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ORIGINAL ARTICLE

FACTORS THAT CAN INFLUENCE POSTPARTUM DEPRESSION: Study in a Reference Hospital in the Amazon Region

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Highlights:
(1) Breastfeeding and newborn weight are important markers of health care.
(2) There was no relationship between the type of delivery and postpartum depression.
(3) The bond created between mother and baby can be a protective factor against PPD.

ABSTRACT

Objective: Investigate from the clinical epidemiological profile, factors that may influence the possibility of Postpartum Depression (PPD) in pregnant women assisted at the Santa Casa de Misericordia do Pará Foundation. *Methods*: This was a prospective, descriptive, cross-sectional cohort study with a quantitative approach. Two questionnaires were applied: one for self-assessment of postpartum depression, based on the Edinburgh Postpartum Depression Scale, and another, developed by the researchers themselves, containing information on sociodemographic data and maternal obstetric history. The questionnaires were applied to postpartum women. The established cut-off point was greater than or equal to 10, with a sensitivity of 82.6% and a specificity of 65.4%. Statistical significance was analyzed by the G and Chi-Square Adherence Tests, adopting a significance level of 5%. *Results*: 214 questionnaires were collected. The prevalence of Ages was 20-29 years old, completed high school, unemployed, breastfeeding and nulliparous. Of the complications during pregnancy hypertensive disorders showed statistical significance. In the group studied, there was no relationship between the types of parturition with the PPD. The existence of a correlation between PPD and breastfeeding, the newborn's weight and the mother's mood was verified. *Conclusion*: No association was found between the type of parturition and the presence of postpartum depression. Of the factors that showed significance, there are breastfeeding and birth weight, which are important markers of maternal and child health care, and it is necessary to emphasize the primordiality of stimulating breastfeeding soon after birth while still in the maternity ward also relating to the mother-baby bond as a protective factor.

Keywords: pregnant; postpartum depression; normal delivery; cesarean section; maternity hospital.

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FATORES QUE PODEM INFLUENCIAR A DEPRESSÃO PÓS-PARTO: ESTUDO EM HOSPITAL DE REFERÊNCIA NA REGIÃO AMAZÔNICA

RESUMO

Objetivo: Investigar, a partir do perfil clínico-epidemiológico, fatores que podem influenciar na possibilidade de Depressão Pós-Parto (DPP) em gestantes atendidas na Fundação Santa Casa de Misericórdia do Pará. *Métodos*: Trata-se de um estudo de coorte prospectivo, descritivo, transversal, com abordagem quantitativa. Foram aplicados dois questionários: um para autoavaliação da depressão pós-parto, baseado na Escala de Depressão Pós-Parto de Edimburgo, e outro desenvolvido pelas próprias pesquisadoras, contendo informações sobre dados sociodemográficos e antecedentes obstétricos maternos. Os questionários foram aplicados às puérperas. O ponto de corte estabelecido foi maior ou igual a 10, com sensibilidade de 82,6% e especificidade de 65,4%. A significância estatística foi analisada pelos Testes G e Qui-Quadrado de Aderência, adotando-se o nível de significância de 5%. *Resultados*: Foram coletados 214 questionários. A prevalência de idade foi 20-29 anos, Ensino Médio completo, desempregadas, nulíparas e estavam amamentando. Das complicações durante a gestação, os distúrbios hipertensivos apresentaram significância estatística. No grupo estudado não se observou relação do tipo de parto com a DPP. Foi verificada a existência de correlação entre DPP e aleitamento materno, peso do recém-nascido e ao humor da puérpera. *Conclusões*: Não foi encontrada uma associação entre o tipo de parto e a presença de depressão pós-parto. Dos fatores que apresentaram significância encontram-se o aleitamento materno e o peso ao nascer, sendo estes importantes marcadores de cuidado em saúde materno-infantil, salientando-se a primordialidade do estímulo à amamentação após o nascimento ainda na maternidade, relacionando, também, com o vínculo mãe-bebê como fator protetor.

Palavras-chave: gestante; depressão pós-parto; parto normal; cesariana; maternidade.

INTRODUCTION

The different modes of delivery – vaginal and cesarean – have great historical relevance and for the clinical routine in the obstetrics, although both present risks and benefits according to the context applied to each pregnant woman, also causing consequences for the puerperal woman[1]. The current gestational experience has focuses that go beyond the purely physical spectrum of pregnancy, also addressing psychosocial aspects of the gestational process, including labor and the puerperium[2]. In this context, one of the central pillars of this process is the mother's relationship with her infant, a process that begins in the prenatal period and extends after birth[3].

In Brazil, the rate of women with Postpartum Depression (PPD) has increased significantly, reaching more than 18% of the female population[4]. In clinical practice, several complications can affect this pillar one of which is Postpartum Depression (DPP). As for as it is concerned, the DPP is a pathology defined in the fifth version of the Statistical and Diagnostic Manual of Mental Disorders (DSM-V) as an episode of major depression that occur in the first four weeks after the birth of the baby[5,6] which has a very heterogeneous clinical condition.

DPP can be characterized by mood lability and cognitive psychomotor and vegetative changes which are manifested through irritability, frequent crying, feeling of guilt and helplessness, low self-esteem, lack of energy and pleasure in performing daily activities, eating and sleeping disorders[7]. Such characteristics can affect the interaction between mother and baby and may even be related to the premature interruption of breastfeeding, as well as having consequences in the infant[8] cognitive development. There are also reports of increased risks of self-mutilation suicidal thoughts end infanticide[9].

Previous studies, such as of the Barros and Aguiar (2019)[10], identified factors to the presence of DPP symptoms pointing out as some of the main ones: Difficulty breastfeeding and early interruption and gestational and delivery complications. In the clinical context, the different modes of delivery can have different outcomes and their influence on the presence of symptoms of this pathology in the puerperium is possible.

In Brazil, there have already been studies on the guidelines to be established for puerperal care in Primary Health Care, but many of the World Health Organization's recommendations differ from those recommended by the Brazilian Ministry of Health[11].Thus, studies on puerperal women that reveal the influence of factors that lead to PPD are extremely important to guide therapeutic approaches based on evidence[11,12].

In this context, for the greatest well-being and safety of the mother-baby binomial, it is necessary to identify such factors that may be related to the involvement of Postpartum Depression symptoms[10]. Therefore, it is necessary in addition to identifying socioeconomic profiles and biological factors to analyze the relationship between the mode of delivery and PPD symptoms. Therefore, the aim of this study was to determine the possible triggers of postpartum depression in puerperal women treated at a referral hospital in the Brazilian Amazon.

METHOD

This is a prospective, descriptive, cross-sectional cohort study with a quantitative approach, whose purpose is to verify the factors related to Postpartum Depression during the puerperium. This research complies with the Nuremberg code and having passed an ethic committee it received approval. Free and Informed Consent was used for participation in the research, with women, between 24 and 48 hours after childbirth, with at least 18 years of age.

Two questionnaires were applied: one for the Self-Assessment of Postpartum Depression, based on the Edinburgh Postnatal Depression Scale (EPDS), and another prepared by the researchers themselves based on the study by Hartman et al.[12], containing information on sociodemographic data and maternal obstetric history, as well as other questions of interest to the research.

The research was carried out between September 2022 and December 2022, in a reference hospital in the Amazon Region, Fundação Santa Casa de Misericórdia do Pará (FSCMPA), with puerperal women one or two days after giving birth. The research took place in the final phase of the pandemic, which denotes a gestation period within the pandemic moment, which made it difficult to obtain a larger sample number. All the patients read the informed consent form and agreed to answer the questions. Those who did not want to take part in the study or who needed to be isolated due to problems during the delivery procedure were excluded.

Data were analyzed descriptively and analytically with data on mood pleasure in daily activities, feeling of guilt, anxiety and concern, feelings of panic, daily tiredness, difficult sleeping, sadness and thoughts suicide. This information was identified to quantify according to the Edinburgh Postnatal Depression Scale (EPDS) the intensity of the depressive symptom, this scale being composed of ten items with answers on a Likert scale (0 to 3). The scale ranges from 0 to 30 with higher scores indicating greater severity of depressive symptoms. The established cut-off point was greater than or equal to 10 with a sensitivity of 82,6% and specificity of 65,4%. Statistical significance was analyzed using the G and Chi-Square Adherence Tests adopting a significance level of 5%. The data collected and analyzed were organized using Microsoft Excel 2016 and presented in the tables format and figures.

RESULTS

At the end of research 214 questionnaires were collected from patients who agreed to participate in the study, as well as meeting the research inclusion criteria. The majority (59,3%) were between 20 and 29 years old, with an average age of 26,8 years old for the surveyed population. Regarding schooling most (43%) had completed high school and 49 respondents (22,89%) had completed elementary school. Most claimed to have a family income of approximately 1 to 2 minimum wages (52,3%.). However, the majority (76,2%) responded that they were not employed at the time of the interview. As for the number of residents in the residence 104 (48,6%) claimed to live with 3 or 4 people, followed by the number of 5 or more residents (33,2%) (Table 1).

Table 1 – Sociodemographic characteristics

Variables	N	%
Age range (years)		
< 20	24	11,2%
20 a 29*	127	59,3%
30 a 39	53	24,8%
> = 40	10	4,7%
Education		
Incomplete elementary school	35	16,4%
Complete elementary school	14	6,5%
Incomplete high school	34	15,9%
Complete high school*	92	43,0%
Incomplete higher education	18	8,4%
Complete higher education	21	9,8%
Family income		
< 01 income	61	28,5%
01 a 02 incomes*	112	52,3%
> 02 incomes	29	13,6%
I don't want to inform	12	5,6%
Is currently employed		
yes	51	23,8%
No*	163	76,2%
Number of residents in the house		
01 to 02	39	18,2%
03 to 04*	104	48,6%
05 or more	71	33,2%

*p < 0.0001 Chi-Square Adherence Test

Source: Authors (2023).

Regarding the number of pregnancies, the majority of puerperal women reported having had only one pregnancy (36%) and it is possible to observe a decrease according to the increase in the number of pregnancies with the lowest percentage (7,5%) referring to five or more pregnancies. Most denied having suffered a previous abortion (78,5%). The highest percentage regarding breastfeeding was of mothers who were managing to breastfeed (74,8%) (Table 2).

Table 2 – Variables related to pregnancy and the puerperium

Variables	N	%
Number of pregnancies		
One*	77	36,0%
Two	62	29,0%
Three	36	16,8%
Four	23	10,7%
Five or more	16	7,5%
Have you ever had an abortion?		
Yes	46	21,5%
No*	168	78,5%
Is breastfeeding		
Yes*	160	74,8%
No	54	25,2%

*p < 0.0001 Chi-Square Test

Source: Authors (2023).

About 162 (75,7%) of the research participants stated that the pregnancy was desired, and this number reduced to (33,6%) when asked if the pregnancy was planned. Regarding the feeling of sadness and depression during pregnancy, most (56,1%) answered this question in the affirmative. As for the history of previous depression 46 women (21,5%) stated that they had already had the disease. Furthermore, regarding the use of substances harmful to health, 28 (13,1%) participants reported having consumed alcohol, 13 (6,1%) tobacco and 4 (1,9%) used illicit drugs during pregnancy a gestação (Table 3).

Table 3 – Variables related to the pregnancy period

Variáveis	N	%
Desired pregnancy*	162	75,7%
During pregnancy, did you feel sad or depressed	120	56,1%
Planned pregnancy	72	33,6%
History of past depression	46	21,5%
Consumption of alcoholic beverages during pregnancy	28	13,1%
Smoking during pregnancy	13	6,1%
Drug use during pregnancy	4	1,9%

*p < 0.0001 Chi-Square Adherence Test

Source: Authors (2023).

Among the complications mentioned, the group of hypertensive disorders such as Systemic Arterial Hypertension (SAH) and pre-eclampsia, emerged as the most prevalent (62%), followed by gestational diabetes mellitus (18%), genital tract infection (13%) and nonspecific bleeding (10%) (Figure 1).

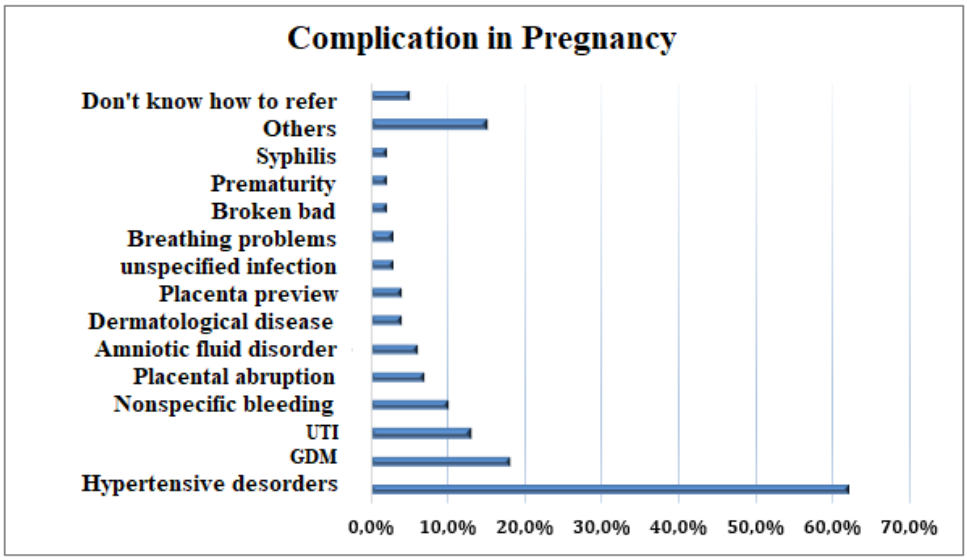


Figure 01 -– Complications in the pregnancy of postpartum women.

Source: Authors (2023).

Regarding the type of delivery 113 (52,8%) of the mothers underwent cesarean delivery, while 101 (47,2%) had a vaginal delivery. Regarding complications during childbirth the majority (82,2%) denied having had any complications. 17,8 had complications (Figure 2).

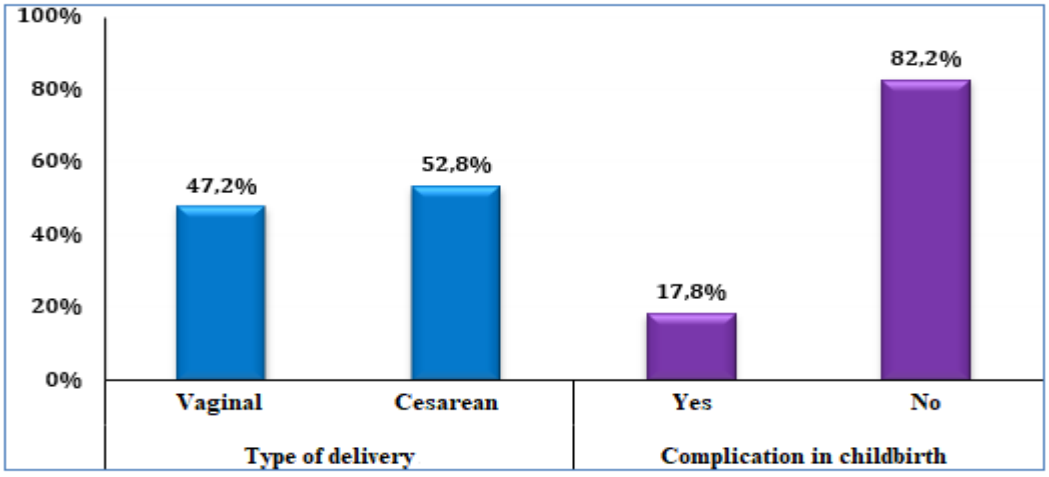


Figure 2 – Type of delivery and complications during delivery.

Source: Authors (2023).

The majority (67,8%) of newborns had full term gestational age. Regarding weight, most had normal weight (44,9%), followed by insufficient weight (29,9%) (Table 4).

Table 4 – Gestational age and birth weight of newborns.

Variables	N	%
NB gestational age		
Pre-term	62	29,0%
Forward*	145	67,8%
Post-term	3	1,4%
Birth weight		
Law weight	44	20,6%
Insufficient weight	64	29,9%
Normal weight*	96	44,9%
Macrosomic	5	2,3%
No information	5	2,3%

*p < 0.0001 G Adherencia Test

Source: Authors (2023).

Among puerperal women who underwent vaginal delivery the average score on the questionnaire was 5,35 ± 5,84 and those who underwent delivery the average was 5,34 ± 4,88. However, there was no statistically significant difference between groups (p=0,4078).

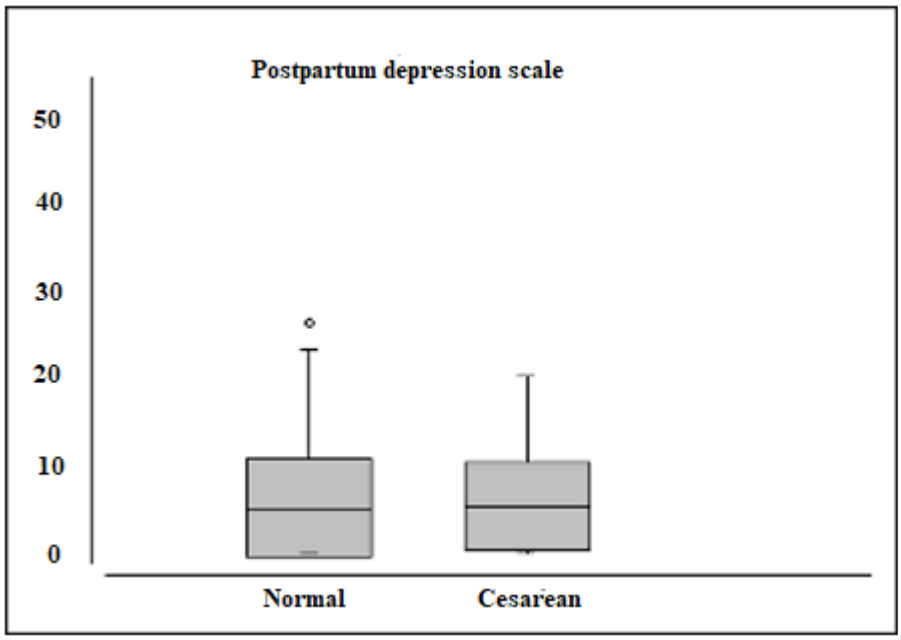


Figure 3 – Comparison of scores according to the type of delivery performed.

Source: Authors (2023).

Mean values were low, suggesting no depression. When evaluating the self-assessment responses, it was observed that the values that should vary between 0 and 3, varied between 0.17 (The idea of harming myself or my child crossed my mind) to a maximum of 1.09 (I have been feeling anxious or worried without good reason), suggesting the absence of factors that indicate Postpartum Depression (Table 5).

Table 5 – Postpartum women's self-assessment response

Postpartum Depression Self-Assessment	Average	PD
The idea of harming myself or my child crossed my mind	0,17	0,55
I have been able to laugh and find humor in things.	0,32	0,66
I have been feeling so miserable that I've been having trouble sleeping.	0,39	0,83
I feel pleasure when I think about what is about to happen in my day-to-day life.	0,41	0,77
I have been feeling scared or panicked for no good reason.	0,41	0,83
I have been feeling so unhappy that I have been crying.	0,43	0,78
I have been feeling sad or devastated.	0,50	0,92
I have been feeling overwhelmed by the tasks and events of my day-to-day life.	0,63	0,90
I have blamed myself unnecessarily when things go wrong.	1,00	1,12
I have been feeling anxious or worried for no good reason.	1,09	1,12

Source: Authors (2023).

The possible existence of correlation between the researched variables was verified. There was statistical significance in the relationships between the following variables: the greater the breastfeeding, the lower the probability of postpartum depression (p= 0.0031)*; as well as, the higher the birth weight, the lower the risk of postpartum depression (p= 0.0317)*; the more sad and depressed the pregnant woman feels, the greater the probability of postpartum depression (p= 0.0001)* (Table 6).

Table 6 – Correlation between postpartum depression and variables surveyed in postpartum women

Variáveis	Coeficiente de Correlação	p-valor
Age	- 0.0527 ou - 5.27%	0.4433
Education	0.0456 ou 4.56%	0.9032
Family income	- 0.0443 ou - 4.43%	0.9055
Is currently employed	- 0.0024 ou 0.24%	0.9945
Breastfeeding	**- 0.8029 ou - 80.29%**	**0.0031***
Type of delivery	0.0569 ou 5.69%	0.8836
No. of pregnancies	0.0333 ou 3.33%	0.6281
Felt sad or depressed	**0.4294 ou 42.94%**	**0.0001***
Planned desired pregnancy	- 0.1293 ou 12.93%	0.0600
Had pregnancy complications	0.1322 ou 13.22%	0.8140
Birth weight	**- 0.4476 ou - 44.76%**	**0.0317***

*Pearson Correlation Test

Sources Authors (2023).

DISCUSSION

Mental health is an essential pillar in the multidimensional care of any patient. During the pregnancy puerperal period, many women are more susceptible to hormonal changes imposed by the physiological changes of pregnancy that may predispose to more depressive symptoms and mood swings[13]. In this context, postpartum depression emerges as one of the major mental health problems, affecting approximately 15% of women in this period[14].

The present study highlights the influence of factors present during the pregnancy period that may be associated with the genesis of postpartum depression. Understanding these psychological and organic factors and how they influence depressive symptoms can contribute to improving the care offered to these women, as a form of prevention and even more effective control of depression.

According to the DSM-IV (Diagnostic and Statistical Manual of Mental Disorders, fifth edition), postpartum depression can be defined as a "major depressive episode" that can occur within 4 weeks of delivery. However, the difficulty in diagnosing PPD represents an important challenge, since puerperal women do not always show signs of depression during the postpartum period, and health professionals often do not even question the patients' mood. In this sense, our study found a statistical association between postpartum depression and feeling sad and depressed during pregnancy ($p= 0.0001$). In the literature, risk factors related to PPD and the prenatal period include genetic predisposition to depression, having a previous family diagnosis, depression or anxiety at some point in life, or other mental health diagnoses, in addition to the use of substance abuse[15].

Although in the present study, a low number of responses was obtained regarding a family diagnosis of depression, it is understood that this data is related to the low number of diagnoses made in the field of mental health, since access to the health is still uneven, in addition to difficulties in accepting the diagnosis due to taboos regarding mental disorders and the search for specialized care.

As for the excessive use of substances, it was found that 28 women interviewed consumed alcoholic beverages and 13 consumed tobacco during pregnancy. In international data, in the United Kingdom, in 2018 alone, about 5.4% of women reported using illicit drugs during pregnancy[16,17]. In Brazil in 2012 of the 21.32% of women who consumed illicit drugs, 13% were pregnant. It is important to emphasize the organic consequences that the abuse of these substances can bring to both the mother and the fetus. Excessive alcohol consumption can trigger cardiovascular diseases, depression, as well as gestational complications such as pre-eclampsia, placental abruption, premature labor and low birth weight[17,18]. For the fetus, complications range from intrauterine growth restriction, prematurity and even sudden infant death[17]. Thus, it is essential to always approach and ask pregnant women about the use of psychoactive substances, so that early identification can instigate awareness measures about their use.

Other risk factors identified in the studies were unexpected pregnancy and low socioeconomic and educational level. In other works[18,19], it was found that young women were a risk factor for PPD, and the probability of PPD decreases with increasing age, some studies also found a prevalence of PPD in younger mothers of approximately 26%. Furthermore, this study found that low monthly income was another risk factor for PPD, and poor living conditions and earning less than one minimum wage were identified as risk situations for depression[20]. Most of the women interviewed in our study had completed high school, with a medium-low economic level, being out of the job market, which may influence the higher rates of sadness and feelings of depression found in the study.

Among the complications during pregnancy 46.7% of the pregnant women had some type, among which the most prevalent were hypertensive disorders (such as HAS and pre-eclampsia), Diabetes Mellitus Gestational (DMG) and Urinary Tract Infection (UTI) and nonspecific hemorrhages. Some studies show that intercurrences during pregnancy such as seizures, bleeding, DMG can generate unwanted behavioral patterns during pregnancy. Furthermore, in the face of a possible fetal loss or the possibility of aggravation of the condition and both maternal and fetal complications, such feelings

can trigger feelings of sadness and maternal depression[22]. Zhao & Zhang (2020)[23] also show previous DM and/or DMG as the main risk factor for the development of PPD.

In this study, there was no statistically significant difference between the type of delivery and PPD, which could be due to the limitation of the sample arrangement. However, it can be observed in the literature[22,23,24] that cesarean delivery may be more associated with the occurrence of PPD, due to the growing maternal expectation of normal delivery, often frustrated by complications in the intrapartum period itself or maternal impossibilities related to the path, object or motor of childbirth. Such factors and expectations linked to the gestational maternal experience end up generating frustration leading to psychic suffering in the first postpartum weeks, favoring the onset of PPD.

Weight below the 10th percentile for gestational age is considered abnormal or small for gestational age, characterizing uterine growth restriction (IUGR). In addition, a weight of less than 2,500 grams, even when appropriate for gestational age, is also considered a risk factor for neonatal complications according to the World Health Organization (WHO). Within this context, some studies show that mothers with low birth weight and/or preterm babies have rates of around 40% chance of developing PPD in the first weeks after delivery. Furthermore, cases of prolonged PPD are more likely to occur in those mothers who had more preterm births, babies with low birth weight and a noticeable lack of family support[21,23]. Such data corroborate the statistically significant findings of the present study that the higher the birth weight, the lower the risk of developing PPD, that is, low birth weight is shown to be an important risk factor.

It is important to emphasize that there was a statistically significant and inversely proportional relationship between the presence of breastfeeding and the risk of developing PPD, that is to say, the relationship and bond created between the mother and her baby appears as a protective factor for this disease. Study carried out in Spain in 2020 by Gila-Díaz et al.[25] corroborates this statement, which, when evaluating 711 mothers' questionnaires, observed that women who were exclusively breastfeeding had less perceived stress and lower risk of PPD when compared to mothers who had mixed breastfeeding after 3 months of the baby's birth.

This study was conducted during a difficult period for public health. The Covid-19 context made it difficult for researchers to access the collection site and influenced the inclusion of more postpartum women in the study. Furthermore, the fact that the pregnancy was conducted during the pandemic may have directly and indirectly limited the results of this research. Therefore, new approaches should be taken to ratify the results obtained here.

CONCLUSION

In this study, among the various factors that may be linked to the genesis of postpartum depression, only the variables breastfeeding and newborn weight showed a significant relationship with PPD, indicating that the bond created between the mother and her baby may be a protective factor against PPD. However, socioeconomic profile values and biological factors were not statistically significant to affirm that they determine or condition PPD. Furthermore, this study found no association between the type of delivery and the presence of PPD, despite the use of a validated and reliable scale. Thus, we highlight the importance of new in loco studies with a larger sample size to determine more efficiently and accurately which factors are closely linked to PPD and to support health policies that help postpartum women stand up to the disease.

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