THE IMPROVEMENT OF PERINATAL MENTAL HEALTH OUTCOMES THROUGH AN INTERVENTION STUDY IN NIGERIAN NAVY REFERENCE HOSPITALS IN NIGERIA

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Abstract

The study investigated the improvement of perinatal mental health outcomes through an intervention study in Nigerian Navy Reference Hospitals in Nigeria. Specifically, it determined the effect of the intervention programme on perinatal mental health outcomes among pregnant and postpartum women and evaluated differences in perinatal mental health across pregnancy trimesters. The study adopted a quasi-experimental research design involving pre- and post-intervention assessments. The population comprised 1,589 respondents, including pregnant women, postpartum women and midwives, while a sample of 336 respondents was selected, consisting of 18 midwives, 226 pregnant women and 92 postpartum women. Stratified and accidental sampling techniques were employed. Data were collected using a researcher-developed questionnaire titled "Improving Perinatal Mental Health Outcomes Questionnaire (IPMHOQ)." The instrument contained 30 items, was validated by experts in Nursing Science and Educational Research, Measurement and Evaluation, and yielded Cronbach Alpha coefficients ranging from .70 to .72. The intervention involved mental health education, group counselling and routine mental health screening. Data were analysed using Analysis of Covariance and one-way Analysis of Variance at the 0.05 level of significance. Findings revealed that the intervention programme significantly improved perinatal mental health outcomes, $F(4, 313) = 389.682$, $p < .05$, while significant differences also existed across the trimesters, $F(2, 223) = 27.570$, $p < .05$. The study recommended integrating structured perinatal mental health interventions into routine antenatal and postnatal care.

Keywords: Intervention Programme; Perinatal Mental Health; Pregnant Women; Postpartum Women; Trimesters.

Introduction

Perinatal mental health is an important aspect of maternal healthcare because pregnancy and the period following childbirth involve substantial biological, psychological and social adjustments that may affect women's emotional well-being. It encompasses the mental and psychological state of women during pregnancy and after delivery, while perinatal mental health outcomes reflect the extent to which women experience conditions such as depression, anxiety, stress, psychological distress and associated difficulties in daily functioning. Depression and anxiety are among the most frequently reported mental health problems during the perinatal period, and their effects may extend beyond the mother to influence maternal functioning, relationships, mother-infant interaction and infant development (Prom et al., 2022; Adie et al., 2026).

Globally, perinatal mental health problems continue to constitute an important public health concern because women may develop new psychological difficulties during pregnancy or experience a recurrence or worsening of pre-existing conditions. Depression during this period may be characterised by persistent sadness, reduced interest, hopelessness and impaired functioning, while anxiety may involve excessive worry, fear and tension relating to pregnancy, childbirth or infant health. Evidence further shows that untreated perinatal depression and anxiety are associated with inadequate perinatal care, poor nutrition, preterm birth, low birth weight and disruption of maternal-infant bonding (Prom et al., 2022; Ubi et al., 2026). Consequently, improving perinatal mental health outcomes requires both early identification of psychological difficulties and interventions capable of reducing symptoms and strengthening women's ability to cope during pregnancy and after childbirth.

The situation is particularly important in low- and middle-income countries, where women experience a higher burden of perinatal depression and anxiety while access to specialised mental healthcare is comparatively limited. Prom et al. (2022) reported that women in such settings face increased exposure to socioeconomic disadvantage, intimate partner violence, unintended pregnancy, low educational attainment and inadequate social support, all of which may increase vulnerability to psychological difficulties. Shortages of mental health professionals, inadequate screening and limited integration of mental healthcare into routine antenatal and postnatal services may further widen the treatment gap in resource-constrained settings (Oladeji et al., 2023; Adie et al., 2026). These challenges make maternal healthcare facilities important settings for introducing structured mental health interventions.

Across pregnancy itself, however, mental health may not remain constant because each trimester presents different physical, emotional and obstetric experiences. The first trimester may involve adjustment to pregnancy, concerns about pregnancy viability, nausea and uncertainty; the second trimester may bring relative physical adjustment for some women; while the third trimester may be associated with increased physical discomfort and concerns about childbirth and infant health. Empirical evidence suggests that psychological outcomes can differ according to gestational stage. Soyemi et al. (2022), in a comparative Nigerian study involving women in the first and third trimesters, found that depression occurred in 10.5% of first-trimester participants compared with 3.9% of those in the third trimester. This finding demonstrates that the level of psychological difficulty experienced during pregnancy may vary according to trimester and supports the need to assess pregnant

women across different stages rather than treating pregnancy as a psychologically uniform period.

Further Nigerian evidence reinforces the relevance of gestational stage to maternal mental health. Izuka et al. (2023), in a multicentre study involving 434 pregnant women attending antenatal clinics in Enugu, reported depressive symptoms in 9.7% and anxiety symptoms in 10.1% of respondents, with gestational age among the factors significantly associated with maternal depression and anxiety. Similarly, Adeoye et al. (2022) reported an antepartum depression prevalence of 14.1% among pregnant Nigerian women, confirming that clinically important depressive symptoms occur within antenatal populations and require attention during routine maternal care. These findings provide a basis for examining whether perinatal mental health differs across the first, second and third trimesters among women accessing care in Nigerian Navy Reference Hospitals.

Beyond identifying variations in mental health, there is a need to determine whether structured interventions can improve outcomes. Perinatal mental health intervention programmes may include screening, psychoeducation, counselling, psychosocial support, stress-management techniques, referral and follow-up care. Such interventions are intended to identify women with psychological difficulties early, improve mental health literacy, strengthen coping abilities and ensure that women requiring additional care are connected to appropriate services. A systematic review by Prom et al. (2022) found that 18 of 20 controlled studies integrating perinatal mental healthcare into routine maternal services in low- and middle-income countries demonstrated significantly greater improvements in depression or anxiety among intervention groups than comparison groups. The evidence therefore suggests that structured interventions embedded within maternal healthcare can improve perinatal mental health outcomes.

The relevance of intervention is particularly evident in Nigeria, where shortages of specialist mental health professionals create the need for approaches that can function within existing maternal healthcare structures. Oladeji et al. (2023) demonstrated that training frontline maternal healthcare workers in Nigeria improved their knowledge of depression and attitudes towards providing depression care, with improvements remaining evident six months after training. Their findings also support task-sharing, whereby trained non-specialist healthcare workers contribute to identifying and managing common perinatal mental health conditions under appropriate supervision. This approach is relevant to facilities where pregnant and postpartum women already maintain regular contact with healthcare personnel.

Within Nigerian Navy Reference Hospitals, women accessing antenatal, delivery and postnatal services provide an appropriate population for examining both variations in perinatal mental health across pregnancy and the effect of a structured intervention programme. Although Nigerian studies have established the occurrence of depression and anxiety among pregnant women and have identified gestational age as a relevant factor, existing studies have largely focused on prevalence, associated factors or healthcare-worker capacity rather than simultaneously evaluating trimester-related differences and testing an intervention among pregnant and postpartum women in Nigerian Navy Reference Hospitals (Soyemi et al., 2022; Izuka et al., 2023; Oladeji et al., 2023). Moreover, systematic evidence from low- and middle-income countries shows considerable variation in intervention design, timing of assessment and follow-up, which limits the direct generalisation of findings to specific Nigerian institutional settings (Prom et al., 2022).

It is against this gap that the present study seeks to investigate the improvement of perinatal mental health outcomes through an intervention study in Nigerian Navy Reference Hospitals in Nigeria. Specifically, the study seeks to determine the effect of the intervention programme on improving perinatal mental health outcomes among pregnant and postpartum women who access care in these hospitals and to evaluate differences in perinatal mental

health across the trimesters among pregnant women. Findings from the study may provide context-specific evidence for strengthening screening, psychological support and intervention strategies within routine maternal healthcare in Nigerian Navy Reference Hospitals.

Aim and objectives of the study

The main objective of the study was to investigate the improvement of perinatal mental health outcomes through an intervention study in Nigerian Navy Reference Hospitals in Nigeria. The study specifically intends to:

1. Determine the effect of the intervention programme on improving perinatal mental health outcomes among pregnant and postpartum women who access care in Nigerian Navy Reference Hospitals.
2. Evaluate the difference in perinatal mental health across the trimesters among pregnant women who access care in Nigerian Navy Reference Hospitals.

Research questions

The following research questions are formulated to guide the study:

1. What is the effect of the intervention programme on improving perinatal mental health outcomes among pregnant and postpartum women who access care in Nigerian Navy Reference Hospitals?
2. What difference exists in perinatal mental health across the trimesters among pregnant women who access care in Nigerian Navy Reference Hospitals?

Research hypotheses

The following null hypotheses are formulated for the study:

1. The intervention programme has no significant effect on improving perinatal mental health outcomes among pregnant and postpartum women who access care in Nigerian Navy Reference Hospitals.
2. There is no significant difference in perinatal mental health across the trimesters among pregnant women who access care in Nigerian Navy Reference Hospitals.

Methodology

The study adopted a quasi-experimental research design involving pre- and post-intervention assessments. The design enabled the researcher to determine changes in perinatal mental health outcomes following the intervention programme. The study was conducted at the Nigerian Navy Reference Hospitals in Lagos and Calabar. The population comprised 1,589 respondents, including pregnant women, postpartum women and midwives. A sample of 336 respondents was selected, consisting of 18 midwives, 226 pregnant women and 92 postpartum women. Stratified and accidental sampling techniques were used to select participants from the two hospitals. The two hospitals served as the strata, while eligible respondents were selected from each hospital.

Data were collected using a researcher-developed questionnaire titled “Improving Perinatal Mental Health Outcomes Questionnaire (IPMHOQ).” The instrument contained 30 items and covered perinatal mental health disorders and barriers to perinatal mental healthcare. It was structured on a modified four-point Likert scale of Strongly Agree, Agree, Disagree and Strongly Disagree. The instrument was validated by experts in Nursing Science and Educational Research, Measurement and Evaluation. Reliability was established through a trial test involving 40 pregnant and postpartum women, with Cronbach Alpha coefficients ranging from .70 to .72. The intervention involved mental health education, group counselling and routine mental health screening. Data were analysed using Analysis of Covariance, while the hypotheses were tested at the 0.05 level of significance.

Presentation of results

The results of the study are presented in this section based on hypotheses formulated to guide the study. The data collected from the respondents were analysed using simple linear regression statistical techniques, and the findings are presented in tables with corresponding interpretations for clarity and ease of understanding.

Hypothesis one

The null hypothesis stated that the intervention programme has no significant effect on perinatal mental health outcomes among pregnant and postpartum women accessing care in Nigerian Navy Reference Hospitals. Analysis of Covariance (ANCOVA) was used to examine post-intervention perinatal mental health outcomes while controlling for participants' pretest scores and educational qualification. Group status, classified as pregnant or postpartum women, was also included in the model. The result presented in Table 1 shows that the overall model was statistically significant, $F(4, 313) = 389.682$, $p < .001$. Since the p-value is less than the 0.05 level of significance, the null hypothesis was rejected. It was therefore concluded that the intervention programme had a significant effect on perinatal mental health outcomes among pregnant and postpartum women accessing care in Nigerian Navy Reference Hospitals. The model explained 83.3% of the variance in post-intervention perinatal mental health outcomes, $R^2 = .833$, Adjusted $R^2 = .831$, indicating a substantial level of explained variance.

Further examination of the model showed that pretest perinatal mental health scores had a statistically significant effect on post-intervention outcomes, $F(1, 313) = 80.543$, $p < .001$. Educational qualification also had a significant effect, $F(1, 313) = 102.214$, $p < .001$, while group status produced a statistically significant effect, $F(1, 313) = 287.112$, $p < .001$. These findings indicate that baseline mental health status, educational qualification, and whether the participant was pregnant or postpartum were significantly associated with post-intervention mental health outcomes. Overall, the result provides evidence that the intervention programme significantly improved perinatal mental health outcomes among pregnant and postpartum women accessing care in Nigerian Navy Reference Hospitals.

Table 1: Summary of ANCOVA for the main effect of the intervention program on improving perinatal mental health issues among pregnant and postpartum women accessing care (N = 318)

Source	Type III Sum of Squares	Df	Mean Square	F-ratio	Sig.
Corrected Model	9348.214	4	2337.054	389.682	.000
Intercept	17642.881	1	17642.881	2941.367	.000
Pretest	482.917	1	482.917	80.543	.000
Educational Qualification	612.308	1	612.308	102.214	.000
Group (Pregnant/Postpartum)	1722.989	1	1722.989	287.112	.000
Error	1863.217	313	5.953		
Total	598317.000	318			
Corrected Total	11211.431	317			

a. R Squared = .833 (Adjusted R Squared = .831)

Hypothesis two

Hypothesis two stated that there is no significant difference in perinatal mental health across the trimesters among pregnant women who access care in Nigerian Navy Reference Hospitals. A one-way Analysis of Variance (ANOVA) was used to test the hypothesis. The result presented in Table 2 showed a between-group sum of squares of 465.580 with 2 degrees of freedom and a mean square of 232.790, while the within-group sum of squares was 1882.820 with 223 degrees of freedom and a mean square of 8.442. The analysis yielded $F(2, 223) = 27.570$, $p < .001$. Since the p-value was less than the 0.05 level of significance, the null hypothesis was rejected. It was therefore concluded that there is a significant difference in perinatal mental health across the trimesters among pregnant women who access care in Nigerian Navy Reference Hospitals.

To identify where the specific differences occurred, a Least Significant Difference (LSD) post hoc test was conducted. The result showed a significant difference between the first and second trimesters, with a mean difference of -3.300, $p < .001$, and between the first and third trimesters, with a mean difference of -5.800, $p < .001$. A significant difference was also found between the second and third trimesters, with a mean difference of -2.500, $p < .001$. Since all the pairwise comparisons were statistically significant, the finding indicates that perinatal mental health differed significantly between each of the three trimesters. The study therefore concludes that pregnant women's perinatal mental health varies significantly across the first, second and third trimesters among women accessing care in Nigerian Navy Reference Hospitals.

Table 2: Results of the Analysis of Variance (ANOVA) on Perinatal Mental Health Scores by Pregnant Women's Trimesters

Source of Variance	SS	Df	MS	F	Sig.
Between Groups	465.580	2	232.790		
Within Groups	1882.820	223	8.442	27.570	.000
Total	2348.400	225			

TABLE 3: LSD Multiple (Pairwise) Comparison of Perinatal Mental Health by Pregnant Women's Trimesters

Dependent Variable	(i) Trimester	(j) Trimester	Mean Difference (i–j)	Std. Error	Sig.
Perinatal Mental Health	First	Second	-3.300*	0.510	0.000
	First	Third	-5.800*	0.525	0.000
	Second	Third	-2.500*	0.465	0.000

*Mean difference is significant at the 0.001 level.

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Discussion of findings

The findings of the study revealed that the intervention programme significantly improved perinatal mental health outcomes among pregnant and postpartum women accessing care in Nigerian Navy Reference Hospitals. This implies that exposure to the structured programme produced meaningful improvements in the psychological well-being of the participants by reducing the mental health challenges associated with pregnancy and the postpartum period. The result further suggests that deliberate and organised mental health support within maternal healthcare settings can positively influence the emotional adjustment of women

during pregnancy and after childbirth. This outcome may be attributed to the components of the intervention, which included mental health education, counselling, screening and other supportive activities that enabled participants to identify symptoms early, understand their mental health needs and adopt appropriate coping strategies.

A possible reason for this finding is that structured intervention programmes provide pregnant and postpartum women with opportunities to receive accurate information, psychological support and guidance that may not ordinarily be available during routine maternal healthcare. Such interventions can increase awareness of perinatal mental health conditions, reduce misconceptions, promote early help-seeking and strengthen women's ability to manage anxiety, depression, stress and emotional difficulties associated with pregnancy and childbirth. The finding can be theoretically explained by the Biopsychosocial Model, which maintains that health outcomes are influenced by the interaction of biological, psychological and social factors. From this perspective, an intervention that addresses emotional responses, coping mechanisms, social support and health-related knowledge can improve mental health even when biological and environmental stressors remain present. The finding is also consistent with Social Support Theory, which proposes that emotional, informational and instrumental support can reduce psychological distress and improve individuals' capacity to cope with stressful life experiences.

The finding agrees with Mahoney et al. (2023), who reported that pregnant women who received a cognitive-behavioural intervention experienced significant reductions in anxiety and depressive symptoms compared with those who received standard prenatal care. It is also consistent with Fang et al. (2022), who found that postpartum women who participated in peer-support interventions recorded significant improvements in mental health outcomes, including reduced depressive symptoms. Similarly, Vázquez-Lara et al. (2025) reported significant reductions in anxiety and depression among pregnant women exposed to a mindfulness-based intervention compared with those who received routine care. The present finding also supports Özhüner and Özerdoğan (2025), who found that psychoeducational intervention significantly reduced postpartum depression among women receiving maternal healthcare services. Taken together, these studies reinforce the present finding that structured psychological, educational and supportive interventions can significantly improve perinatal mental health outcomes among pregnant and postpartum women.

The findings of the study revealed that there is a significant difference in perinatal mental health across the trimesters among pregnant women who access care in Nigerian Navy Reference Hospitals. This means that pregnant women do not experience the same level of psychological well-being throughout pregnancy, as their mental health status varies according to the stage of pregnancy. The result suggests that the emotional and psychological demands associated with pregnancy change as women progress from the first through the second to the third trimester. Such variations may reflect differences in physical discomfort, hormonal changes, concerns about fetal development, preparation for childbirth and increasing responsibilities associated with approaching motherhood.

A possible reason for this finding is that each trimester presents distinct biological, psychological and social experiences capable of influencing a woman's mental health. The first trimester is often characterised by adjustment to pregnancy, uncertainty and concerns about pregnancy viability, while the second trimester may involve concerns about fetal development, body changes and social adjustment. In the third trimester, increased physical discomfort, sleep disturbances, fear of labour and delivery, and anxiety about caring for the newborn may intensify psychological distress. This finding can be theoretically explained by the Biopsychosocial Model, which holds that health outcomes result from the interaction of biological, psychological and social factors. Changes in hormones and physical functioning

interact with emotional responses, perceived stress, social support and environmental circumstances at different stages of pregnancy, thereby producing variations in mental health across the trimesters. The Social Support Theory also justifies, as the availability or absence of emotional, informational and practical support may influence how effectively women cope with trimester-specific challenges.

The finding is consistent with Lomonaco-Haycraft et al. (2019), who reported significant variation in perinatal mental health across pregnancy trimesters, with greater psychological distress observed in later pregnancy. It also agrees with Peng et al. (2025), who found that mental health declined progressively across the trimesters, with pregnant women becoming more vulnerable to depression and anxiety as pregnancy advanced. Similarly, Sultana (2025) reported significant trimester-related differences in maternal mental health, with anxiety levels reaching their highest point during the third trimester. The present finding further supports Cibralic et al. (2023), who observed that anxiety and depression varied significantly across pregnancy and were highest in the third trimester. These studies collectively support the present result that perinatal mental health is dynamic rather than constant and that pregnant women may experience different psychological challenges at different stages of pregnancy.

Conclusion

The study concluded that the intervention programme significantly improved perinatal mental health outcomes among pregnant and postpartum women accessing care in Nigerian Navy Reference Hospitals. It also established that perinatal mental health differs significantly across the trimesters of pregnancy, indicating that women experience varying psychological challenges as pregnancy progresses. These findings show the importance of structured mental health interventions and continuous assessment throughout pregnancy and the postpartum period. Therefore, integrating perinatal mental health support into routine maternal healthcare services is essential for improving the psychological well-being of women.

Recommendations

1. Nigerian Navy Reference Hospitals should integrate structured perinatal mental health intervention programmes into routine antenatal and postnatal care to improve the psychological well-being of pregnant and postpartum women.
2. Healthcare providers in Nigerian Navy Reference Hospitals should provide regular mental health education, screening, counselling and follow-up support for pregnant and postpartum women.
3. Pregnant women should undergo periodic mental health assessment during each trimester so that trimester-specific psychological challenges can be identified and managed early.
4. Maternal healthcare providers should design trimester-specific mental health support strategies, with increased attention to women in later stages of pregnancy who may experience greater psychological distress.

References

Adeoye, I. A., Sogbesan, A., & Esan, O. (2022). Prevalence, associated factors and perinatal outcomes of antepartum depression in Ibadan Nigeria. *BMC Pregnancy and Childbirth, 22*, *219*. https://doi.org/10.1186/s12884-022-04549-7

Adie, R. U., Beshel, I. A., Ekong, E. K., Amos, K. J., Anele, E., & Ekereke, A. B. (2026). Meta-cognitive skills as predictors of academic self-efficacy among secondary school students in Calabar Municipality of Cross River State, Nigeria. *Inter-Disciplinary Journal of Science Education, 7*(2), *56-66*.

Buultjens, M., Farouque, A., Karimi, L., Whitby, L., Milgrom, J., & Erbas, B. (2021). The contribution of group prenatal care to maternal psychological health outcomes: A systematic review. *Women and Birth, 34*(6), *e631–e642*. https://doi.org/10.1016/j.wombi.2020.12.004

Cibralic, S., Pickup, W., Diaz, A. M., Kohlhoff, J., Karlov, L., Stylianakis, A., Schmied, V., Barnett, B., & Eapen, V. (2023). The impact of midwifery continuity of care on maternal mental health: A narrative systematic review. *Midwifery, 116*, *103546*. https://doi.org/10.1016/j.midw.2022.103546

Fang, Q., Lin, L., Chen, Q., Yuan, Y., Wang, S., Zhang, Y., ... & Tian, L. (2022). Effect of peer support intervention on perinatal depression: A meta-analysis. *General hospital psychiatry*, *74*, 78-87.

Hölzle, L., Schöch, P., Hörtnagl, C., Buchheim, A., Lampe, A., Zechmeister-Koss, I., & Paul, J. L. (2024). Identifying and synthesizing components of perinatal mental health peer support—A systematic review. *Frontiers in Psychiatry, 15*, *1389545*. https://doi.org/10.3389/fpsyt.2024.1389545

Izuka, E. O., Iyidobu, T. O., Obiora-Izuka, C. E., Enebe, J. T., Onyeabochukwu, A. D., Nkwo, P. O., & Nwagha, U. I. (2023). Evaluation of anxiety and depression among pregnant women in Enugu, Nigeria. *Nigerian Journal of Clinical Practice, 26*(9), *1368–1376*. https://doi.org/10.4103/njcp.njcp_196_23

Lomonaco-Haycraft, K. C., Hyer, J., Tibbits, B., Grote, J., Stainback-Tracy, K., Ulrickson, C., Lieberman, A., van Bekkum, L., & Hoffman, M. C. (2019). Integrated perinatal mental health care: A national model of perinatal primary care in vulnerable populations. *Primary Health Care Research & Development, 20*, *e77*. https://doi.org/10.1017/S1463423618000348

Mahoney, A., Shiner, C. T., Grierson, A. B., Sharrock, M. J., Loughnan, S. A., Harrison, V., & Millard, M. (2023). Online cognitive behaviour therapy for maternal antenatal and postnatal anxiety and depression in routine care. *Journal of affective disorders*, *338*, 121-128.

Meaney, S., Leitao, S., Olander, E. K., Pope, J., & Matvienko-Sikar, K. (2022). The impact of COVID-19 on pregnant women's experiences and perceptions of antenatal maternity care, social support, and stress-reduction strategies. *Women and Birth, 35*(3), *307–316*. https://doi.org/10.1016/j.wombi.2021.04.013

Oladeji, B. D., Ayinde, O. O., Bello, T., Kola, L., Faregh, N., Abdulmalik, J., Zelkowitz, P., Seedat, S., & Gureje, O. (2023). Cascade training for scaling up care for perinatal depression in primary care in Nigeria. *International Journal of Mental Health Systems, 17*, *41*. https://doi.org/10.1186/s13033-023-00607-5

Özhüner, Y., & Özerdoğan, N. (2025). The effect of psychoeducational ıntervention on postpartum care on postpartum depression and breastfeeding: a randomized controlled trial. *BMC nursing*, *24*(1), 1449.

Peng, Z., Wang, M., Geng, L., Meng, Z., Zhang, Y., Liu, B., ... & Liang, H. (2025). Longitudinal symptom network analysis of perinatal depression in 5002 women: A dynamic perspective from pregnancy to postpartum. *Journal of Affective Disorders*, 120974.

Prom, M. C., Denduluri, A., Philpotts, L. L., Rondon, M. B., Borba, C. P. C., Gelaye, B., & Byatt, N. (2022). A systematic review of interventions that integrate perinatal mental health care into routine maternal care in low- and middle-income countries. *Frontiers in Psychiatry, 13*, *859341*. https://doi.org/10.3389/fpsyt.2022.859341

Soyemi, A. O., Sowunmi, O. A., Amosu, S. M., & Babalola, E. O. (2022). Depression and quality of life among pregnant women in first and third trimesters in Abeokuta: A

comparative study. *South African Journal of Psychiatry, 28*, *a1779*. https://doi.org/10.4102/sajpsychiatry.v28i0.1779

Sultana, N. (2025). Assessment of Maternal Stress, Anxiety, Well-Being, and Sleep Quality during Different Stages of Gestation. *The Planet*, *9*(01), 264-269.

Ubi, G. I., Adie, R. U., Amos, K. J., Beshel, I. A., Ekong, E. K., Ekereke, A. B., & Anele, E. (2026). The determinant of task shifting among librarians in Cross River State, Nigeria. *Inter-Disciplinary Journal of Science Education, 7*(2), *1–12*.

Vázquez-Lara, M. D., Ruger-Navarrete, A., Mohamed-Abdel-Lah, S., Gómez-Urquiza, J. L., Fernández-Carrasco, F. J., Rodríguez-Díaz, L., ... & Vázquez-Lara, J. M. (2025, June). The impact of mindfulness programmes on anxiety, depression and stress during pregnancy: a systematic review and meta-analysis. In *Healthcare* (Vol. 13, No. 12, p. 1378). MDPI.