



Social support and personality traits as determinants of postpartum depression among postnatal patients in university college hospital, Ibadan

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Abstract

Literature reveals the burden of postpartum depression (PPD) globally. There is however a lacuna of knowledge on the interactions of social support, personality traits and PPD among Nigerian post-natal women. This study was carried out to observe the extent to which social support and personality traits determine levels of PPD among postnatal women using the University College Hospital Ibadan, Oyo state, Nigeria. A total of 214 postnatal women mean age of 32.3 ± 7.78 were purposively selected for this study. The women responded to the multidimensional scale of perceived social support (MSPSS), MINI international pool item personality (MINI-IPIP) and the Edinburgh Postnatal Depression Scale (EPDS). Results show that there was a high prevalence of PPD among the respondents as 54.5% reported mild-moderate levels of PPD, 18.0% reported moderate-severe levels of depression and 18.0% reported severe levels of PPD. Social support was observed to significantly predicted postpartum depression among the participants ($\beta = -.16, t = -2.41, p < .05$). Social support and neuroticism ($F = 6.56, p < .05$) and support and openness ($F = 3.99, p < .05$) were found to jointly significant determine PPD among the participants. Openness ($\beta = -.14, t = -2.06, p < .05$) and neuroticism ($\beta = -.18, t = -2.69, p < .05$) personality traits independently and significantly predicted PPD. Finally, the age of respondents significantly predicted PPD ($\beta = .143, t = -2.08, p < .05$).



The study concludes that there is a high prevalence of PPD among postnatal women using UCH and that postpartum women who receive enough social support from family, friends, or significant others are less likely to experience depressive symptoms or develop PPD. Also, personality traits of openness and neuroticism and age maternal age independently predicted PPD. Adequate social support during pregnancy and at postnatal periods is recommended.

Keywords: Social support, personality traits, postpartum depression, postnatal patients, university college hospital, Nigeria

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Introduction

Pregnancy and birth are described to be one of the most life-changing experiences in a woman's existence. As a society, people are accustomed to viewing pregnancy as a time for new life and celebration. Though this may be accurate for some cases, there still lacks a full understanding of what occurs emotionally, physically, and mentally to mothers after the birth of their child. Although there is evidence that explains postpartum 'baby blues' as a 'normal' experience after birth (Kornfeind, & Sipsma, 2018), there remains a larger need for research and understanding of postpartum. Postpartum (also known as the postnatal period) refers to the period immediately after a woman gives birth. This period is well established as an increased time of risk for the development of serious mood disorders. Postpartum depression is one of the most common complications of childbearing affecting women and as such represents a considerable public health problem affecting women and their families (Falana, & Carrington, 2019). The effects of postnatal depression on the mother, her marital relationship, and her children make it an important condition to diagnose, treat and prevent (Robinson & Stewart, 2001). It is reported that between 10% and 20% of women develop depression within a year of giving birth, and depressive symptoms persist beyond the first year in 25% of these women (Falana, & Carrington, 2019).



Postpartum depression is characterized by tearfulness, despondency, emotional lability, feelings of guilt, loss of appetite, and sleep disturbances as well as feelings of being inadequate and unable to cope with the infant, poor concentration and memory, fatigue and irritability (Robinson et al., 2001). Some women may worry excessively about the baby's health or feeding habits and see themselves as 'bad', inadequate, or unloving mothers (Robinson et al., 2001). The implication of this is that such mothers struggle to cope alone and the expected warmth from a mother-child relationship is negatively affected due to the mother's persistent low mood and energy. Postpartum depression usually begins within 1 - 12 months after delivery (Beck, 2001), however, in some women, postpartum blues simply continue and become more severe. In others, a period of well-being after delivery is followed by a gradual onset of depression. The patterns of symptoms in women with postpartum depression are similar to those in women who have depression unrelated to childbirth (Wisner et al., 2002), apart from the fact that the content may focus on the delivery or baby.

Postpartum depression (PPD) has a significant impact on the mother and long-term consequences on the cognitive and emotional development of most children whose mothers are affected (WHO, 2003). It is generally also agreed that while this illness can progress into major depression and carries a great risk of ill health and death, it is underdiagnosed and underrated in many developing countries (Weobong, et al., 2015). In addition, it has been reported that the prevalence of PPD is three times higher in developing countries compared to developed countries, with various risk factors accounting for the high burden of the illness (Halbreich & Karkun, 2006). However, various countries have reported higher rates such as Uganda at 43.0% and Cameroun at 23.4% as compared to Ethiopia at 13.1%, Ghana at 3.8% and Morocco at 11.6% (Weobong, et al., 2015; Adama, et al., 2015; Naku, Nakasi, & Mirembe, 2006; Agoub, Moussaoui, & Battas, 2005). In Nigeria, studies have been conducted to determine the prevalence of PPD using the Edinburgh Postnatal Depression Scale EPDS (Obindo, et al. 2014).

Stewart, et al., (2003), identified three common forms of postpartum affective illness: The blues (baby blues, maternity blues); Postpartum (or postnatal) depression; and Puerperal (postpartum or postnatal) psychosis. Each of these forms of postpartum illness is reported as differing in prevalence, clinical presentation, and management. Postpartum blues is reported as the most common observed mood disturbance (Miller, 2002). Symptoms of postpartum blues begin within a few days of delivery and persist for hours up to several days (Miller,



2002). The symptoms include mood lability, irritability, tearfulness, generalized anxiety, and sleep and appetite disturbance. Postnatal blues are by definition time-limited and mild and do not require treatment other than reassurance, the symptoms remit within days (Miller, 2002). On the contrary, the signs and symptoms of 'postpartum depression' are generally the same as those associated with major depression occurring at other times, including depressed mood, anhedonia and low energy, reports of suicidal ideation are also common (Nonacs& Cohen, 1998). The screening for postnatal mood disturbance can be difficult given the number of somatic symptoms typically associated with having a new baby that is also symptoms of major depression; for example, sleep and appetite disturbance, diminished libido, and low energy (Adeyemo, et al., 2020). Puerperal psychosis is a very severe postpartum depressive episode which is characterized by the presence of psychotic features which are different from postpartum depression in aetiology, severity, symptoms, treatment and outcome.

Robling et al., (2000) observed that postpartum psychosis is the most severe and uncommon form of postnatal affective illness, with rates of between one to two episodes per thousand deliveries. The clinical onset is rapid, with symptoms presenting as early as the first 48 to 72 hours postpartum, and the majority of episodes developing within the first two weeks after delivery. The presenting symptoms are typically depressed or elated mood; which can fluctuate rapidly, disorganized behaviour, mood lability, delusions and hallucinations (Jones et al., 2001). Furthermore, some factors may act as enablers of postpartum depression. For instance, some women during postnatal visits to the clinic may conceal their emotions and view PPD as normal rather than as an illness of concern, thus may keep their feelings to themselves, bottling up in silence (Msiqwa, 2010). Furthermore, many women may be unaware of the signs and symptoms of the illness and those that are aware that they have a problem, tend to keep quiet about it for fear of being stigmatized or considered weak. Similarly, additional findings suggest that some women face difficulties describing or talking about postnatal depression due to their tendency to underreport their psychological feelings. Thus, barriers to health-seeking behaviour relate very much to the reluctance of some women to discuss problems as well as how problems are dealt with (Adeyemo, et al., 2020). However, other factors may serve as deterrents to postpartum depression. For instance, the communal-living lifestyle found especially in rural settings enables social support and companionship from members within the community. This gives a sense of comfort and relief to women, from the challenges of pregnancy and delivery. In addition, the traditional naming ceremony



that is typically celebrated on the baby's eighth day of life in some Nigerian cultures enables mothers to maintain high spirits in the first few days after delivery.

Also, the link between personality traits and vulnerability to depression is well established, but the findings linking personality and postpartum depression are inconsistent and less robust (Mulder, 2002). Determining factors that increase the likelihood of developing PPD would help identify women at risk, improving efforts at prevention and early detection. Certain personality traits increase vulnerability to depression (Barlow, 2014; Boyce et al., 2001). Nonetheless, there is poor knowledge of postpartum depression among postnatal women and poor recognition of its symptoms by health practitioners (Joel, et al., 2016). This has resulted in missed diagnosis of PPD and has necessitated research on psychosocial factors of postpartum depression to provide evidence of the burden of mental health (Joel, et al., 2016).

Some studies showed links between social support and postpartum depression. For instance, Adeyemo, et al., (2020) reported that the communal-living lifestyle found especially in rural settings enables social support and companionship from members within the community that gives a sense of comfort and relief to women, from the challenges of pregnancy and delivery. The traditional naming ceremony that is typically celebrated on the baby's eighth day of life in some Nigerian cultures was also reported to enable mothers to maintain high spirits in the first few days after delivery (Adeyemo et al., 2020). In a study on six West African mothers living in the United Kingdom, Gardner et al. (2014) reported that despite exhibiting symptoms of PPD the respondents did not regard it as an illness but attributed it to social Stress. Also, the women perceived the supportive nature of social networks as being unavailable, highlighting the role that social support plays in the development of PPD (Gardner et al 2014). In the same vein Weijing et al., (2022) suggested that social support shown through interpersonal relationships with family members plays an important role in reducing postpartum depression and sleep quality among Chinese women. They concluded that improving the relationship between new mothers and their husbands or mothers-in-law as well as enhancing social support help to reduce postpartum depression and sleep disturbance (Weijing et al., 2022).

Some related studies showed interactions between personality traits and PPD (Mulder, 2002). However, research findings connecting personality and PPD are inconsistent. For instance, Maliszewska et al., (2017) found no relationship between extroversion/introversion and



PPD, which contradicted their earlier findings that found that extroversion/introversion does predict vulnerability to depression. Maliszewska et al., (2016) evaluated the relationship between extroversion/introversion and PPD and reported that extroversion which is related to positive emotions such as happiness, optimism, and enthusiasm as well as to security, activation, and interest in social interaction, is associated with reduced vulnerability to affective disorders, increased social support, and successful adjustment to childbirth stressors. Verkerk et al., (2005) reported that women with low extroversion/high introversion had a higher risk of PPD. Furthermore, Penacoba-Puente, (2016) reported that introversion could be associated with the onset of emotional disorders and poor adjustment during the perinatal period.

A study by Chang, et al., (2014) supported the conclusion that neuroticism is associated with PPD. Barlow, (2014), concluded that neurotic individuals tend to experience intense negative emotions in response to stressful situations, and pregnancy and childbirth can be stressful. Neuroticism has been hypothesized as among the most important predictive factors for depression both in pregnancy and postpartum (Dennis, et al., 2004; Podolska et al., 2010; Saudina, 2014). Nevertheless, not all studies agree with this hypothesis (Imsiragic et al., 2014; Maliszewska et al., 2016). In a Nigerian study, Adejuwon, et al., (2018) observed that there was limited evidence to show the relationship between personality traits and postpartum depression. Their study however reported that social support, conscientiousness, openness to experience and neuroticism jointly predicted anxiety and insomnia in nursing mothers. They also found that social support, conscientiousness, openness to experience and neuroticism jointly predicted Somatic symptoms of nursing mothers. Similarly, Agbaje, et al., (2019) in a cross-sectional study found a direct association between depressive symptoms, anxiety and younger maternal age, rural residence, and low income among postnatal women in Enugu state, South East Nigeria. On the other hand, Odinka, et al., (2018) found that dependent personality had no significant correlation with PPD among Igbo nursing mothers in Enugu, south-east Nigeria.

Though there have been several studies on postpartum depression, carried out in many tertiary hospitals in Nigeria, most of these studies have largely concentrated on the prevalence of postpartum depression and its risk factors, very few studies have investigated postpartum depression with social factors and personality traits as independent variables. Thus, this study is aimed at bridging this knowledge gap.



Hypotheses:

The following hypotheses were used as a guide for this study

1. Social support will have a significant predictive influence on postpartum depression among postnatal patients in UCH in Ibadan.
2. Social support and personality traits (openness and neuroticism) will have a significant joint predictive influence on postpartum depression among postnatal patients in UCH, Ibadan.
3. There will be a predictive influence in the experience of postpartum depression across types of personality traits (openness, conscientiousness, extraversion, agreeableness, and neuroticism) among postnatal Patients in UCH, in Ibadan.
4. Maternal age is a significant predictor of post-partum depression among postnatal women using UCH Ibadan.

Materials and Methods

Participants

Adopting the sampling size determination by Glenn (1992) and reviewed by Singh and Masaku (2014) for a population range of 500 to 50,000 respondents, a total of 214 respondents were purposively selected for this study. These included only women who had put to bed between 0-8 weeks and were using the post-natal maternity facilities of the university college hospital (UCH), Ibadan. In addition, only post-natal women who were willing to complete and submit the questionnaires to the researchers were included. This inclusion criterion allowed the researcher to ensure that all potential participants were well-informed and understood the study goals. Women who do not visit nor use the post-natal facilities of the university college hospital were excluded from this study. Women who have given birth for more than 2 months and above were also excluded.

Instruments

A pilot study on seventy postnatal women was carried out to validate the instruments before the main study three instruments were used after their validation. These are:

The multidimensional scale of perceived social support (MSPSS) developed by Zimet et al, (1988) is a 12-item measure of social support. This questionnaire has three different subscales designed to measure three dimensions of sources of social support, namely family, friends or significant other. Each subscale was measured using four items on a 7-point scale ranging from "very strongly agree" to "very



strongly disagree". MSPSS has been discovered to be a three-factor construct with very good internal consistency and test-retest reliability; with Cronbach's alpha of 0.81 to 0.98 in most non-clinical studies and 0.92 to 0.94 in clinical studies (Clara, 2003; Pedersen et al., 2009; Zimet et al., 1990, 1988). The MSPSS has been validated and used among the Nigerian population by Bello et al. (2022).

The MINI International Pool Item Personality (MINI-IPIP): This 20-item personality scale was adapted, developed and validated by Donnellan et al., (2006) as a brief form of the 50-item IPIP Five-factor model. It was inspired by the need for an instrument to measure human personality in critical situations within the shortest time with near or greater psychometric properties compared to other brief five-factor model instruments. The mini International Personality Item Pool (Mini-IPIP), was developed to measure the Five-factor model comprised of five subscales: Extraversion Agreeableness, Conscientiousness, Neuroticism and Openness. The items are measured on a 5-point Likert scale from 1 "Strongly disagree" to 5 "Strongly agree". Each subscale is represented by four questions. Items (6,7,8,9,10,15,16,17,18,19,20) are reversely scored, three out of the four items of the Openness subscale are for reverse scoring. As reported in four studies by Donnellan et al. (2006), the reliability coefficient (Cronbach's α) is .81 for Extraversion, .73 for Agreeableness, .70 for Conscientiousness .74 for neuroticism and .69 for Openness. The MINI IPIP displayed good construct, convergent and discriminant validity with other scales like the BFI-44. The mini-IPIP has been validated and used on Nigerian samples (Ogunsemi et al., 2022) and is found to have acceptable psychometric properties for Nigerian samples.

The Edinburgh Postnatal Depression Scale (EPDS) was developed by Cox, Holden, and Sagovsky (1987) to assist health professionals in detecting mothers suffering from PPD; a distressing disorder more prolonged than the "blues" (which can occur in the first week after delivery). The scale consists of 10 short statements. A postnatal mother is required to check off one of four possible answers that are closest to how she has felt during the past week. Responses are scored 0, 1, 2 and 3 based on the seriousness of the symptom. Items 3, 5 to 10 are reverse scored (i.e., 3, 2, 1, and 0). The total score is found by adding together the scores for each of the 10 items. The scale usually takes about five minutes to complete. In completing the scale, the mother checks off the response that comes closest to how she has felt during the previous seven days. All 10 items must be completed. Care should be taken to avoid the possibility of the mother discussing her answers with others and, the mother should complete the scale herself unless she has limited English or reading difficulties. The scale can be used at



six to eight weeks after birth or during pregnancy. Mothers scoring above 12 or 13 are likely to be suffering from depression and should seek medical attention. In our pilot study the scale was found to have acceptable psychometric properties on Nigerian samples yielding a Cronbach's alpha of .61, and item-total correlation ranging from .03 to .52.

Data collection and analysis

Data were collected between February and April 2023. Collected data were analyzed using descriptive (percentages) and inferential statistics (Pearson moment correction analysis and regression analysis).

Results

Social demographic characteristics of respondents

The distribution of respondents by age shows that the mean \pm SD age of the participants is 32.3 ± 7.78 . This indicates that the majority of the participants were young women. Distribution by educational qualification revealed that 41(19.2%) of the respondents had secondary school certificate, 97(45.3%) have a BSc/HND/ND, 69(32.2%) have MSc and 7(3.3%) of the respondents had PhD as highest degrees. This result indicates that the majority of the respondents have graduated from the university. Distribution by employment status revealed that 84(39.3%) of the respondents were unemployed, 93(43.5%) were self-employed and 37(17.3%) were formally employed. This result indicated that the majority of the participants were self-employed. Furthermore 24 (11.3%) of the respondents lived alone with their child(ren), 156 (72.9%) participants lived with their husband and child(ren), 17(7.9%) lived with their parents and child(ren) and 17(7.9%) lived with their husband, child(ren) and extended family members. This indicated that the majority of the respondents lived with their husbands and child(ren). Distribution of participants by the number of children they have given birth to shows that 70 (32.7%) had one child, 75 (35.0%) had two children, 51(23.8%) had three children, 12(5.6%) had four children, 4(1.9%) had five children, 1(0.5%) had six children and 1(0.5%) had seven children. This indicates that the majority of the respondents had two children.

As summarized in Table 1 the nature of perceived social support among the respondents shows that 16.0% report low social support, 26.3% report an average level of social support, 42.7% report a high level of social support and 15.0% report very high-level social support. When the level of social support received from a significant order was measured, 18.3% of the respondent reported a low level of significant

others support, 17.9% reported an average level, 50.2% reported a high level of social support and 13.6% reported very high level of significant others support. When the level of social support received from the family was analyzed, 14.6% reported low family support, 29.6% reported average family support, 44.1% reported high family support and 15.5% reported very high family support. For the level of support received from friends, 16.9% reported low, 29.6% reported average support received from friends, 44.1% reported high level of friend support and 9.4% reported very high support from friends.

Table 1
Nature of perceived social support among postnatal women in UCH

Variables	Low (%)	Average (%)	High (%)	Very high (%)
Social support	16.0	26.3	42.7	15.0
Significant Others support	18.3	17.9	50.2	13.6
Family Support	14.6	28.1	41.8	15.5
Friends support	16.9	29.6	44.1	9.4

Source: Author

As summarized in Table 2, the pattern of postpartum depression shows that 9.5% report no level of depression, 54.5% report a mild level of depression, 18.0% report a moderate level of depression and 18.0% report a severe level of depression. This result shows the prevalence of postpartum depression among postnatal patients of University College Hospital (UCH), Ibadan of which a corresponding high per cent of them were mild. This indicated that the majority of the post-natal patients experienced mild postpartum depression.

Table 2
Prevalence of postpartum depression among the participants

	Nil (%)	Mild (%)	Moderate (%)	Severe (%)
Postpartum depression	9.5	54.5	18.0	18.0

Source : Author

As summarized in Table 3 there was a significant negative correlation between social support and Postpartum Depression (PPD) [$r(214) = -.164, p < .01$]. This is an indication that PPD decreased with an increase in social support. Also, significant inverse correlations were observed between the domains of social support (significant others [$r(214) = -.083, p < .01$]; family [$r(214) = -.149, p < .01$], and friends [$r(214) = -.147, p < .01$] and postpartum depression among the participants. Also, a significant negative correlation was observed between neuroticism [r

(214) = -.183, p < .01]; and openness [r (214) = -.141, p < .01]; personality traits and PPD.

Table 3
Correlation Matrix showing Relationship between social support, personality traits and postpartum depression (PPD)

Variable	M	S	1	2	3	4	5	6	7	8	9	10
Mean	SD											
Social support total	62.4	13	1									
Significant others	19	3.4	.897**	1								
Family	18	3.2	.938**	.857**	1							
Friends	17	3.4	.885**	.650**		1						
Extroversion	12	2.7	-.050	-.015	-.038	-.065	1					
Agreeableness	10	3.2	-.289**	-.298**	-.307**	-.258**	-.211**	1				
Conscientiousness	10	3.2	-.300**	-.270**	-.287**	-.251**	-.206**	.530**	1			
Neuroticism	11	2.5	.028	-.030	-.023	.058	.077	.120	.140*	1		
Openness	10	2.9	-.287**	-.247**	-.278**	-.259**	-.204**	.460**	.505**	.118	1	
PPD	27	6.2	-.164	-.083	-.149	-.147	-.040	.081	.059	.183**	-.141**	1



Source: Author

A regression analysis was conducted to determine the predictive influence of Social Support on Postpartum depression among postnatal women at the University College Hospital (UCH) in Ibadan, Nigeria. The result shown in Table 4 reveals that Social support significantly predicted postpartum depression among the participants ($\beta = -.16$, $t = -2.41$, $p < .05$). The beta contribution of -0.16 is an indication of an inverse relationship between social support and postpartum depression. This shows that postpartum depression increases with a decrease in social support. The analysis in Table 4 further shows an R^2 of $.027$, which suggests that 2.7% variance of postpartum depression among the participants is explained by social support [$F(1, 209) = 5.79$, $p < .05$]. Based on this result it is concluded that social support is a significant predictor of post-partum depression among postnatal Patience in UCH Ibadan.

Table 4
Regression Analysis of the Predictive Influence of Social Support on Postpartum Depression among postnatal patients in UCH Ibadan.

	B	B	T	sig	R	R ²	F	P
(Constant)	33.42		12.8	.0				
	9		51	00				
Social Support		-	-	.0	.1	.0	5.79	.0
Composite	-.099	.16	2.40	.0	.64	.27	4	.17
score		4	7	.17				

Source: Author

A regression analyses were conducted to determine the joint predictive influence of Social Support and neuroticism personality traits on postpartum depression among postnatal women at the University College Hospital (UCH) in Ibadan on one hand and the joint predictive influence of Social Support and openness personality trait among the participants on the other hand. The result shown in Table 5 reveals that Social support and neuroticism are joint significant determinants of postpartum depression among the participants ($F = 6.56$, $p < .05$). Also Social support and openness are joint significant determinants of postpartum depression among the participants ($F = 3.99$, $p < .05$). The analysis in Table 5 further shows an R^2 of $.059$, for the interaction between social support and neuroticism, which suggests that 5.9% variance of postpartum depression among the participants is explained by the joint influence of social support and neuroticism. Furthermore an observed R^2 of $.037$, on the interaction between social

support and openness suggests that a 3.7% variance of postpartum depression among the participants is explained by the joint influence of social support and openness personality trait. Based on this result it is concluded that social support and neuroticism as well as social support and openness are significant joint determinants of postpartum depression among postnatal women using UCH Ibadan.

Table 5
Regression Analysis of the Social Support and personality traits (neuroticism and openness) on Postpartum Depression among postnatal women in UCH Ibadan.

Determinants	B	B	T	sig	R	R ²	F	P
Social Support composite	-.097	-.160	-2.386	.018	.244	.059	6.558	.002
Neuroticism	-.457	-.180	-2.674	.008				
Social Support composite	-.082	-.135	-1.912	.057	.192	.037	3.985	.020
Openness	.220	.104	1.464	.145				

Source: Author

A regression analyses were conducted to determine the predictive influence of each of the personality traits on PPD among postnatal women at the UCH. The result shown in Table 6 reveals that only openness ($\beta = -.14$, $t = -2.06$, $p < .05$) and neuroticism ($\beta = -.18$, $t = -2.69$, $p < .05$) personality traits independently and significantly predicted PPD among the participants. The positive direction of the beta contribution observed in the interaction between openness and PPD is an indication that postpartum depression increases with an increased openness personality trait. Also, the negative direction of the beta contribution observed in the interaction between neuroticism and PPD is an indication that postpartum depression increases with a decrease in neuroticism personality trait. The analysis in Table 6 further shows that conscientiousness ($\beta = .06$, $p > .05$), extraversion ($\beta = .004$, $p > .05$) and agreeableness ($\beta = .08$, $p > .05$) personality traits had no significant independent predictive influence on PPD among the participants. Based on this result it is concluded that there is a significant difference in the predictive influence of personality traits on PPD among postnatal women using UCH Ibadan.

Table 6: Regression of Personality traits on PPD among postnatal women in UCH

Predictor	B	B	T	Sig	R	R ²	F	p
Openness	.29	.14	2.0	.04	.141	.02	4.26	<.05
conscientiousness	.11	.05	.85	.39	.059	.00	.736	>.05
Extraversion	.00	.00	.06	.95	.004	.00	.004	>.05
Agreeableness	.16	.08	1.1	.24	.081	.00	1.36	>.05
Neuroticism	-.46	-.18	-2.6	.008	.183	.03	7.25	<.05

source

A regression analysis was conducted to determine the predictive influence of maternal age of participants on postpartum depression among postnatal women using the UCH Ibadan, Nigeria. The result shown in Table 7 reveals that maternal age of participants significantly predicted PPD among the participants ($\beta = .143$, $t = -2.08$, $p < .05$). The positive direction of the beta contribution ($\beta = .143$) is an indication of a positive relationship between maternal age of participants and PPD. This shows that PPD increases with an increase in age of the women. The analysis in Table 7 further shows an R^2 of .020, which suggests that a 2.0% variance of PPD among the participants is explained by maternal age [$F(1, 209) = 4.34$, $p < .05$]. Based on this result it is concluded that maternal age is a significant predictor of PPD among postnatal women using UCH Ibadan.

Table 7: Regression Analysis of maternal Age on PPD among postnatal women in UCH Ibadan.

	B	B	T	sig	R	R ²	F	P
(Constant)	23.58		13.0	.00				
Maternal Age in years	.114	.143	2.08	.038	.143	.020	4.34	.038

Source: Author

Discussions

This study investigated social support and personality traits as determinants of postpartum depression among post-natal patients in University College Hospital, Ibadan. The first objective of this study is

aimed at exploring the patterns of social support, personality traits and postpartum depression among postnatal patients in UCH, Ibadan. In Nigeria, various studies have been conducted to determine the prevalence of PPD using the Edinburgh Postnatal Depression Scale EPDS (Obindo, 2014). For example, Atwoli (2011) noted that a study conducted in Nigeria in 2005 reported a postpartum depression prevalence rate of 14.6%. Ebeigbe, & Akhigbe, (2008) found a higher prevalence of 27% in the western part of Nigeria, however, Adewuya, (2006); Adewuya et al., (2005), reported a low (14.6%) and high (23.0%) prevalence of PPD in western Nigeria respectively. Two different studies conducted in South-eastern Nigeria reported a low prevalence of 10.7% in one and a high prevalence of 30.0% in the other (Abasiubong, Bassey, & Ekott, 2008; Uwakwe, 2003). In Northern Nigeria, seemingly high prevalence rates of 44.5% and 21.8% were reported (Tungchama, et al., 2018; Obindo, 2014).

Adewuya, Fatoye, Ola, Ijaodola, & Ibigbami, (2005) used different instruments of measurement in carrying out a controlled study to compare the prevalence of PPD among reproductive-aged women in Nigeria at eight weeks after delivery. The tools included the Beck's Depressive Inventory (BDI) and locally translated versions of the EPD. The study participants consisted of 876 postpartum women and a comparison group of 900 non-postpartum women (Adewuya et al., 2005). In addition, PPD was diagnosed using the modified non-patient version of Structured Clinical Interview for DSM-III-R (SCID-NP) (Adewuya et al., 2005). The results revealed a significant difference between the two groups, with the postpartum women having higher scores for both EPDS and BDI respectively concluding the comparable prevalence of PPD in Nigeria with that of the developed world (Adewuya et al., 2005). Abiodun (2006) conducted a two-stage screening procedure in a developing society in Nigeria. The objective of the study was to determine the prevalence and associated factors for postnatal depression in primary health care (PHC) centres. The incidence of postnatal depression in the primary care populations studied was 18.6%. The procedure involved the use of the 10-item self-reporting Edinburgh Postnatal Depression Scale (EPDS) and the Present State Examination Schedule. The authors suggested incorporating the EPDS into the maternal and health care programs of Primary Health Care centres in developing countries like Nigeria for early detection and intervention of PPD.

A similar study carried out in a Zimbabwean random sample of postpartum women indicated that 33% of the participants met the DSM-V criteria for depression (Chibuanda et al., 2010). Kathree, Selohilwe, Bhana, & Petersen (2014) conducted a study in South Africa



and found high prevalence rates of PPD; 16.47% of mothers in a Peri-urban settlement, and 39% in an informal settlement. Oates et al. (2004) examined the universal and cross-cultural nature of PPD. The primary objective of the study was to explore the universal recognition, attribution, description, and perceptions of remedies and services for PPD within the context of local services. Data were collected and analyzed for three different groups of informants chosen from 15 different health centers, from 11 different countries. Oates et al. concluded the universal nature and cross-cultural equivalence of PPD as an illness that requires interventions by health professionals.

The result of the first hypothesis showed that social support significantly predicted PPD among the respondents. This finding corroborates that of Okhakhume, et al., (2017) who found that social support did not only mediate the influence of antenatal anxiety on postnatal anxiety on postnatal depression but also had a joint prediction with marital stress and antenatal anxiety on postnatal depression. These findings are not uncommon, especially among some cultural practices in Nigeria whereby family members particularly mothers and in-laws oftentimes visit and stay with their pregnant daughters to provide social support through sharing knowledge and experiences about pregnancy and childbirth as well as provide physical support for cooking and other domestic chores. The source of social support is usually someone or persons significant to the nursing mother which usually build trust and confidence in terms of communication and quality of physical, psychological and emotional support provided and received. Also, many social events held within the postpartum period including naming ceremonies, religious child dedications and christenings bring family members and friends together to celebrate with the new mother and also provide some psychological support to the nursing mother and greatly decrease the chances of the nursing mother to experience depressive symptoms.

The outcome of the second hypothesis revealed a substantial positive link between respondents' PPD and social support and personality traits (neuroticism and openness). The notion that neuroticism and postpartum depression are related is supported by certain studies. Maliszewska et al. (2016); Axfors et al. (2017); Chang et al. (2014); Imsiragic et al. (2014); Marn-Morales et al. (2014). Pregnancy and childbirth can be stressful, and neurotic people often react to stressful events with intensely negative feelings. According to some writers, neuroticism is one of the most significant prognostic factors for depression during pregnancy and postpartum (Dennis & Boyce, 2004; Podolska et al., 2010), and interest in neuroticism has grown recently



(Barlow, 2014). There is less literature on openness since there is less research on the relationship between openness and postpartum depression. The emergence of PPD is significantly influenced by openness as well. According to one study (Imsiragic et al., 2014), having a high level of openness was linked to a lower incidence of postnatal depression.

According to the third hypothesis' findings, respondents' openness and neuroticism personality traits strongly and independently predicted postpartum depression. These results support those of Murakami et al. (2022), who discovered that postpartum women with high neuroticism and poor extraversion showed statistically significant postpartum depression susceptibility among the Japanese population. Additionally, Puyane, et al., (2022) discovered that neuroticism was repeatedly recognized as a personality trait that exhibited a substantial connection with postpartum depression among all the personality qualities described in the literature. Similar findings were made by Roman, et al. (2019), who discovered that neuroticism, conscientiousness, and agreeableness personality traits exhibited substantial mean differences in postpartum depression experiences among new moms in north-east Romania. It's important to note that personality research has identified five distinct categories of personality traits: agreeableness (the propensity to empathize, express concern for social harmony with an optimistic viewpoint, and contradict negative emotional expressions); conscientiousness (the degree of organization, control, and motivation); extraversion (the frequency and intensity of interpersonal relationships, activity, need for stimulation, and response); and neuroticism (the propensity to be apprehensive, show concern about social harmony with an optimistic opinion and contradict negative). The qualities of each of these personality factors so imply that personality type can influence the experience of postpartum depression symptoms.

The fourth hypothesis's outcome demonstrates that PPD was significantly predicted by respondents' age. In a sample of more than a million women at postpartum from 138 countries, Bradshaw et al. (2022) showed that first-time mothers reported significantly greater incidence of postpartum depression compared to mothers who had experienced postpartum more than once. In a similar vein, Agbaje, et al., (2019) discovered that among a sample of postnatal women in South-East, Nigeria, younger mother age was substantially related to postpartum depression compared to elderly maternal age. Additionally, Tungchama, et al.'s (2018) research indicated that among women who frequent postnatal and children's welfare clinics



in a tertiary hospital in Jos, Nigeria, maternal age is substantially linked with postpartum depression.

Conclusions

According to the study, postpartum women who receive enough social support from family, friends, or significant others are less likely to experience depressive symptoms or develop postpartum depression. Also, postpartum women with agreeableness, conscientiousness, and intelligence/imagination as their dominant personality traits are less likely to experience postpartum depression, whereas postpartum women with neuroticism and extraversion as their dominant personality traits are more likely to do so. The study also discovered that postpartum depression and social support are positively correlated and that maternal age is a significant risk factor for postpartum depression. This study reaffirmed that each explanatory factor plays a significant role in predicting postpartum depression.

Recommendations

Implicit on these findings it is necessary for families of pregnant and postnatal women, maternal and mental healthcare professionals, religious and social groups, human development organizations, public policymakers as well as government ministries and agencies in charge of women's development, to note that social support and personality type should be included as yardsticks for designing appropriate intervention strategies that will help in reducing or preventing the incidence of PPD. Also, it is instructive for clinical psychologists and other mental health professionals to diligently assess the dominant personality trait and levels of social support received during postpartum periods of their clients to design or adopt effective therapeutic interventions for the treatment of postpartum depression. Again, the practice of having experienced family members or significant others (especially women) visit and spend time with postnatal women should be encouraged, adequately planned for and implemented by families of postnatal women. Finally, postnatal women should be encouraged to participate actively in social events such as naming ceremonies, child dedication and christening of their babies, as these events could be therapeutic as it brings the sources of social support closer to postnatal women thus mitigating PPD.

Limitations of the study

This study was carried out on postnatal women using a hospital facility in Ibadan, Nigeria. Hence the social-cultural context of the



respondents as well as other extraneous factors that could influence their responses should be taken into cognizance in the application of the result to other settings. Thus generalization of the finding on other populations should be approached with caution.

Ethical considerations

Before the administration of the instruments on the respondents, authorizations to carry out the study was sought and obtained by the management of University College Hospital Ibadan. Also, informed consent forms were filled out by the respondents and all ethical requirements regarding carrying out studies on human subjects were adhered to.

Conflicts of interest

None is declared by the authors

References

- Abasiubong, F., Basse, E.A., &Ekott, J.U., (2008). Postpartum depression among women in Uyo, Akwa-Ibom State. *Nigeria Journal of Psychiatry*, 6, 65-69.
- Abiodun, O. A. (2006). Postnatal depression in primary care populations in Nigeria. *General Hospital Psychiatry*, 28, 133-136.
- Adama, N., Foumane, P., Olen, J., Dohbit, J., &Meka, E., (2015). Prevalence and Risk Factors of Postpartum Depression in Yaounde, Cameroon. *Open Journal of Obstetrics and Gynecology*, 5, 608-617.
- Adejuwon, G.A., Adekunle, I.F., &Ojeniran, M., (2018). Social support and personality traits as predictors of psychological wellbeing of postpartum nursing mothers in Oyo state, Nigeria. *International Journal of Caring Sciences*, 11(2), 704 - 719.
- Adewuya, A. O., Eegunranti, A. B., &Lawal, M. A. (2005). Prevalence of postnatal depression in western Nigerian women: a controlled study. *International Journal of Psychiatry*, 9 (1), 6-64.
- Adewuya, A. O., Fatoye, F. O., Ola, B. A., Ijaodola, O.R., & Ibigbami, S. M. (2005). Socio-demographic and obstetric risk factors for postpartum depressive symptoms in Nigerian women. *Journal of Psychiatric Practice*, 11(5), 353-358.
- Adewuya, A.O., (2006). Early postpartum mood as a risk factor for postnatal depression in Nigerian women. *American Journal of Psychiatry*, 163, 1435-1437.
- Adeyemo, E.O., Oluwole, E.O., Kanma-Okafor, O.J., Izuka, O.M., &Odeyemi, K.A., (2020). Prevalence and predictors of postpartum depression among postnatal women in Lagos, Nigeria. *Africa Health Science*, 20(4): 1943-1954.

-
- Agbaje, O.S., Anyanwu, J.I., Umoke, I.C., Iwuagwu, T.E., Iweama, C.N., Ozoemena, E.L., & Nnaji, I.R., (2019). Depressive and Anxiety Symptoms and Associated Factors among Postnatal Women in Enugu-North Senatorial District, South-East Nigeria: A Cross-Sectional Study. *Archives of Public Health*, 77(1), 1 – 16.
- Agoub, M., Moussaoui, D., & Battas, O., (2005). Prevalence of postpartum depression in a Moroccan sample. *Archives of Women's Mental Health*, 8, 37–43.
- AtwoliLukoye (2011). Postpartum Depression. *Journal of obstetrics and Gynecology of East and Central Africa*, vol 23.
- Axfors C, Sylvén S, Ramklint M, & Skalkidou A (2017). Adult attachment's unique contribution in the prediction of postpartum depressive symptoms, beyond personality traits. *J. Affect. Disord.*, 222 (2017), pp. 177-184.
- Barlow, D.H., (2014). The Origins of Neuroticism. *Perspective in Psychological Science*, 9, 481-491.
- Beck CT. Predictors of postpartum depression: an update (2001). *Nursing Research*, 50 (5), 275 – 285.
- Bello, I. B., Akinnawo, E. O., Akpunne, B. C., & Onisile, D. F. (2022). Validation of the Multidimensional Scale of Perceived Social Support on Nigerian Female Undergraduates. *Journal of Education, Society and Behavioural Science*, 35(3), 19–26.
<https://doi.org/10.9734/jesbs/2022/v35i330410>
- Boyce P, Hickey A, Gilchrist J, & Talley N. J., (2001) The development of a brief personality scale to measure a vulnerability to postnatal depression. *Arch Women Ment Health* 3:147–153
- Bradshaw, H., Riddle, J.N., Salimgaraev, R., Zhaunova, L., & Payne, J.L., (2022). Risk factors associated with postpartum depressive symptoms: A multinational study. *Journal of Affective Disorders*, 301, 345 – 351.
- Chang, H.P., Chen, J.Y., Huang, Y.H., Tyan, J.Y., Yeh, C.J., Su, P.H., Chin-Hung Chen, V., (2014). Prevalence and factors associated with depressive symptoms in mothers with infants or toddlers. *Pediatric Neonatal*, 55, 470–479. <https://doi.org/10.1016/j.pedneo.2013.12.009>
- Chibanda, D., Mangezi, W., Tshimanga, M., Woelk, G., Rusakaniko, S., StranixChibanda, L., Midzi, S., & Avinash, K., Shetty, M. (2010). Postnatal depression by HIV Status among Women in Zimbabwe. *Journal of Women's Health*, 19(11), 2071-2077.
- Cox JL, Holden JM, Sagovsky R (1987) Detection of postnatal depression: development of the 10-item Edinburgh postnatal depression scale. *Br J Psychiatry* 150:782–786
- Dennis, C.L.E., Janssen, P.A., & Singer, J., (2004). Identifying women at-risk for postpartum depression in the immediate postpartum period. *Acta Psychiatrica Scand* 110, 338–346. <https://doi.org/10.1111/j.1600-0447.2004.00337.x>.

-
- Ebeigbe, P.N., & Akhigbe, K.O. (2008). Incidence and associated risk factors of postpartum depression in a tertiary hospital in Nigeria. *Nigeria Postgraduate Medicine Journal*, 15, 15 - 28.
- Falana, S.D., & Carrinton, J., (2019). Postpartum Depression. *Nursing Clinics of North America*, 54(4), 1 – 19
- Gardner, P. L., Bunton, P., Edge, D., Wittkowski, A.(2014) The experience of postnatal depression in West African mothers living in the United Kingdom: a qualitative study. *Midwifery*. Jun;30(6):756-63. doi: 10.1016/j.midw.2013.08.001. PMID: 24016554.
- Hallbreich, U., & Karkun, S., (2006). Cross-cultural and social diversity of prevalence of postpartum depression and depressive symptoms. *Journal of Affective Disorders*, 91, 97–111.
- Imsiragic, A.S., Begic, D., Vukovic, I.S., Simicevic, L., & Javorina, T., (2014). Multivariate Analysis of Predictors of Depression Symptomatology after Childbirth. *Psychiatry Danub*, 26, 416–421.
- Joel .A.Afolayan., Olayinka .A. Onasoga., F.M. Rejuaro., Yusuf .A. Gambari. & Chibuike Onuabueke (2016). Knowledge of Postpartum Depression and its Associated Risk Factors Among Nurse-Midwives in a Nigerian Tertiary Hospital. *African journals online vol 8*
- Jones Ian & Nick Craddock (2001). Familiality of the Puerperal Trigger in Bipolar Disorder: results of a family study. *American journal of psychiatry*, 158:913-917
- Kathree, T.M., Selohilwe, M., Bhana, A., & Petersen, I. (2014). Perceptions of postnatal depression and health care need in a South African sample: the mental in maternal health care. *Biomed-Central Women's' health*, 14, 140 – 148.
- Kornfeind, K.R., & Sipsma, H.L., (2018) Exploring the Link between Maternity Leave and Postpartum Depression. *Womens Health Issues*. 2018 Jul-Aug;28(4):321-326. doi: 10.1016/j.whi.2018.03.008.. PMID: 29729837.
- Maliszewska, K., Swiatkowska-Freund, M., Bidzan, M., & Preis, K., (2016). Relationship, social support, and personality as psychosocial determinants of the risk for postpartum blues. *Ginekol. Pol.* 87, 442–447.
- Miller, J.L., (2002). Postpartum Depression Analyses. *The JAMA Journal of the American Medical Association*, 287(6), 762 – 775.
- Msiqwa, T., (2010). Prevalence of depressive symptoms and risk factors among postpartum mothers at Sinza and Magomeni health in Kinondoni Municipal- Dar Es Salaam, Tanzania.
- Murakami, K., Ishikuro, M., Obara, T., Ueno, F., Noda, A., Onuma, T., Matsuzaki, F., Kikuchi, K., Kobayashi, N., Hamada, H., Iwama, N., Metoki, H., Saito, M., Sugawara, J., Tomita, H., Yaegashi, N., & Kuriyama, S. (2022). Maternal Personality and Postpartum Mental Disorders in Japan: the Tohoku Medical Megabank Project Birth and Three Generation Cohort Study. *Nature Portfolio*, 12(6400), 1 – 8.

-
- Nakku, J., Nakasi, G., & Mirembe, F., (2006). Postpartum major depression at six weeks in primary health care: prevalence and associated factors. *African Health Science*, 6, 207–214
- Nonacs, L., & Cohen, L.S., (1998). Postpartum mood disorders: diagnosis and treatment guidelines. *Journal of Clinical Psychiatry*, 59(2), 34 – 40.
- Oates, M.R., Cox, J.L., Neema S, Asten P, Glangeaud-Freudenthal N, Figueiredo B, Gorman L.L, Hacking S, Hirst E, Kammerer MH, Klier CM, Seneviratne G, Smith M, Sutter-Dallay AL, Valoriani V, Wickberg B, & Yoshida K; TCS-PND Group. Postnatal depression across countries and cultures: a qualitative study. *Br J Psychiatry Suppl*. 46:s10-6. doi: 10.1192/bjp.184.46.s10. PMID: 14754813.
- Obindo, T.J., Ekwempu, C.C., Ocheke, A.N., Piwuna, C.G., Adegbe, E.O., & Omigbodun, O.O., (2014). Prevalence and Correlates of Postpartum Depression in a Teaching Hospital in Nigeria. *High Medical Research Journal*, 13, 71–75.
- Odinka, J.I., Nwoke, M.B., Chukwuorji, J.C., Nduanya, U.C., Muomah, R.C., Amadi, K.U., Ndukuba, A.C., & Odinka, P.C., (2018). Dependent personality as correlate of postpartum anxiety and depression among Igbo nursing mothers in Enugu, south-east Nigeria. *Nigerian Journal of psychological Research*, vol. 14.
- Ogunsemi, J. O., Akinnawo, E. O., Akinbobola, O. I., Ariyo, J. O., Babatunde, S. I., & Akpunne, B. C. (2022). Psychometric Properties and Validation of Mini-International Personality Item Pool (Mini-IPIP) among Nigerian Population. *Advances in Research*, 23(4), 49–57. <https://doi.org/10.9734/air/2022/v23i430342>
- Ohkakhume, A. S., Sunday Shide., & Angela .I. Osuagwu. (2017). Marital stress, Antenatal Anxiety, Social support and Postnatal Depression among Nursing mothers in Ibadan. *Advances in social science research journal*, <https://doi.org/10.14738/assrj.411.2910>
- Penacoba-Puente, C., (2016). Post-Partum Depression, Personality, and Cognitive Emotional Factors: a Longitudinal Study on Spanish Pregnant Women. *Health Care Women International* 37, 97.
- Podolska, M.Z., Majkowicz, M., Bidzan, M., Pankiewicz, P., Sipak-Szmigiel, O., & Podolski, J., (2010). Increased neuroticism aggravates the risk of depressive symptoms pregnant women. *Studies in Psychology*, 10, 53–66.
- Puyane, M., Subira, S., Torres, A., Roca, A., Garcia-Esteve, L., & Gelabert, E., (2022). Personality traits as a risk factor for postpartum depression: a systematic review and meta-analysis. *Journal of Affective Disorders*, 298, 577 – 589.
- Robinson, G. E., & Stewart, D.E., (2001). Postpartum Disorders. In: Scoland, N.L and Stewart, D.E., *Psychological aspects of Women's Health Care*. American Psychiatric Press, Inc., Washington DC, 117-139

-
- Robling S A., Paykel E S., Dunn V.J., Abbott R., & Katona C., (2000). Long-term outcome of severe puerperal psychiatric illness: a 23 year follow-up study. *Psychol Med.* 2000 Nov;30(6):1263-71. doi: 10.1017/s0033291799003025. PMID: 11097067.
- Roman, M., Bostan, C.M., Diaconu-Gherasim, L.R., & Constantin, T., (2019). Personality traits and postnatal depression: the mediated role of postnatal anxiety and moderated role of type of birth. *Frontiers in Psychology*, 10 (1625), 1 – 14.
- Saudina, U., (2014). Big Five Personality Traits and Social Support as Predictors of Postpartum Depression. *Journal of European Psychology Student*.
- Stewart, D.E., Robertson, E., Dennis, C.L., Grace, S.L., & Wallington, T., (2003). Postpartum depression: Literature review of risk factors and interventions. <http://www.who.int/mentalhealth/prevention/suicide/litreviewpostpartumdepression.pdf>
- Tungchama, F.P., Obindo, J.T., Armiya'u, A.Y., Maigari, Y.T., Davou, F.J., Goar, S.G., et al. (2018). Prevalence and socio-demographic correlates of postpartum depression among women attending Postnatal and/or Children's Welfare Clinics in a Tertiary Hospital, Jos, Nigeria. *Sahel Medical Journal* 21(1), 23 – 30.
- Verkerk, G.J.M., Denollet, J., Van Heck, G.L., Van Son, M.J.M., & Pop, V.J.M., (2005). Personality factors as determinants of depression in postpartum women: a prospective 1-year follow-up study. *Psychosocial Medicine*, 67, 632–637.
- Uwakwe, R., & Okonkwo, J.E., (2003). Affective (depressive) morbidity in puerperal Nigerian women: Validation of the Edinburgh postnatal depression scale. *Acta Psychiatrica Scand*, 107, 251-259.
- Weijing, Q., Yan, L., Huicong, L., Jun, G., Yucui, M., Nan, Z., Fuqing, Z., Qing, G., & Jie, H., (2022). Effects of family relationship and social support on the mental health of Chinese postpartum women. *BMC Pregnancy and Childbirth*, 22(65), 1 – 10.
- Weobong, B., Ten-Asbroek, A., Soremekun, S., Danso, S., & Owusu-Agyei, S., (2015). Determinants of postnatal depression in rural Ghana: findings from the done population-based cohort study. *Depression and Anxiety*, 32, 108–119.
- Wisner, K. L., Parry, B. L., & Piontek, C. M., (2002). Clinical practice. Postpartum depression. *England Journal of Medicine*, 347, 194-199.
- World Health Organization (2003). World Health Report, 2003. Global burden of disease in 2002: Data sources, methods and results. http://www.who.int/healthinfo/globalburdendisease/GBDreport2004update_full.pdf.