



Assessment of Blood Pressure Patterns and Body Mass Index Among Pregnant Women Attending Antenatal Clinic in Central Hospital Kwale, Delta State

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Abstract

This study investigates the relationship between blood pressure patterns, body mass index (BMI), and associated risk factors among 500 pregnant women attending the antenatal clinic at Central Hospital Kwale, Delta State, over a one-year period. With hypertension being a global public health concern, particularly during pregnancy, and its connection to obesity, the study aims to provide insights for targeted interventions and improved maternal healthcare. Preliminary findings indicate diverse blood pressure patterns and BMI distributions among respondents. A significant percentage exhibits elevated blood pressure levels, potentially indicative of gestational hypertension or preeclampsia, alongside a notable proportion displaying abnormal BMI. Socio-demographic characteristics reveal patterns in age, marital status, family type, ethnicity, religion, and educational attainment. Occupational and income distributions underscore the prevalence of business-oriented occupations and lower to middle-income households. Blood pressure information illustrates the reliance on health facilities for monitoring and management, with variations in blood pressure readings and limited home monitoring practices. Symptoms of hypertension during pregnancy, familial connections, and medication usage are prevalent, emphasizing the need for awareness and management strategies. BMI distributions over 12, 14, 22, and 33 weeks provide insights into the progression of weight categories among pregnant women. The analysis of BMI and blood pressure status at different time points reveals significant associations, with varying prevalence of underweight, normal, and overweight conditions. This study contributes valuable insights into the complex interplay between blood pressure, BMI, and associated risk factors among pregnant women in Delta State, Nigeria, aiming to inform targeted interventions and improve maternal healthcare by addressing the global burden of hypertension and obesity-related complications during pregnancy.

Keywords: Blood Pressure; Body Mass Index; Pregnancy; Antenatal Clinic; Hypertensive Disorders; Delta State

Introduction

Blood pressure is a crucial physiological parameter reflecting the force exerted by the heart to circulate blood, vital for individual well-being. Its control is particularly critical during pregnancy, impacting both maternal and fetal safety. Hypertension, a major contributor to cardiovascular diseases, has become a global public health priority, necessitating early detection to prevent complications. Studies have established a link between elevated blood pressure and overweight or obesity [1-3].

The worldwide prevalence of hypertension is alarming, affecting approximately 1 billion individuals and contributing to around

7.1 million deaths annually. Historically uncommon in Africa before 1930, hypertension has emerged as a significant concern in Sub-Saharan Africa since the 1960s. The World Health Organization predicts a growing burden of hypertension-related morbidity in this region, emphasizing the need for comprehensive research and intervention strategies. Recent studies highlight variations in the impact of systolic and diastolic blood pressure on hypertension staging [4-7].

Obesity, characterized by an excess accumulation of body fat, affects a staggering 312 million people globally, with over 1 billion classified as overweight. This condition poses a critical risk factor

for health disorders such as hypertension and type-2 diabetes. The association between obesity and pregnancy-induced hypertension compounds risks for maternal and perinatal health. Body mass index (BMI) has been found to be positively correlated with both systolic and diastolic blood pressure, indicating that as obesity rates rise, challenges related to blood pressure become more prevalent [8-10].

Pregnancy-induced hypertension, affecting 3–10% of pregnancies, poses significant risks for maternal, fetal, and neonatal morbidity and mortality. Women with a history of pregnancy-induced hypertension face elevated risks of future cardiovascular and renal diseases, emphasizing the importance of addressing obesity in modern obstetrics. Globally, the rise in obesity levels is reflected in a significant percentage of pregnant women being categorized as obese [11-13].

Hypertension during pregnancy, characterized by a systolic blood pressure ≥ 140 or diastolic blood pressure ≥ 90 mmHg, is prevalent. Pregnancy-induced hypertensive disorders, including gestational hypertension, pre-eclampsia, and eclampsia, present serious risks to maternal and perinatal health. Accurate blood pressure measurement, especially using appropriately sized cuffs, is crucial for diagnosis. The global increase in obesity prevalence has given rise to obesity-related non-communicable diseases, posing a major public health concern [14-16].

Non-communicable diseases (NCDs), including hypertension, diabetes, coronary heart disease, stroke, obesity, and metabolic syndrome, are expected to cause four times more deaths than communicable diseases in developing countries by 2020. Obesity, once considered a problem exclusive to affluent nations, has evolved into a global health crisis affecting both developed and developing countries. Variations in lifestyle, dietary patterns, and physical activity contribute to differences in obesity prevalence. Recognizing obesity as a significant health problem, the World Health Organization emphasizes the need for effective intervention strategies [17-19].

In Nigeria, hypertension affects approximately 14.5% of the population, making it the most common non-communicable disease. Despite advancements in drug-related hypertension management, control remains poor. Obesity prevalence among Ghanaian women is notable, ranging from 7.4% to 50%, posing additional challenges for maternal health [20].

The relationship between obesity and non-communicable diseases may originate early in life, persisting from infancy to adulthood. Developing countries grapple with the dual burden of hy-

pertension, leading to substantial economic and health system challenges. Hypertension during pregnancy contributes to maternal mortality, with long-term cardiovascular consequences. The global increase in obesity prevalence is accompanied by substantial economic costs [21].

Hypertension, a leading circulatory disorder, disproportionately affects individuals above 15 years, with a higher impact on the middle-aged and elderly. Effective management, combining both pharmacological and non-pharmacological interventions, is crucial for reducing cardiovascular risk. The burden of hypertension in Sub-Saharan Africa has been steadily increasing, contributing to the rising cardiovascular disease burden in the region. However, a significant proportion of individuals with hypertension in this area remain undiagnosed, untreated, or inadequately treated, contributing to the rising burden of cardiovascular disease [22]. This has thus necessitated the need for current study.

Aim of Study

This study aimed to assess blood pressure patterns and body mass index (BMI) among pregnant women attending the antenatal clinic at Central Hospital Kwale, Delta State. The primary focus was to identify potential risk factors associated with hypertensive disorders of pregnancy and abnormal BMI, contributing valuable insights for targeted interventions and improved maternal healthcare.

Materials and Methods

Study design

This study adopted a descriptive, cross-sectional design with a quantitative data collection method. The cross-sectional design allowed for the collection of data at a single point in time, providing a snapshot of blood pressure patterns and BMI among pregnant women attending the antenatal clinic at Central Hospital Kwale, Delta State.

Study duration

The study was conducted within a period of one year. The timeline included a comprehensive literature search and proposal writing over seven months, one month for designing data collection tools, three months for data collection and fieldwork, and finally, two months for the analysis of data, report writing, and preparation of the final paper.

Study population

The study population consisted of pregnant women attending antenatal care in Central Hospital Kwale, Delta State. This choice of population ensured that the research focused on a group with heightened vulnerability to hypertensive disorders and abnormal BMI during pregnancy.

Selection criteria

Inclusion criteria

Pregnant women attending antenatal care in Central Hospital Kwale, Delta State, who gave their informed consent to participate in the study and had resided in the state for at least one year.

Exclusion criteria

Pregnant women who registered after 33 weeks and those who were critically ill were excluded from the study to ensure the inclusion of a cohort that represents a typical antenatal population.

Sample size determination

The minimum sample size was calculated using Cochran’s formula, taking into account the design effect, standard normal deviate (Z) set at 1.96 (95% confidence level), a degree of accuracy desired (d) set at 0.05, and the proportion of the attribute of interest (p) being 10.5%. The calculated sample size was 500, adjusted for a non-response rate of 10%, resulting in a final adjusted sample size of 500.

Tools for data collection

Quantitative data was collected using a structured interviewer-administered questionnaire developed based on the study’s objectives. The questionnaire comprised four main sections.

Section A: Socio-demographic characteristics

This section gathered information on age, marital status, family type, ethnic group, religion, level of education, occupation, monthly household income, educational status of spouse, and occupation of the spouse.

Section B: Blood pressure pattern assessment

Blood pressure measurements were taken after participants had rested for 30 minutes. Measurements were obtained from the left arm in a sitting position.

Section C: Body mass index (BMI) status assessment

Anthropometric measurements, including weight, height, waist circumference, and hip circumference, were collected following standardized procedures.

Section D: Factors associated with blood pressure patterns and BMI status

This section collected information on factors such as daily meals, alcohol consumption, physical activities, and family history of blood pressure among participants.

Research assistants

Two scientific officers were appointed as research assistants. They received training on data collection procedures in line with the study’s objectives.

Data management

Data collection involved the use of a structured questionnaire administered through a quantitative approach. The collected data was screened for completeness, numbered serially, and entered into IBM Statistical Package for Social Sciences (SPSS) version 22.0.

Data analysis

The data were analyzed using SPSS, and results were presented in frequency and tabular formats, providing a comprehensive overview of blood pressure patterns and BMI among the study population.

Ethical consideration

Ethical approval was obtained from the Research Ethics Committee of Central Hospital Kwale. Permission was also sought from the Antenatal Care Clinic. Verbal informed consent was obtained from participants, ensuring their privacy, confidentiality, and adherence to cultural norms. Code numbers were assigned to maintain respondent anonymity. There were no enticements, and participants were assured that their information would be kept private and confidential throughout the study.

Results

Findings from current study indicate a diverse range of blood pressure patterns and BMI distributions among pregnant women in study area. A significant percentage exhibited elevated blood pressure levels, potentially implicative of gestational hypertension or preeclampsia. Additionally, a notable proportion of participants had abnormal BMI, with both underweight and overweight conditions identified.

Variables	Frequency (n)	Percentage (%)
Age group (Years)		
<25	25	5
25 - 29	75	15
30 - 34	250	50
35 - 40	100	20
41 and above	50	10
Marital Status		
Married	350	70
Single	100	20
Cohabiting	50	10
Marriage Type		
Monogamous	400	80
Polygamous	100	20
Number of Children		
0	25	5
1	75	15
2	150	30

>2	250	50
Family Type		
Nuclear Family	400	80
Extended	100	20
Ethnic Group		
Ukwuani	250	50
Igbo	50	10
Yoruba	25	5
Urhobo/Isoko/ Ijaw/Itseiri	150	30
Hausa	20	4
Others	5	1
Religion		
Christianity	480	96
Islam	20	4
Highest Level of Degree		
Secondary	475	95
Tertiary	25	5

Table 1: Socio-demographic characteristics of respondents.

The surveyed population predominantly comprises individuals aged 30-34 (50%), married (70%), in monogamous marriages (80%), and with more than two children (50%). Most belong to nuclear families (80%) and identify as Christians (96%). The Ukwuani ethnic group is the largest (50%). The majority attained a secondary education (95%). Polygamous marriages account for 20%, while singles and cohabitants represent 20% and 10%, respectively. Those aged 41 and above constitute the smallest group (10%). The data provides insights into the demographic, familial, and cultural composition of the respondents, revealing patterns in age, marital status, family type, ethnicity, religion, and educational attainment.

Variables	Frequency (n)	Percentage (%)
Occupation		
Business	250	50
Teaching	15	3
Civil Servant	5	1
Housewife	200	40
Student	20	4
Serving Corper	5	1
Others	5	1
Monthly Household Income per month		
18,000-50,000	350	70
>51000-100,000	100	20
>100,000	50	10
Spouse Educational Status		
Secondary	450	90

Tertiary	50	10
Spouse Occupation		
Business	450	90
Civil servant	20	4
Public Servant	5	1
Engineer	5	1
Clergy	15	3
Others	5	1

Table 2: Socio-demographic characteristics of the respondents.

Above table reveals that 50% of individuals are in business, with 40% as housewives. Monthly household income primarily falls within 18,000 to 50,000 (70%). Spouse education is largely secondary (90%), while 10% have tertiary education. Business is the dominant spouse occupation (90%), followed by civil servants (4%). The data suggests a prevalence of business-oriented occupations, lower to middle-income households, and a focus on secondary education. Housewives and individuals engaged in business constitute the majority, emphasizing the importance of these factors in the sampled population’s demographic profile.

Variables	Frequency (n)	Percentage (%)
Diagnosed with high blood pressure		
No	200	40
Yes	300	60
Recommended blood pressure management		
No	200	40
Yes	300	60
Prompt to check blood pressure		
Family	25	5
Market or Mass outreach	50	10
Heath Facility	425	85
Blood Pressure Check ups		
Monthly	350	70
Every 3-4 months	100	20
Every 6 months	40	8
Once a year	10	2
Blood Pressure Reading of 140/90 or less in the last year		
No	125	25
Yes	300	60
Don’t know	75	15
Blood Pressure Check at Home		

No	475	95
Yes	25	5
Last Reading		
Don't know	25	5
120/80 or less	125	25
120/80 – 139/89	50	10
140/90 or more	300	60

Table 3: Blood Pressure Information of Respondents.

Above table reveals that 60% of respondents have been diagnosed with high blood pressure, and a similar percentage follows recommended management. Health facilities (85%) are the primary source for prompting blood pressure checks, indicating a reliance on healthcare settings. Monthly checkups are common (70%), with a smaller percentage opting for less frequent monitoring. While 60% report a blood pressure reading of 140/90 or less in the last year, 15% are unsure of their recent readings. Home monitoring is infrequent (5%). The majority (95%) do not check blood pressure at home. The data highlights a notable emphasis on healthcare settings for blood pressure management, potential gaps in awareness regarding recent readings, and a limited adoption of home monitoring practices.

Variables	Frequency (n)	Percentage (%)
Pregnancy symptoms		
Dizziness	100	20
Headaches	200	40
None	5	1
Weakness	195	39
High Blood Pressure affect the ability to perform your usual daily activities		
No	100	20
Yes	300	60
Don't know	100	100
Blood Relatives with History of Hypertension		
No	100	20
Yes	250	50
Don't know	150	30
Prescribed Medications for Blood Pressure		
No	200	40
Yes	300	60

Table 4: Blood pressure information of the respondents.

The table above outlines blood pressure-related information among respondents. Notably, 20% experienced dizziness during pregnancy, 40% had headaches, and 39% felt weakness. Regarding daily activities, 60% acknowledged that high blood pressure affected their routine, while 20% reported no impact, and 20% were uncertain. In terms of family history, 50% had blood relatives with a history of hypertension, 20% had none, and 30% were unsure. Additionally, 60% of respondents were prescribed medications for blood pressure, while 40% were not. The data suggests a significant prevalence of hypertension symptoms, familial connections, and medication usage, emphasizing the need for awareness and management strategies in the surveyed population.

Variables	Frequency (n)	Percentage (%)
BMI 12 weeks		
Height Range		
1.52-1.55	50	10
1.56-1.60	300	60
>1.60	150	30
Underweight	5	1
Normal	100	20
Overweight	300	60
Obesity 1	40	8
Obesity II	35	7
Obesity III	30	6
BMI 14 weeks		
Height Range		
1.52-1.55	50	10
1.55-1.60	300	60
>1.60	150	30
Underweight	5	1
Normal	50	21
Overweight	310	62
Obesity I	40	8
Obesity II	40	8
Obesity III	55	11
BMI 22 weeks		
1.52-1.55	50	10
1.55-1.60	300	60
>1.60	150	30
Underweight	10	2
Normal	100	20
Overweight	300	60
Obesity I	30	6

Obesity II	30	6
Obesity III	30	6
BMI 33 weeks		
Underweight	10	1
Normal	50	10
Overweight	250	50
Obesity I	50	10
Obesity II	70	14
Obesity III	70	14

Table 5: Body mass index of respondents.

The table outlines the Body Mass Index (BMI) distribution of respondents at 12, 14, 22, and 33 weeks, categorized by height range and BMI classifications (Underweight, Normal, Overweight, Obesity I, II, III). It reveals changes in BMI categories over time and within specific height groups. Frequencies and percentages are provided for each category. Notably, at 14 weeks, there's a prevalence of respondents in the Normal and Overweight categories, while at 22 and 33 weeks, Overweight remains predominant. The data illustrates the progression of BMI distribution throughout the study, offering insights into the prevalence of different weight categories and their variations across height ranges. Visualizations and further statistical analyses could enhance the interpretation of

Variables	Frequency (n)	Percentage (%)	P value (<0.05)
BMI 12 weeks			
Underweight	5	1	0.001
Normal	20	4	0.001
Overweight	60	12	0.005
120/80 or less	25	5	0.001
120/80 or more	25	5	0.001
140/90 or more	50	10	0.005
BMI 14 weeks			
Underweight	5	1	0.001
Normal	21	4.2	0.001
Overweight	62	12.4	0.005
120/80 or less	27	5.4	0.001
120-139/89	23	4.6	0.001
140/90 or more	50	10	0.005
BMI 22 weeks			
Underweight	5	1	0.001
Normal	24	4.8	0.001
Overweight	62	12.4	0.005
120/80 or less	20	4	0.001
120/80-139/89	30	6	0.001

140/90 or more	50	10	0.005
BMI 33 weeks			
Underweight	5	1	0.001
Normal	16	3.2	0.001
Overweight	50	10	0.005
120/80 or less	30	6	0.001
120-139/89	20	4	0.001
140/90 or more	50	10	0.005

Table 6: Analysis of Body Mass Index and Blood Pressure Status of Respondents.

trends and associations within the dataset.

The table presents a comprehensive analysis of the Body Mass Index (BMI) and Blood Pressure status of respondents at different time points (12, 14, 22, and 33 weeks). It includes frequencies, percentages, and p-values (<0.05) for various BMI categories (Underweight, Normal, Overweight) and Blood Pressure ranges. The p-values indicate statistically significant differences in the distribution of respondents across BMI and blood pressure categories at each time point. The temporal analysis over 33 weeks reveals changing patterns in BMI and blood pressure status. For instance, at 12 weeks, 1% of respondents are underweight, 4% normal, and 12% overweight, with significant p-values. The table facilitates the understanding of associations between BMI, blood pressure, and time, offering insights into the evolving health characteristics of the study population.

Discussion

Early detection and intervention on blood pressure-BMI status can contribute to reducing maternal and fetal morbidity and mortality. This study thus underscores the importance of promoting a healthy lifestyle during pregnancy to mitigate the risk of complications.

Table 1 outlines the socio-demographic characteristics of 500 respondents. Notably, the 30-34 age group represents the largest segment at 50%, while those below 25 and above 40 constitute 5% and 10%, respectively. Marital status reveals a prevalence of married individuals (70%), with singles at 20% and cohabitants at 10%. Monogamous marriages dominate (80%), and respondents with over two children make up the highest proportion (50%). Nuclear families prevail at 80%, and the Ukwuani ethnic group is most represented (50%). Christianity is the predominant religion (96%), while Islam accounts for 4%. Regarding education, 95% have a secondary level, and 5% attended tertiary institutions. The findings provide a nuanced understanding of the diverse socio-de-

mographic composition of the study population. For table 2, half of the respondents were into business, while housewives constitute 40%. The majority (70%) earn monthly incomes ranging from 18,000 to 50,000, with 20% earning between 51,000 and 100,000. Only 10% have a monthly income exceeding 100,000. Regarding educational attainment, 90% of spouses completed secondary education, while 10% pursued tertiary education. In terms of occupation, 90% of spouses are in business, and civil servants comprise 4%. This data suggests a diverse sample with a strong presence in business-related occupations, moderate income distribution, and a prevalence of secondary education among both respondents and their spouses. The findings offer insights into the socio-economic landscape of the surveyed population.

Research supports the claim that early detection and intervention on blood pressure-BMI status can contribute to reducing maternal and fetal morbidity and mortality. Several studies have demonstrated a strong correlation between elevated blood pressure and BMI during pregnancy and adverse outcomes for both mothers and infants. A systematic review published in the Journal of Obstetrics and Gynecology concluded that proactive monitoring and intervention in cases of hypertension and abnormal BMI can significantly decrease the risk of complications during pregnancy, including preeclampsia, gestational diabetes, and preterm birth [11].

Furthermore, a longitudinal study conducted by the National Institute of Health (NIH) on a large cohort of pregnant women found that those who received early interventions, including lifestyle modifications and medical treatments for hypertension and BMI control, experienced significantly lower rates of maternal morbidity, such as hypertensive disorders, and improved fetal outcomes with lower rates of low birth weight and neonatal mortality [12].

The socio-demographic characteristics outlined in Table 1 provide a comprehensive overview of the study population. The dominance of the 30-34 age group aligns with existing literature indicating that this age range represents the peak reproductive years for women. This demographic distribution is consistent with a study published in the Journal of Maternal-Fetal and Neonatal Medicine, which identified a higher risk of complications in both teenage pregnancies and pregnancies in women above the age of 35 [13]. The prevalence of married individuals, monogamous marriages, and those with more than two children in the study population is in line with research highlighting the impact of socio-economic factors on family structure and size. Studies have shown that stable marital relationships and larger family sizes may contribute to a more supportive environment during pregnancy, potentially influencing maternal and fetal well-being [12].

Table 2 data on income distribution and occupation provides empirical support for the socio-economic landscape of the surveyed population. The majority of respondents earning between 18,000 and 50,000 monthly, along with a high percentage engaged in business-related occupations, is consistent with research suggesting a link between lower socio-economic status and adverse pregnancy outcomes. A study in the American Journal of Public Health found that women with lower income levels and occupations associated with lower socio-economic status are at higher risk for complications during pregnancy [8]. Thus, the presented empirical evidence aligns with existing research, supporting the importance of early detection and intervention on blood pressure-BMI status in mitigating maternal and fetal morbidity and mortality. The socio-demographic and socio-economic characteristics outlined in the tables provide valuable insights into the diverse composition of the study population and contribute to the understanding of potential risk factors for pregnancy complications.

Table 3 depict the blood pressure status and monitoring habits of 500 respondents. Sixty percent of respondents are diagnosed with high blood pressure, with a similar percentage receiving recommendations for management. Health facilities play a predominant role in prompting blood pressure checks (85%). Seventy percent of respondents monitor their blood pressure monthly, showing a proactive approach. A majority (60%) have readings within the recommended range (140/90 or less) in the last year. Only 5% engage in home blood pressure checks. While monthly monitoring and favorable readings are positive, there is room for improvement in home monitoring and individual awareness. The findings underscore the significance of health facilities in promoting blood pressure awareness and the need for increased individual responsibility in monitoring and managing hypertension.

Table 4 summarizes information on blood pressure-related variables among respondents. Regarding pregnancy symptoms, 20% experienced dizziness, 40% had headaches, 1% reported none, and 39% felt weakness. Concerning the impact of high blood pressure on daily activities, 20% said no, 60% acknowledged its influence, and 20% were unsure. In terms of family history, 20% had no blood relatives with hypertension, 50% did, and 30% were uncertain. As for prescribed medications, 40% were not on medication, while 60% were prescribed medication for blood pressure. The data provides insights into the prevalence of symptoms and the influence of high blood pressure on daily life. Notably, a significant portion of respondents expressed uncertainty about their family's hypertension history and the impact of high blood pressure on daily activities. This suggests a potential need for increased awareness and education regarding these aspects of hypertension. The information serves as a valuable resource for understanding patterns and trends in the surveyed population's experiences with blood pressure-related factors.

Table 5 details the body mass index (BMI) of respondents at 12, 14, 22, and 33 weeks of pregnancy, categorized by height range. The majority fall within “Normal” and “Overweight,” with consistent frequencies in “Obesity” categories. At 12 weeks, 62% are overweight, while at 14 and 22 weeks, 60% and 60% are overweight, respectively. The data reveals stable percentages in obesity categories throughout the study. Notably, at 33 weeks, 50% are overweight, and “Obesity II” and “III” each constitute 14%. The study’s longitudinal nature emphasizes the importance of monitoring BMI changes during pregnancy, highlighting potential health implications. These findings aid healthcare professionals in developing targeted interventions for pregnant individuals with varying BMI levels.

Table 6 meticulously examines the dynamics between Body Mass Index (BMI) and Blood Pressure across four distinct time points (12, 14, 22, and 33 weeks), shedding light on the intricate interplay between these health metrics. The data unveils not only the distribution of respondents among BMI categories (Underweight, Normal, Overweight) and Blood Pressure ranges (e.g., 120/80 or less, 120/80-139/89, 140/90 or more) but also assesses the statistical significance of these distributions through p-values (< 0.05).

The observed p-values below the conventional significance threshold of 0.05 imply substantial associations, emphasizing that the disparities in BMI and Blood Pressure statuses at each time point are not mere chance occurrences. This underscores the relevance of the temporal dimension in health assessments, indicating fluctuations in individual health characteristics over the 33-week span.

The temporal analysis delineates a nuanced narrative, offering insights into how BMI and Blood Pressure statuses evolve. For instance, at the initial 12-week mark, 1% of respondents are underweight, 4% are normal, and 12% are overweight, each with statistically significant p-values of 0.001. This suggests a compelling relationship between BMI categorizations and temporal progression. As the study progresses, these nuanced variations become instrumental in understanding the complex dynamics of health parameters over time, offering a valuable contribution to the broader discourse on health trends and outcomes.

Conclusion

This study sheds light on the prevalence of abnormal blood pressure patterns and BMI among pregnant women attending antenatal clinics in Central Hospital Kwale, Delta State. The results emphasize the significance of routine screening and monitoring during pregnancy to identify high-risk individuals and provide timely interventions. Health education and lifestyle modification programs should be integrated into antenatal care to promote ma-

ternal and fetal well-being, underscoring the critical role of early detection and intervention in blood pressure and BMI for maternal health. Analyzing socio-demographics, it reveals a diverse population with notable trends in age, marital status, and ethnic representation. The socioeconomic landscape indicates a varied sample, with a prevalence of business-related occupations and secondary education. While respondents show proactive blood pressure monitoring, emphasis on home monitoring and individual awareness is needed. Insights into pregnancy symptoms, family history, and medication usage highlight areas for heightened awareness and education. The longitudinal analysis of BMI and blood pressure establishes significant associations, emphasizing the temporal dimension in health assessments. The study contributes valuable information for healthcare professionals, advocating tailored interventions and increased awareness programs to mitigate maternal and fetal complications through a focus on promoting a healthy lifestyle during pregnancy.

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Ethical Approval

The study received ethical approval from the Institutional Review Board of Novena University, Ogume, Delta State, Nigeria.

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