and the depressive disorder due to pregnancy was found. There was an inverse relationship between the duration of pregnancy and postpartum disorder. The greater the duration of history for example 37 gestational weeks, the lower was the depression and in the same way, the 35 weeks pregnancy shown a higher rate of depression in the female patients. A considerable correlation is also found between the order and parity with that of postpartum depression. The given table shows that the difference between high and low values of week of gestation, gravidity and parity is minor. There is not a great difference between them. The values are written below in the *Table 2*.

The female patients with a higher rate of mood disorders had premature rupture of membranes. It had a higher rate as compared to the control group *(Table 3)*.

The congenital defects and disease were found in 33 patient mothers from high-risk postpartum disorder when they were analyzed intragestationally. This group had more percentage of defected children as compared to the other group. The number of participants in the control group was 23. There is no statistically considerable difference between the two groups. *Table 4* below shows the disease reported in fetuses.

A very few participants showed psychological problems. There is no such result available. There is no intragestational psychological problem found in any participant. The Mann-Whitney U non-parametric evaluation showed that there is no significant difference between the participants with smoking issues and non-smokers. *Table 5* below shows the comparison of non-smokers with smokers. The table shows the high and low proportion of comparison between smokers and non-smokers.

Table 2: The contrast of variables related to the development of delivery in the patients (Mann-Whitney U test) (Z-Standardized Test Statistic)C

EPDS	N	Mean	Standard Deviation	Z	p
Week of Gestation					
High	75	38.49	4.376		
Low	75	37.21	2.891	-2.996	0.003
Gravidity					
High	75	1.65	0.774		
Low	75	1.75	0.882	-2.275	0.04
Parity					
High	75	1.3	0.871		
Low	75	1,69	0.673	-1.848	0.045

Table 3: The contrast of the presence of Premature Rupture Of Membranes (PROM) in the patients (chi-square test)

EPDS			High	Low	Chi-Square	p
PROM	0	N	26	31	0.5	0.5
		%	59	66		
	1	N	19	16		
		%	42	3		

Table 4: Diseases testified in the neonates (chi-square test)

EPDS			High	Low	Chi-Square	p
Disease and defects	No diseases or congenital defects	N	41	53	3.99	0.03
		%	57	68		
	A congenital defect in the neonate	N	11	6		
		%	17	7		
	A disease in the neonate (No congenital defects)	N	20	19		
		%	29	23		

Table 5: The evaluation of smoking practices in the participants

EPDS			High	Low	Chi-Square	p
Smoking	No	N	65	67	1.6	0.2
		%	90	96		
	Yes	N	8	16		
		%	10	3		

DISCUSSION

One of the America's best known psychotherapists and psychiatrists has stated that females often experiences postpartum depression which is a physiological reaction of the body towards the physical stress caused by pain, hormonal changes, tiredness, and mental stress due to new changes and role in mother's life. However, the factors observed before and during pregnancy played significant role in defining postpartum depression. A study carried out in Chins revealed another aspect; according to it, pregnant ladies with exposure to cellular phones were subjected to postpartum depression. Young mothers indulged more into the fear of incompetency of raising a child in comparison to old mothers. The same study also showed that depression declined after the 1st month of delivery in women who underwent cesarean section, Med. Delivery, or moderate preterm delivery. A study encapsulating population revealed that postpartum depression has link with several factors like old age. This study also showed that ethnicity and age of marriage also significantly defines the frequency of postpartum depression. They also report that level of education, tobacco smoking, family income, and duration of marriage does not specifically play role in PPD. According to a study, primiaparas (21.3, 28%) showed higher prevalence of postpartum depression than multiparas (12.5%).

As per another study conducted in Pakistan, the development of PPD is impacted also by the number of children a female has, gender of the child born and the planned of un-expected nature of pregnancy. Combined study of Nepal and Nigeria showed that the number of alive childbirths and high number of alive children plays protective factor against PPD. Again, to consolidate the stance, another study was conducted in 13 different Japanese hospitals which encapsulated about 3760 pregnant females. This study showed that the risk of postpartum depression development was greater in primiapras than in multiparas women in the 1st month after delivery. Available research rules have also confirmed that shorter pregnancy duration was associated with higher risks of depression disorders after delivery. In cases of premature birth, babies have premature features that in turn decreases their immunity and increases their susceptibility to infections and need of treatments. This increases fear, anxiety and depression in mothers.

A cross-sectional qualitative study was carried out in Vietnam. This study depicted that PPD is associated with not just the type of birth or pregnancy duration but also with the level of education, intragestational diseases like hypertension, diabetes, infections, and liver patholo-

gies, and the absence, presence or extent of satisfaction with family life. Women who depicted a happy family life, better communication and social interactions showed less chances of prevalence of PPD symptoms. Maternal hypertention and gestational diseases like diabetes mellitus were also found as contributing factors to PPD. Moreover, low birth weight of the baby, delayed initiation of breastfeeding and premature delivery increased the risk of PPD as well (Silverman ME, *et al.*, 2017). A retrospective analysis revealed that depression after delivery was 3 times higher in women who went through intragestational preeclampsia, and in case of severe preeclampsia the risk was four times higher.

Similarly, studies also found that obesity also added up to the stress mechanism. Anthropometric studies revealed that the increased ratio of mood disorders were owing to the height, obesity or body weught gain during pregnancy, BMI, waist to hip ratio; all these factors added up to the suicide ratio as well as acute depression conditions. Some other factors like being a widow, low socio-economic state, and poor social circle added up to the risks of developing post-delivery depression in 300 women in a study conducted in 12 different hospitals in Pakistan. A study carried out in the Bronx depicted that women that were financially weak or unemployed showed higher risk of having PPD almost 28% in comparison to employed women with 14% (Liu S, *et al.*, 2017). These demonstrated that weak personal attributes like decision making power, social-support and communication skills led to the development of postpartum depression at higher rate.

Within 14 days of child birth, women were expected to experience the symptoms of anxiety 30% and depression 35%. A study carried out in Iran encapsulating 300 women showed that postpartum depression was observed more in women who were worried about physical functioning, declined emotional health due to fear of impaired role, fatigue, and social function. Poor family support, anxiety about the newborn, family history of depression, marital relation issues, less sleep hours, continuous strain on muscles and mind, and financial problems all collectively contribute to the severe postpartum depression. In many cases, where doctors didn't take medical family history of the patients, they came to know about history of psychiatric disorders only when they observed psychiatric symptoms in the patients after child birth. The health of child and appropriate family functioning greatly depends upon the frame and status of mind of a female after child birth. Medical professionals have a spot here of looking into this matter since the very beginning of the pregnancy, suggesting women multiple relaxing ways and providing psychological support. It is extremely important to sort out the chances of developing postpartum depression in various women during delivery to effectively cop up with the developing symptoms afterwards (Hussain-Shamsy N, *et al.*, 2020).

CONCLUSION

The detailed study has shown that females with EPDS higher scores depicting the risk of depression disorders development in the postpartum period is present in relatively low percentage. Primigravidas and women who underwent premature delivery were most prone to PPD. It is imperative for primigravidas women to undergo screening tests and psychological trainings to fight depression and strengthen their sense of motherhood competency. These kind of training programs should be introduced over the perinantal period, e.g. amid antenatal classes. Females with premature deliveries should be given more attention postnatally because they need more social and emotional support. This research paper also revealed that the importance of gaining precise medical history like inform of forms, is extremely imperative in handling mental disorders especially that are socially stigmatized.

REFERENCES

1. Hanley J. Perinatal mental health: A guide for health professionals and users. John Wiley and Sons. 2013.
2. Takahashi YU, Tamakoshi KO. Factors associated with early postpartum maternity blues and depression tendency among Japanese mothers with full-term healthy infants. Nagoya J Med Sci. 2014; 76(1-2): 129.
3. American Psychiatric Association. Diagnostic and statistical manual of mental disorders: DSM-5. American Psychiatric Association. 2013.
4. O'Hara MW, Wisner KL. Perinatal mental illness: definition, description and aetiology. Best Pract Res Clin Obstet Gynaecol. 2014; 28(1): 3-12.
5. Zanardo V, Volpe F, de Luca F, Giliberti L, Giustardi A, Parotto M, *et al.* Maternity blues: A risk factor for anhedonia, anxiety, and depression components of Edinburgh Postnatal Depression Scale. J Matern Fetal Neonatal Med. 2020; 33(23): 3962-3968.
6. Azad R, Fahmi R, Shrestha S, Joshi H, Hasan M, Khan AN, *et al.* Prevalence and risk factors of postpartum depression within one year after birth in urban slums of Dhaka, Bangladesh. PLoS One. 2019; 14(5): 0215735.
7. Kitzinger S. The new experience of childbirth. Orion Publishing Group. 2012.
8. Eleonora BB. Psychological Aspects of Procreation. Silesian Publishing House. 2006.
9. Manjunath NG, Giriyappa RV. Postpartum blue is common in socially and economically insecure mothers. Indian J Community Med. 2011; 36(3): 231.
10. Jaeschke R, Siwek M, Dudek D. Postpartum mood disorders-update 2012. Neuropsychiatry Neuropsychol. 2012; 7 (3): 113.
11. Kaźmierczak M, Gebuza G, Gierszewska M. Emotional disorders of the postpartum period. Nurs Probl. 2010; 18(4): 503-511.
12. O'Hara MW, Schlechte JA, Lewis DA, Varner MW. Controlled prospective study of postpartum mood disorders: psychological, environmental, and hormonal variables. J Abnorm Psychol. 1991; 100(1): 63.
13. Lancaster CA, Gold KJ, Flynn HA, Yoo H, Marcus SM, Davis MM. Risk factors for depressive symptoms during pregnancy: a systematic review. Am J Obstet Gynecol. 2010; 202(1): 5-14.
14. Ghaedrahmati M, Kazemi A, Kheirabadi G, Ebrahimi A, Bahrami M. Postpartum depression risk factors: A narrative review. J Educ Health Promot. 2017; 6: 60.
15. Kripa B. Marwaha Raman Postpartum Blues. Stat Pearls Publishing LLC. 2020.
16. Buttner MM, Mott SL, Pearlstein T, Stuart S, Zlotnick C, O'Hara MW. Examination of premenstrual symptoms as a risk factor for depression in postpartum women. Arch Womens Ment Health. 2013; 16(3): 219-225.
17. Robertson E, Grace S, Wallington T, Stewart DE. Antenatal risk factors for postpartum depression: a synthesis of recent literature. Gen Hosp Psychiatry. 2004; 26(4): 289-295.
18. Seyfried LS, Marcus SM. Postpartum mood disorders. Int Rev Psychiatry. 2003; 15(3): 231-242.

19. Zauderer C. Postpartum depression: How childbirth educators can help break the silence. J Perinat Educ. 2009; 18(2): 23-31.

20. Hapgood CC, Elkind GS, Wright JJ. Maternity blues: phenomena and relationship to later post partum depression. Aust N Z J Psychiatry. 1988; 22(3): 299-306.

21. Cox JL, Holden JM, Sagovsky R. Detection of postnatal depression: development of the 10-item Edinburgh Postnatal Depression Scale. Br J Psychiatry. 1987; 150(6): 782-786.

22. Cox JL, Holden J, Henshaw C. Perinatal mental health: the Edinburgh Postnatal Depression Scale (EPDS) manual. RC Psych publications. 2014.

23. Lanes A, Kuk JL, Tamim H. Prevalence and characteristics of postpartum depression symptomatology among Canadian women: a cross-sectional study. BMC Public Health. 2011; 11(1): 1-9.

24. Silverman ME, Reichenberg A, Savitz DA, Cnattingius S, Lichtenstein P, Hultman CM, *et al.* The risk factors for postpartum depression: A population-based study. Depress Anxiety. 2017; 34(2): 178-187.

25. Liu S, Yan Y, Gao X, Xiang S, Sha T, Zeng G, *et al.* Risk factors for postpartum depression among Chinese women: path model analysis. BMC Pregnancy Childbirth. 2017; 17(1): 1-7.

26. Hussain-Shamsy N, Shah A, Vigod SN, Zaheer J, Seto E. Mobile health for perinatal depression and anxiety: Scoping review. J Med Internet Res. 2020; 22(4): e17011.