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# A STUDY OF PERSONALITY IN RELATION TO POSTPARTUM DEPRESSION

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**Abstract:**

**BACKGROUND**:
Postpartum depression (PPD) poses a widespread mental health challenge for numerous new mothers worldwide. Despite extensive research identifying various risk factors, the influence of personality traits on predisposing individuals to PPD continues to be a topic under investigation. Insight into the interplay between personality characteristics and the childbirth experience, alongside the transition to motherhood, holds promise for enhancing both preventive strategies and therapeutic approaches for PPD.

**METHODOLOGY:**
The study used comprehensive approach to understand the relationship of personality traits and postpartum depression. A quantitative survey method was used. Participants included (N=35) primiparous women within the first year of there postpartum. Personality traits were assessed using Big Five Inventory and Postpartum Depression was assessed using the Edinburgh Postpartum Depression Scale.

**RESULTS:**
Qualitative analysis revealed that there exists significant correlation between certain personality traits and postpartum depression. From the analysis it is understood that neuroticism (r =0.324; p=0.057) agreeableness (r=0.109; p=0.733) and openness (r=0.224; p=0.902) were positively correlated and the personality traits like extraversion (r= -0.067; p=0.351) and conscientiousness (r= -0.224; p=0.098) were negatively correlated. Additionally from the descriptive analysis of the demographic details and depression, it was found that there was significant difference in the depression level of women who were educated up to high school and those educated above high education.

**CONCLUSION:**
This study's results highlight the significance of integrating personality factors into the assessment and treatment of postpartum depression. Tailoring interventions to match individual personality profiles has the potential to amplify the effectiveness of preventive and therapeutic strategies.

**Keywords:** Postpartum depression, personality traits, PDD risk factors.

## Introduction:

Childbirth is a significant event in a woman's life, impacting social, psychological, and biological aspects (Cemal, Akman, et al., 2007). During puerperium, changes in gonadal steroids affect neurotransmitters, linked to mood (Bloch et al., 2003). This period increases the risk of depressive symptoms and mood episodes (Steiner, Dunn, et al., 2003; Freeman, Smith, et al., 2002). Postpartum depression (PPD) is a mood disorder affecting women in the first year after childbirth, marked by sadness, worry, insomnia, appetite loss, irritability, anger,

difficulty bonding with the child, lack of interest in activities, fatigue, poor concentration, and thoughts of self-harm or harming the child. Unlike postpartum blues, which last a few days, PPD can persist much longer (Clay and Seehusan, 2004; Robertson, Grace, et al., 2004). Despite historical awareness of PPD dating back to Hippocrates, stigma persists, leading women to hide symptoms and avoid seeking help. Hippocrates linked suppressed lochial discharge to agitation and mania (Hamilton, 1962). Although PPD is recognized, awareness remains limited globally.

The ICD-10 does not specifically diagnose PPD but includes it under major depressive disorder. Symptoms include depressed mood, loss of interest in activities, weight changes, insomnia, fatigue, feelings of worthlessness, and suicidal thoughts, causing significant distress and impairment (American Psychiatric Association, 2013). Beck C.T (2001) identified 13 predictors of PPD, including prenatal depression, self-esteem, childcare stress, prenatal anxiety, life stress, social support, marital relationship, previous depression, infant temperament, maternity blues, marital status, socioeconomic status, and unplanned pregnancy. Biological, obstetric, and infant gender factors also contribute to PPD.

Personality encompasses psychological, behavioral, and physical traits (Allport, 1961). The Big Five theory identifies five traits: neuroticism, extraversion, openness to experience, agreeableness, and conscientiousness (Costa and McCrae, 1992).

- **Openness:** Imaginative, creative, and curious.
- **Extraversion:** Social, energetic, and emotionally expressive.
- **Conscientiousness:** Thoughtful, goal-oriented, and attentive.
- **Agreeableness:** Trustful, kind, and altruistic.
- **Neuroticism:** Negative emotions, depression, and anxiety.

The present paper makes an attempt to understand the relation between Personality characteristics and post partum depression among the primiparous women, as personality traits can significantly influence the risk, experience, and management of Postpartum Depression (PPD), which is a form of depression that occurs after childbirth.

## REVIEW OF LITERATURE

Many Research studies reveal the risk of women to experience PPD and close relation between personality traits and PPD. Puyané et al. (2022) concluded that, Neuroticism is a significant risk factor for PPD. A meta-analysis shows a strong association between neuroticism and PPD symptoms. Batt et al. (2020) viewed that, distinctiveness of postpartum depression (PPD) from major depressive disorder (MDD) is unclear. Early postpartum indicators like symptom severity and heritability suggest potential distinctiveness, but over time, PPD may resemble MDD more closely. Roman et al. (2019) revealed that, Postnatal anxiety mediates the relationship between neuroticism and postnatal depression. Type of birth influences how personality traits affect anxiety and depression. Hicks and Mehta (2018) observed that, the Big Five and Type A personality traits relate to psychological well-being. Extraversion and conscientiousness positively impact well-being, while neuroticism negatively affects it.

Axfors et al. (2017) opined, the Attachment anxiety and neuroticism/trait anxiety are the chief predictors of postpartum depressive symptoms (PPDS). High attachment anxiety and neuroticism predict PPDS in non-depressed pregnant women. In a study, Smith-Nielsen et al. (2016) observed, PPD is linked to attachment insecurity only with co-morbid personality disorder (PD). Infants of mothers with PPD but no PD show no differences compared to those with no psychopathology. Miller et al. (2015) found that, nearly 20% of mothers experience PPD within the first 3 months postpartum. Various prevention strategies, including antidepressants and psychological interventions, show promise, especially interpersonal therapy for at-risk populations. Katon, Russo, and Galvin (2014) in their study found that, younger, unemployed, stressed, and depressed women during pregnancy are at higher risk for PPD. Medical issues like diabetes and neurological conditions also increase risk.

Udovičić (2014) in his study found that, unemployment and neuroticism correlate with PPD, while extraversion and social support negatively associate. Neuroticism and low conscientiousness are significant predictors of PPD symptoms. Xia et al. (2014) found that, Self-Supporting Personality (SSP) traits like interpersonal responsibility and openness negatively correlate with depression, even beyond the Big Five traits. O'Hara and

McCabe (2013) suggested that, PPD often goes unnoticed and can harm mother-infant bonding and child development. Early detection and treatment by healthcare providers are crucial. Sockol et al. (2013) carried a meta-analysis of 37 trials showed preventive interventions reduce PPD symptoms and episodes. The results revealed that, impact diminishes later in the postpartum. Shalkidio and Helgrin et al. (2012) in their study concluded that, the hormonal changes during pregnancy and breastfeeding can increase PPD risk. Biological mechanisms include hormonal fluctuations, stress response, neurotransmitter activity, and genetic factors.

**OBJECTIVES OF THE STUDY**

1. To investigate the association between specific personality traits (e.g., neuroticism, extraversion, conscientiousness) and postpartum depression.
2. To determine if certain personality traits act as risk or protective factors for PPD.

**VARIABLES:**

**Independent Variable**: Personality Traits (Extraversion, Openness, Conscientiousness, Agreeableness, Neuroticism) and **Dependent Variable**: Postpartum Depression.

SAMPLE: The study used purposive sampling to select 35 participants from urban and rural areas in Chittoor district, Andhra Pradesh state, India. The mean age of the participants is 24.6 years. Participants are native to the region.

**STUDY TOOLS**

Big Five Inventory developed by John O. P and Srivatsava (1999), measures Big Five trait domains of personality namely: extraversion, agreeableness, conscientiousness, neuroticism (vs. emotional stability), and openness to experiences. It is a 44-item inventory using a 5-point Likert scale, with some reverse-scored items, with Reliability of 0.75 to 0.80 and Validity of 0.83 to 0.91 for different traits. Edinburgh Postnatal Depression Scale (Cox, Holden, Sagovsky, 1987), is a 10-item scale for assessing postpartum depression. It is scored on a 4-point Likert scale, with certain items reverse-scored, with Reliability 0.83 and Validity 0.9.

**RESULT AND DISCUSSION**

The demographic details namely education, occupation, gender of the child and birth weight of the child distributed in Table 1.

**Table 1: The sample distribution, mean standard deviation, t test values, and the level of significance of socio-demographic details with respect to Postpartum Depression:**

| S.No | Socio-demographic variables | Details | N | Mean | S.D | 't' value | p value |
|---|---|---|---|---|---|---|---|
| 1 | Education | Degree and Higher | 15 | 18.0 | 3.53 | **2.62** | 0.01 |
| | | Up to High school | 20 | 15.3 | 3.45 | | |
| 2 | Occupation | Homemaker | 18 | 16.6 | 3.71 | 1.08 | 0.28 |
| | | Working Professional | 17 | 19.9 | 3.27 | | |
| 3 | Gender of the Child | Female | 21 | 16.9 | 3.14 | 0.45 | 0.76 |
| | | Male | 14 | 17.8 | 4.04 | | |
| 4 | Birth weight of the child | > 2.5 kg | 17 | 17.9 | 3.71 | 0.13 | 0.89 |
| | | </= 2.5 Kg | 18 | 16.6 | 3.27 | | |
| 5 | Type of Family structure | Nuclear | 17 | 17.3 | 3.48 | 0.11 | 0.91 |
| | | Joint | 18 | 17.2 | 3.62 | | |

Table 1 highlights key statistical insights on postpartum depression based on the mother's education level, occupation, child's gender, birth weight, and family type. Mothers with education above high school (n=15) had a significantly higher mean depression score of 18.0 compared to those with education up to high school (n=20) with a mean of 15.3 (t=2.62, p=0.01), indicating that higher education may be associated with increased awareness of health risks and, consequently, higher depression levels. However, no significant differences were found in depression scores between homemakers (n=18, mean=16.6) and working mothers (n=17, mean=19.9), with a t-value of 1.08 and a p-value of 0.28 ($p > 0.05$).

Other factors, such as the child's gender and birth weight, did not show statistically significant differences in depression scores. Mothers of female children (n=21) had a mean score of 16.9, while mothers of male children (n=14) had a mean score of 17.8 (t=0.765, p=0.45). Similarly, no significant difference was found based on birth weight, with children above 2.5 kg (n=17) having a mean score of 17.9 and those 2.5 kg or less (n=18) scoring 16.6 (t=0.13, p=0.89). The family type (nuclear vs. joint) also showed no significant effect on depression scores (t=0.11, p=0.91).

Table 2 summarizes the correlational analysis between depression and the personality traits of extraversion, agreeableness, conscientiousness, neuroticism, and openness. A statistically insignificant negative correlation was found between depression and extraversion (Pearson's Rho = -0.067, $p > 0.05$), suggesting that individuals with higher extraversion may have a lower risk of postpartum depression. This aligns with studies by Song et al. (2010), Maliszewska et al. (2016), and Peñacoba-Puente et al. (2016), which reported a similar link between high extraversion and lower postnatal depression. Conversely, the correlation between depression and agreeableness was also statistically insignificant but positive (Pearson's Rho = 0.109, $p > 0.05$), indicating no substantial relationship between agreeableness and postpartum depression, consistent with findings by Verkerk et al. (2005) and Peñacoba-Puente et al. (2016).

The analysis also showed an insignificant negative correlation between depression and conscientiousness (Pearson's Rho = -0.224, $p > 0.05$), suggesting that individuals with higher conscientiousness may be at a lower risk for postpartum depression, as supported by Imširagic et al. (2014) and Udovicic (2014). A significant positive correlation was found between depression and neuroticism (Pearson's Rho = 0.324, $p < 0.05$), aligning with studies by Jones et al. (2010) and Marín-Morales et al. (2014), indicating that high neuroticism is associated with increased postpartum depression. Lastly, the correlation between depression and openness was positive but statistically insignificant, suggesting a potential vulnerability among women with higher openness to postpartum depression. Studies by Smith et al. (2019) and Johnson et al. (2018) found similar trends, linking higher openness with postpartum depression symptoms.

**Figure 1: shows the N and means of the Socio-demographic details of the participants with respect to Postpartum depression**

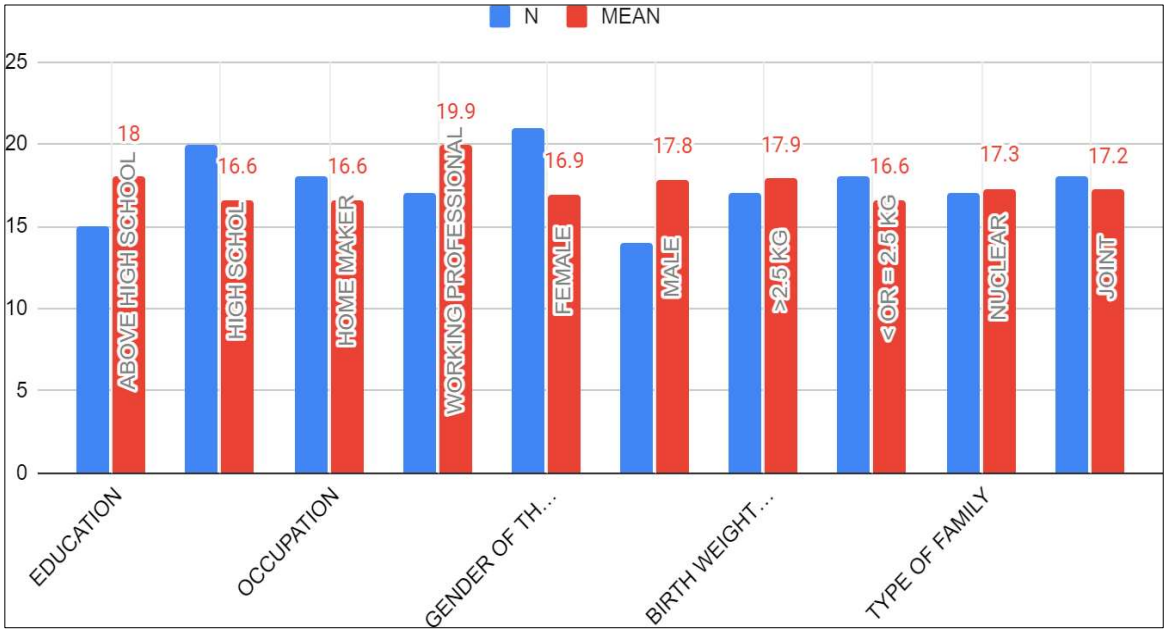
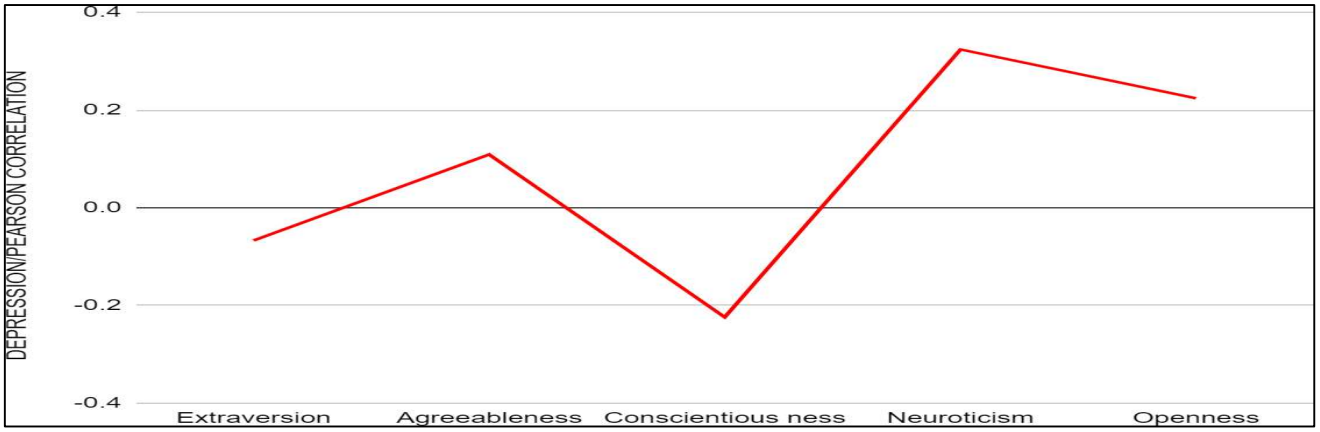



**Table 2: Correlation between depression and extraversion, depression and agreeableness, depression and conscientiousness, depression and neuroticism, depression and openness**

| **Personality Variables** | Extraversion | Agreeableness | Conscientiousness | Neuroticism | Openness |
|---|---|---|---|---|---|
| Pearson Correlation for Postpartum Depression | -0.067 | 0.109 | -0.224 | 0.324 | 0.224 |
| P - value | 0.35 | 0.733 | 0.098 | 0.057 | 0.902 |

**Figure 2: shows the correlation between PPD and Big Five personality traits among the participants**




## CONCLUSIONS

The study reveals that personality traits play a key role in postpartum depression (PPD) among new mothers. Neuroticism was a significant predictor, with higher scores linked to increased depressive symptoms, while agreeableness and openness also showed positive correlations with PPD. In contrast, conscientiousness and extraversion were negatively correlated with PPD, indicating lower depression risk for women with higher levels of these traits. Education level emerged as a significant factor, with women educated above high school experiencing more depression, while no significant differences were found for other demographic factors like occupation, child's gender, or family type.

## PRACTICAL IMPLICATIONS

The study underscores both practical and theoretical implications, particularly in the early identification and screening of postpartum depression (PPD). Healthcare providers can use personality assessments to identify women at higher risk for PPD, enabling timely interventions and preventive measures. This early detection can lead to targeted counseling, enhancing postpartum well-being and mother-child bonding. By considering personality traits, providers can offer personalized support through peer groups or online forums for women with similar challenges. Integrating personality insights into prenatal education can improve resilience, coping, and social support, with tailored interventions such as stress management for women with high neuroticism and structured routines for those with low conscientiousness.

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