

Research Article

Knowledge of Hypertension, Related Complications and Prevalence Among Academic Staff of Faculty of Education, Niger Delta University, Bayelsa State, Nigeria

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Abstract

Background: Hypertension represents a significant public health challenge globally, with university lecturers potentially facing increased risk due to occupational stress and lifestyle factors. Limited data exist on the burden of hypertension among this population; hence this study was conducted to fill that knowledge gap. **Methods:** It was a descriptive cross-sectional study conducted among academic staff in Faculty of Education, Niger Delta University, Bayelsa State, south-south Nigeria, between 8th February and 19th June, 2026. Given the relatively small and accessible size of the population, the researchers adopted the total population sampling (census) method, in which all the academic staff members were included in the study. The World Health Organization STEP-wise approach to non-communicable diseases surveillance was adapted for the study. A structured, adapted instrument titled “Hypertension Knowledge-Level among Academic Staff Questionnaire (HK-LASQ)” was used for collection of data. The reliability of the instrument was 0.86, which was established using Kuder-Richardson Formula 20 (KR-20). Data collection involved the use of structured questionnaire and clinical measurement of blood pressure. The data generated from this study were analyzed using frequency tables percentages and z-test statistical tool. All statistical analyses were performed using IBM SPSS V.25.0. **Results:** The results revealed that, the overall knowledge of respondents on hypertension was better (67.2%), but poor in hypertension related complications (36.9%). Hypertension prevalence was 60.9% (n = 67), with 53.7% (n = 36) of participants previously diagnosed. And out of this number, 63.9% were receiving treatment. **Conclusion:** Despite better knowledge of hypertension as a health condition, the prevalence remains elevated among academic staff of Faculty of Education, Niger Delta University, with significant gaps in diagnosis and treatment. The high prevalence rate observed has a serious implication for institutional policy framework for hypertension that could assist in addressing risk-factors and improve healthcare access among academic staff of the Faculty of Education.

Keywords

Heart Failure, Hypertension, Kidney Failure, Occupational Stress, Risk Factors

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1. Introduction

Hypertension, commonly known as high blood pressure, is one of the leading non-communicable diseases and a major global public health concern in the 21st century. Blood pressure is the pressure the heart needs to pump and deliver blood to all parts of the body [22]. When this pressure is higher than normal, it is called high blood pressure or hypertension. According to [20], hypertension is diagnosed when systolic blood pressure is consistently 140 mmHg or higher and/or diastolic blood pressure is 90 mmHg or higher on repeated measurements. It is often referred to as the "silent killer" because many individuals remain asymptomatic until complications develop that may lead to death [3]. As explained by [16], it is associated with continuous elevated arterial blood pressure, which increases the risk of cardiovascular diseases, stroke, kidney disease, and premature death among individuals and families in the community.

The burden of hypertension has increased over the past three decades globally. According to [23], approximately 1.4 billion adults aged 30-79 years had hypertension in 2023, representing almost 33% of the population in this age group. As observed by [15], the number increased from about 650 million in 1990 to 1.4 billion in 2024. As averred by [14], and [16], the burden is disproportionately intense in low-and middle-income countries (LMICs) of the world. According to [24], two-third of adults with hypertension live in LMIC, where the health systems are persistently challenged by series of problems that greatly affect screening, diagnosis, treatment and access to preventive information. According to [14] and [24], there is worldwide major treatment and control gap among hypertensive patients, with about 600 million individuals (44%) unaware they have the condition, about 630 million diagnosed and treated and 320 million have their blood pressure appropriately controlled. This pronounced treatment gap indicates a significant missed opportunity for the prevention of cardiovascular diseases and premature death.

The major causes of hypertension among university academic staff include persistent stress and lifestyle behaviours [2]. Among university academic staff, hypertension has become a common health challenge due to their nature of work that exposes them to multiple occupational stressors. As explained by [2], occupational stress is recognized as one of the most important determinants of hypertension among academic staff. Continuous pressure to achieve academic excellence exposes academics to several stress instigating activities that activate the individual's physiological stress responses that may lead to sustained high blood pressure. As affirmed by [12], some of these stressors include heavy teaching responsibilities, research demands, administrative duties, publication pressures, grant writing, student supervision, and the need to meet promotion criteria. These responsibilities often result in prolonged working hours, mental stress, physical inactivity, irregular eating habits, inadequate sleep, and poor work-life bal-

ance [9]. All of which can significantly contribute to the development of hypertension. Furthermore, prolonged sitting during meetings, research, and computer-based work reduces physical activity and increases the risk of obesity which is a strong risk factor of hypertension [18]. Lifestyle behaviours also play a significant role in the development of high blood pressure among university academic staff. Many academics skip meals, consume fast foods rich in salt and saturated fats, drink excessive caffeinated beverages to stay alert, and engage in little regular exercise because of demanding work schedules. These unhealthy lifestyle behaviours further increase cardiovascular risk that might result to hypertension.

The prevalence of hypertension among university lecturers varies across countries but is generally high in low-and middle-income countries [23]. Studies conducted in Nigeria and other African countries have reported prevalence rates ranging from approximately 20 to over 50 percent, depending on the age distribution, lifestyle factors, and diagnostic criteria used [14]. The prevalence of hypertension tends to increase with advancing age, sex, obesity, family history of hypertension, excessive alcohol consumption, smoking, high dietary salt intake, and persistent inactivity [8]. Hypertension among academic staff negatively affects both individual health and institutional productivity. Poorly controlled hypertension may result in headaches, fatigue, reduced concentration, absenteeism, decreased teaching effectiveness, reduced research productivity, increased healthcare costs, and a higher risk of severe complications such as stroke, heart failure, myocardial infarction, and chronic kidney disease.

Health interventions such as lifestyle modification and medications can lower blood pressure and decrease the risk of complications [19]. Lifestyle modification measures include weight loss, physical exercise, smoking cessation, reduced intake of salt, and alcohol and healthy diet. If lifestyle modification measures are not sufficiently providing the expected results, appropriate medications are used. Preventing and controlling hypertension among university academic staff requires a comprehensive and integrated approach that involves the implementation of workplace health promotion programmes such as regular blood pressure screening, health education, stress management interventions, opportunities for physical activity, healthy food options within campus environments, smoking cessation support, moderation of alcohol consumption, and routine medical check-ups. Institutional policies that promote work-life balance and reduce excessive workload can also contribute significantly to improving cardiovascular health among academic staff.

The level of knowledge of hypertension, including complications and preventive measures is very pivotal in the planning of interventional programmes aimed at controlling and preventing high blood pressure among members of the community [6]. Although academic staff generally possess high educational qualifications, this does not necessarily translate

into adequate knowledge of hypertension, its risk factors, warning signs, related disorders, preventive measures, and appropriate health-seeking behaviour. Research has shown that even among university employees, important gaps in knowledge and preventive practices still exist [16]. Without the basic knowledge of hypertension, individuals may not see it very essential to be involved in healthy lifestyles that could significantly reduce risk of hypertension among them [3].

Furthermore, hypertension related complications are health conditions that results from sustained or persistently elevated blood pressure over a period of time without appropriate health care interventions [17]. The major organs commonly affected are the heart, brain, kidneys, eyes and blood vessels. As explained by [11], important examples of hypertension related complications include, stroke, heart diseases, chronic kidney disease (hypertensive nephropathy), brain dysfunction (hypertensive encephalopathy) and visual impairment (hypertensive retinopathy). According to [10], these problems are responsible for significant disability, reduced productivity, and increased healthcare costs. Poor knowledge of these complications may discourage routine blood pressure screening and timely medical intervention, thereby increasing the likelihood of adverse health outcomes [13].

At Niger Delta University, especially in the Faculty of Education, there is limited documented evidence regarding the level of knowledge of hypertension and its related complications as well as the prevalence of hypertension among academic staff. Without such information, it is difficult to determine the extent of the problem and design appropriate interventions aimed at improving awareness, encouraging regular screening, and reducing the burden of hypertension among staff. It is against this background that this study sought to assess the knowledge of hypertension, related complications, and the prevalence of hypertension among academic staff of the Faculty of Education, Niger Delta University, Bayelsa State.

2. Materials and Methods

It was a descriptive cross-sectional study conducted in the Faculty of Education, Niger Delta University, Wilberforce Island, Bayelsa State, South-south Nigeria. The descriptive cross-sectional survey design was adopted because, it enables the researcher determine the distribution of health conditions and describing existing characteristics without manipulating any variable. The study was carried out between 8th February and 19th June, 2026. The target population of the study comprised all the academic staff of the Faculty of Education, Niger Delta University, Wilberforce Island, Bayelsa State, which according to records obtained from the university registry as at January, 30th 2026, was 122 academic staff, in 10 functional departments. Given the relatively small and accessible size of the population, the researcher adopted the total population sampling (census) method, in which all the academic staff members were included in the study. As affirmed by [7], when

a population is small and accessible, researchers may study the entire population rather than select a sample. The World Health Organization STEP-wise approach to non-communicable diseases surveillance was adopted for the study. The WHO STEP-wise framework is WHO-developed standardized framework for monitoring non-communicable diseases through questionnaire assessment, physical measurement and biochemical measurements. The framework consists of three basic steps; the first two steps of the approach were utilized for this study.

A structured and adapted instrument titled “Hypertension Knowledge-Level among Academic Staff Questionnaire (HK-LASQ)” was used for collection of data. The HK-LASQ was made up of 21 items and divided into sections A and B. Section A elicited respondents’ socio-demographic characteristics, with 3 items while section B consisted of 18 items based on knowledge of hypertension and associated complications. The questionnaire was structured with response options such as true or false with a scoring formular of (correct answer =1 and incorrect answer 0). A higher score indicated better or high extent of knowledge of hypertension and low score indicated poor or low extent of knowledge. HK-LASQ, which was adapted from the Hypertension knowledge -Level Scale (HK-LS) by [8], assessed knowledge of hypertension across several domains, including definition, medication, drug adherence, complications, lifestyle, blood pressure measurement, and risk factors. The reliability of the instrument was established using Kuder-Richardson Formula 20 (KR-20). The instrument was administered to 20 academic staff University of Africa Toruorua, Sagbama LGA, Bayelsa State and were retrieved that same day. The returned copies of the instrument were cleaned, coded, analyzed, and it yielded an overall internal consistency of 0.86, which was adjudged to be appropriate for the instrument to be used for the study. Data collection was in two stages, that involved the use of structured questionnaire and clinical measurement of blood pressure of participants.

In step one, data were collected from the 122 academic staff of the Faculty of Education, Niger Delta University using HK-LASQ. The process was carried out through a cloud-based online survey platform, using the social messaging mobile application WhatsApp. A special link was provided through the official WhatsApp platform of the faculty. Respondents were instructed to click the link and were directed to the online survey portal and completed the questionnaire online. Fifteen respondents were excluded from the analysis due to inappropriate data on more than 20% of the questionnaire items, while 107 were included resulting to 87.7% complexion rate.

In step two, objective data were collected by physically measuring the participants’ blood pressure in millimeters of mercury (mmHg), which was used in determining the prevalence of hypertension among academic staff of Faculty of Education Niger Delta University. The measurement was first done during the monthly Statutory Board Meetings of the Faculty of Education, in which 12 academic staff were absent., hence the total number of academic staff participated at this

level were 110. A follow-up measurement was also done conveniently in their various offices. The data were presented in table across 3 domains, such as overall hypertension status, previous knowledge and treatment status. In each staff, blood pressure was measured twice with a 5-minute interval between the two measurements using Omron x-3 digital sphygmomanometer. The average of the two measurements was used as basis for classifying staff as either normal blood pressure ($\leq 140/80$ mmHg), or high blood pressure (above 140/80mmHg).

The data generated from this study were analyzed using frequency tables and percentages for the research questions while z-test statistical tool was used to test the null hypotheses set at 0.05 level of significance. The total scores were categorized into better and poor levels of knowledge, in line with a modified version of World Health Organization standardized Knowledge-Attitude-Practice (KAP) survey guidelines commonly used in public health researches. Based on WHO KAP survey recommendations, knowledge scores were categorized

as ≥ 60 better knowledge, while $< 60\%$ is poor knowledge. All statistical analyses were performed using IBM SPSS V.25.0.

3. Results

A total of 120 academic staff participated at the first stage of study and only 107 correctly filled copies of the questionnaire were analyzed. The mean age was 50.5 ± 19.8 years, with the largest proportion 57.0%, ($n = 61$) aged 41 to 60 years. Majority of respondents were females, 51.4% ($n = 55$), while 48.6% ($n = 52$) were males. This variable was later examined in relation to knowledge levels—see below—to explore whether gender difference exist their knowledge of hypertension and disorders. Concerning rank of respondents, majority were Lecturer I, 31.8% ($n = 34$) and the least number of respondents were others (graduate assistants and assistant lecturers) 9.3% ($n = 10$).

Table 1. Socio-demographic Characteristics of study Respondents ($N = 107$).

Characteristics	Frequency (n)	Percentage (%)
Age (Years)		
Below 40 years	35	32.7
41-60 years	61	57.0
Above 61 years	11	10.3
Gender		
Male	52	48.6
Female	55	51.4
Rank		
Professor	13	12.2
Senior Lecture	20	18.7
Lecturer I	30	28.0
Lecturer II	34	31.8
Others	10	9.3

Overall knowledge of hypertension as a health condition was better among academic staff of Faculty of Education, Niger Delta University, with a cluster percentage of 67.2 for true response options and 32.8 for false options. As shown in the Table 2, majority of participants went for true options in

items 4 to 9, and 14, indicating the better knowledge in all these items. However, for items 10 to 13, majority of respondents ticked false, indicating poor knowledge in those four items.

Table 2. Respondents' knowledge on hypertension (N = 107).

S/N	Characteristics	True		False	
		Frequency	Percentage	Frequency	Percentage
4	Hypertension is a condition with sustained high blood pressure	87	81.3	20	18.7
5	Individuals can have hypertension without notifiable symptoms	71	66.4	36	33.6
6	Hypertension can affect both young and older adults	69	64.5	38	35.5
7	Hypertension can be managed through appropriate treatment and lifestyle modification	94	87.9	13	12.1
8	People with hypertension should take hypertensive medicines regularly	65	60.7	42	39.3
9	Hypertensive medicines should be taken according to instructions of a health personnel	89	83.2	18	16.8
10	Excessive intake of salt may increase the risk of hypertension	47	43.9	60	56.1
11	Regular physical exercise can prevent hypertension	49	45.8	58	54.2
12	Being overweight or obese can increase the risk of hypertension	85	78.4	22	20.6
13	Excessive alcohol consumption and smoking can contribute to hypertension	38	35.5	69	64.5
14	Regular blood pressure measurement is important for detecting hypertension?	98	91.6	9	8.4
Cluster percentage			67.2		32.8

Table 3 displays respondents' knowledge on hypertension related complications. Among participants, uncontrolled hypertension can increase the risk of stroke was only known by 47.7% (n = 50). Uncontrolled hypertension can cause kidney damage or kidney failure was only known by few 29.9%, (n = 32), hypertension can damage the heart and increase heart diseases was only known by 38.6%, (n = 41), a large proportion they didn't also know that hypertension can lead to heart

failure high 35.5%, (n = 38). Hypertension can cause vision problems was only known by 37.4% (n = 40), Hypertension can damage the blood vessels supplying blood to the brain was by only (44.4%) (n = 48). Hypertension increases the risk of dementia and cognitive impairment was only by 25.2%, (n = 27). Overall level of knowledge of respondents on hypertension related complications was poor as reported in Table 3 with a cluster percentage of 36.9.

Table 3. Respondents' knowledge on hypertension related complications (N = 107).

S/N	Characteristics	True		False	
		Frequency	Percentage	Frequency	Percentage
15	Uncontrolled hypertension can increase the risk of <i>Stroke</i>	50	47.7	57	53.3
16	Uncontrolled hypertension can cause <i>kidney damage</i> or kidney failure	32	29.9	75	70.1
17	Hypertension can damage the <i>heart</i> and increase the risk of heart diseases.	41	38.3	66	61.7
18	Long-term Hypertension can cause <i>heart failure</i>	38	35.5	69	64.5
19	Severe and prolonged hypertension can cause <i>vision</i> problems	40	37.4	67	62.6
20	Uncontrolled hypertension can increase the risk of <i>dementia</i> and	27	25.2	80	74.8

S/N	Characteristics	True		False	
		Frequency	Percentage	Frequency	Percentage
	<i>cognitive impairment</i>				
21	Hypertension can damage the blood vessels supplying blood to the brain	48	44.9	59	55.1
	Cluster percentage		36.9		63.1

Table 4 shows the prevalence of hypertension among academic staff of Faculty of Education, Niger Delta University. The table revealed that, the general prevalence rate of hypertension was 60.9% (n = 67). Out of these number, 36 participants, representing 53.7% of the total sample were previously

diagnosed of hypertension, meaning that 46.3% of hypertensive participants were newly diagnosed. Among those previously diagnosed with hypertension, 63.9% (n = 23) were currently receiving antihypertensive medications.

Table 4. Hypertension prevalence and treatment status among academic staff of Faculty of Education, Niger Delta University (N = 110).

Domain	Frequency (n)	Percentage (%)
Overall hypertension Status		
Hypertensive	67	60.9
Normotensive	43	39.1
Previous Knowledge (n=67)		
Previously diagnosed	36	53.7
Newly diagnosed	31	46.3
Treatment Status (36)		
Currently on treatment	23	63.9
Not on treatment	13	36.1

Table 5 presents independent z-test summary on difference in knowledge of hypertension between male and female academic staff of Faculty of Education, NigerDelta University. The z-tests showed that there was no statistically significant difference in knowledge of hypertension between male and female respondents, as the *p-value* of 0.086 was greater than

0.05 level of significance, at 105 degree of freedom. The null hypothesis was retained, indicating that male and female academic staff Faculty of Education had comparable levels of knowledge of hypertension, and gender did not significantly influence their knowledge scores.

Table 5. Independent z-test summary on difference in knowledge of hypertension between male and female academic staff of Faculty of Education (N = 107).

Gender	N	Mean	SD	df	z	<i>p-value</i>	Decision
Male	52	35.63	2.036	105	191	0.086	Not Sig
Female	55	21.53	2.231				
	107						

($p\text{-value} > 0.05$)

Table 6 displays independent z-test summary on difference in knowledge of hypertension related complications between male and female academic staff of Faculty of Education, NigerDelta University. The z-tests showed that there was no statistically significant difference in knowledge of hypertension related complications between male and female respondents,

as the $p\text{-value}$ of 0.216 was greater than 0.05 level of significance, at 105 degree of freedom. The null hypothesis was accepted, indicating that male and female academic staff Faculty of Education had comparable levels of knowledge of hypertension related health complications, and gender did not significantly influence their knowledge scores.

Table 6. Independent z-test summary on difference in the knowledge of hypertension related complications between male and female academic staff of Faculty of Education ($N = 107$).

Gender	N	Mean	SD	df	z	p-value	Decision
Male	52	62.43	3.42	105	39.34	0.216	Not Sig
Female	55	32.42	2.21				
	107						

($p\text{-value} > 0.05$)

4. Discussion of Findings

The findings of this study revealed that academic staff of the Faculty of Education, Niger Delta University, demonstrated better knowledge of hypertension. This finding indicates the fact that most of the participants were relatively aware of hypertension as a major non-communicable disease, which includes its basic features, risk factors and preventions. The reasonably better level of knowledge may be attributed to the educational background of the respondents, their access to health information and their professional exposure to health-related information within the university community. This result is significant because adequate knowledge of hypertension is an indispensable requirement for adopting appropriate preventive behaviours, early detection and effective management [1]. The finding is consonant with the assertion of [22]. The World Health Organization affirmed that increasing awareness and knowledge of hypertension is an important component of improving prevention, detection and control of the disease. Similarly, a systematic review by [10] and, [3], demonstrated the substantial global burden of hypertension and the importance of awareness and effective management in reducing its complications.

Nevertheless, the study found that respondents had poor knowledge of hypertension related complications. This result simply indicates that although the academic staff had general knowledge on hypertension, their understanding of the complications associated with uncontrolled hypertension was inadequate. This distinction is important because knowledge of hypertension does not necessarily translate into knowledge of its potential consequences [16]. Poor

knowledge of related health complications may reduce the apparent seriousness of the condition and may influence individuals' inspiration to undergo routine blood pressure screening and adhere to preventive and treatment measures [4, 21].

The study also revealed a high prevalence of hypertension among the academic staff. This finding is of great public health concern because hypertension commonly affects sufferers without symptom and may remain undiagnosed for a long period of time. The high prevalence revealed among the respondents may reflect the influence of multiple behavioural, occupational and sociodemographic factors associated with hypertension, including increasing age, physical inactivity, unhealthy dietary practices, obesity, stress and excessive salt consumption [15]. It was also identified by the World Health Organization that, hypertension as one of the leading global risk factors for premature death and cardiovascular disease [22]. The high prevalence observed in the presence of relatively good general knowledge reinforces the need to move beyond information provision toward interventions that promote sustained healthy lifestyles, regular screening, early diagnosis and appropriate management of hypertension among university staff [1, 5]. In addition, the finding highlights that having relatively good knowledge of hypertension does not necessarily guarantee adequate prevention or favourable blood pressure status [3]. This suggests a knowledge-practice gap, whereby awareness exists but is not sufficiently translated into sustained healthy behaviours.

Furthermore, the study recorded no statistically significant difference between male and female academic staff in knowledge of hypertension. This finding indicates that gender did not significantly influence the respondents' level of

knowledge regarding hypertension. Although descriptive differences may have existed between males and females, such differences were not large enough to be considered statistically significant [12]. The finding suggests that both male and female academic staff may have comparable access to information about hypertension. It is also possible that the relatively high educational attainment of university academic staff reduces gender-related differences in access to health information. This finding is consistent with the broader understanding that health knowledge can be influenced by educational attainment, access to health information and exposure to health promotion activities rather than gender alone [3, 21].

In addition, the study also found no statistically significant difference between male and female academic staff in knowledge of hypertension related complications. This result is an indication that gender did not significantly determine respondents' understanding of complications associated with hypertension. The absence of a significant gender difference may further indicate that male and female respondents had relatively similar exposure to health information and educational resources. More importantly, because knowledge of hypertension related complications was generally poor among the respondents, the absence of a significant gender difference suggests that the knowledge deficit was not confined to either males or females. Therefore, health education interventions should target the entire academic staff population. Such interventions should particularly emphasize the consequences of uncontrolled hypertension, including stroke, heart disease, heart failure and kidney disease [16, 20]. Furthermore, the World Health Organization emphasizes that improving awareness, screening and appropriate treatment is central to reducing the burden of hypertension and its associated complications [20].

5. Conclusion

Based on the findings, the authors concluded that respondents possessed better general knowledge of hypertension but had poor knowledge of its related health disorders, while the prevalence of hypertension was high. Furthermore, neither knowledge of hypertension nor knowledge of hypertension-related disorders differed significantly by gender. This pattern suggests that general awareness alone may be insufficient to prevent hypertension and its complications. Generally, the study findings highlight the important need of strengthening hypertension education among university academic staff, with particular emphasis on the consequences of uncontrolled hypertension. The high prevalence rate observed has a serious implication for institutional policy framework for hypertension that will assist in addressing risk-factors and improve healthcare access among academic staff of the Faculty of Education.

6. Recommendations

The study recommends the following measures in accordance with the findings.

- 1) There should be a comprehensive health promotion programme within the university community that encapsulates health education with routine blood pressure screening, lifestyle counselling and referral for appropriate medical care.
- 2) Such health intervention programme should address both knowledge and behavioural risk factors and should be made available every academic session and equally to male and female academic staff.
- 3) There should be a policy framework within the university administrative system that compels both academic and non-academic staff routinely measure their blood pressure and provide treatment opportunity for diagnosed with hypertension.

Abbreviations

HK-LS	Hypertension knowledge -Level Scale
HK-LASQ	Hypertension Knowledge-Level Among Academic Staff Questionnaire

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Author Contributions

Doubrapade Walker: Conceptualization, Methodology, Formal Analysis, Investigation, Validation, Writing – original draft

Anthony Bibowei Akpe: Data Curation, Project administration, Resources, Software, Writing – review & editing

Data Availability Statement

The dataset used for analysis during the research process are available from the corresponding author on reasonable request.

Conflicts of Interest

The authors declare no conflicts of interest.

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