Research Article

DETERMINANTS ASSOCIATED WITH POSTPARTUM DEPRESSION IN PUERPERAL WOMEN TREATED AT A HEALTH CENTER

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ABSTRACT

The research determined the sociocultural, psychological and biological determinants that are associated with PPD in puerperal women treated at the San Rafael Norte Health Center, Chilpancingo, Guerrero. Mexico. Methods: A quantitative, cross-sectional, observational, analytical, cases and controls study. The convenience sample consisted of 28 cases and 59 controls. Two instruments were used: the social determinants questionnaire and the Edinburgh Postpartum Depression Scale (EPDS). The Chi-Square test was performed with (p <0.05) and Odds Ratio with 95% CI. Results: 32.2% of the puerperal women present PPD. The sociodemographic determinants associated with PPD are: schooling (p = 0.007), socioeconomic position (p = 0.002), the psychological determinants associated with PPD are evidenced: satisfaction of the puerperal couple with the sex of the baby (p = 0.009), relationship with the partner (p = 0.000), planned pregnancy (p = 0.007), in pregnancy having felt sadness (p = 0.029), presenting feelings of guilt or lack of self-esteem (p = 0.000), and experiencing an event stressful (p = 0.033), body satisfaction after pregnancy (p = 0.002) and the biological determinants associated with PPD are: presenting complications during delivery (p = 0.047) and type of feeding the baby is receiving (p = 0.013). Conclusions: The OR analysis determined when the puerperal couple does not provide an economic income, and when she suffers from violence, the risk of developing PPD increases. While not feeling sad, not having low self-esteem, not experiencing stressful events, not smoking and not consuming alcohol are protective factors, reducing the possibility of suffering from postpartum depression three times.

INTRODUCTION

Depression occurs when feelings of sadness, loss, anger, or frustration interfere with daily life for a long period of time, affects people of all ages, social conditions, and can lead to psychosocial disability. [1] Depression is an alteration in brain function that manifests itself at any age and in each group of the population it presents in different ways. However, it is more common in women. Some symptoms of depression are: sadness, anger, frustration, disinterest in your favorite activities, headaches, digestive problems, increased or loss of appetite, tiredness and sleep disturbances. [2] Women of reproductive age are at higher risk of depression than men.[3]

Postpartum depression (PPD) is a known entity that affects not only women but the entire family. It affects women the hardest and most chronically due to their greater sensitivity to stress, and multiple social roles in the community. [4] According to the Pan American Health Organization, depression is attributed to rapid psychosocial changes, an increase in chronic diseases, and excessive drug use, such as tranquilizers, antihypertensives, and contraceptives. [5] It also points to postpartum depression. It is very common, affects one in six women who give birth. It is estimated that it currently affects more than 300 million people worldwide. [3]

Depression can become chronic or recurrent and sensibly hinder performance at work, school, and the ability to face with daily life. In the most serious form, it can lead to suicide. Women who suffer from it are unable to take care of themselves, their family and their babies, while at the same

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time it could negatively affect their quality of life.[6] PPD is a public health problem in several countries, with a worldwide prevalence that fluctuates between 10% and 15%, three times higher in developing countries than in developed countries, being higher in women from low socioeconomic status. In 2014 Latin America has reported a high prevalence of Chile 50.7%, Colombia 32.8%, Mexico 32.6%, Peru 24.1% and Venezuela 22%. [7]

In Mexico, according to the National Institute of Statistics and Geography (INEGI), one in 10 Mexican women who have a childbirth suffers from postpartum depression. [8] Likewise, depression is among the ten main causes of loss of years of healthy life and is considered the main reason for work disability. People with major depression lose up to 2.7 more days from work than those with diabetes, respiratory disorders, heart problems, or arthritis. During the puerperium, a series of sociodemographic, psychological and biological changes occur that cause greater vulnerability in the appearance of PPD, despite being a pathology that brings adverse consequences not only for puerperal women, but also has a negative impact on the mother-child relationship, the couple and the family. [9]

In Mexico, in 2016, the 2010 Mexican Official Standard project was updated "For the care of women during pregnancy, childbirth and the puerperium and of the newborn," which included "Identify data on depression or any other disorder in relationship to mental health during pregnancy, childbirth and the puerperium. " [10] Despite this inclusion, currently in health centers screening is not performed to identify postpartum depression, it is intended with these results to implement screening of systematic way to provide better nursing care in prenatal care due to the increase in the prevalence of PPD. [9]

The study was developed in the urban health center "PRI" provides first level care, prenatal care consultation, uses the referral system and counter referral at the time of risk pregnancy and delivery to second level hospitals. The objective of the study was: To determine the sociocultural, psychological and biological determinants associated with PPD in puerperal women attended at the San Rafael Norte Health Center, Chilpancingo, Guerrero; and Determine the prevalence of PPD.

METHODOLOGY

87 puerperal women who attended their prenatal follow-up at the Health Center, San Rafael Norte, Chilpancingo, Guerrero, were studied. A quantitative, observational, analytical, cases and controls investigation was carried out, with a ratio of two controls to one case. With a non-probability sampling scheme for convenience, the population, corresponding to 28 cases and 59 controls. The study period was January 1 to February 12, 2019, for the collection of information two questionnaires were used, the Edinburgh Postpartum Depression Scale (EPDS) validated with a Cronbach's alpha of .82. A second questionnaire "Social Determinants Associated with Postpartum Depression, the instrument was formulated with variables of greater association in the reviewed studies. They were applied to the studied group with prior informed consent. Analysis plan for data processing, the statistical software SPSS version 23 was used, with a confidence level of 95% and a p-value (.05), the Chi-square statistical test was performed for the association of variables and the odds ratio (OR) was also obtained.

RESULTS

The results of 87 women who were in late puerperium, with 5 weeks of evolution are presented, the demographic characteristics of the studied population are the following: average age 25.8 years and a standard deviation of 5.8, with a minimum age range of 15 years and 38 years maximum, prenatal control was evaluated according to the number of visits attended, it was with an average of 5 prenatal visits. The prevalence of postpartum depression (PPD) was 32.2% in surveyed puerperal women.

Analysis of Association of Variables And Odds Ratio

Regarding the evaluation of the risk factors for PPD in the patients, it was possible to demonstrate the behavior of the sociodemographic determinants: According to the age of the population studied, it was found that 82.1% were postpartum adults in the cases and 81.4% in controls. Regarding marital status, 53.6% of the cases live in a free union and in controls, 57.6% were married, schooling in cases was 53.6% with basic education and 32.2% with high school education in controls, In relation to occupation, it is observed both in the cases and in the controls, 64.3% and 62.7% are housewives respectively, 82.1% of the cases consider their economic position to be low.

Table No 1 Estimation of Social Risks For Postpartum Depression

Characteristics	Category	Without depression controls		With depression controls		X^2	P<0.05	OR	CI 95%
		n (59)	%	n (28)	%				
Age	Teen	11	18.6	5	17.9	.008[a]	.929	1.054	.328-3.390
	Adult	48	81.4	23	82.1				
Civil status	With couple	57	96.6	25	89.3	1.881[a]	.170	.292	.046-1.859
	Single	2	3.4	3	10.7				
Education	< Basic level	36	61.0	25	89.3	7.242[a]	.007	.188	.051-.694
	> High school level	23	39.0	3	10.7				
Occupation	Not working	37	62.7	18	64.3	.020[a]	.887	.934	.366-2.382
	Worker	22	37.3	10	35.7				
Speak an indigenous language	Yes	7	11.9	7	25	2.426[a]	.132	.404	.126-1.293
	No	52	88.1	21	75				
Your partner currently provides you with an income	Yes	54	91.5	24	85.7	.691[a]	.406	**1.800**	.444-7.299
	No	5	8.5	4	14.3				
How do you consider your socioeconomic position	Low	28	47.5	23	82.1	9.518[a]	.002	.192	.066-.586
	> Average	31	52.5	5	17.9				

Own source: data obtained from the survey applied to puerperal women in the C.S. San Rafael Norte, Chilpancingo, Guerrero.

They showed a significant relationship with PPD development (p = <0.05), education ($X2 = 7.242$; p = 0.007) and their socioeconomic position ($X2 = 9.518$; p = 0.002). On other part, the OR analysis determined that there is a 1.80 times on higher risk of presenting postpartum depression when the puerperal couple does not provide an income (OR: 1.80); 95% CI (0.444–7.299). That is, when the puerperal couple does not provide them with an economic income, the risk of developing postpartum depression increases, although these data were not significant (p> 0.05). Likewise, for this study, the basic level of schooling, speaking an indigenous language and having a low economic position are a protection factor (See table 1)

Analyzing the psychological determinants of risk in the cases, the following was observed: 57.1% their partner is satisfied with the sex of their baby, 71.4% consider having a good relationship with their partner, 57.1% their pregnancy was not planned, 78.6% during pregnancy felt sad, 71.4% during pregnancy, presented feelings of guilt or lack of self-esteem, 53.6% during pregnancy, did not experience any stressful event, 57.1% expressed body satisfaction after delivery. (see table 2).

The psychological determinants showed a significant association with the presence of PPD, the following: your partner is satisfied with the sex of your baby ($X^2 = 9.436$; p = 0.009), as he considers the relationship with his partner ($X^2 = 20.795$; p = 0.000), her pregnancy was planned ($X^2 = 7.361$; p = 0.007), during pregnancy she felt sad ($X^2 = 4.776$; p = 0.029), during pregnancy, she presented feelings of guilt or lack of self-esteem ($X^2 = 29.135$; p = 0.000), during pregnancy, she experienced some stressful event ($X^2 = 4.671$; p = 0.033), body satisfaction after delivery ($X^2 = 9.207$; p = 0.002). (See table No.2)

Table 2 shows the estimation of the risk for these determinants, it was shown that there are 4,781 times more presenting PPD when the puerperal couple is not satisfied with the sex of their baby (OR: 4,781; 95% CI 1,663–13,749) . The risk increases 3,583 times more in having PPD when the pregnancy is not planned (OR: 3,583; 95% CI 1,395–9,203) (p <0.05). Likewise, the risk of having PPD is increased 4,781 times when the puerperal woman does not feel satisfied with her body image (OR: 4,781; 95% CI 1,663–13,749).

Table No 2 Estimation of Psychological Risks for Postpartum Depression

Characteristics	Category	Without depression controls		With depression controls		X^2	P<0.05	OR	CI 95%
		n (59)	%	n (28)	%				
Your baby was discharged with you	Yes	53	89.8	24	85.7	.316[a]	.574	1.472	.380 – 5.701
	No	6	10.2	4	14.3				
You are satisfied with the sex of your baby	Yes	59	100	27	96.4	2.132[a]	.144	-	.966 – 1.114
	No	0	0	1	3.6				
Your partner is satisfied with the sex of your baby	Yes	51	86.4	16	57.1	9.207[a]	.002	4.781	1.663 –13.749
	No	8	13.6	12	42.9				
Your pregnancy was planned	Yes	43	72.9	12	42.9	7.361[a]	.007	3.583	1.395 – 9.203
	No	16	27.1	16	57.1				
During pregnancy, you felt sad	Yes	32	54.2	22	78.6	4.776[a]	.029	.323	.114 - .913
	No	27	45.8	6	21.4				
During pregnancy, I have feelings of guilt or lack of self-esteem	Yes	8	13.6	20	71.4	29.135[a]	.000	.063	.021- .190
	No	51	86.4	8	28.6				
During the pregnancy, you experienced a stressful event	Yes	14	23.7	13	46.4	4.571[a]	.033	.359	.138 - .933
	No	45	76.3	15	53.6				
Body satisfaction after delivery	Yes	51	83.4	16	57.1	9.207[a]	.002	4.781	1.663 – 13.749
	No	8	13.6	12	42.9				
Smoking during pregnancy	Yes	2	3.4	3	10.7	1.881[a]	.170	.292	.046 – 1.859
	No	57	96.6	25	89.3				
Consuming alcohol during pregnancy	Yes	7	11.9	6	21.4	1.367[a]	.242	.494	.149 – 1.637
	No	52	88.1	22	78.6				
Suffers from violence	Yes	4	6.8	1	3.6	.361[a]	.548	1.964	.209 – 18.430
	No	55	93.2	27	96.4				

Own source: data obtained from the survey applied to puerperal women in the C.S. San Rafael Norte, Chilpancingo, Guerrero.

Table No 3 Biological Risk Estimation for Postpartum Depression

Characteristics	Category	Without epression controls		With depression controls		X^2	P<0.05	OR	95%
		n (59)	%	n (28)	%				
Number of deliveries	Primigravida	22	37.3	12	42.9	.043[a]	.836	.909	.368 – 2.243
	Multigesta	37	62.7	16	57.1				
Type of obstetric resolution	Vaginal delivery	38	64.4	19	67.9	.100[a]	.752	.857	.330 - 229
	Caesarean section	21	35.6	9	32.1				
Complications during the current pregnancy	Yes	27	45.8	12	42.9	.065[a]	.799	.889	.359 – 2.202
	No	32	54.2	16	57.1				
Complications during childbirth	Yes	19	32.8	13	46.4	1.652[a]	.199	1.825	.726 – 4.587
	No	40	67.8	15	53.6				
Type of feeding your baby is receiving	Exclusive maternal breast	44	74.6	12	42.9	8.330[a]	.004	3.911	1.512 – 10.119
	Non-exclusive maternal breast	15	25.4	16	57.1				
Complications during breastfeeding	Yes	40	67.8	19	67.9	.000[a]	.995	.997	.381 – 2.612
	No	19	32.2	9	32.1				

Own source: data obtained from the survey applied to puerperal women in the C.S. San Rafael Norte, Chilpancingo, Guerrero.

In other words, when the puerperal woman is not satisfied with her body image, the risk of developing postpartum depression increases.

In the risk estimation, as can be seen that only the fact of suffering violence increased the risk of presenting PPD 1,964 times more (OR: 1,964; 95% CI .209 - 18,430). In other words, when the puerperal woman suffers from violence, the risk of developing postpartum depression increases, these data were not significant (p> 0.05). (See table No.2) While not feeling sad, not having low self-esteem, not experiencing stressful events, not smoking and not consuming alcohol are protective factors, reducing the possibility of suffering from depression three times.

Regarding the Behavior of the biological determinants in the cases and controls, it is observed in the population under study, the highest proportion are multigesta both in the cases and in the controls 57.1% and 62.7% respectively, regarding the number of consultations 42.9% of the cases attended between 1 and 3 prenatal consultations and 44.1% of the controls attended more than 7 prenatal consultations, 14.35% of the cases and 18.6% of the controls presented premature birth as a complication in delivery, In 42.9% of the cases, the feeding that the baby received was exclusively maternal breast. 67.9 of the puerperal women presented complications during breastfeeding (Mastitis, Cracks in the nipple). (See table No. 3)

It is observed that there is statistical significance between the biological determinants, during the current delivery with the variables present complications (X^2 = 9.641; p = 0.047) and type of feeding that your baby is receiving (X^2 = 8.628; p = 0.013) with the presence postpartum depression (p <0.05). The estimation of the risk for these determinants is presented, it was shown that when the puerperal woman presented complications during childbirth, they had a risk of 1,825 times higher in having PPD (OR: 1,825; 95% CI .726–4.587). In other words, when the puerperal woman presents complications during childbirth, the risk of developing postpartum depression increases. (See table 3)

Furthermore, when the baby's type of feeding is not exclusive maternal breast, there is a 3,911 times higher risk of having PPD (OR: 3,911; 95% CI 1,512–10,119). In other words, the type of feeding that is not exclusive maternal breast increases the risk of developing PPD. (See table No.3)

DISCUSSION

This research shows a prevalence of 17.9% in adolescent puerperal women and 82.1% in adult puerperal women with postpartum depression, in adults the low level of education prevailed and showed statistical significance with the presence of PPD (p = 0.007) this result has similarity with what was presented by Molero KL. *Et al*, identified that 4% of the puerperal women surveyed with PPD are adolescents and 72% are adults, with a low educational level prevailing (p <0.05).[7] The opposite result with Rincón *et al* in their study carried out in Colombia found statistical significance between the university school level and the presence of PPD (p = <0.05).[8]

In this research, 58.6% of puerperal women with low socioeconomic status are presented, with statistical significance between low socioeconomic status and the presence of PPD (p = 0.002) the study coincides with the research by Silva *et al* implemented in Brazil, where 58.0 % of the puerperal women are of low socioeconomic status and it identify statistical significance with the presence of PPD (p = 0.002).[12] In the present study it is shown that 44.8% of the puerperal women have a child and it was obtained that the number of children is not associated with the presence of PPD (p = 0.958). Unlike Dante García in his thesis implemented in Peru in 2015, he found that 94.4% of puerperal women have 1 to 3 children and obtained an association between PPD and number of children (p = 0.029).[13]

In this research it was found that there is a statistically significant relationship between postpartum depression and poor relationship with the partner (p = 0.000), Contreras *et al* in their research implemented in Chile in 2017, identified that the aspects related to poor relationship with partner and the presence of PPD were statistically significant (p = <0.05)[14] In our research, 62.1% of the puerperal women mentioned having experienced sadness during pregnancy, it had significance with the presence of PPD (p = 0.029) in similarity with Romero *et al* in their study implemented in 2017 in Mexico, reporting that 42.2% of puerperal women experienced sadness during pregnancy and there was statistical significance with the presence of PPD (p = 0.000).[15]

In this research in the variable during pregnancy present feelings of guilt and low self-esteem has significance at PPD (p = 0.000), Zaidi *et al* in their study implemented in India in 2017 indicates that there is a significant association between postpartum depression and low self-esteem (p = 0.007)[4], likewise Molero KL. *Et al* in their research implemented in Peru in 2014, identified that having feelings of guilt is associated with postpartum depression (p = 0.001)[8] In this study it is shown that 31% of postpartum women experienced a stressful event during pregnancy, and presents a statistical association with the presence of PPD (p = 0.033), Romero *et al* points out that 30.5% of puerperal women suffered a stressful life event during pregnancy and is associated with the presence of PPD (p = 0.011),[13] Zaidi *et al* in her study implemented in India in 2017 mentions that 36.80% of puerperal women presented a stressful event during pregnancy, also pointing out that there is an association with the presence of PPD (p = 0.003)[4] another study implemented by Silva *et al* in Brazil in 2012 indicates that 56.2% presented some stressful event during pregnancy and showing an association with the presence of PPD (p = 0.023)[12]

In the present study, it was identified that 23% of puerperal women who are not satisfied with their body image after pregnancy, this variable is associated with the presence of PPD (p = 0.002) a study by Romero *et al* found that the 20.1% are not satisfied with the changes that pregnancy left in their body, likewise body dissatisfaction after delivery is associated with the presence of PPD (p = 0.007).[15] In the present study it was found that primiparity did not is associated with the presence of PPD and there is no risk (p = 0.619, OR: 0.793; 95% CI 0.317-1.987), Cerda Sánchez MA in her research implemented in Lima, Peru in 2017 reported the opposite that there is a probability of 1.15 times more in having PPD when the woman is primiparous (p = 0.762, OR: 1.15; 95% CI 0.472 - 2.787).[16]

In the present study it was obtained that there is no relationship between having complications during pregnancy with the presence of PPD (p = 0.895), Dante García E, in Peru in 2015, found that there is a statistically significant relationship

between PPD and complications in the pregnancy (p = 0.045). [13] In the present study, it was found that 32.2% of puerperal women presented complications with breastfeeding, as well as no association between PPD and complications during breastfeeding (p = 0.905) Molero KL. *Et al* in his research implemented in Peru in 2014, on the contrary, he identified that 28.6% of the puerperal women presented difficulty with breastfeeding and there is an association between PPD and the difficulties that the puerperal woman presents with breastfeeding (p = 0.000) . [8]

CONCLUSIONS

It is evidenced for every 10 puerperal women, 3 women presented PPD, the problem observed in second-level health institutions becomes serious and mainly in health centers such as the one studied where no screening test is applied during the puerperal period. The characteristics of the evaluated sociodemographic determinants were determined and showed a significant association for the development of PPD, education, their socioeconomic position. Among the psychological determinants showed statistical significance, the satisfaction of the woman's partner with the sex of the baby, the relationship with her partner, her pregnancy was planned, during the pregnancy she felt sad, presented feelings of guilt or lack of self-esteem, lived some stressful event, post-pregnancy, she feels satisfied with her body image with PPD. And in the biological determinants where there is statistical significance with PPD, present complications during delivery and the type of feeding that your baby is receiving.

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