

Pregnancy Outcomes of Women With Hypertensive Disease in Lagos State, Nigeria

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ABSTRACT: *This study investigates the differences in pregnancy outcomes among women with hypertensive disease in pregnancy, with and without mental health disorders, in Lagos State, Nigeria. Utilizing a longitudinal research design, data was collected from pregnant women in their 20-24 weeks of gestation through delivery and postpartum. The sample size of 300 was determined using the Cochran formula, with participants selected from six maternal and child health centers across three senatorial districts. A validated questionnaire comprising fifteen questions assessed pregnancy outcomes, and statistical analyses included descriptive and inferential statistics. Results revealed no significant associations between mental health status and gestational age, mode of delivery, duration of labor, or delivery period. Apgar scores at 1 and 5 minutes also showed no significant association with mental health status. However, a notable association was found between mental health status and birth weight, indicating a higher prevalence of low-birth-weight infants among women with mental health disorders. Other factors, including estimated blood loss, postpartum packed cell volume, blood transfusion, duration of hospital admission, and NICU admission, showed no significant associations with mental health status. In conclusion, birth weight is significantly associated with the mental status of pregnant women with hypertensive disease, while other factors appear to have negligible impact.*

Recommendations include routine mental health assessments, early detection, and intervention for better maternal mental health outcomes. Midwives are advised to implement early monitoring of fetal growth, emphasizing closer prenatal care and nutritional counseling to reduce the risk of mental health disorders in pregnant women.

KEYWORDS: pregnancy outcomes, hypertensive disease, mental health disorder, pregnant woman

INTRODUCTION

It is common to celebrate pregnancy as a joyous time for women; nevertheless, not only can pregnancy bring about a variety of physical, psychological, and physiological changes, but it also has the potential to have adverse impacts on pregnant women. The presence of hypertension disease in pregnancy, which is one of the many factors that contribute to maternal mortality, is a substantial danger during this time period. There is a correlation between the existence of elevated blood pressure in pregnant women who have hypertensive disease and the development of mental health disorders such as anxiety, depression, and post-traumatic stress experiences. It is possible that these disorders will make the mental health problems that the women may have already been experiencing before to becoming pregnant much worse. A number of factors that contribute to this include the following: non-compliance with or discontinuation of mental health medication during pregnancy; exposure to stressful life events; experiencing violence (such as assault or verbal and physical abuse) during pregnancy; memories of difficult childhood periods; fear; financial difficulties; and a lack of support. Women's lives are significantly affected by the major biological process of pregnancy. The World Health Organisation (WHO) asserts that pregnancy is a natural occurrence that brings about changes in physiological, social, and psychological aspects of a person's life. According to Gilbert et al. (2020), this is also a time when women are more likely to be hit by diseases. It is also a period that is filled with anxieties, worry, and anxiety, all of which are regarded normal and anticipated during this era of physiological changes. On the other hand, when these feelings become extreme, the situation becomes abnormal, and difficulties may occur (Nasr & Hassan, 2016). As a result of pregnancy, women experience a variety of changes in their bodies, both physically and mentally, as they get ready to give birth to their children. As a consequence of these physical changes, imbalances may occur, which can lead to illnesses such as hypertensive disorders in pregnancy. On the other hand, psychological alterations may contribute to mental health disorders (Braunthal & Brateanu, 2019).

According to Battarbee et al. (2020), maternal and foetal morbidity and mortality are significantly increased by hypertensive disorders that manifest themselves during pregnancy. In terms of the medical disorders that may be experienced during pregnancy, hypertension is one of the most prevalent, accounting for two to three percent of all pregnancies that are considered to be complicated (Rapaport, 2020). Research estimates show that roughly five to ten percent of pregnant women will have hypertension throughout their pregnancy (Dachew et al., 2020). These hypertensive disorders that occur during pregnancy may be classified into a number of different categories, such as chronic hypertension, preeclampsia, eclampsia, preeclampsia superimposed on chronic hypertension, and gestational hypertension without proteinuria (Portelli & Baron, 2019). It is estimated that roughly five to ten percent of pregnancies are complicated by chronic hypertension (CH), gestational hypertension (GH), preeclampsia (PE), and eclampsia. This makes these conditions the second greatest cause of maternal mortality to occur among pregnant women. According to Akinola et al.'s research from 2019,

these disorders are linked to higher risks of stillbirth, neonatal mortality, and a variety of maternal and baby health issues, including intrauterine growth restriction. According to Lahti-Pulkkinen et al. (2020), understanding the aetiology of these disorders is a very important topic for public health because of the prevalence of these disorders and the repercussions that are associated with them.

Evidence about the connection between hypertensive disorders of pregnancy (HDP) and the risk of maternal mental illness was the subject of a research that was carried out by Berihun et al (2021). The purpose of this research was to address two questions: (a) if hypertensive disorders in pregnancy (pre-eclampsia and gestational hypertension) are independently linked with depressed and anxious symptoms throughout pregnancy and in the postpartum period; and (b) whether parity moderates any connections that were detected. The Avon Longitudinal research of Parents and Children (ALSPAC) had more than 8300 moms as participants. These mothers were included in the research cohort. The Edinburgh Postnatal Depression Scale (EPDS) and the Crown-Crisp Experiential Index (CCEI) were used, respectively, in order to evaluate the symptoms of anxiety and depression that were experienced by mothers throughout their pregnancies and after they gave birth. Within the sample of moms who participated in the research, a total of 1885 (14.4%) and 281 (2.1%) mothers have been identified as having pre-eclampsia and gestational hypertension, respectively. In comparison to moms who did not have pre-eclampsia, those who did have pre-eclampsia had a significantly higher likelihood of experiencing prenatal depression symptoms by a factor of 53 percent (adjusted odds ratio = 1.53; 95% confidence interval, 1.06–2.23). The largest incidence of prenatal depression symptoms was associated with having pre-eclampsia and being a woman who was not a nulliparous woman (adjusted odds ratio = 2.75; 95% confidence interval, 1.09–6.96). It was shown that women who had never given birth before had a 56% higher probability of experiencing prenatal anxiety symptoms if they had pre-eclampsia.

It is based on these premises that the researcher found it imperative to determine the differences in the pregnancy outcome of women with hypertensive disease in pregnancy, with and without mental health disorders in Lagos State, Nigeria. The objective of this study is to find out the differences in the pregnancy outcomes of women with hypertensive disease in pregnancy without mental health disorders and women with hypertensive disease in pregnancy with mental health disorders in Lagos State, Nigeria.

Hypothesis

Ho1: There is no significant difference between the pregnancy outcome of women with hypertensive disease in pregnancy with mental health disorders and women with hypertensive disease in pregnancy without mental health disorders in Lagos State, Nigeria.

METHODOLOGY

A longitudinal research design was used to investigate the mental well-being of pregnant women who were enlisted from the second trimester to delivery and the postpartum phase. Pregnancy is an exceptional and transforming occurrence that may have a substantial influence on a woman's mental state. The research specifically targeted pregnant women in their 20-24 weeks of gestation who were

undergoing prenatal care. The selection of these women was conducted from six designated maternal and child health centres situated inside General Hospitals in Lagos State.

The sample size was obtained using the Cochran formula. Hence, the sample size determined by the use of the Cochran formula was increased to 300 to accommodate a 7% attrition rate from each of the chosen maternal and child health centres. The pregnant women were chosen from the three senatorial districts of Lagos State, namely Lagos West, Lagos East, and Lagos Central. The samples were collected sequentially from pregnant women throughout the second trimester, third trimester, birth, and postpartum period, from those who satisfied the selection criteria.

The data collecting questionnaire had fifteen items designed to assess pregnancy outcomes, which were derived from prior research (Mahmud et al., 2021). The questionnaire underwent validation by professionals in the fields of Midwifery and Mental Health, who verified its face and content validity. The researcher partnered with the chief nurse at each general hospital, who then acquainted the researcher with the nurse overseeing the prenatal clinic. Data collection was facilitated during the planned prenatal clinic sessions, which occurred on Mondays, Wednesdays, and Fridays. The data gathering phase lasted for a duration of nine months and included several activities. The research goals were examined via the use of descriptive statistics and inferential statistics, namely the Chi-square test.

RESULTS

Table 1: Differences in the pregnancy outcome of women with hypertensive disease in pregnancy with and without mental health disorders

Variable	Mental status		Total	Pearson chi-square	P-value
Factors	No mental disorder	Mental disorder			
Gestational age at delivery					
Preterm	1	4	5		
Term	75	166	241		
Post term	7	15	22		
Total	83	185	268	4.273	0.748
Mode of Delivery					
Vaginal delivery	49	100	149		
Cesarean section	34	85	119		
Total	83	185	268	0.580	0.748
Duration of labour					
<3 hours	2	3	5		
4-12 hours	25	54	79		
>12 hours	24	44	68		
Total	51	101	152		
Period of delivery					

Morning	22	37	59		
Afternoon	27	70	97		
Night	34	78	112		
Total	83	185	268	1.567	0.457
Apgar score at 1 minute					
7-10	74	168	242		
4-6	9	16	25		
0-3	0	1	1		
Total	83	185	268	0.762	0.683
Apgar score at 5 minute					
7-10	83	180	263		
4-6	0	4	4		
0-3	0	1	1		
Total	83	185	268	2.286	0.319
Birth weight					
<2.5Kg	37	98	135		
2.5-3.5Kg	34	76	110		
3.6-3.9Kg	10	11	21		
>4Kg	2	0	2		
Total	83	185	268	7.982	0.046
Estimated blood loss					
Normal	61	125	186		
PPH	22	60	82		
Total	83	185	268	1.672	0.643
Postpartum packed cell volume					
0-18	0	3	3		
19-25	15	26	41		
26-30	31	74	105		
>30	37	82	119		
Total	83	185	268	2.054	0.561
Blood Transfusion					
Yes	22	59	81		
No	61	126	187		
Total	83	185	268	0.788	0.375
Units of blood transfused					
None	61	126	187		
1-2	20	53	73		
3-4	2	6	8		
Total	83	185	268	0.988	0.912

Duration of hospital admission					
Normal	28	53	81		
Prolonged	55	132	187		
Total	83	185	268	2.845	0.416
NICU admission for baby					
Yes	0	5	5		
No	83	180	263		
Total	83	185	268	2.286	0.131

Upon examining Table 1, which displays the correlation between several variables and the mental condition of pregnant women, the following observations may be made:

The study found no statistically significant correlation between gestational age at delivery (preterm, term, post term) and the mental health of pregnant women ($r = 4.273$, $p = 0.748$). The gestational age at delivery does not seem to have an impact on the mental condition. The delivery method (vaginal birth, caesarean section) did not have a significant correlation with the mental state of pregnant women (Pearson chi-square = 0.580, $p = 0.748$). The method of delivery does not seem to have an effect on the mental condition of the women. The length of labour (<3 hours, 4-12 hours, >12 hours) does not have a significant correlation with the mental condition of pregnant women (Pearson chi-square = 1.567, $p = 0.457$). The length of labour does not seem to have a substantial impact on mental well-being.

The timeframe of delivery (morning, afternoon, night) did not show a substantial correlation with the mental condition of pregnant women (Pearson chi-square = 1.567, $p = 0.457$). The duration of delivery does not seem to have an impact on the mental state. The Apgar scores at 1 minute and 5 minutes (7-10, 4-6, 0-3) do not demonstrate a substantial correlation with the cognitive condition of expectant mothers (Apgar score at 1 minute: $r = 0.762$, $p = 0.683$; Apgar score at 5 minutes: Pearson chi-square = 2.286, $p = 0.319$). There seems to be no correlation between the Apgar ratings and the mental condition. A notable correlation exists between the weight at birth (<2.5Kg, 2.5-3.5Kg, 3.6-3.9Kg, >4Kg) and the mental condition of expectant mothers ($r = 7.982$, $p = 0.046$). The birth weight seems to have a statistically significant influence on the mental condition. There is no significant correlation between the mental health of pregnant women and the other parameters, including estimated blood loss, postpartum packed cell volume, blood transfusion, units of blood transfused, length of hospital stay, and NICU hospitalisation for the infant.

The data suggest a strong association between mental health status and birth weight among women with hypertension disease during pregnancy. This indicates a greater occurrence of low-birth-weight babies among women with mental health disorders. Nevertheless, there were no notable correlations found between mental health status and various pregnancy outcomes, such as gestational age, mode of delivery, duration of labour, Apgar scores, estimated blood loss, postpartum packed cell volume, blood transfusion, duration of hospital admission, or NICU admission.

To summarise, the statistical analysis of the table indicates that there is a significant correlation between birth weight and the mental status of pregnant women. However, factors such as gestational age, mode of delivery, duration of labour, period of delivery, Apgar scores, and various medical interventions do not show any significant correlations with the mental status.

DISCUSSION

Regarding gestational age at delivery, a chi-square test indicated no statistically significant association between mental health status and gestational age. Similarly, no significant association was found between mental health status and mode of delivery, duration of labor, or period of delivery. The analysis of Apgar scores at 1 and 5 minutes revealed no significant association between mental health status and the scores. However, a significant association was found between mental health status and birth weight, indicating that women with mental health disorders had a higher prevalence of infants with birth weights below 2.5 kg. Regarding other pregnancy outcomes, no significant associations were observed between mental health status and estimated blood loss, postpartum packed cell volume, blood transfusion, units of blood transfused, duration of hospital admission, or NICU admission for the baby. These findings suggest that mental health status among women with hypertensive disease in pregnancy may be associated with birth weight, with a higher prevalence of low birth weight infants among women with mental health disorders. However, no significant associations were observed between mental health status and other pregnancy outcomes, including gestational age, mode of delivery, duration of labor, Apgar scores, estimated blood loss, postpartum packed cell volume, blood transfusion, duration of hospital admission, or Neonatal Intensive Care Unit admission (NICU).

CONCLUSION

The analysis of the relationship between various factors and the mental status of pregnant women with hypertensive disease reveals that birth weight is significantly associated with mental health status. This suggests a higher prevalence of low-birth-weight infants among women with mental health disorders. On the other hand, no significant associations were found between mental health status and other pregnancy outcomes, including gestational age at delivery, mode of delivery, duration of labor, period of delivery, Apgar scores, and various medical interventions such as estimated blood loss, postpartum packed cell volume, blood transfusion, duration of hospital admission, and NICU admission for the baby. Therefore, while birth weight appears to be a critical factor, the impact of other factors on the mental status of pregnant women with hypertensive disease seems to be negligible.

Recommendations

Based on the study's findings, the following recommendations are made:

1. Healthcare providers should routinely assess mental well-being, identify potential risk factors, and offer appropriate support services, including counseling and mental health interventions. Early detection and intervention can contribute to better maternal mental health outcomes.
2. There is need for midwives to implement early monitoring of fetal growth and intervene promptly if there are indications of low birth weight. This could involve closer prenatal care, nutritional counseling, and other interventions to ensure optimal fetal development and reduce the risk of mental health disorders in pregnant women.

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