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SOCIO-DEMOGRAPHIC CORRELATES OF POST-TRAUMATIC STRESS DISORDER AMONG POSTPARTUM MOTHERS UTILISING HEALTH FACILITIES IN UDENU LOCAL GOVERNMENT AREA, ENUGU STATE

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Abstract

The study investigated socio-demographic correlates of post-traumatic stress disorder (PTSD) among postpartum mothers utilising health facilities in Udenu LGA, Enugu State. Two specific objectives, two research questions, and one null hypothesis guided the study. A correlational research design was employed. The population of the study comprised 3,754 postpartum mothers, while the sample size consisted of 380 respondents selected using a multistage sampling technique. The Correlates of Postpartum Post- traumatic Stress Disorder Questionnaire (CPPQ) adapted from city birth trauma scale (CBTS) was used for data collection. The internal consistency of CBTS was determined using Cronbach's Alpha with an index of .863. Frequencies, percentages, and point-biserial correlation (r_{pb}) were used to answer the research questions, while multivariable logistic regression was used to test the null hypothesis at 0.05 level of significance. Findings revealed that 20.4% of postpartum mothers experienced PTSD. There was a significant relationship between PTSD and age and education level ($p < .05$), Postpartum mothers aged 25–35 years were 53.8% less likely to experience PTSD than those aged 15–24 years (OR = .462, 95% CI [.250–.855], p = .014). Also, self-employed postpartum mothers were 52.9% less likely to experience PTSD (OR = .471, 95% CI [.235–.943], p = .034). PTSD was significantly related to parity ($p < .05$). The researcher recommended among others that the mental health of postpartum mothers should be assessed by a medical doctor or a nurse before discharge from the hospital after childbirth and at 6-week postnatal visit so as to ensure that PTSD within the postpartum period is identified early and adequate treatment is administered.

Keywords: Post-traumatic stress disorder, Stress, Socio-demographic correlates, Postpartum mothers

Introduction

The perinatal period is meant to be a period of joy and hopeful expectations, however some mothers may have complications during this period that can cause trauma and stress during and even after childbirth. This trauma or stress may present itself during the postpartum period as post-traumatic stress disorder (PTSD). Post-traumatic stress disorder is a global mental health concern following traumatic events among postpartum mothers. Globally, the prevalence of PTSD among postpartum mothers is estimated to range from 3.1 per cent to 15.7 per cent (Yildiz et al., 2018). According to the World Health Organisation [WHO] (2024), maternal mental health issues like postpartum PTSD contribute significantly to the global burden of disease. Women in Nigeria also experience PTSD. Adewuya et al. (2018) reported a rate of 5.9 per cent of PTSD after childbirth in Nigeria women. In Ibadan, Nigeria, a rate of 4.18 per cent for PTSD was reported by Sekoni et al. (2021). Adeyemo et al. (2020) reported that approximately 25.4 per cent of postpartum women in Lagos had symptoms consistent with PTSD, particularly after

traumatic birthing experiences. Umunna (2021) also reported that 30 per cent of postpartum women in Uyo exhibited PTSD symptoms, correlating with delivery complications and inadequate social support. However, there is paucity of studies on PTSD among postpartum mothers in Enugu State and in Udenu Local Government Area.

Stress is a common mental health condition affecting individuals across various circumstances. The International Labour Congress (2019) defined stress as the harmful physical and emotional responses that arise when there is an imbalance between demands and an individual's ability to cope, which can impair well-being. The WHO (2022) similarly defined stress as a state of worry or mental tension resulting from difficult situations. In this study, stress refers to the mental or physical tension caused by adverse circumstances or pressures that can negatively impact postpartum mothers' well-being, behaviour, and overall functioning. While stress can be categorised into eustress (positive stress) and distress (negative stress), it is distress that poses significant risks. Chronic or intense distress, particularly in postpartum women who may face additional stressors such as delivery complications or inadequate support, can contribute to the development of severe psychological conditions such as PTSD (Ahsan, 2023). Post-traumatic stress disorder (PTSD) is a mental illness. According to Du et al. (2018), PTSD is a serious mental disorder that can occur after someone experiences or witnesses a traumatic event in which there was a threat of injury or death. PTSD can be the result of a single traumatic event or ongoing trauma (Frewen et al., 2019). Ressler et al. (2022) defined PTSD as a condition in which a person's memory, emotions, and body response are stuck in a state of hyperarousal and hypervigilance, as if the traumatic event were still occurring. Similarly, Merians et al. (2023) explain that PTSD involves enduring psychological distress resulting from trauma exposure, often manifesting through flashbacks, nightmares, and emotional numbness. In postpartum mothers, PTSD may develop due to traumatic experiences during childbirth, such as emergency surgical interventions, life-threatening complications, or the loss of a child, leading to significant emotional and psychological impacts (Horsch et al., 2024). Contextually, PTSD refer to the persistent distress and trauma-related symptoms postpartum mothers experience following traumatic events during the perinatal period. There are various signs and symptoms of PTSD experienced by postpartum mothers.

Postpartum mothers often show clear signs and symptoms of PTSD. Hyperarousal, for instance, leaves mothers constantly on edge, easily startled, and struggling with sleep, which exacerbates physical exhaustion and emotional instability (Thomason & Marusak, 2018). Avoidance behaviours, where mothers steer clear of places, people, or activities that remind them of the traumatic event, can disrupt their daily lives and hinder maternal-infant bonding (Beck & Watson, 2019). This detachment, along with irritability and negative changes in mood such as persistent fear, guilt, or hopelessness can compromise the mothers' emotional well-being (Wu, 2021). Furthermore, intrusive memories, flashbacks, and nightmares related to traumatic childbirth events lead to heightened anxiety and emotional distress (Suarez & Yakupova, 2023). These symptoms not only affect the psychological health of postpartum mothers but can also have a cascading effect on their ability to perform daily responsibilities, connect with their new-borns, and engage in healthy family dynamics (Wang et al., 2023).

A postpartum mother is a woman who has recently given birth within the last 12 months. According to WHO (2010), it is important to note that postpartum mothers often face a unique set of challenges, such as adjusting to new roles, coping with potential complications during and after childbirth, and managing the demands of infant care.

Frankham et al. (2023) opined that PTSD has been linked to emotional distress, sleep disturbances, difficulties in bonding with the baby, and even impaired cognitive and emotional development in the child. Such mental health issues are not only detrimental to the mother's well-being but also impact her ability to provide proper care for her newborn (Frankham et al., 2023). In this study, postpartum mothers are specifically mothers that have recently given birth within the past one year. The severity of PTSD symptoms in postpartum mothers can be influenced by certain socio-demographic correlates.

Socio-demographic correlates are social and demographic factors that can influence the experience of PTSD in postpartum mothers. These factors do not directly cause PTSD but may relate to its intensity or likelihood. Socio-demographics factor are variables that establish the characteristics of postpartum mothers such as; age, marital status, occupation or employment status, race, educational level, religion, family size, language and others. However, the socio-demographic factors of interest in this study are; age, level of education, and employment status. Age refers to the number of years that a person has lived from their birth to the present time. Arshad et al. (2024) reported that postpartum PTSD was significantly associated with age. Organisation for Economic Co-operation and Development [OECD] (2021) defined level of education as the highest level of education an individual has completed, such as primary, secondary, post-secondary, or tertiary education. Wang et al. (2022) found that maternal level of education was significantly associated with PTSD. Employment status refers to an individual's current situation regarding their job or occupation. Kunst (2011) reported that unemployed (25.6%), part time employed (18.1%), full time employed (12.4%) and homemakers (20.5%) were less likely to develop PTSD. Hence, this study sought to investigate these sociodemographic factors as they relate to the experience of PTSD among postpartum mothers in Udenu LGA, Enugu State.

The study was conducted in Udenu Local Government Area, Enugu state. According to Ogbuabor and Onwujekwe (2018), the Enugu State government introduced several maternal healthcare initiatives to improve antenatal and postnatal care services across all LGAs in the state, including Udenu LGA. However, little to no effort have been put in place to address the increasing burden of maternal mental health conditions in the state, given its association with challenging childbirth experiences, inadequate support systems, and insufficient mental health resources in the region. This presents significant challenges, as symptoms of PTSD often go unrecognised and untreated, exacerbating the mental health crisis among mothers. There is a pressing need to address this gap to enhance maternal mental healthcare outcomes. Therefore, this study investigated the correlates of PTSD among postpartum mothers utilising health facilities in Udenu LGA, Enugu State.

Statement of the Problem

The postpartum period is often associated with feelings of joy and fulfilment as mothers welcome a new life into the world. However, due to the physiological and hormonal changes that occur during pregnancy and after childbirth, postpartum mothers can experience mental health challenges, including Post-Traumatic Stress Disorder (PTSD). Post-traumatic stress disorder has been linked to emotional distress, sleep disturbances, difficulties in bonding with the baby, and even impaired cognitive and emotional development in the child. Such mental health issues are not only detrimental to the mother's well-being but also impact her ability to provide proper care for her new-born. Hence, postpartum mothers need adequate care enriched with proper emotional and mental

healthcare to prevent and reduce the occurrence of PTSD during postnatal and postpartum periods.

Regrettably, the reoccurrence of traumatic and stressful events might have worsened postpartum mother's experience of post-traumatic stress disorder. Although postpartum mothers are provided with free maternal and child health programme in Enugu State, mental health care is not included in this programme, hence, making mothers prone to having severe mental health problems like PTSD. Also challenges faced by postpartum mothers like stigma, shame, and fear of being labelled as "crazy" are associated with mental health issues which may have increased the occurrence of PTSD in them. Despite the high rate of PTSD among postpartum mother, there is paucity of research on socio-demographic correlates of PTSD among postpartum mothers in Udenu Local Government Area, Enugu State. In view of these facts, the study sought to investigate the correlates of PTSD among postpartum mothers utilising health facilities in Udenu LGA, Enugu State.

Purpose of the Study

The purpose of the study was to investigate socio-demographic correlates of post-traumatic stress disorder (PTSD) among postpartum mothers utilising health facilities in Udenu Local Government Area, Enugu State. Specifically, the study determined the:

1. proportion of postpartum mothers who experience PTSD in Udenu LGA, Enugu State;
2. relationship between PTSD and socio-demographic factors (age, level of education, and employment status) among postpartum mothers in Udenu LGA, Enugu State.

Research Questions

The following research questions guided the study:

1. What is the proportion of postpartum mothers who experience PTSD in Udenu LGA, Enugu State?
2. What is the relationship between PTSD and socio-demographic factors (age, level of education, and employment status) among postpartum mothers in Udenu LGA, Enugu State?

Hypotheses

The following null hypotheses were postulated to guide this study and were tested at .05 level of significance:

$H0_1$: There is no significant relationship between PTSD and socio-demographic factors (age, level of education, and employment status) among postpartum mothers in Udenu LGA, Enugu State.

Methods

In order to accomplish the purpose of this study, a correlational research design was employed. The study was conducted in Udenu LGA, Enugu State. Udenu Local Government Area is one of the seventeen Local Government Areas in Enugu State in South-East geopolitical zone of Nigeria. Udenu LGA has its headquarters at Obollo-Afor town. The LGA is predominantly rural and agrarian, with a substantial proportion of its working population engaged in farming, although very strong in trading and services. The population of the study consisted of 3,754 postpartum mothers utilising health facilities in Udenu LGA. The sample size was 380 postpartum mothers based on the guideline of Cohen et al. (2018), that when a population size is 2,500 and above at 95% confidence level (5% interval), the sample size should be 333 and above. The sample was drawn using multi-stage sampling procedure comprising two stages of random sampling technique and one stage of convenience sampling which depended upon voluntary willingness of

postpartum mothers to participate in the study. The instrument for data collection was titled Correlates of Postpartum Post- traumatic Stress Disorder Questionnaire" (CPPQ) which was divided into sections A and B. Section A consisted of items on socio-demographic characteristics of the participants while section B was an adaptation of City Birth Trauma Scale which was used to assess PTSD among the respondents. The instrument was validated by five experts in the Department of Human Kinetics and Health Education, University of Nigeria, Nsukka to ensure face validity. The internal consistency of the City Birth Trauma Scale was determined using Cronbach's Alpha with indices of .863 and was adjudged reliable for the study. The Statistical Package for Social Sciences (SPSS version 26) was used for data analysis. Research questions were answered using frequency, percentages, and point biserial correlation. The null hypothesis was tested using multivariable logistic regression model at .05 level of significance. Interpretation of the correlation coefficient (r_{pb}) between the independent and dependent variables was based on Nwagu and Agbaje (2017) estimates for weak, moderate and strong correlation coefficients. The correlation coefficient of +-.00 - .29 was interpreted as none (.00) or weak relationship (NR or WR), +-.30 - .59 was interpreted as moderate relationship (MR), and +-.60 - 1.00 was interpreted as strong relationship (SR).

Results

The results of the study are presented according to the research questions and hypotheses that guided the study.

Research question one: What is the proportion of postpartum mothers who experience PTSD in Udenu LGA, Enugu State?

Table 1: **Proportion of Postpartum Mothers who Experience PTSD in Udenu LGA, Enugu State (n=363)**

s/n	PTSD Symptoms	f	%
1.	Re-experiencing symptoms	133	36.6
2.	Avoidance symptoms	149	41.0
3.	Negative cognitions and mood	32	8.8
4.	Hyperarousal	87	23.9
	Total PTSD	**92**	**25.3**

Key: CBTS Score ≤ 30 = No PTSD; CBTS Score > 30 = PTSD

Results in Table 1 show that overall, 25.3 per cent of postpartum mothers utilising health facilities in Udenu LGA, Enugu State experienced PTSD.

Research question two: What is the relationship between PTSD and socio-demographic factors (age, level of education, and employment status) among postpartum mothers in Udenu LGA, Enugu State?

Table 2: **Point–Biserial Correlation between PTSD and Socio-demographic Factors among Postpartum Mothers in Udenu LGA, Enugu State (n=377)**

s/n	Variables	1	2	3	4
1.	PTSD	-	-.078	-.072	-.113
2.	Age	-.078	-	.059	-.032
3.	Education level	-.072	.059	-	-.079
4.	Employment status	-.113*	-.032	-.079	-

Significant at ***p<.001; **p<.01; *p<.05

Results in Table 2 show that overall, there is a weak negative relationship between PTSD and postpartum mothers' age (r_{pb}= -.078), education level (r_{pb}= -.072), and employment status (r_{pb}= -.113) in Udenu LGA, Enugu State.

Hypothesis one: There is no significant relationship between PTSD and socio-demographic factors (age, level of education, and employment status) among postpartum mothers in Udenu LGA, Enugu State.

Table 3: **Multivariable Logistic Regression Testing Relationship between PTSD and Socio-demographic Factors among Postpartum Mothers in Udenu LGA, Enugu State (*n*=377)**

Socio-demographic Factors	**B**	**S.E**	**Wald**	**Df**	**p-value**	**OR**	**95% C.I. for Exp(B)**	
							Lower	**Upper**
Age			5.203	2	.042*			
15 – 24 years[a]								
25 -34 years	.873	.463	5.142	1	.018*	.488	.268	.812
35 years and above	.296	.260	7.945	1	.171	.583	.295	1.264
Education Level			7.687	3	.005*			
No formal education[b]								
Primary education	.774	.668	.981	1	.359	1.541	.702	3.522
Secondary education	.467	.513	3.472	1	.073	2.194	.978	4.734
Tertiary education	.989	.222	2.154	1	.149	.517	.276	1.183
Employment Status			4.684	2	.113			
Employed[c]								
Unemployed	-.477	.331	1.301	1	.279	.648	.291	1.391
Self employed	-.772	.551	4.433	1	.039*	.497	.248	.901
Constant	3.093	.567	20.794	1	.001	8.143		

Cox & Snell R^2 = .065 CI= confidence Interval
χ^2 (8) = 12.431, p = .134 > .05 Predicted Classification Table Overall = 80.4
Ref Groups: Age = 15–24 years[a]; Education Level = No Formal Education[b]; Employment status= Employed[c]

Results in Table 3 show that a test of the full constant only model on relationship between PTSD and socio-demographic factors (age, level of education, and employment status) among postpartum mothers in Udenu LGA, Enugu State was not significant, indicating that the socio-demographic factors as a set had no effect in predicting the dependent

variable, $\chi 2$ (8) = 12.431, p = .134 > .05. Findings showed that there was significant relationship between PTSD and age and education level (p< .05) while there was no significant relationship between PTSD and employment status (p > .05) among postpartum mothers in Udenu LGA, Enugu State. In the multivariable analysis, postpartum mothers aged 25 – 35 years were less likely to experience PTSD than those aged 15 – 24 years (OR = .462, 95% CI [.250-.855], p = .014). Also, postpartum mothers who are self-employed were likely to experience PTSD (OR = .471, 95% CI [.235-.943], p = .034).

Discussion

Findings in Table 1 show that overall, 25.3 per cent of postpartum mothers utilising health facilities in Udenu LGA, Enugu State experienced PTSD. The findings were expected and thus, not surprising because PTSD has been shown to be on the increase among postpartum mothers in Udenu LGA, Enugu State even before the postpartum period. The findings are consistent with the findings of Ellouze et al. (2017) that the prevalence of PTSD was 44.5 per cent among mothers of preterm infants in Tunisia. The findings is also in line with the finding of Wang et al. (2022) that the prevalence of PTSD was 29.7 per cent among mothers of preterm infants at one month of corrected age after discharge from the neonatal intensive care unit in China. The findings could be due to the physiological, hormonal and psychological change associated with pregnancy and childbirth, which could increase the probability of mental and emotional changes resulting in PTSD. The increased prevalence of PTSD may have been influenced by traumatic childbirth experiences and other related past traumatic experiences. The continuous agreement between the studies may be attributed to the trauma related experiences postpartum mothers are exposed to even before childbirth. The findings have implications for postpartum mothers as they may use it to gain awareness about PTSD and gain the courage to seek professional care and emotional support early if they experience it.

Findings in Table 2 show that overall, there is a weak negative relationship between PTSD and postpartum mothers' age in Udenu LGA, Enugu State. The corresponding hypothesis in Table 3 show that there was significant relationship between PTSD and age. Also, postpartum mothers aged 25-35 years were less likely to experience PTSD than those aged 15-24 years. The findings are expected and therefore not surprising because mothers who are 25 years and above are assumed to be more knowledgeable and experienced in things regarding childbirth and the postpartum period than younger mothers and should be better able to manage their emotion. The findings agree with the findings of Arshad et al. (2024) that postpartum PTSD was significantly associated with age among mothers in the postnatal period in Tunisia. The findings also agree with the finding of Angelini et al. (2018) that age was significantly associated with PTSD among women in the southeast of Brazil. However, the findings are in contrast with the findings of Huner et al. (2023) that mothers of advanced age have significant higher rate of PTSD than younger mothers. The difference in the findings may be because of the target population and location. The findings have implications for healthcare providers as they may be able to customise mental health services based on the age of the postpartum mothers, ensuring effective early detection and intervention.

Furthermore, findings in Table 2 show that overall, there is a weak negative relationship between PTSD and postpartum mothers' education level in Udenu LGA, Enugu State. The corresponding hypothesis in Table 3 show that there was significant relationship between PTSD and education level. The findings are expected and thus, not surprising. This is because with increased education level, an individual becomes

knowledgeable about different issues and even seek to attain perfection or at least have control of things in the environment. Hence, postpartum mothers with higher education level may have expectations of how things should go in this period and may even attempt controlling it. However, when things do not go as expected, they may become hopeless, sad and disappointed with the outcome. The findings agree with the findings of Lui et al. (2021) that education level of mothers was significantly associated with PTSD among mothers in China. However, the findings disagree with the findings of Shereda et al. (2021) that educational level was not significantly associated with PTSD among women with previous recurrent abortion in Maternal and Child Health Centers in Shebin El Koom and also at Menoufia Governorate Egypt. The reason for this discrepancy in findings might be because of the differences among study populations, regions, study settings, and the measurement tools used. The findings have implications for public health educators as they may use it in providing classes, seminars, and workshops, understandable for all education level on the concept of PTSD and how it can affect postpartum mothers.

Additionally, Table 2 show that overall, there is a weak negative relationship between PTSD and postpartum mothers' employment status in Udenu LGA, Enugu State. The corresponding hypothesis in Table 3 show that there was no significant relationship between PTSD and employment status among postpartum mothers in Udenu LGA, Enugu State. However, postpartum mothers who are self-employed were less likely to experience PTSD than those who are employed. This findings are surprising and thus, not expected. This is because employment status has been known to be a key factor affecting socioeconomic status which in turn is associated with health outcome. The findings agree with the findings of Elgin and Güney (2022) that employment status was not significantly associated with PTSD among mothers in neonatal intensive care unit (NICU) in Numune Hospital in Sivas. However, the findings disagree with the findings of Mukabana et al. (2023) that employment status of postpartum mothers was significantly associated with PTSD among mothers of preterm infants in Western Kenya. The disparity in the findings may be because of the difference in location and population. The findings hold implications for policymakers as they may be able to incorporate the insights into targeted mental health policies that address the unique needs of postpartum mothers based on their employment status.

Conclusion

The study concluded that PTSD is a prevalent condition among postpartum mothers utilising health facilities in Udenu LGA, Enugu State, with a prevalence rate of 20.4 per cent. Although socio-demographic factors such as age, education level, and employment status had weak negative correlations with PTSD, they collectively did not significantly predict PTSD occurrence. However, age and education level were found to have significant individual relationships with PTSD, while employment status did not. Multivariable analysis revealed that postpartum mothers aged 25–35 years were significantly less likely to experience PTSD than those aged 15–24 years, and self-employed mothers had a lower likelihood of PTSD compared to their unemployed counterparts. These findings suggest that younger postpartum mothers and those without self-employment may be more vulnerable to PTSD, highlighting the need for targeted mental health interventions within this population.

Recommendations

Based on the findings, the study recommended the following:

1. Health facilities in Udenu LGA, in collaboration with the Enugu State Ministry of Health, should integrate routine mental health screening for postpartum mothers, particularly younger mothers aged 15–24 years, to facilitate early detection and intervention for PTSD. This will enable healthcare providers to identify at-risk individuals and offer appropriate support.
2. The local government health department, in partnership with non-governmental organizations (NGOs) and community leaders, should develop psychosocial support programs for postpartum mothers. These programs should include counselling services, peer support groups, and mental health education to help affected mothers cope with PTSD symptoms effectively.
3. The Enugu State government and relevant NGOs should implement economic empowerment initiatives aimed at providing skill acquisition training and financial support for postpartum mothers. Since self-employment was found to reduce the likelihood of PTSD, these initiatives can enhance the financial independence of mothers, thereby improving their mental well-being.
4. Public health educators and community health workers should also intensify health education and awareness campaigns on PTSD among postpartum mothers. These campaigns should focus on informing mothers about the symptoms of PTSD, available support services, and the importance of seeking timely professional help when needed.
5. Research institutions and academic scholars should conduct further studies to explore additional factors influencing PTSD among postpartum mothers. Such studies should consider variables like marital status, social support, and previous traumatic experiences to develop more targeted interventions for postpartum mental health.

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