

# Postpartum Depression, Prevalence and Risk Factors: A Prospective Study Conducted at the University Obstetric Gynecological Hospital "Koco Gliozheni"

Irida Dajti<sup>1\*</sup>, Enkeleda Prifti<sup>2</sup>

<sup>1</sup> Resident at Obstetrics- Gynecology Department, Faculty of Medicine, University of Medicine, Tirana, Albania

<sup>2</sup> Obstetric-Gynecologist Doctor at University Hospital of Obstetric Gynecology "Koco Gliozheni"; Faculty of Medicine, University of Medicine, Tirana, Albania

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## Abstract

**Introduction:** Postpartum depression affects 10-15% of women after childbirth and is a health pathology which has short-term and long-term effects on young mothers, their children and families.

The aim of this study was to assess the prevalence of postpartum depression at the University Obstetric Gynecological Hospital "Koco Gliozheni" and to look at its risk factors.

**Material and methods:** This is a prospective study conducted at the University Obstetric and Gynecological Hospital "Koco Gliozheni" during a period of 1 year through which postpartum depression in women was assessed, also the factors that may affect postpartum depression.

This study was conducted from January 2021 to December 2021 and included 200 patients. The p

values < 0.05 were considered statistically significant.

**Results:** The study found that the prevalence of postpartum depression was 8% and 92% of women surveyed did not have postpartum depression.

The study also assessed the degree of postpartum depression and found that: 40% of women had minimal depression, 22% had mild depression, 21% had moderate depression, 11% had moderately to severe depression, and 6% had severe depression. It was estimated that the average age of women who had developed postpartum depression was 27 years. Mode of delivery (vaginal vs. cesarean section) was not significantly associated with depression (OR-1,03, 95%CI: 0,578-1,85, p=0,9). We found a

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**Address for correspondence:** Irida Dajti\*, Resident at Obstetrics- Gynecology Department, Faculty of Medicine, University of Medicine, Tirana, Albania. Email: iridadajti@yahoo.com

statistically significant association between the perinatal complications and postpartum depression (OR-3,36, 95 % CI: 1,703-6,656, p=0,005) also with prenatal depression and anxiety and PPD (OR-2,37, 95%CI; 1,33-4,23, p=0,003). No statistically significant association was found between the maternal education, age, employment, household income and PPD.

80% of women in the study did not seek psychological counseling for their condition.

**Conclusions:** Postpartum depression greatly affects the quality of life of new mothers. Early diagnosis and treatment of postpartum depression will affect both these mothers and their babies, as well as the atmosphere of the whole family.

**Keywords:** postpartum depression, mother, women.

## INTRODUCTION

The birth of a child is almost always seen as a period of joy and happiness in a woman's life (1). But the birth process represents the most paradoxical experience in a woman because in addition to the act of bringing her baby to life, she has to challenge the psychosocial load which tests femininity and personal preparation, bringing about major transformations in her life and increasing the risk for psychological disorders (2,3). The incidence of depression is high especially in the puerperal period where hormones and psychosocial factor affect what is called postpartum depression (DPP), which is observed especially after 4-6 weeks from birth (4).

From the characteristics of DPP we can mention 5 main symptoms: depressive load, loss of desire or interest in various activities, insomnia, poor concentration, feelings of guilt or remorse, thought of death or suicide, thoughts that persist throughout the day for at least two weeks (3).

Major predisposing factors for postpartum depression are generally social, such as: stressful life events, stress while caring for a child, prenatal anxiety (5). Overall a previous history of postpartum depression, conflict in the couple, single women also affect its occurrence (6,7). It was previously believed that only women from western countries suffer from postpartum depression (8). However, conditions with similar symptoms have been seen in other countries (9). Studies show that women in Europe and Australia have lower rates of postpartum depression than

women in America (10). For most women the symptoms are transient and are known as postpartum blue periods; however, in 10-15% of women the symptoms persist longer and are more severe (11).

There are conflicting opinions in various studies regarding the way of giving birth and breastfeeding in cases with risk factors for postpartum depression (12,13), where the sex of the child is considered as a risk for postpartum depression in some studies (14). Postpartum depression can affect much in the sub-child relationship which is expressed by insecurity, avoidance and disorganization of the affective part of the child. Other consequences of maternal depression at school age include low levels of social cooperation (15,16).

Due to the short-term and long-term effects on children and families, postpartum depression needs to be studied, especially in less developed countries where it is almost elusive, undiagnosed or untreated (17). Evidence shows an increase in the prevalence of mental pathologies of mothers and children in underdeveloped countries (17,18).

In the local medical level, the identification of mental pathologies is not considered a priority, mental health care is not integrated with the primary health care system, mental disorders are generally stigmatized for women and their families and there is a lack of information of women about the possibility of developing postpartum depression. Also, the social determination of poverty, gender stereotypes,

domestic violence, gender discrimination, cultural differences make the management of postpartum depression more difficult in underdeveloped countries (19).

This is a cohort study developed at the University Obstetric and Gynecological Hospital Koco Gliozheni, which aims to assess the prevalence of postpartum depression and to look at its risk factors.

## MATERIAL AND METHODS

This is a prospective study conducted at the University Obstetric and Gynecological Hospital "Koco Gliozheni" during a period of 1 year through which postpartum depression in women was assessed, with regard also to the factors that may affect postpartum depression.

This study was conducted from January 2021 to December 2021 and part of this study were 200 patients. The included patients were women who were pregnant and gave birth to a live child, women aged 16-45 years, their pregnancy was term, healthy to give consent for this study, women who agreed to be contacted by the hospital for the first postnatal visit 6 weeks after birth.

The study did not include women who could not give their consent, had a previous history of psychiatric treatment or were diagnosed with a psychiatric pathology, pregnancy with fetal abnormalities.

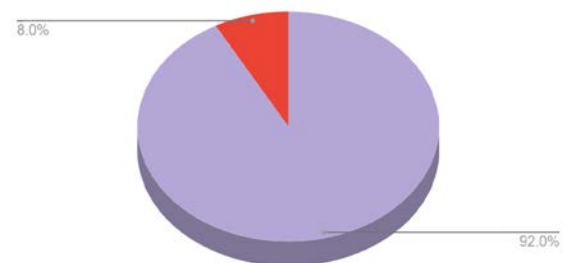
The questionnaire was based on the Edinburgh Postnatal Depression Scale (EPDS), the most widely used questionnaire for assessing

postpartum depression. It is constructed with 10 questions which based on a score from 0-30 assess the severity of symptoms. Part of the questionnaire were some general questions such as related to the socio-demographic part, psychological risk factors and obstetric ones.

Approval to be part of this study was obtained 1 day after vaginal birth and 2 days after birth with cesarean section if the patient was in good health. After 6 weeks from the day of birth patients presented to the hospital and in anonymously and in complete privacy have completed the questionnaire.

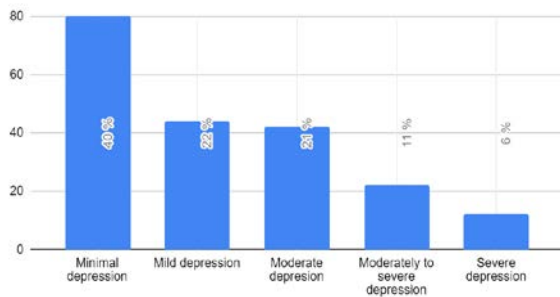
## RESULTS

The study found that the prevalence of postpartum depression was 8% and 92% of women surveyed did not have postpartum depression (Figure 1).



**Figure 1.** Prevalence of postpartum depression

The study also assessed the degree of postpartum depression and found that: 40% of women had minimal depression, 22% had mild depression, 21% had moderate depression, 11% had moderately to severe depression, and 6% had severe depression (Figure 2).



**Figure 2.** Degree of postpartum depression

In the women who were part of the study 5 (2,5 %) of them were aged 16-20 years, 137 (68,5%) of them aged 20-29 years, 52 (26 %) of them aged 30-39 years, 6 (3%) of them aged 40-45 years. It was estimated that the average age of women who had developed postpartum depression was 27+-5,5 years. In the study, mother's age failed to significantly predict postpartum depression ( $p = 0,8$ ).

Among the newly delivered mothers 78 (39%), [OR-0,61, 95%CI: 0,36-1,15,  $p=0,1$ ] had university degree, 92 (46%), [ OR-1,12. 95%CI: 0,63-1,99,  $p=0,6$ ] secondary school and 30 (15%), [OR-1,28, 95% CI: 0,58-2,78,  $p=0,5$ ] primary school. Education was not significant associated with postpartum depression (Table1). Family income was noted as good in 87 women (43,4 %), [OR-0,7, 95%CI:0,40-1,25,  $p=0,2$ ] and as medium income in 107 women (53,5 %), [OR-1,3, 95%CI:0,74-2,27,  $p=0,3$ ] and as low income in 6 women (3,1%), [OR-1,8, 955CI: 0,32-1,08,  $p=0,5$ ].

Maternal employment was noted only in 61 patients (30,5 %), [OR-0,71, 95%CI:0,39-1,306,  $p=0,2$ ], but that revealed no significant association with postpartum depression.

(73 %) were non-smokers and (7 %) were active smokers. We found no statistically significant correlation between the postpartum depression and smoking ( $p=0,20$ ).

No statistically significant association was found between the maternal education, age, employment, household income and PPD.

In 64 women (32 %) a complication during pregnancy was noticed (anemia, hypertension, preeclampsia, hyperemesis, gestational diabetes, risk of abortion, risk of preterm birth, urinary infection, hyperthyroidism, allergies). We found a statistically significant association between the perinatal complications and postpartum depression (OR-3,36, 95 % CI: 1,703-6,656,  $p=0,005$ ).

There was no significant difference in the way of giving birth, 38% of women had given birth vaginally, 30% of women had given birth by emergency cesarean section and 32% of women had planned cesarean section.

From the total sample size, 76 (38%) underwent vaginal delivery and 124 women (62 %) were delivered by cesarean section. Mode of delivery (vaginal vs. cesarean section) was not significantly associated with depression (OR-1,03, 95%CI: 0,578-1,85,  $p=0,9$ ).

80% of women in the study did not seek psychological counseling for their condition. Prenatal anxiety and depression was seen in 48% of women and it is significantly associated with postpartum depression (OR-2,37, 95%CI: 1,33-4,23,  $p=0,003$ ).

Regarding their current psychological condition, when asked about what might have affected: 35% of women related the condition to the current situation with COVID-19, 20 % of women with the process of childbirth and pregnancy, 10% of women answered for financial problems, 1% for racism, 4% for couples, 5% for the current situation in the country, 22% answered that nothing has affected, 2 % have chosen loneliness or self-closure as the answer, 1% the feeling of losing something or someone.

**Table 1.** Obstetric and psychological factors association with postpartum depression

Factors	%	OR	95%CI	P
<i>Age</i>				
<30 years	71%	1,04	0,56-1,92	0,88
>30 years	29%	0,95	0,51-1,76	0,88
<i>Maternal level of education</i>				
primary school	15%	1,28	0,58-2,78	0,5
secondary school	46%	1,12	0,63-1,99	0,6
university	39%	0,61	0,36-1,15	0,1
<i>Income</i>				
poor	3,1%	1,80	0,32-1,08	0,5
medium	53,5%	1,30	0,74-2,27	0,3
good	43,4%	0,7	0,40-1,25	0,2
<i>Maternal employment</i>				
yes	30,5%	0,71	0,39-1,306	0,2
no	69,55	1,4	0,76-2,56	0,21
<i>Smoking</i>				

yes	7%	0,52	0,17-1,58	0,2
no	73%	1,91	0,63-5,79	0,25
<i>pregnancy complications</i>				
yes	32%	3,36	1,7-6,65	0.005
no	68%	0,29	0,15-0,58	0.005
<i>mode of delivery</i>				
vaginal	38%	0,96	0,53-1,72	0,9
sc	62%	1,03	0,57-1,85	0,91
<i>prenatal anxiety/depression</i>				
yes	48%	2,37	1,33-4,23	0.003
no	52%	0,42	0,23-0,75	0.003

## DISCUSSION

Through this study some valuable conclusions were drawn, it was observed that postpartum depression was about 8%. There is a wide range globally of reported PPD prevalence varying from a rate of 7.6% in Canada, 13.8% in Japan to 23.5% in Turkey, 27.3% in China followed by high incidence rate of PPD up to 33.4% in Iran, 36.7% in Korea, 39.4% in Bangladesh and 47.4% in Eswatini, South Africa (10).

Regarding the degree of postpartum depression, the values obtained were significant and similar as conclusions with other studies conducted in different countries (10).

Most of the women in the study belonged to the age of 20-29 years which constitute the largest percentage of women who give birth and less the age of 16 to 20 years and the age of 40-45 years.

Scientific research also refers to the age group 20-39 years as the age group that has the highest risk of developing postpartum depression due to the fact that it is the age group where women give birth to their children. In our estimation, age 27 +/- 5,5 years is the riskiest age to develop postpartum depression but age was not significantly associated with postpartum depression. The study has also found that maternal education was not significantly associated with the risk of PPD. Data from the present study showed that poor, medium and good household income were not significant predictors of postpartum depression. A meta-analysis of 13 studies which included 1.476.922 women showed that prenatal smoking was associated with higher incidence of PPD. Yet, our results showed no association between smoking and PPD (Table1) (18).

Mode of delivery (vaginal versus cesarean section) was not significantly associated with postpartum depression in the present study (OR-1,03, 95%CI: 0,578-1,85, p=0,9). Current finding is consistent with other previous studies and a meta-analysis. The major explanations for these results include use of regional anesthesia, effective postoperative pain management and maternal perception of cesarean section as a safe, pain-free option for childbirth (12).

Our data confirmed that perinatal complications are associated with increased risk for postpartum depression (OR-3,36, 95 % CI: 1,703-6,656, p=0,005). Other studies reported similar results revealing a significant correlation between the

complications during pregnancy and PPD. Also we have seen a strong correlation with prenatal anxiety or depression and PPD (OR-2,37, 955CI: 1,33-4,23, p=0,003) (20).

What was noticed as something special was the fact that a high percentage of women (35% of them) linked their psychological situation with COVID-19, something that should be studied further with other studies.

The study was limited by a smaller sample size, the use of one screening tool for depression among other tools. The study, therefore, missed out on the many other mothers who were not present at the hospital at the time of the study. Moreover, the study failed to determine the prevalence of PPD based on the tools used in other epidemiological studies. However, the Patient Health Questionnaire (PHQ-9) is a multipurpose instrument for screening, diagnosing, monitoring, and measuring the severity of depression (20).

## CONCLUSION

Postpartum depression greatly affects the quality of life of new mothers. Early diagnosis and treatment of postpartum depression will affect both these mothers and their babies, as well as the atmosphere of the whole family. For this reason, more studies should be done in this aspect not only in screening and diagnosis of postpartum depression but also in its management.

Ethics approval and consent to participate

This study was approved by the directorate of the University Obstetric and Gynecological Hospital

"Koco Gliozheni" to be performed with patients of this hospital. Each patient was informed in detail about this study and was asked if they want to be part of it or not, their approval was also obtained. Confidentiality was guaranteed before administering the questionnaires. The study has been performed in accordance with the Declaration of Helsinki by the protection of the life, health, dignity, integrity, as well as ensuring the right to self-determination and the protection of the privacy, and confidentiality of personal information of research subjects.

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**Conflict of Interest Statement:** The authors declare that they have no conflict of interest.

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