

An Assessment of the Risk Factors and Concerns of Postpartum Depression among Mothers Seeking Health Care in North Central Trinidad

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Abstract

Background: Postpartum depression (PPD) is a debilitating mental disorder which affects mainly females usually after giving birth. **Objectives:** We aimed to study the risk factors and concerns of PPD among mothers seeking health care at regional health authority hospitals in Trinidad. **Materials and Methods:** The cross-sectional study consisted of 360 mothers from the postnatal and neonatal clinics of the North Central Regional Health Authority, Trinidad. Data were collected via a questionnaire using convenience sampling to study the risk factors and concerns of PPD among mothers. Participants were asked to sign a consent form before filling out the questionnaire. The questions were geared toward obtaining mother's perspective on predisposing factors of PPD, identifying if they are at risk for perinatal depression, the outcomes of having PPD, and determining if they were screened and treated for it. **Results:** This study comprised 360 postnatal women among which 4.7% were diagnosed with postpartum while 40% scored ≥ 10 in the Edinburgh Postnatal Depression Scale which indicated a risk for PPD. This research revealed seven significant predictors of PPD: family history of mental illness, baby blues, mood swings during period, use of oral contraceptives, emotional support, life stress, and being diagnosed with depression ($P < 0.05$). Other characteristics like sociodemographics were not remarkably correlated but marginally indicative of depressive signs. **Conclusion:** The study shows that many risk factors of PPD exist, and screening and treatment should be used to avoid the consequences of PPD.

Keywords: Concerns, Edinburgh Postnatal Depression Scale, postpartum depression, risk factors

INTRODUCTION

Postpartum depression (PPD) is a debilitating mental disorder which affects mainly females usually after giving birth. It can typically manifest as difficulty sleeping, mood changes, appetite changes, anxiety, crying, trouble focusing, reduced interest in diurnal pastimes, and exhaustion, thus making it difficult to care for themselves or for others. According to Cheryl Beck, in a predictors of PPD article, approximately 13% of women experience PPD worldwide, and Psychiatrist Dr. Gerard Hutchinson, in Raising the Lid on PPD article, stated that studies done at Mt Hope and San Fernando General Hospital showed that after 2–3 weeks postlabor, PPD rates were as high as 35%.^[1,2] A study done by Persad *et al.* with a sample size of 602 antenatal and postnatal patients asserted that the point prevalence of PPD was 38.5% in North Central Trinidad.^[3]

Predisposing factors increase the possibility of mothers acquiring PPD, some of which include lack of support, prior PPD, financial stress, a history of mood changes with menstrual cycles or oral contraceptives, and a family history of depression and mental illness. This illness can have longstanding consequences on a child causing the behavioral, cognitive, and academic development to be impaired. Currently, there is no screening for PPD at any health facilities in Trinidad and Tobago despite the probable adverse effects on both mother and infant. This results in numerous patients being undiagnosed

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and untreated. There are valid tools available for screening PPD such as the EPDS which was implemented in this study.

This investigation aims to assess the risk factors and concerns of PPD that mothers face, as there are not many studies on the subject at present in Trinidad. Findings of this study can indicate risk factors in Trinidad that play a role in women having PPD as well as women at risk for developing PPD. Furthermore, increasing public awareness of PPD, as well as common concerns among mothers via targeted campaigning, can encourage mothers to not trivialize their mental health and seek help if necessary. The implementation of screening in public health facilities can aid in diagnosing and treating PPD, thus reducing the negative consequences of the illness in both mother and child.

MATERIALS AND METHODS

The cross-sectional study consisted of 360 mothers from the postnatal and neonatal clinics of the North Central Regional Health Authority. This study was conducted from January 2019 to August 2019. The study was approved by the Campus Ethics Committee of the University of the West Indies (CEC776/11/18). Written informed consent was obtained from the participants prior to completing the questionnaire (all patients agreed to participate in the study and fill the study questionnaire). Data were collected using a questionnaire via convenience sampling consisting of 35 questions via single-point cluster sampling in the postnatal and neonatal clinics of Mount Hope Women's Hospital, Chaguanas District Health Facility, St. Joseph and Macoya Health Centers. The annual attendance rate of these clinics comprises approximately 56,000 mothers who attend for postnatal and neonatal care in which both mother and baby are assessed together and is representative of the population. The first 25 questions consisted of demographic questions which included age, marital status, ethnicity, and employment status and closed-ended questions specific to assessing possible risk factors and concerns that mothers can have after giving birth, as well as the effects of any PPD that develops. The remaining questions were those of the Edinburgh Postnatal Depression Scale (EPDS). The American College of Obstetricians and Gynecologists recommends a standardized validated tool and cites both the EPDS and the Patient Health Questionnaire-9 as appropriate to screen for postnatal depression.^[4] We chose the EPDS as the study was conducted in a primary care setting, having been validated in primary care postnatal and nonpostal women. The EPDS is a versatile tool that is used to assist health professionals in detecting mothers that are at risk for PPD. Elements of the scale correspond to numerous clinical depression symptoms, such as guilt feeling, sleep disturbance, low energy, anhedonia, and suicidal ideation. For each question, the patient will choose one of four possible replies that reflect how she has been feeling over the past 7 days. Responses are scored as 0, 1, 2, or 3 for a maximum score of 30. Higher scores ≥ 10 indicate more depressive

symptoms.^[4] Cox *et al.* found that the diagnostic validity of the EPDS scores ≥ 10 had satisfactory sensitivity (79%) and specificity (85%) for PPD.^[5] The sample size was determined based on the formula: $n = (Z_{1-\alpha})^2 \times (P [(1 - P)]/D^2)$, where $Z = 1.96$ corresponding to 95% confidence level, P was 0.295, and D (the margin of error) = 0.05. Using the formula, the minimum sample size needed was 320 mothers seeking health care at regional health authority hospitals. The size taken was 360 mothers seeking health care at regional health authority hospitals.

RESULTS

The prevalence of PPD was 4.7%, and 40% of the participants had an EPDS score ≥ 10 . Of the 4.7% diagnosed with PPD [Table 1], 3.6% of the participants had an EPDS score ≥ 10 . 95.3% of the participants were not diagnosed with PPD by a doctor, and of this, 36.4% of the participants had an EPDS score ≥ 10 .

Participants of 73.7% were not asked questions about PPD. Participants of 43.1% with an EPDS score < 10 were not asked questions about PPD by their doctor. For those with an EPDS score ≥ 10 , 9.4% of the participants were asked questions about PPD while 30.6% were not.

Participants with PPD were more likely to have a family history of mental illness compared to those who did not have a family history of mental illness (odds ratio [OR]: 3.369; confidence interval [CI] 95%: 1.232–9.212). There was no statistical significance between there being a recent death in the family and having PPD as well as for if there were complications during or after birth, if the pregnancy was planned or not, and if participants had mood swings when taking oral contraceptives as $P > 0.05$. For those with PPD, the odds were higher that participants experienced baby blues (OR: 5.727; CI 95%: 1.617–20.29). Participants with PPD were more likely to be diagnosed with depression (OR: 22.992; CI 95%: 7.835–67.46) [Table 2].

Participants with an EPDS score ≥ 10 were more likely to have a family history of mental illness (OR: 2.041; CI 95%: 1.751–5.282). Participants with an EPDS score ≥ 10 were more likely to have a recent death in the family (OR: 2.488; CI 95%: 1.553–3.984). For those with an EPDS score ≥ 10 , the odds were higher that participants experienced baby blues (OR: 3.608; CI 95%: 2.315–5.621 respectfully). There was no statistical significance between whether participants had an EPDS score ≥ 10 and if they had complications during and after giving birth, if the pregnancy was planned or not, if participants used oral contraceptives, and if they had mood swings while using oral contraceptives as $P > 0.05$. Participants with an EPDS score ≥ 10 were more likely to have mood swings during their period (OR: 2.567; CI 95%: 1.641–4.017) and be diagnosed with depression (OR: 4.265; CI 95%: 1.733–10.497).

Table 1: Participants diagnosed and not diagnosed with postpartum depression and the Edinburgh Postnatal Depression Scale scores of participants

	EPDS score <10 (%)	EPDS score ≥10 (%)	Total (%)
Diagnosed with PPD	4 (1.1)	13 (3.6)	17 (4.7)
Not diagnosed with PPD	212 (58.9)	131 (36.4)	343 (95.3)
Total (%)	216 (60.0)	144 (40.0)	360 (100)

EPDS: Edinburgh Postnatal Depression Scale, PPD: Postpartum depression

Table 2: Risk factors and diagnosis of postpartum depression and Edinburgh Postnatal Depression Scale scores

Risk factors (n=360)	Diagnosis of PPD					EPDS score				
	Yes (%)	No (%)	P	OR	CI 95%	≥10 (%)	<10 (%)	P	OR	CI 95%
Experience baby blues										
Yes	14 (3.9)	154 (42.8)	0.003	5.727	1.617-20.292	94 (26.1)	74 (20.6)	<0.001	3.608	2.315-5.621
No	3 (0.8)	189 (52.5)				50 (13.9)	142 (39.4)			
Complications during/after birth giving										
Yes	11 (3.1)	147 (40.8)	0.076	2.444	0.884-6.762	68 (18.9)	90 (25)	0.298	1.253	0.819-1.915
No	6 (1.7)	54.4)				76 (21.1)	126 (35)			
Planned pregnancy										
Yes	2 (0.6)	94 (26.1)	0.259	0.353	0.079-1.574	32 (8.9)	64 (17.8)	0.119	0.679	0.416-1.107
No	15 (4.2)	249 (69.1)				112 (31.1)	152 (42.2)			
Mood swings during period										
Yes	14 (3.9)	193 (53.6)	0.034	3.627	1.024-12.851	102 (28.3)	105 (29.2)	<0.001	2.567	1.641-4.017
No	3 (0.8)	150 (41.7)				42 (11.7)	111 (30.8)			
Oral contraceptives										
Yes	1 (0.3)	134 (37.2)	0.010	3.743	1.290-10.865	64 (0.017)	82 (22.7)	0.220	1.307	0.852-2.007
No	5 (1.4)	209 (58.1)				80 (22.2)	134 (37.2)			
Mood swings when taking oral contraceptives (*n=146)										
Yes	7 (4.8)	44 (30.1)	0.112	2.864	0.860-9.536	25 (17.1)	26 (17.8)	0.355	1.381	0.696-2.737
No	5 (3.4)	90 (61.7)				39 (26.7)	56 (38.3)			
Diagnosed with depression										
Yes	9 (2.5)	16 (4.4)	<0.001	22.992	7.835-67.468	18 (5)	7 (1.9)	0.001	4.265	1.733-10.497
No	8 (2.2)	327 (90.8)				126 (35)	209 (58.1)			

OR: Odds ratio, CI: Confidence interval, EPDS: Edinburgh Postnatal Depression Scale, PPD: Postpartum depression

DISCUSSION

PPD causes great harm to the female population and their families, and early detection is quite a challenge. Participants diagnosed and not diagnosed with PPD and EDPS scores of participants showed that the incidence of PPD detection was higher using the EPDS ≥10 as compared to the incidence of PPD with only routine clinical evaluation. This is concurrent with the study done by Evins *et al.*^[6] which found that the incidence of PPD detection was higher using EPDS as compared to the incidence of PPD with only routine clinical evaluation. Our study indicated that 73.7% of the participants were not asked about PPD and 30.6% scoring over 10 on the EPDS were not inquired about PPD either. Therefore, we can conclude that many patients' diagnosis is overlooked, thus underscoring the need for increased awareness, and the use of screening techniques like EPDS will increase the likeliness of detection and treatment.

This study revealed that sociodemographics such as ethnicity, age, marital status, and employment had no significant impact

in producing PPD. A similar study by the Institute of Social Medicine indicated that advanced maternal age has lower rates of PPD than younger women.^[7] In another study from Portugal, it was found that young mothers exhibited more depressive signs as well as more EPDS > 12 scores than adult mothers in the postpartum period.^[8] The current study did not find any ethnic disparity in the occurrence of PPD. Research done by Wei *et al.* disclosed that there was a high frequency of depression among African Americans.^[9] Women from different ethnic backgrounds seem to have varying levels of emotional health. In our study, employment was found to be protective of PPD, and this discovery was validated by Lewis *et al.*^[10]

Most of the participants were married, common-law, and single where the highest (9%) diagnosis of PPD belonged to married women and 4% to single women. This is inconsistent with a study done in Jamaica which reported a frequency of 71% of PPD among single mothers.^[11] Another meta-analysis found that single marital status is a predictor of PPD.^[1]

Our study found that 7.8% of people with EPDS ≥ 10 and 1.6% of people with PPD had insufficient emotional support whereas the majority who were undiagnosed and scored < 10 had sufficient emotional support, thus stipulating that inadequate support is a predisposing component for PPD. Contrastingly, in our research, only 1.1% with PPD agreed to having marital problems while 10.8% had EPDS scores ≥ 10 which showed that marital problems did not have a discernible impact on PPD. This finding contradicts with the phenomena of previous research exhibiting that marital problems are an influential factor of PPD.^[12]

The study reported a notable interrelation between a family history of mental illness, PPD, and EPDS ≥ 10 . These data were supported by Franks in 1934 and John Hopkins School of Medicine as it affirmed that women who have a family history of mental disorder, particularly PPD, major depression, anxiety, and panic attacks (53.3%), are more likely to develop PPD than women with no historical factors.^[13,14] Women with a history of major depression or a family history of psychiatric illness should be acknowledged in pregnancy and closely monitored in the postpartum period to avoid developing PPD.^[15] We explored the association between recent death in the family, complications during or after giving birth, and having a planned or unplanned pregnancy and PPD and established no substantial relation ($P > 0.05$). Nonetheless, the correlation between a recent death in the family and EPDS ≥ 10 was noted where 15.6% of the participants scored above 10 ($P < 0.001$), implying that recent death in the family poses a risk.

We also found that women who experienced baby blues had higher odds of acquiring PPD. Manjunath *et al.* suggested that 60%–80% of all new mothers suffer from postpartum blues (PPB) and should be monitored as 20% of these mothers can develop PPD.^[16] This notion is further supported by Horibe *et al.* which stated that primiparas tend to have significantly higher EPDS scores than multiparas.^[17] It was proposed that a mentally ill history and natural irritants may determine if baby blues lead to depression. Sociodemographics with EPDS scores ≥ 10 can also contribute to PPB developing into PPD.^[18]

Mood swings during period, oral contraceptives, and being diagnosed with depression were all found to have a connection with PPD and EPDS ≥ 10 ($P < 0.05$). This finding supports the argument by Petrick and Boyer that these were strong threats of PPD.^[19,20] Furthermore, Horibe *et al.* proposed that the relationship between regular oral contraceptive use prior to pregnancy and PDD may be due to negative hormonal effects experienced while using oral contraceptives.^[17] Pluchino *et al.* also stated that a possible reason for contraceptives causing PPD is due to the effects of testosterone, progesterone, and estradiol on the central nervous system, however, the mechanism is not well understood.^[21] According to the Harvard study of Moods and Cycle, women who also took oral contraceptives were at risk of worsening their mood.^[22] Participants of 14.7% with an EPDS score ≥ 10 strongly agreed of having financial problems. Prior studies done by Maryam

Ghaedrahmati and Qobadi *et al.* found that stressful life events such as financial struggles exacerbate the risk of PPD.^[23,24]

An important finding of this study is the concerns of mothers diagnosed with PPD. We found that majority was perturbed that their depression would negatively affect their relationship with their children and partner (35.5% and 23.5%). Only 17.6% almost always worried that their depression would impact the development of their child and compromise their caregiving abilities. The participants rarely thought of harming their children and that their depression would make it difficult to have a connection with their child. A comparable study by Field showed how PPD impinges on early interactions with their child and caregiving abilities.^[25]

CONCLUSION

Findings show that many participants were at risk for developing PPD. The prominent risk factors of PPD identified for mothers diagnosed with PPD were a family history of mental illness, baby blues, mood swings during periods, use of oral contraceptives, emotional support, life stress, and being diagnosed with depression. For those at risk for developing PPD (EPDS score ≥ 10), the risk factors were family history of mental illness, recent death in the family, mood swings during period, baby blues, life stress, financial and marital problems, and being diagnosed with depression. Other characteristics like sociodemographics were not significantly correlated but marginally indicative of depressive symptoms.

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Conflicts of interest

There are no conflicts of interest.

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