ASSESSMENT OF HEREDITY AND CULTURE AS PREDISPOSING FACTORS TO HYPERTENSION AMONG WOMEN OF CHILDBEARING AGE IN KADUNA STATE, NIGERIA

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Abstract
The study assessed heredity and culture as the predisposing factors to hypertension among women of child bearing age in Kaduna state, Nigeria. Two objectives, research questions, and hypothesis were drafted. A descriptive survey design was used for the study. The population of the study comprised of 2,219,429 women of child bearing age in Kaduna state Nigeria. A sample size of three hundred and ninety-six (396) respondents were selected for the study. A multi-stage sampling procedures involving simple random, purposive and convenient sampling techniques were used to select one local government, two wards, two primary health care centres and women of child bearing age as respondents for the study. A heredity and culture as the predisposing factors to hypertension (HCPFH) questionnaire was used as instrument for data collection. Spearman brown prophecy formula was used to analyse the data, a reliability index value of 0.78 was obtained, which means that the instrument is reliable. A Descriptive statistic of frequencies and percentages, mean and standard deviation was used to analyse the research questions respectively. The inferential statistics, one sample t-test was used to test the hypotheses at 0.05 level of significance. The results on effect of heredity as a predisposing factor of hypertension among women of childbearing age in Kaduna state is significant ($t=4.962$ $p = 0.000$), culture as a predisposing factor of hypertension among women of childbearing age in Kaduna state is significant ($t= 5.161$ $p = 0.000$). Based on the findings of the study, the study concluded that heredity and culture are a predisposing factors of hypertension among women of childbearing age in Kaduna state. Based on the conclusion drawn, it was recommended that health educators should intensify awareness campaigns on hypertension and its risk factors, especially focusing on heredity and culture.
Keywords: Hereditary, Culture, Predisposing factors, Women.

Introduction
Women of childbearing age represent a vital segment of any society due to their central role in reproduction, family health, and socioeconomic development. Their health and well-being directly influence not only maternal and child outcomes but also the overall health profile of the community. Ensuring optimal health among women in this age group is, therefore, a cornerstone of public health priorities, particularly in low- and middle-income countries like Nigeria where maternal morbidity and mortality remain major challenges (Livingston, 2023).
One of the most significant threats to maternal health in this demographic is hypertension and hypertensive disorders in pregnancy (HDP). Hypertension, also known as high or raised blood

pressure, is a condition in which blood vessels have persistently elevated pressure. Each time the heart beats, it pumps blood into the vessels, and blood pressure is created by the force of blood pushing against the arterial walls (World Health Organization, 2024). When the pressure remains consistently high, it strains the heart and blood vessels, predisposing individuals to cardiovascular, renal, and cerebrovascular complications. Globally, hypertension is a major cause of premature death, affecting approximately one in four men and one in five women over a billion people worldwide (WHO, 2022).

In sub-Saharan Africa, including Nigeria, hypertension and its complications are of growing public health concern. The burden of the disease is disproportionately high in low- and middle-income countries, where limited awareness, inadequate healthcare infrastructure, and rising urbanization have contributed to an epidemiologic shift from communicable to non-communicable diseases (Xiong, 2020). Among women of reproductive age, the problem is further compounded by unique biological and social determinants that make them particularly vulnerable to hypertensive disorders during pregnancy.

Heredity plays a major non-modifiable role in the development of hypertension. Family history is a robust predictor of the condition due to inherited genetic variants and shared household exposures such as high salt intake and unhealthy lifestyles. Studies from West Africa have shown meaningful familial clustering of blood pressure and identified candidate genetic loci associated with hypertension (Yako et al., 2018). Measuring family history and collecting family pedigree data are critical steps toward distinguishing inherited risk from modifiable environmental factors (Thalia, 2024).

Culture equally shapes exposure to and perception of hypertension risk factors. In many Nigerian communities, cultural acceptance of larger body size, reliance on traditional remedies, and low prioritization of routine screening hinder early detection and treatment adherence (Miezah et al., 2024). Studies in sub-Saharan Africa have shown that dependence on herbal preparations and traditional healers is often associated with delayed presentation and poor blood pressure control (Lassale et al., 2022). Moreover, dietary habits, such as the consumption of high-salt traditional foods and the growing adoption of Western diets low in potassium, further increase the risk of elevated blood pressure (United Nations, 2021).

Access to healthcare services also plays a crucial role in the prevention and management of hypertension among women of childbearing age. Limited access to prenatal care, inadequate awareness of hypertension symptoms, and misconceptions that the disease primarily affects older adults contribute to under diagnosis and late presentation. Strengthening antenatal care services and implementing culturally sensitive health education programmes can help reduce the burden of hypertension and related pregnancy complications in Kaduna State and beyond (Livingston, 2023). Despite substantial research on the determinants of hypertensive disorders in pregnancy in developed countries, there remains a paucity of data on the predisposing factors among women of childbearing age in Nigeria. This study, therefore, aims to assess the predisposing factors to hypertension among women of childbearing age in Kaduna State, with particular attention to the influence of heredity, culture, and healthcare access on the prevalence of hypertensive disorders.

Statement of the Problem

Hereditary predisposition plays a notable role in the increasing burden of hypertension among women in Kaduna State, as a family history of the condition significantly elevates individual risk. The influence of lifestyle choices such as poor dietary habits, physical inactivity, alcohol consumption, smoking, and obesity further compounds this genetic vulnerability. Rapid urbanization and changing food patterns have led many women to adopt high-calorie diets with low nutrient value, while sedentary work routines reduce physical activity, creating an environment conducive to hypertension development.

Cultural beliefs and practices in many parts of Kaduna State further influence hypertension risk and management. Traditional dietary patterns emphasizing high salt intake, coupled with cultural restrictions that discourage women from engaging in certain physical activities or seeking timely medical care, worsen vulnerability. In some communities, hypertension is still perceived as a spiritual or transient illness rather than a chronic medical condition, leading to poor adherence to treatment and delayed diagnosis.

Objectives of the Study

The following are the objectives:

1. Determine hereditary as predisposing factor to hypertension among women of child bearing age in Kaduna state.
2. Determine culture as predisposing factor to hypertension among women of child bearing age in Kaduna state.

Research Questions

The following are questions drafted;

1. What are the hereditary predisposing factor to hypertension among women of child bearing age in Kaduna state?
2. What are the cultural predisposing factor to hypertension among women of child bearing age in Kaduna state?

Hypotheses

The following are objective for the study;

1. Hereditary does not significantly predispose hypertension among women of child bearing age in Kaduna state.
2. Culture does not significantly predispose hypertension among women of child bearing age in Kaduna state.

Methodology

This study aimed to assess the predisposing factors of hypertension among women of childbearing age in Kaduna state, Nigeria. A descriptive survey research design was adopted for the study. This design was chosen because it allows for the systematic description and analysis of characteristics, attitudes, and behaviors of a specific population without manipulating any variables. It also enables the researcher to clearly define the research problem, collect relevant data, and report findings that represent the population of women of childbearing age in Kaduna state.

The population of the study comprised all hypertensive and non-hypertensive women of childbearing age in Kaduna state. According to the 2024 National Population Commission**,** the

state has an estimated population of 10,088,312 people, out of which 2,219,429 are women of childbearing age. Kaduna state is divided into 23 local government areas distributed across three senatorial zones. The sample size for the study was 396 respondents**,** determined using the Research Advisors Sample Size Table (2006), which recommends that for a population of about 2.5 million, a sample of 396 is adequate at a 95% confidence level and 0.05 margin of error. A multi-stage sampling procedure was employed. At the first stage, simple random sampling was used to select three local government areas one from each senatorial zone. The second stage involved randomly selecting six political wards, two from each chosen LGA. The third stage used proportionate sampling to determine the number of respondents to be drawn from the selected Primary Health Care (PHC) centres in each ward using the formula: (population size × desired sample size) / total population of selected wards. Lastly, convenience sampling was used to select eligible respondents at each PHC facility. In total, six PHCs were sampled two in each senatorial zone with 66 respondents drawn from each facility, giving a total of 396 participants.

The instrument for data collection was a structured questionnaire titled "Assessment of Predisposing Factors to Hypertension among Women of Childbearing Age in Kaduna State, Nigeria." The questionnaire contained seven sections. Section A gathered examined hereditary factors, investigated cultural influences. Each item was designed to elicit responses on a scale of agreement or disagreement, providing quantitative data for analysis. To ensure validity, the instrument was reviewed by five experts from the Department of Human Kinetics and Health Education, Ahmadu Bello University, Zaria. Their feedback on the clarity, relevance, and appropriateness of the items was incorporated into the final version of the questionnaire to ensure it accurately measured the intended variables.

For the procedure of data collection**,** an introductory letter was obtained from the Department of Human Kinetics and Health Education, Ahmadu Bello University, Zaria, and presented to the Executive Secretary of the Kaduna State Primary Health Care Development Board for approval. Permission was subsequently sought from the Health Secretaries of the selected LGAs. Six trained research assistants one per ward were engaged to support data collection. The researcher and assistants visited each selected PHC, introduced the study to the officers in charge, and obtained consent from the women of childbearing age attending the facility. The questionnaires were then administered directly to the respondents and retrieved immediately upon completion to ensure a high response rate and accuracy of data.

To determine the hereditary predisposing factor to hypertension predisposing factor to hypertension were computed and compared using mean scores and standard deviation. The benchmark mean was fixed at 2.50 as the midpoint average of the 4 point scale used for the measurement. After the questionnaires were retrieved, data were coded and analyzed using both descriptive and inferential statistics. Descriptive statistics such as frequencies and percentages were used to summarize the demographic characteristics of respondents, while means and standard deviations were used to answer the research questions. To test the hypotheses, a one-sample t-test was employed at a 0.05 level of significance ($\alpha = 0.05$). This analytical approach helped determine whether the identified factors significantly predispose women of childbearing age in Kaduna State to hypertension.

Results

Research Question One: What are the hereditary predisposing factor to hypertension among women of child bearing age in Kaduna state?

Table 1 Mean score and standard deviation hereditary as a predisposing factor to hypertension among women of child bearing age

S/N	Hereditary as a predisposing factor to hypertension	Mean	Std. Dev.
1	My family has history of hypertension	2.84	0.603
2	I am aware of my family's history of hypertension	3.23	0.811
3	My family has certain inherited traits that can predispose us to hypertension such as genetic variants, salt sensitivity, genetic kidney impairment, overactive sympathetic nervous system, endothelial dysfunction, and obesity.	2.93	0.384
4	Women of child bearing age in my family develops hypertension during pregnancy.	2.99	0.414
5	Members of my family are genetically predispose to obesity.	2.49	0.721
6	My parent or siblings have hypertension	2.35	0.541
	Aggregate	**2.80**	**0.679**

(Decision mean 2.5)

Table 1 presented the mean scores of responses concerning hereditary predisposing factor to hypertension among women of child bearing age in Kaduna state, Nigeria. Hereditary has noticeably affected hypertension, as indicated by a mean score of 2.80 and standard deviation of 0.679. This suggests that various hereditary traits in women of child bearing age is a determinant in hypertension.

Research Question Two: What are the cultural predisposing factors to hypertension among women of childbearing age in Kaduna state?

Table 2: Mean score and standard deviation culture as a predisposing factor to hypertension among women of child bearing age

S/N	Culture	Mean	Std. Dev.
1	Cultural beliefs discourage women from seeking medical attention for hypertension-related symptoms.	2.99	0.432
2	Traditional diets consumed in my community contribute to high blood pressure among women.	2.33	0.640
3	There is cultural pressure for women to bear many children, which increases stress levels.	2.95	0.580
4	Use of traditional herbs for treating illnesses is more accepted than modern medicine.	2.42	0.350
5	Women are expected to handle all household responsibilities regardless of their health.	2.79	0.656
6	Religious or cultural practices delay early diagnosis and treatment of hypertension.	2.65	0.788

7	Family decisions regarding a woman's health are often influenced by cultural norms rather than medical advice.	2.92	0 .466
	Aggregate	**2.72**	**0.543**

(Decision mean 2.5)

Table 2 presented the mean scores of responses concerning culture as predisposing factor to hypertension among women of child bearing age in Kaduna state, Nigeria. Culture has noticeably affected hypertension, as indicated by a mean score of 2.72 and standard deviation of 0.543. This suggests that various culture in women of child bearing age is a determinant in hypertension.

Hypotheses Testing

Hypothesis I: Hereditary does not significantly predispose factor to hypertension among women of child bearing age in Kaduna state. .

Table 3: One sample t-test on hereditary does not significantly as predispose hypertension among women of childbearing age in Kaduna state

Variable	Test	N	Mean	Std. Dev.	Std. Error	t-value	df	p-value
Hereditary as predisposing factor of hypertension	One sample t-test	30	2.80	0.679	0.008	4.962	29	0.001
Test Mean		30	2.50	0.000	0.000			

(t-critical = 1.98, p <0.05)

The observed t-value for the test (4.962) obtained at 29 degree of freedom (df) is higher than the critical value indicated at the bottom of the table. The p-value for the test was 0.001 (p < 0.05). There observations provided sufficient evidence for rejecting the null hypothesis. The null hypothesis that Hereditary does not significantly predispose factor to hypertension among women of child bearing age in Kaduna State. is therefore rejected. The result shows that hereditary is a predisposing factor in hypertension among women of childbearing age in Kaduna state.

Hypothesis II: Culture does not significantly predispose hypertension among women of child bearing age in Kaduna state. .

Table 4: One sample t-test on significant culture as predisposing factor of hypertension among women of childbearing age in Kaduna state

Variable	Test	N	Mean	Std. Dev.	Std. Error	t-value	df	p-value
Culture as predisposing factor of hypertension	One sample t-test	30	2.72	0.543	0.010	5.161	29	0.000
Test Mean		30	2.50	0.000	0.000			

(t-critical = 1.98, p <0.05)

The observed t-value for the test (4.962) obtained at 29 degree of freedom (df) is higher than the critical value indicated at the bottom of the table. The p-value for the test was 0.001 (p < 0.05). There observations provided sufficient evidence for rejecting the null hypothesis. The

null hypothesis that Culture does not significantly predispose hypertension among women of child bearing age in Kaduna State is therefore rejected. The result shows that culture is a predisposing factor in hypertension among women of childbearing age in Kaduna state.

Discussion of Findings

Hypothesis one test revealed that women of childbearing age are positively affected heredity as predisposing factor of hypertension. This findings agrees with the finding Ibrahim, and Ahmed, (2021) the study indicates heredity as an independent risk factor. A study also by Wright *et al*., (2015) revealed that a systolic blood pressure target of less than 120 mm Hg, compared to the standard target of less than 140 mm Hg, led to reduced rates of cardiovascular events and mortality. Also study by Collaboration, (2017) stated a comprehensive analysis of global trends in hypertension from 1990 to 2015 indicated a rising burden worldwide, with significant links to cardiovascular diseases (NCD).

Hypothesis two findings revealed that culture is a predisposing factor of hypertension among women of childbearing age in Kaduna State, Nigeria. Women of childbearing age are positively affected by culture as predisposing factor of hypertension. This findings agrees with the finding by Abdullahi, and Bello (2020) explored that cultural norms, traditional dietary practices, and local beliefs influence the prevalence of hypertension. It indicates a significant association.

Conclusion

Based on the findings, the study concluded that heredity and culture are predisposing factors to hypertension among women of child bearing age in Kaduna state, Nigeria.

Recommendations

The study has the following recommendations:

1. Researchers should conduct further longitudinal and community-based studies to explore other emerging risk factors of hypertension among women of childbearing age.
2. Health educators should intensify awareness campaigns on hypertension and its risk factors, especially focusing on lifestyle, stress management, and maternal health.

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