

# Pregnancy Stress and Spirituality Predicts Perinatal Depression

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## Abstract

Perinatal depression is a prevalent mental health issue that significantly impacts the well-being of women during pregnancy and the postpartum period. For successful preventative measures, it is essential to comprehend the complex elements like pregnancy stress and spirituality related to perinatal depression. Pregnancy stress represents a significant risk factor for the development of perinatal depression. At the same time, spirituality, according to existing research, can serve as a protective factor against pregnancy stress, thereby reducing the risk of perinatal depression. The present study examined pregnancy stress and spirituality predicts perinatal depression among 432 women drawn from the Enugu state. The participants have a mean age of 28.97 years. Data were collected using the Healthy Pregnancy Stress Scale, the Spiritual Valence Scale Immanuel and Perinatal Depression Inventory. The study design was cross-sectional, and results of the multiple hierarchical regression analysis showed that pregnancy stress ( $\beta = .31, t = 6.84, p < .001$ ) and spirituality ( $\beta = -.24, t = -5.50, p < .001$ ) positively and negatively predicted Perinatal depression respectively. The findings of this study identified pregnancy stress as a factor in increasing Perinatal depression in women while spirituality as a factor in decreasing Perinatal depression in women. Therefore, as the authors recommend, necessary training will be given to pregnant women as part of pregnancy mental health care.

**Keywords:** Spirituality; Stress; Pregnancy; Depression; Women

## Abbreviations

PPD: Postpartum Depression; AND: Antenatal Depression; ADHD: Attention Deficit Hyperactivity Disorder; CCREOH: Caribbean Consortium for Research in Environmental and Occupational Health; SVS: Spiritual Valence Scale; HPSS: Healthy Pregnancy Stress Scale; PDI: Perinatal Depression Inventory; ESUTH: Enugu State University Teaching Hospital; PSDH: Poly Sub-District Hospital.

## Introduction

Perinatal mental health in pregnant women has been a worldwide public health concern. Perinatal mental health

challenges affect up to 20% of women [1]. Changes in women's hormone levels, especially during the reproductive cycle and pregnancy, may raise their chances of developing depression by twice as much as males [2]. The total prevalence of depression has been estimated to range between 20% and 31% [3]. Low and middle-income countries experience higher rates of depression during pregnancy [4], with Nigeria having the highest rate at 24.5% [5]. The perinatal period, which marks the beginning of motherhood, is a compassionate time for mental health issues, such as perinatal depression [6]. Even though affective instability is challenging for perinatal women, there is a shortage of studies investigating emotional factors in perinatal women.

Perinatal depression is defined in the Diagnostic and Statistical Manual of Mental Disorders-5th edition (DSM-5) as the occurrence of a major depressive episode during pregnancy (antenatal depression (AND) or following childbirth postpartum depression (PPD)), with use of the “with peripartum onset” specifier for depressive disorders (onset during pregnancy or within four weeks after delivery) [7]. The perinatal mental health of women is generally a neglected field. For example, Priya A, et al. [8] reported that perinatal care administration and facilities are feeble in many African countries. This work must highlight some variables pertinent to women’s perinatal mental health in a sub-Saharan African country. However, pregnancy is a significant life event for a woman, followed by many good changes and occurrences, ranging from increased self-esteem to societal acceptance. It is a time of physical, physiological, and psychological preparation for delivery and motherhood. Becoming a parent is one of a woman’s life’s maturational stages [9]. On the other hand, pregnancy qualifies as a robust stressor due to pregnant women’s physical, physiological, psychological, and socio-cultural changes.

Pregnant women are stressed and have to worry about childcare after giving birth [10,11]. Lazarus RS, et al. [12] defined stress as an occurrence or circumstance that develops from interacting with one’s environment and is subsequently evaluated as damaging, frightening, or demanding to understand better how pregnant women experience stress. When pregnancy is identified as detrimental, a mother-to-be may experience feelings of wrath, hatred, disappointment, or despair; when a pregnancy is recognized as a threat, she may share feelings of concern, worry, or dread. As a result, it’s critical to comprehend how pregnant ladies deal with stress. A mother’s mental health can be affected by pregnancy stress [13], which can lead to insufficient prenatal care [14], a shorter gestational period, low infant birth weight, or obstetric complications like structural congenital disabilities [15]. Adverse effects on the child’s physical and psychological development include attention deficit hyperactivity disorder (ADHD) or intellectual disability [16]. As a result, stress in pregnant women should be monitored and managed. Pregnancy activates the physiologic stress response, which is designed to keep the body in a state of equilibrium. The consequence is typically effective adaptation. However, undesirable health effects might occur when the stressor’s demands exceed an individual’s capacity to adapt [17]. The results of stress reactivity on the mother’s health, birth outcomes, and fetal development are all different throughout pregnancy.

At least for specific subgroups of women, evidence of excessive stress exposure during pregnancy is more readily available. In recent research on a varied metropolitan population, 78% reported low-to-moderate pregnancy

stress, whereas only 6% reported high levels [14]. Low financial resources, difficult job conditions, significant family and home obligations, strain in personal relationships, and pregnancy issues are some of the stresses that regularly impact women during pregnancy worldwide. Meanwhile, parallel literature on stress in pregnancy and its effects on mothers, infants, and development across time have evolved fast in other health fields, including behavioural medicine, health psychology, and social epidemiology [18]. Women are more likely to work in low-paying professions, such as subsistence farming and unofficial jobs, and they make less money for the same degree of education and experience as males [19]. Catering, hair styling, tailoring, fashion design, and other artisanship are casual occupations. Traders are likelier to be active in small home businesses and familial groups, making them less potent than those with stable and secure full-time work [20]. Nigerian women are actively involved in these income-generating businesses, yet they must still care for their children and maintain their homes in order. Many women work for nearly all of their pregnancies. The possible burden associated with various tasks during pregnancy might contribute to pregnancy stress.

According to Pargament KI [21], spirituality is defined as the pursuit of the holy, which is linked to a concept of and belief in a higher force larger than oneself, such as God. Spirituality describes how individuals seek and express purpose and meaning and how they feel linked to themselves, others, the divine and nature [22]. What is holy, heavenly, everlasting, or meaningful is referred to as sacred. Numerous people find solace and stress relief in their spirituality and religious pursuits. Even though there are many different ways that people can express their spirituality and many different paths that they can take to find God, research has shown that those who are more religious or spiritual and who use their spirituality to deal with challenges in life benefit in several ways from their spirituality in terms of their health and well-being. Higher spirituality is connected to fewer depressive symptoms [23]. Spirituality may help to reduce the severity of depressive symptoms and ideas of meaninglessness, according to some evidence, e. g for starters, highly spiritual persons are more inclined to meditate or pray, as well as seek out and benefit from social support [24]. As a result, some spiritual practices may assist in reducing the adverse effects of depressive symptoms on one’s sense of purpose in life. Second, spiritual persons might measure their depressive symptoms in several ways [25]. For example, highly spiritual people may perceive depression as a goal to overcome rather than a terrible, uncontrollable state.

While spirituality and religiosity are connected, they are not the same, according to Cheadle AC, et al. [26]. Spirituality covers “beliefs and experiences,” whereas religiosity encompasses “behaviours associated with structured

traditions." According to some studies, religious engagement creates beliefs and allows spiritual experiences, which alter how individuals feel and may help alleviate depressive symptoms. Qualitative research indicates that women turn to their spirituality for support when dealing with the signs of perinatal depression [27-30]. Spiritual experiences may be significant for perinatal women since many cultures associate delivery, motherhood, and family with religious and spiritual importance [26]. Even under ideal conditions, the perinatal period might be viewed as a time of increased stress due to sleep loss, postpartum recuperation, hormonal changes, and emotional pressures [31]. Furthermore, the postpartum phase is a time of personal and family transformation that can be stressful. As a result, faith may be used as a moderating force or a guiding element in preventing perinatal depression and improving quality of life. Spirituality tends to have a more significant influence on depressive symptoms in high-stress populations. Because labour and parenthood can create physical, psychological, and social stress, spirituality could help protect women against perinatal depression symptoms, according to Smith TB, et al. [32]; Moreira-Almeida A, et al. [33]. According to Keefe RH, et al. [29], African American and Latina mothers with a history of perinatal depression said that accepting God's guidance relieved stress and encouraged them to take action and that faith communities provided them with a social support system that helped them cope with the condition.

On the other hand, spirituality was connected to higher stress levels in a sample of Hispanic women suffering from perinatal depression, according to Mann JR, et al. [34]. Although spirituality has been shown to have an opposite association with depressive symptoms in several studies [32,33], there has been little research on the connection between these characteristics and perinatal depression. In light of the increased importance of spirituality during pregnancy and the perinatal period, this is an ideal moment to investigate the impact. There is little study on spirituality's influence on a mother's mental health during pregnancy or after delivery. Although a few quantitative researchers have found that spirituality is linked to lower levels of depression or depressive symptoms during pregnancy [35-37], greater emphasis has been placed on the impact of spirituality and religion in postpartum depression.

Liu W, et al. [38] studied the risk role of cognitive fusion and perceived stress on postpartum depression. Perceived stress was the most potent risk predictor of postpartum depression ( $= 0.332$ ). Cheng CY, et al. [39] investigated the trends of perinatal stress and depression and their impact on postpartum depression. There was a link between stress and depressive symptoms. Women in their late pregnancy and postpartum periods were more vulnerable to stress and depression. Gokoel AR, et al. [40] studied prenatal

depression and perceived stress in Surinamese women participating in the Caribbean Consortium for Research in Environmental and Occupational Health (CCREOH) research. According to the data, high-felt stress was 27.2 per cent in the first two trimesters and 24.7 per cent in the third trimester, respectively. During the first or second trimester, 22.4 per cent of the individuals experienced probable depression, and 17.6 per cent during the third. Women who were stressed out throughout the first two trimesters had a 1.92 higher likelihood of developing potential depression in the third trimester than women who were not stressed out. Similarly, Priya A, et al. [8] conducted community-based research on depression and stress among pregnant women. According to the data, depression and stress were prevalent in 25.5 per cent, and 23 per cent of the population, respectively.

Religion and spirituality were explored by Cantu-Weinstein A, et al. [41] as the essential parts of culture that might interact with mental health. They can also be important in a woman's pregnancy and postpartum experiences. In a prospective longitudinal research, Clements AD, et al. [42] looked at the effects of social support and religious commitment on antenatal and postpartum depression symptoms. Findings revealed that depression was inversely connected to social support and religious commitment (at just six months postpartum). Pregnant women with little social support and postpartum women with little social support or religious devotion may be more susceptible to depression. A study conducted by Mann JR, et al. [43] wanted to see if there was a link between prenatal religiosity/spirituality and postpartum depression, considering antenatal depressive symptoms, social support, and other relevant confounders. Women who engaged in organized religious activities at least a few times each month had significantly lower depression symptom ratings, according to the findings.

Mann JR, et al. [44] explored religion, spirituality, and depressive symptoms in pregnant women similarly. Results indicated that religiosity/spirituality was shown to be strongly linked with reduced depressive symptoms. However, studies on pregnancy stress and spirituality are scarce. Further research is needed to understand the relationship entirely. This study attempts to fill that gap. In the current study, the authors hypothesized that pregnancy stress would be positively associated with perinatal depression while spirituality would be negatively related to perinatal depression.

## Methods

### Participants

This study's participants comprised 432 pregnant women drawn from the three (3) government hospitals in Enugu metropolis Enugu State. The hospitals included: Uwani Health Center=96(22.22%), Enugu State University Teaching

Hospital (ESUTH), Parklane = 144 (33.33%) and Poly Sub-District Hospital Asata, Enugu (PSDH) = 192 (44.44%). The hospitals were selected using purposive sampling, and only women who gave their oral agreement participated in the study. The Pregnant women fall within the age range of 19-50 years ( $M = 28.97$ ,  $SD = 5.21$ ). The participants were all women. The participants' marital statuses are as follows: single = 21 (4.9%), married = 410 (94.9%) and widowed = 1 (0.2%). The participant's occupational statuses are as follows: Unemployed = 52 (12%), public servant = 140 (32.4%), business = 184 (42.6%) and others = 56 (13.0%). The ethnic groups of the participants are Igbo = 414 (95.8%), Yoruba = 3 (0.7%), Hausa = 8 (1.9%) and others 7 (1.6%). Educational qualifications were as follows: First School Leaving Certificate = 15 (3.5%), WAEC = 98 (22.7%), OND/HND/NCE = 111 (25.7%), B.Sc. = 189 (43.8) and Postgraduate studies = 19 (4.4%). The participants belonged to different religious denominations such as catholic = 278 (64.4%), Protestant = 49 (11.3%), Pentecostal = 84 (19.4%), Moslem = 2 (0.5%) and others = 19 (4.4%).

## Measures

**Spiritual Valence Scale (SVS):** Spirituality was measured using the Spiritual Valence Scale developed by Immanuel EU, et al. [45]. SVS is a 12-item scale that measures an individual's spirituality, personal convictions, closeness to God, commitment, dedication, ability to influence spiritual outcomes, and connection to the Divine. Responses are made on a 5-point Likert scale ranging from (1) "Absolutely False" to (5) True. Sample questions include "I worship the Almighty God in spirit and truth" and "I have a personal relationship with God". Immanuel EU, et al. [45] reported a Cronbach's alpha coefficient of 0.81. A higher score, therefore, denotes higher spirituality, and vice versa.

**Healthy Pregnancy Stress Scale (HPSS):** This scale was used to measure pregnant women's stress using Frazier T, et al. [46]. It is an 18-item measure of stressors contributing to a woman's pregnancy-related stress. The HPSS takes about 2-3 minutes to complete. Sample questions include "Difficulty balancing work and home organization" and "Worry over my baby's health". Each item is scored on a six-point Likert scale with 1 = Not a source of stress during pregnancy at all" to 6 =

"Source of great stress during pregnancy."

**Perinatal Depression Inventory (PDI):** Perinatal depression was measured using Brodey BB, et al. [47] Perinatal Depression Inventory. The PDI is a simple, brief, self-report instrument used to assess the severity of depression in various perinatal populations. The PDI Scale comprises 14 items. Responses are made on a 5-point Likert scale of Never (1) to Always (5). The scale score is determined by adding the item scores; higher scores denote more severe depressive symptoms. Sample items of the PDI include: "I had difficulty keeping my mind on what I was doing" and "I felt disappointed in myself". The developers validated the PDI on a large group of pregnant and postpartum women with varying degrees of depression in private and public obstetrics clinics. Brodey BB, et al. [47] reported that even though the PDI-14 used much fewer words to produce a more accurate assessment of severity, scores on the PDI-14 correlated strongly with the EPDS, PHQ-9, and BDI-II, indicating good evidence of convergent validity. The authors performed reliability analysis in this study sample, and a Cronbach's Alpha coefficient of 0.82 resulted.

## Procedures

The authors got an ethical clearance from the State Ministry of Health for the study to proceed. The Nurses on duty assisted in identifying the qualified participants to give the scales to fill. The literate prenatal women that gave their informed consent completed the study scales. Out of 440 copies of the questionnaire forms distributed, 432 (98.18%) were filled correctly and used for analysis. Responses to the study scales were scored and analyzed with the SPSS 20.

## Design/Statistics

The study adopted a cross-sectional design, a form of study design in which one gathers data from many people at a point in time [48]. The authors used multiple hierarchical regression for data analyses. Multiple regression analysis is a test that analyzes the amount of variance explained in a dependent variable by more than one predictor variable [49].

Predictors	Step 1				Step 2			
	B	SE	$\beta$	T	B	SE	$\beta$	T
Pregnancy Stress	0.21	0.03	0.31	6.84***	0.2	0.03	0.31	6.93***
Spirituality					-0.27	0.05	-0.24	-5.50***
R <sup>2</sup>	0.01				0.04			
$\Delta R^2$	0.01				0.02			
F	46.81 (1,430)***				40.14 (2,429)***			
$\Delta F$	46.81(1, 430)***				30.27 (2,429)***			

Note: \*\*\* $p < .001$ .

**Table 1:** Hierarchical multiple regression summary, showing pregnancy stress and spirituality predicting perinatal depression.



## Discussion

The findings of this study show that pregnancy stress is related positively to perinatal depression. This study is the first work examining the association between pregnancy stress and perinatal depression. Other scholar's report that perceived stress is related to postpartum depression [38] and prenatal depression [40]. They also said that perinatal stress is associated with depression [39], and stress is associated with depression [8]. The current finding may be understood in that pregnancy stress indicates that pregnancy stress is a consistently strong predictor of perinatal depression. The result supports the direct effect hypothesis of stress in that the higher the stress an individual goes through, the poor the mental health status the individual will have. As the women adjust to bodily changes, hormonal changes, and the thought of caring for a newborn, pregnancy may be stressful for many women, leading to perinatal depressive symptoms in particular women.

Further, the findings of this study show that spirituality is related to perinatal depression. This study is the first work examining the association between spirituality and perinatal depression. This finding is similar to some previous studies on religiosity/spirituality in postpartum depression [41,43], which reported that religiosity/ spirituality was associated with lower depression among pregnant women. Also, Clements AD, et al. [42] findings on religious commitment on antenatal and postpartum depression align with this study's findings. This finding may be understood because women struggling with the stress and difficulties of pregnancy and new motherhood may find comfort, meaning, and purpose in their spirituality. Moreover, spiritual practices like prayer, meditation, and mindfulness may assist people in managing their emotions and stress, which can lower their chance of developing perinatal depression.

## Implications of the Findings

The study provided empirical evidence for the degree of relation between pregnant women's stress and spirituality in perinatal depression. Higher stress is associated with higher perinatal depression. The finding supports the direct effect hypothesis of stress in that the higher the stress an individual goes through, the poor the mental health status the individual will have. As the women adjust to bodily changes, hormonal changes, and the thought of caring for a newborn, pregnancy may be stressful for many women, leading to perinatal depressive symptoms in particular women. Many African women, especially married women, carry lots of burdens. They have pregnancy, cater to their husband's and children's needs, take loads of domestic burden, and in most cases go to work and carry on with businesses, which adds to their stress. This study is corroborated by Biresaw MS, et al.

[50] that reported that pregnant women go through a lot of stress. This study suggests that all pregnant women should be tested for perceived stress and given treatment, especially in the first and third trimesters.

Higher spirituality is shown to be associated with lower perinatal depression. Because of this, pregnant women can adopt the components of spirituality, which are a feeling of purpose and meaning in life and faith in a higher force. This belief system can give expectant mothers a more comprehensive viewpoint and assist them in giving meaning to all of their experiences, including the difficulties of pregnancy and new parenthood. A more optimistic outlook and higher mental health might result from having this sense of purpose and connection to a higher being.

## Limitations and Suggestions for Future Studies

Research on women in the perinatal stage of pregnancy is a neglected area. This research report focused only on pregnancy stress and spirituality related to perinatal depression. Subsequent work with women in the perinatal stage of pregnancy could investigate other variables associated with perinatal depression, such as social support, socioeconomic status, and personality. Again, this report focused on depression, which is pathology. Subsequent work with women in the perinatal stage of pregnancy could investigate the same or more variables that contribute to the positive mental health of women in the perinatal stage of pregnancy. It is not enough to point out the reality of perinatal depression; it is vital to highlight factors that can enhance the well-being of women in the perinatal stage of pregnancy.

## Conclusion

The authors examined the relationship between pregnancy stress and spirituality in perinatal depression. Results showed that pregnancy stress and spirituality were positive and negative predictors of perinatal depression, respectively. The study suggests that interventions like high spirituality among pregnant women may enhance their mental health.

## References

1. Schwartz H, McCusker J, Law S, Zekowitz P, Somera J, et al. (2021) Perinatal mental healthcare needs among women at a community hospital. *J Obstet Gynaecol Can* 43(3): 322-328.
2. Maharlouei N, Keshavarz P, Salemi N, Lankarani KB (2020) Depression and anxiety among pregnant mothers in the initial stage of the Coronavirus Disease (COVID-19) pandemic in the southwest of Iran. *Reproductive Health*

- 18(1): 111.
3. Fan S, Guan J, Cao L, Wang M, Zhao H, et al. (2021) Psychological Effects Caused by COVID-19 pandemic on pregnant women: A systematic review with meta-analysis. *Asian Journal of Psychiatry* 56: 102533.
  4. Sheeba B, Nath A, Metgud CS, Krishna M, Venkatesh S, et al. (2019) Prenatal depression and its associated risk factors among pregnant women in Bangalore: A hospital based prevalence study. *Frontiers in Public Health* 7: 108.
  5. Thompson O, Ajayi I (2016) Prevalence of antenatal depression and associated risk factors among pregnant women attending antenatal clinics in Abeokuta North Local Government Area, Nigeria. *Depression Research and Treatment* 2016: 4518979.
  6. Langan R, Goodbred AJ (2016) Identification and management of peripartum depression. *Am Fam Physician* 93(10): 852-858.
  7. American Psychiatric Association (2013) Diagnostic and statistical manual of mental disorders. 5<sup>th</sup> (Edn.), Washington.
  8. Priya A, Chaturvedi S, Bhasin SK, Bhatia MS, Radhakrishnan G (2018) Depression, anxiety and stress among pregnant women: A community-based study. *Indian Journal of Psychiatry* 60(1): 151-152.
  9. Bjelica A, Kapor-Stanulovic N (2004) Pregnancy as a psychological event. *Medicinski Pregled* 57(3-4): 144-148.
  10. Choi P, Henshaw C, Baker S, Tree J (2005) Supermum, superwife, supereverything: Performing femininity in the transition to motherhood. *Journal of Reproductive and Infant Psychology* 23(2): 167-180.
  11. Hays S (1996) *The cultural contradictions of motherhood*. Yale University Press, New Haven.
  12. Lazarus RS, Folkman S (1984) Stress, appraisal, and coping. *Encyclopedia of Behavioral Medicine*, Springer, New York, pp: 1913-1915.
  13. Brummelte S, Galea LA (2010) Depression during pregnancy and postpartum: contribution of stress and ovarian hormones. *Progress in Neuro-Psychopharmacology & Biological Psychiatry* 34(5): 766-776.
  14. Woods SM, Melville JL, Guo Y, Fan MY, Gavin A (2010) Psychosocial stress during pregnancy. *American Journal of Obstetrics and Gynecology* 202(1): 61.e1-61.e7.
  15. Zhu P, Tao F, Hao J, Sun Y, Jiang X (2010) Prenatal life events stress: implications for preterm birth and infant birthweight. *American Journal of Obstetrics and Gynecology* 203(1): 34.e1-34.e8.
  16. Rodriguez A, Bohlin G (2005) Are maternal smoking and stress during pregnancy related to ADHD symptoms in children?. *Journal of Child Psychology and Psychiatry, and Allied Disciplines* 46(3): 246-254.
  17. Shelby J, McCance KL (2006) Stress and disease. In: McCance KL, et al. (Eds.), *Pathophysiology: The biologic basis for disease in adults and children*. 5<sup>th</sup> (Edn.), Elsevier Health Sciences, New York.
  18. Schetter DC, Tanner L (2012) Anxiety, depression and stress in pregnancy: implications for mothers, children, research, and practice. *Current Opinion in Psychiatry* 25(2): 141-148.
  19. Enfield S (2019) *Gender Roles and inequalities in the Nigerian labour market*. UK Department for International Development.
  20. Adeyem OE, Odusina KE, Akintoye AE (2016) Religion and labour force participation in Nigeria: Is there any inequality among women? *African Journal of Reproductive Health* 20(3): 75-84.
  21. Pargament KI (2007) *Spiritually Integrated Psychotherapy: Understanding and Addressing the Sacred*. Guilford Press, New York, London.
  22. Puchalski C, Ferrell B, Virani R, Otis-Green S, Baird P, et al. (2009) Improving the quality of spiritual care as a dimension of palliative care: the report of the consensus conference. *Journal of Palliative Medicine* 12(10): 885-904.
  23. Kayser J, Tenke CE, Svob C, Gameraff MJ, Miller L, et al. (2019) Family risk for depression and prioritization of religion or spirituality: Early neurophysiological modulations of motivated attention. *Frontiers in Human Neuroscience* 13: 436.
  24. Hill PC, Pargament KI (2003) Advances in the conceptualization and measurement of religion and spirituality. Implications for physical and mental health research. *The American psychologist* 58(1): 64-74.
  25. Wittink MN, Joo JH, Lewis LM, Barg FK (2009) Losing Faith and Using Faith: Older African Americans Discuss Spirituality, Religious Activities, and Depression. *Journal of General Internal Medicine* 24(3): 402-407.
  26. Cheadle AC, Dunkel Schetter C, Gaines Lanzi R, Reed Vance M, Sahadeo LS, et al. (2015). *Spiritual and*

- Religious Resources in African American Women: Protection from Depressive Symptoms following Birth. *Clinical Psychological Science* 3(2): 283-291.
27. Amankwaa LC (2003) Postpartum depression among African- American women. *Issues Ment Health Nurs* 24(3): 297-316.
  28. Crockett K, Zlotnick C, Davis M, Payne N, Washington R (2008) A depression preventive intervention for rural low income African-American pregnant women at risk for postpartum depression. *Arch Women's Ment Health* 11(5-6): 319-325.
  29. Keefe RH, Brownstein-Evans C, Rouland Polmanteer RS (2016) I find peace there: how faith, church, and spirituality help mothers of colour cope with postpartum depression. *Mental Health, Religion & Culture* 19(7): 722-733.
  30. Zittel-Palamara K, Cercone SA, Rockmaker JR (2009) Spiritual support for women with postpartum depression. *Journal of Psychology and Christianity* 28(3): 213-224.
  31. Matthey S (2016) Anxiety and stress during pregnancy and the postpartum period. *The Oxford Handbook of Perinatal Psychology*. Oxford University Press, pp: 132-149.
  32. Smith TB, McCullough ME, Poll J (2003) Religiousness and depression: Evidence for a main effect and the moderating influence of stressful life events. *Psychol Bull* 129(4): 614-636.
  33. Moreira-Almeida A, Neto FL, Koenig HG (2006) Religiousness and mental health: A review. *Braz J Psychiatry* 28(3): 242-250.
  34. Mann JR, Mannan J, Quinones LA, Palmer AA, Torres M (2010) Religion, spirituality, social support, and perceived stress in pregnant and postpartum Hispanic women. *Journal of Obstetric, Gynecologic, and Neonatal Nursing* 39(6): 645-657.
  35. Jesse DE, Swanson MS (2007) Risks and resources associated with antepartum risk for depression among rural southern women. *Nurs Res* 56(6): 378-386.
  36. Jesse DE, Walcott-McQuigg J, Mariella A, Swanson MS (2005) Risks and Protective factors associated with symptoms of depression in low-income African American and Caucasian women during pregnancy. *J Midwifery Women's Health* 50(5): 405-410.
  37. Giurgescu C, Murn NL (2016) Church member support benefits psychological well-being of pregnant African American women. *J Christ Nurs* 33(2): 87-91.
  38. Liu W, Wu X, Gao Y, Xiao C, Xiao J, et al. (2022) A longitudinal study of perinatal depression and the risk role of cognitive fusion and perceived stress on postpartum depression. *J Clin Nurs* 32(5-6): 799-811.
  39. Cheng CY, Chou YH, Chang CH, Liou SR (2021) Trends of perinatal stress, anxiety, and depression and their prediction on postpartum depression. *Int J Environ Res Public Health* 18(17): 9307.
  40. Gokoel AR, Abdoel Wahid F, Zijlmans WCWR, Shankar A, Hindori-Mohangoo AD, et al. (2021) Influence of perceived stress on prenatal depression in Surinamese women enrolled in the CCREOH study. *Reproductive Health* 18: 136.
  41. Cantu-Weinstein A, Cohen MJ, Owens D, Schiller CE, Kimmel MC (2022) A qualitative study of religion and spirituality in a perinatal psychiatry inpatient unit in the Southeast USA. *Journal of Religion and Health* 61(1): 286-299.
  42. Clements AD, Fletcher TR, Childress LD, Montgomery RA, Bailey BA (2016) Social support, religious commitment, and depressive symptoms in pregnant and postpartum women. *Journal of Reproductive and Infant Psychology* 34(3): 247-259.
  43. Mann JR, McKeown RE, Bacon J, Vesselinov R, Bush F (2008) Do antenatal religious and spiritual factors impact the risk of postpartum depressive symptoms?. *Journal of Women's Health* 17(5): 745-755.
  44. Mann JR, McKeown RE, Bacon J, Vesselinov R, Bush F (2007) Religiosity, spirituality, and depressive symptoms in pregnant women. *International Journal of Psychiatry in Medicine* 37(3): 301-313.
  45. Immanuel EU, Nzenweaku JU (2015) Roles of spirituality and religious affiliation in mental health among persons remanded in prison custody. *Nigerian Journal of Psychological Research* 11: 54-59.
  46. Frazier T, Hogue CJ, Yount KM (2018) The development of the healthy pregnancy stress scale, and validation in a sample of low-income African American women. *Maternal and Child Health Journal* 22(2): 247-254.
  47. Brodey BB, Goodman SH, Baldasaro RE, Brooks-DeWeese A, Wilson ME, et al. (2016) Development of the Perinatal Depression Inventory (PDI)-14 using item response

- 
- theory: a comparison of the BDI-II, EPDS, PDI, and PHQ-9. *Archives of Women's Mental Health* 19: 307-316.
48. Thomas L (2020) Cross-sectional study: Definitions, uses & examples. Scribbr.
49. Ross A, Willson VL (2017) Hierarchical Multiple Regression Analysis Using at Least Two Sets of Variables (In Two Blocks). *Basic and Advanced Statistical Tests*. Rotterdam, pp: 61-74.
50. Biresaw MS, Takelle GM, Gebeyehu ET (2022) Perceived stress and associated factors among pregnant women during COVID-19 pandemic period in Northwest Ethiopia, 2020: a cross-sectional study. *BMJ Open* 12(9): e063041.