Understanding Postpartum Depression through Learned Helplessness Theory

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Abstract:

Purpose : To empower mothers and raise public knowledge of postpartum depression, this study aimed to examine PDD from the viewpoint of the learned helplessness theory to reveal its causes, risk factors, and available treatments. This study elucidates the elements of postpartum depression and finds strong links to mood disorders, anxiety, and emotional exhaustion.

Methodology : The sample data comprised 542 mothers who gave birth recently and was analyzed on PLS-SEM 4.0 software.

Results : It was found that anxiety and emotional exhaustion significantly and positively affected postpartum depression. Mood disorders, being the mediating variable, significantly affect PPD in the target sample of women after their deliveries.

Conclusion : To improve maternal mental health and to influence future clinical and research techniques for treating postpartum depression, it is essential to empower new mothers and raise the general population's consciousness. Both of these elements work together to improve maternal mental health.

Keywords: Postpartum depression, Emotional exhaustion, Anxiety, Mood disorder, Learned Helplessness Theory, PLS-SEM 4.0 software.

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1. INTRODUCTION

Postpartum depression causes severe suffering in women at a time when cultural or personal views of motherhood as a particularly joyous, if tiring, experience may conflict with the depressed woman's capacity to feel fulfilled in her mothering role, bond with her child or manage the usually exhausting activities involved in caring for a new born [1]. Postpartum depression can have serious effects on women, especially at a time when social and personal opinions generally present motherhood as a largely pleasant but hard experience [2]. This can cause conflict for women who are depressed and may make it more difficult for them to feel fulfilled in their roles as mothers, build strong relationships with their kids, and manage the demanding responsibilities that come with caring for a newborn [3]. These crippling emotions, which include helplessness, guilt, hopelessness, and loneliness, are a natural part of the depressed state and can be made worse by these emotional breaks. These feelings are made worse by postpartum depression, causing afflicted women

to have them more frequently and distressingly [4]. This study makes use of a model to better understand the circumstances and treatments for women who experience mental and physical strain both during and after delivery. The theoretical foundation for our work is Seligman's idea of learned helplessness. According to this theory, human unhappiness may be explained by the idea of learned helplessness, in which a person stops trying to change their circumstances after they realize they have no control over what happens around them [5]. Therefore, we speculate that women may suffer increased psychological anguish and exhaustion as a result of delivery. This study also recognizes how behaviors, perceptions, and cognitions are interconnected. A cross-sectional survey design isconducted, and analysis is carried out to examine these assumptions. According to the results of this study, women's mood problems are often preceded by increased anxiety and emotional tiredness during and after delivery [6]. In turn, depression frequently follows these mood disorders. The study also looks at particular strategies for understanding the challenges women encounter during this crucial time.

The remainder of the paper is divided into the following sections: In the beginning, we give a thorough summary of Seligman's theory of learned helplessness. The essential variables are explained using this framework, and conceptual connections between them are suggested. Second, we describe the techniques used to gather and analyze the data. Third, we elaborate on the study's findings and any pertinent ramifications. In order to contribute to the continuing discussion on this subject, we conclude by outlining potential directions for future research and discussing the limits of our study.

1.1. Theoretical Background

In psychology, the term "learned helplessness" refers to a mental state seen in both people and animals after prolonged exposure to unpleasant, painful, or aversive stimuli, which causes them to lose the ability or desire to act to avoid or escape from similar situations, even when escape or avoidance is possible. This behaviour is frequently explained by the person's belief that they have no control over or ability to change the situation. By relating this idea to Postpartum Depression (PPD), it is implied that the difficulties and emotional disruptions encountered before, during, and after childbirth may contribute to a feeling of helplessness. These women are more likely to engage in risky behaviour when they believe they are powerless to alter or improve their circumstances [7, 8].

The links and mechanisms involved in this process are illustrated in Fig. (1) in this theoretical study model. It may contain components like the first unpleasant behavior, anxiety, and emotional exhaustion, which leads to emotional and psychological reactions to this sense of helplessness and results in final postpartum depression expression [9]. By putting up such a model, researchers want to elucidate the intricate interplay between psychological, emotional, and environmental components in this situation and illustrate how learned helplessness might contribute to the development of PPD. With the aid of this research, treatments, and support networks may be developed to assist women in overcoming these difficulties and reducing their risk of Postpartum Depression (PPD). These insights into the role of learned helplessness in PPD will be beneficial.

Understanding how learned helplessness and postpartum depression are related in this situation is crucial because it illuminates the psychological processes that affect a woman's mental health during the delicate time of childbirth and the postpartum period [10, 11]. Healthcare providers and mental health specialists can create targeted interventions, counseling, and support programs to give new mothers the skills they need to regain control, lessen their susceptibility to depression, and promote overall emotional well-being during this significant life transition by recognizing the factors that contribute to a sense of helplessness and identifying those at risk [12]. This study has consequences for mothers' immediate well-being as well as family dynamics, child development, and the general health of communities.
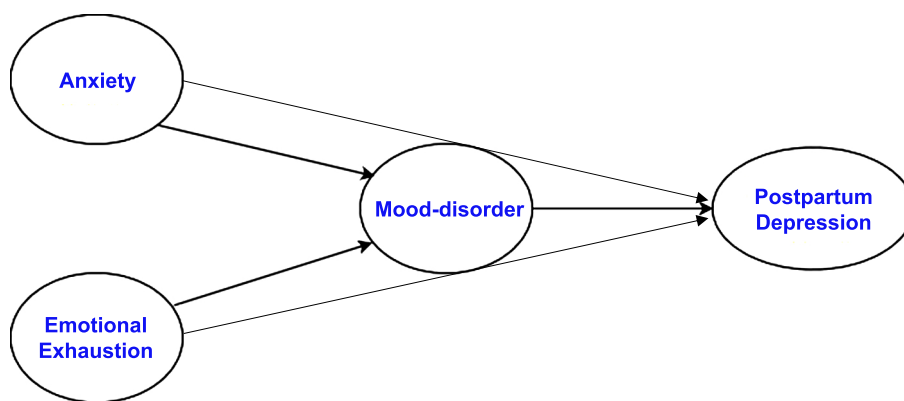

Fig. (1). Theoretical framework

1.2. Anxiety, Mood Disorders, and Depression

Postpartum Depression (PPD) is frequently accompanied by anxiety, which, if untreated, can hasten the onset of a mental disorder [7]. According to the American Psychiatric Association (2013), PPD is a syndrome that some women experience after giving birth and is characterized by feelings of melancholy, despair, and a lack of enthusiasm or joy in daily activities. Due to overlapping symptoms, including sleep problems, impatience, and trouble focusing, the presence of anxiety exacerbates the depressive symptoms [8]. Consistently negative thoughts, which are frequently associated with anxiety, might amplify depressive symptoms and prolong the woman's emotional pain [9]. In addition to exhausting emotional coping strategies, anxiety can result in social retreat and isolation [10], making it harder to control the emotional toll of postpartum depression. Anxiety is also linked to more stress, which causes the production of stress hormones that can have a detrimental effect on brain chemistry and lead to mood disorders like major depressive disorder [11]. The likelihood of postpartum depression developing into a more severe mood disorder increases if co-occurring anxiety symptoms are not identified or treated right once [12]. Additionally, postpartum depression and anxiety can hinder a mother's capacity to bond with and care for her child, which can result in shame and inadequacy emotions [13], which are frequently linked to mood disorders.

Learned helplessness theory underlines that new mothers experience anxiety and a lack of control over their mental state and circumstances. They may acquire a sense of helplessness. By fostering negative thought patterns, delaying help-seeking, exhausting coping strategies, and interfering with mother-infant attachment, this helplessness can lead to the emergence and aggravation of mood disorders. This sense of powerlessness can exacerbate negative thought patterns, put off seeking assistance, exhaust coping systems, and disrupt mother-infant bonds, all of which can lead to the emergence and worsening of mood disorders. Thus, we propose our first hypothesis.

H1- Anxiety positively affects postpartum depression of new mothers

H2- Anxiety positively affects mood disorders of new mothers

1.3. Emotional Exhaustion, Mood Disorders and Depression

Emotional exhaustion in the setting of postpartum mood disorders, notably Postpartum Depression (PPD), offers a huge and challenging problem for new mothers. A confluence of circumstances during the postpartum period raises the risk of emotional depletion and increases susceptibility to mood disorders [14]. These causes include sleep loss brought on by the rigorous caregiving obligations of a baby and elevated stress levels brought on by adjusting to motherhood's expectations [15]. These considerations also include the substantial hormonal changes seen after delivery. Not only is emotional exhaustion a direct result of these causes, but it is also a key PPD symptom. It frequently shows extreme exhaustion and emotional exhaustion, with women reporting a persistent sensation of powerlessness and hopelessness as well as a significant drop in interest or enjoyment in routine tasks [13]. A vicious cycle can develop where each symptom exacerbates the others due to the interaction between emotional weariness and other PPD symptoms such as protracted melancholy, anger, and feelings of worthlessness [16].

The formation of a strong mother-infant link, which is essential for the well-being of both mother and child, might be hampered by emotional tiredness, which is important. It may be difficult for mothers who are emotionally worn out to provide their babies with the emotional care and support they need, which can cause them to feel guilty and inadequate and further exacerbate their emotional suffering [17, 18]. The long-term effects of ignoring emotional tiredness and postpartum mood disorders can be severe, impacting not just the mother's mental health but also the child's emotional growth and well-being [19, 20]. For new mothers who are experiencing postpartum mood disorders and emotional weariness, early intervention and support are crucial. A woman's emotional health and ability to care for her child can be greatly enhanced by a combination of therapeutic modalities, such as cognitive-behavioural therapy and interpersonal therapy, medication when necessary, participation in support groups, and lifestyle changes to address sleep and self-care [15]. It is crucial to understand the multifaceted nature of emotional weariness and its connection to postpartum mood disorders to give mothers the attention and support they need during this crucial life transition. Thus, we propose-

H3- Emotional exhaustion positively affects the postpartum depression of new mothers.

H4- Emotional exhaustion positively affects the mood disorders in new mothers

The likelihood of postpartum depression in new mothers is considerably increased by pre-existing mood disorders such as major depressive disorder and bipolar disorder. According to extensive studies [17, 40], postpartum depression is more common among women who have a history of mental disorders. Women are more susceptible to developing postpartum depression during the postpartum period due to hormonal changes, additional stress from childbirth, and needing to care for a baby [8, 18]. It is crucial to locate these women and offer them the proper help. Comprehensive screening, individualized treatment planning, and support services are advised to reduce the risk and severity of postpartum depression in this high-risk group. Early detection of mood disorders throughout pregnancy and the postpartum period is crucial [19, 20]. To protect the welfare of the mother and the newborn throughout this crucial life change, healthcare experts are crucial in identifying and resolving these difficulties. Fig. (**1**) provides the theoretical model based on the hypotheses proposed.

Thus, we propose-H5-Mood disorder positively affects depression in new mothers.

H6- Mood disorders act as a mediator between anxiety and PDD in such a way that elevating the mood would have a significant effect on the anxiety and depression of mothers.

H5- Mood disorder acts as a mediator between emotional exhaustion and PDD in such a way that moods would have a significant effect on the emotional exhaustion and depression of mothers.

2. METHODOLOGY

2.1. Sample

The 542 new mothers affected by PDD who provided the data were the source of the information. To ensure that our analysis is focused on identifying the factors causing PPD, participants in the experimental procedure have to have a clinical diagnosis of the illness. By concentrating on this subset, as opposed to utilizing a larger, non-specific sample, we want to shed light on the particular difficulties and factors connected to PPD. For the psychological variables of anxiety and depression illustrating the psychological effects of depression and anxiety on new mothers, the study employed the DASS-21 [21]; for mood disorder [22], which are important for comprehending the mood problems that postpartum mothers face and are chosen to assess mood disturbances. Emotional exhaustion [23] captures several facets of burnout, which are essential for determining the emotional toll that postpartum mothers experience. The data was collected on a 7-point Likert scale, and PLS-SEM version 3.33 was used to collect and analyze the data.

To eliminate Common Method Bias (CMB), respondents were informed that there were no right or incorrect responses. They were also given the assurance that the information would be kept private and utilized solely in an aggregate form. The Harman one-factor test was used to determine the amount of CMB. Only 29% of the variation was explained by a single component, falling short of the 50% requirement [24].

According to some researchers, the Harman single-factor test is inadequate to assess the impact of CMB [25]. In order to gauge the prevalence of CMB, the Variance Inflation Factor (VIF) was also employed. When the model was analyzed using PLS-SEM, the VIF test was advised for determining the severity of CMB [26]. All VIF values in the inner model (Table 1) were less than the recommended threshold of 3.3 [27], allaying CMB concerns.

2.2. Data Analysis

The efficacy of the sample was assessed using G*Power. It is recommended that a sample size of about 47 be used to get 95 percent statistical significance [28]. The relationships were investigated using PLS-SEM.

2.2.1. Measurement Model

Table 2 displays the research's measurement model. All items should have outer loading values of more than

0.5, with the majority loading close to 1 [29-32]. This demonstrates the high degree of quality of the measurement model [29-32]. The internal reliability of model components was assessed using composite reliability and Cronbach's alpha. Both exceeded the 0.70 minimum value that was allowed for all structures [29-32]. For all constructs, the HTMT ratio was likewise under 0.90, demonstrating discriminant validity [30]. The HTMT ratio is a more accurate measure of discriminant validity in the context of PLS-SEM modeling than the Fornell-Larcker criteria [31] (Table 3).

Table 1. Descriptive statistics of the sample.

Construct	Mean	SD	Skewness	Kurtosis	VIF
Anxiety	7.61	1.21	-0.261	1.251	2.650
Emotional Exhaustion	3.72	1.39	-0.281	1.318	1.317
Mood Disorder	4.92	1.02	-0.271	1.961	2.128
Postpartum Depression	2.73	1.62	0.012	1.871	1.930

Source: Data Processed.

Table 2. Evaluation of the measurement model (reflective constructs).

Construct	Items	Outer Loadings	Composite Reliability	Cronbach's α (CA)	AVE
Anxiety	AN1	0.768	0.827	0.883	0.672
	AN2	0.746	-	-	-
	AN3	0.803	-	-	-
	AN4	0.739	-	-	-
	AN5	0.874	-	-	-
	AN6	0.781	-	-	-
	AN7	0.709	-	-	-
Emotional Exhaustion	EE1	0.754	0.812	0.873	0.718
	EE2	-	-	-	-
	EE3	-	-	-	-
	EE4	-	-	-	-
	EE5	-	-	-	-
Mood Disorder	M1	0.862	0.892	0.859	0.653
	M2	0.873	-	-	-
	M3	0.717	-	-	-
	M4	0.761	-	-	-
	M5	0.862	-	-	-
	M6	0.852	-	-	-
	M7	0.823	-	-	-
	M8	0.716	-	-	-
Postpartum Depression	DE1	0.891	0.719	0.817	0.528
	DE2	0.792	-	-	-
	DE3	0.871	-	-	-
	DE4	0.784	-	-	-
	DE5	0.823	-	-	-
	DE6	0.831	-	-	-
	DE7	-	-	-	-

Source: Data Processed.

2.3. Structural Model

The bootstrapping method was used in PLS-SEM to confirm the predictive usefulness of the model. Table 4 shows the t-values, path coefficients, and significance level for the study's constructs. The coefficient of determination was used to calculate the variance in the dependent variables that are explained (R^2). For evaluating the study's hypotheses, PLS-SEM employs the bootstrapping technique (Table 4). 15,000 bootstraps were performed on the model. The model shows that anxiety has a direct impact on postpartum depression. The association demonstrates that anxiety and emotional exhaustion have a positive influence on mood disorders in the sample, which further demonstrates a favourable association with depression. We, therefore, agree with all three hypotheses (Table **4** and Fig. **2**).
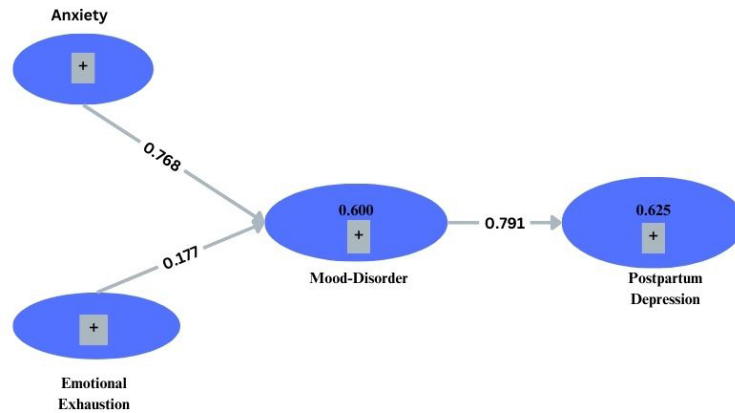

Fig. (2). Structural model.

Table 3. Evaluations of the fornell-larcker criterion for discriminant validity.

Construct	Anxiety	Emotional Exhaustion	Mood Disorder	Depression
Anxiety	0.829			
Emotional Exhaustion	0.621	0.891		
Mood Disorder	0.631	0.475	0.872	
Postpartum Depression	0.642	0.582	0.531	0.763

Source: Data Processed.

Table 4. Summary table of structural model.

Constructs	Path Coefficient	t-statistics	p-values	Effect size (f^2)	R^2-Value	SRMR	Q^2 Value
Anxiety→ Postpartum Depression (Direct Effect)	0.316	4.921	0.000	0.252	60%	0.063	0.348
Anxiety→ Mood Disorder	0.768	4.002	0.001	0.152			
Anxiety→ Mood Disorder→ Postpartum Depression	0.672	3.981	0.001	0.166			
Emotional Exhaustion → Postpartum Depression (Direct Effect)	0.432	5.21	0.000	0.178			
Emotional Exhaustion→ Mood Disorder	0.177	5.012	0.002	0.162			
Mood Disorder → Postpartum Depression	0.791	5.832	0.000	0.173	62.5%		
Emotional Exhaustion→ Mood Disorder→ Postpartum Depression	0.712	4.12	0.000	0.181			

Source: Data Processed.

3. RESULTS AND DISCUSSIONS

Within the field of mental health, the interaction between anxiety and mood disorders is a key topic that has important ramifications for thorough clinical knowledge. The study showed a significant positive relationship between anxiety and postpartum disorder, which can be due to a complex interaction of biological, psychological, and environmental variables in new mothers. Biological reasons include hormone changes during pregnancy and the postpartum period, which alter brain chemistry and may make people more vulnerable to anxiety and depression. PPD can develop from anxiety brought on by the difficulties of new parenthood, such as worries about the baby's safety and one's parenting skills. One's capacity to handle the emotional demands of parenthood might be further weakened by the stress and sleep disturbances associated with worry. Unrealistic expectations, a lack of social support, and a history of anxiety problems may also influence this favorable association. For early intervention and support, understanding this relationship is essential, stressing the need for comprehensive care to enhance maternal health.

This study presented evidence that anxiety and mood disorders have a major causal influence on one another. It means that anxiety might contribute to the onset or worsening of mood disorders [33]. The intricate interaction of emotional and cognitive elements within the field of mental health is the foundation for the relationship between anxiety and mood disorders. The reason behind this relationship is that in new mothers, there lies a complicated interaction of biological, psychological, and environmental variables, underlying the complex link between anxiety and mood disorders. Anxiety and mood disorders are frequently co-occurring due to biological abnormalities in neurotransmitters like serotonin and norepinephrine, which are implicated in both conditions. On a psychological level, anxiety-related cognitive patterns like rumination and chronic concern can progressively trigger depressive symptoms. Chronic stress, traumatic events, and environmental stresses all contribute to this association. Furthermore, comorbidity frequently happens when one condition exacerbates the other. It might be difficult to distinguish between the two when there are common symptoms like insomnia and attention issues.

Emotional exhaustion and postpartum depression are positively related. Emotional exhaustion can result from the physically and emotionally taxing aspects of delivery and the early phases of parenthood [13]. Additionally, emotional exhaustion can be made worse by the lack of sleep caused by caring for a child and by hormonal changes that occur during the postpartum period [15, 34]. In addition to increasing the risk of PPD, emotional tiredness may also lead to social exclusion, self-care neglect, and cognitive patterns of increased stress [13, 15]. Understanding and addressing this link is crucial for early intervention and assistance, highlighting the value of reducing emotional exhaustion and providing tools to support postpartum mothers' mental health and well-being.

Emotional exhaustion showed a positive correlation with mood disorders in new mothers. The emergence of mood disorders and emotional tiredness in new mothers are closely related, and this connection can be traced to a variety of physical, psychological, and environmental variables. Early pregnancy and childbirth's severe physical and emotional demands frequently result in emotional tiredness, which can then cause mood problems [10]. Lack of sleep, a typical side effect of raising infants, has been linked to mood problems and makes emotional weariness worse [35]. When coupled with emotional weariness, hormonal changes during the postpartum period might affect mood regulation [36]. When new mothers are emotionally tired, social isolation, self-care neglect, and the difficulties of transitioning to parenthood all increase the likelihood of mood disorders [17, 37-40]. The necessity of addressing aspects like sleep, social support, and self-care to reduce emotional tiredness and improve the mother's mental health during the postpartum period is emphasized by understanding this relationship, which is essential for prompt intervention and support.

4. LIMITATIONS

The study used cross-sectional research that could not demonstrate causality. Furthermore, because cross-sectional studies rely on self-reported data obtained at a single point in time, they may be susceptible to recall bias or misreporting by participants. Controlling for confounding factors that can cause postpartum illness is also crucial. Reliance on retrospective data has the potential to create memory bias, and the thoroughness of the study may be constrained by failure to take into consideration external stresses and aspects like social support.

5. FUTURE SCOPE

Future research examining the complex connections between postpartum depression, mood disorders, emotional tiredness, and anxiety in new mothers has a lot of potential. The creation of preventative treatments to recognize and treat mental fatigue and anxiety early in the postpartum period can benefit from ongoing research in this area, which will eventually lower the incidence of postpartum depression. Longitudinal studies can shed light on how these interactions change over time in terms of their dynamics. Evaluation of the effectiveness of specialized therapies and support networks for new mothers will continue to be crucial, with the potential to change healthcare procedures. While research into the use of telemedicine and technology to help new mothers can be immensely beneficial, a complete bio-psycho-social model may give a holistic knowledge of maternal mental health at this critical time. Our expertise in this field may be further enhanced by comprehending the impact of cultural and socioeconomic issues as well as their consequences for health policy. Insights can also be gained by studying the resilience and coping methods of new mothers who do not go on to develop mood disorders, as well as the long-term effects of maternal mental health on child development. Last but not least, treating maternal

mental health difficulties in various cultural and socioeconomic situations would require a global approach.

CONCLUSION

Postpartum depression comprises a variety of concerns that need to be addressed to provide holistic recovery to the women experiencing it and dealing with it. This study investigated the impact of anxiety and emotional exhaustion on PDD. The mediating effect of a mood disorder on the relationship between anxiety and depression, emotional exhaustion, and PDD is also studied. It was found that anxiety and emotional exhaustion significantly and positively affected mood disorders in the target sample of women after their deliveries, and this was found to implicate depression to a significant and positive extent. The results validated all three hypotheses and pointed out the grave need for extensive psychothe-rapeutic, cognitive, pharmaceutical, and non-pharmacol-ogical care for the women just after their babies' deliveries. This is important to help them handle their complicated and mixed physical, emotional, and behavioural changes and direct their anxieties towards awareness and seeking professional help.

AUTHORS' CONTRIBUTION

G.S.: Contributed to the study's concept and desig;, S: Wrote the paper; R.J. Discussed, proofread and edited the study.

All authors reviewed the results and approved the final version of the manuscript.

LIST OF ABBREVIATIONS

PPD	=	Postpartum Depression
CMB	=	Common Method Bias
VIF	=	Variance Inflation Factor

ETHICS APPROVAL AND CONSENT TO PARTICIPATE

The study was approved by the internal ethics committee of Chitkara Business School, Chitkara University India, (PEC/23/174).

HUMAN AND ANIMAL RIGHTS

All procedures performed in studies involving human participants were in accordance with the ethical standards of institutional and/or research committees and with the 1975 Declaration of Helsinki, as revised in 2013.

CONSENT FOR PUBLICATION

Informed consent was obtained from the participants.

STANDARD OF REPORTING

STROBE guidelines were followed.

AVAILABILITY OF DATA AND MATERIAL

The data supporting the findings of the study can be made available to the qualified researchers on reasonable request.

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