Original Article

Prevalence, Awareness, and Treatment of Hypertension among Older Adults: A Cross- Sectional Study in Egor Community, Edo State, Nigeria

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Abstract

Background
Hypertension is a global, long-term health issue that primarily affects adults due to accumulated risk factors. This study examined the prevalence, awareness, and treatment of hypertension among older adults in Egor Community, Edo State.
Methods
A cross-sectional design was used, involving 312 systematically selected adults. Data were collected through a validated, self-design validated questionnaire. Analysis was conducted using SPSS version 28, applying descriptive statistics, bivariate and multinomial logistic regression, and Spearman correlation at a 5% significance level.
Results
Hypertension prevalence was 51.6%, with 52.9% of participants showing low awareness. Dietary modifications included reduced sodium (93.9%) consumption of refined sugar-containing foods (91.0%), and increased fruit and vegetable intake (63.1%). Key behavioral changes were medication adherence (88.5%) and dietary adjustments (61.9%). Common physical activities were brisk walking (67.9%) and stretching (16.3%). Awareness of hypertension declined significantly with increasing age (OR = 0.570, $p < 0.001$). Awareness was significantly higher among males compared to females (OR = 1.354, $p = 0.033$). However, level of education was not a significant predictor of awareness (OR = 1.353, $p = 0.101$). In addition, a weak but statistically significant negative correlation was observed between treatment modalities and blood pressure levels ($r = -0.173$, $p = 0.002$), indicating that improved treatment modalities were associated with lower blood pressure readings
Conclusion
Effective hypertension management should integrate medication, lifestyle changes, and health education, particularly targeting older and less educated populations through tailored interventions.
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Keywords: Prevalence, Awareness, Treatment modalities, Hypertension, Lifestyle modification, Egor community

Background

Hypertension is a major global public health problem and a leading cause of preventable morbidity and mortality worldwide. It is a chronic, often asymptomatic condition characterized by persistently elevated systolic and/or diastolic blood pressure, which significantly increases the risk of cardiovascular diseases (CVDs).[1] Due to its silent nature, hypertension frequently remains undetected until serious complications arise, including damage to vital organs such as the heart, brain, and kidneys.[1] Consequently, hypertension remains one of the leading causes of premature death globally.[1]

Globally, an estimated 972 million people were living with hypertension in 2000, with projections suggesting an increase to 1.56 billion by 2025.[2] By 2021, the prevalence had risen to 1.13 billion people, affecting approximately one in four men and one in five women.[3] Africa bears the highest burden, with about 46% of adults aged 25 years and above living with hypertension.[3] In low- and middle-income countries, including Nigeria, hypertension constitutes a substantial component of the growing burden of non-communicable diseases occurring alongside communicable diseases. In Nigeria, the estimated prevalence among adults is 28.9%, with reported ranges of 6.2–48.9% for men and 10.0–47.3% for women. Urban dwellers (30.6%) appear slightly more affected than rural dwellers (26.4%).[4, 5] Hypertension disproportionately affects older adults, with prevalence rates reported to be two to four times higher than those observed in younger populations.[1] The condition is strongly associated with major cardiovascular outcomes, including myocardial infarction, cerebrovascular disease, and heart failure, and is a leading risk factor for stroke. Recent evidence has also linked hypertension to cognitive impairment and dementia.[2] Despite its high burden, awareness of hypertension remains suboptimal, particularly in developing countries. While approximately 73% of hypertensive adults in the United States are aware of their condition, only about 30% of Nigerian patients are aware of their diagnosis at the time of presentation.[6] Awareness is critical for effective hypertension control, as it promotes medication adherence and the adoption of healthy lifestyle behaviors. Improved knowledge and awareness have been shown to correlate with better treatment adherence and reduced complications.[7]

Effective management of hypertension aims to lower blood pressure and prevent target organ damage. Evidence indicates that appropriate treatment can reduce the risk of stroke by 35–40%, myocardial infarction by 20–25%, and heart failure by more than 50%.[4] However, several studies have highlighted persistent challenges in hypertension management, particularly poor treatment adherence. In the Imoru community, the prevalence of hypertension was reported to be 37.7%.[8] A study by Arshia et al. found that 68.14% of patients were non-compliant with medication, and 71.43% of those who were non-compliant reported hypertension-related complications.[9] Knowledge has been shown to significantly influence medication adherence and blood pressure control, as demonstrated in studies conducted in Ethiopia,[10] and Uzbekistan.[11]

In Nigeria, barriers to adherence commonly include forgetfulness, financial constraints, and misconceptions about long-term treatment, with 68.7% of patients reported to have low adherence to antihypertensive therapy.[12] Other studies found that only 40.7% of patients had good knowledge of hypertension, while up to 90% were non-compliant with prescribed treatment regimens.[13] Additionally, a study conducted in Obosi reported that 88.1% of hypertensive patients experienced a low quality of life.[14] With Nigeria's growing older adult population, improving awareness and education on hypertension is essential for guiding effective policy formulation and reducing its overall disease burden.

Despite the substantial global and national evidence on hypertension, there remains a significant gap in localized, community-specific data, particularly among older adults. In Egor Community, Benin City, Edo State, limited information exists on the prevalence of hypertension, the level of awareness among older adults, and the treatment modalities they adopt. Furthermore, community-specific factors such as socio-cultural beliefs, use of traditional remedies, lifestyle practices, and access to healthcare services influencing hypertension management have not been adequately explored. These gaps highlight the need for focused research within this community. Therefore, this study aimed to assess the prevalence, awareness, and treatment modalities of hypertension among older adults in the Egor Community, Benin City, Edo State, to generate evidence to inform targeted interventions and improve health outcomes in this vulnerable population.

Methods

Study design and setting

This study employed a community-based cross-sectional research design to assess hypertension-related outcomes among older adults. The study was conducted in Egor Community, located in Egor Local Government Area of Benin City, Edo State, Nigeria.

Study population

The study population consisted of older adults aged 50 years and above who were residents of Egor Community, Edo State.

Inclusion criteria

Participants were eligible for inclusion if they were aged 50 years or older at the time of data collection, had lived in Egor Community for at least six months prior to the study, were able to communicate effectively in English or a local language (either verbally or in writing), provided informed consent, and were available throughout the data collection period.

Exclusion criteria

Particioants had resided in Egor Community for less than six months, or were unavailable during the data collection period. Participants were also excluded if they were unable to communicate effectively in English or a local language (either verbally or in writing) and no appropriate assistive communication support (e.g., caregiver facilitation or other reasonable accommodations) was available at the time of data collection. This criterion was applied solely to ensure accurate data collection and not to systematically exclude individuals with communication impairments. However, the potential for selection bias arising from this limitation is acknowledged.

Sample size determination

The sample size was derived using Fisher's formula for determining sample size in large or unknown populations,[25] as shwn below:

$$n = \frac{z^2 pq}{d^2}$$

Where;

n = sample size

z = the standard normal deviation (1.96), which is equivalent to 95% confidence interval

p = the proportion of population of older adults with hypertension = 24.5% = 0.245.[26]

q = 1-p = 0.755

d = Degree of precision = 0.05

Thus; n = [1.9602 x 0.245 x 0.755] / 0.052

= 284.24

= 284

A 10% non-response rate was assumed.

To get the actual sample size, ns = (10/100 x 284) + 284 = 312.4 = 312

So approximately, 312 older adults is the sample size that was used in this study.

Sampling procedures

The researcher employed a systematic sampling technique to select older adults in Egor Community. The total number of residential houses in the community (N = 680) was obtained from local enumeration records

provided by the Egor Local Government Health Department and confirmed through a comprehensive enumeration of all households with the assistance of community leaders and health extension workers to ensure accuracy.

The sampling interval (k) was calculated by dividing the total number of houses (N = 680) by the desired sample size (n = 312), yielding approximately 2.18, which was rounded down to 2 for practical implementation. A starting point was randomly selected from the list of houses, and every 2nd house was then chosen for inclusion in the study.

In households with more than one eligible older adult, one participant was selected using simple random sampling (e.g., balloting or drawing lots) to avoid intra-household clustering and maintain independence of observations. This method ensured an even, fair, and representative distribution of older adults across Egor Community.

Instrument for data collection

Two instruments were used for data collection in this study: a digital sphygmomanometer and a self-designed questionnaire.

Digital sphygmomanometer

Blood pressure of the respondents was measured using a digital sphygmomanometer (Omron HEM-7120) manufactured by Omron Healthcare Co., Ltd., Japan. The device is an automated upper-arm blood pressure monitor that operates using the oscillometric method to measure systolic and diastolic blood pressure as well as pulse rate. It features automatic cuff inflation and digital display, which enhances ease of use and minimizes observer bias associated with manual measurements. The instrument has been widely used in clinical and research settings due to its accuracy and reliability. Appropriate cuff sizes were used to ensure accurate measurements. The device was checked for proper functioning and calibration according to the manufacturer's guidelines before use.[27] Blood pressure classification was based on standard hypertension classification guidelines.[28]

Self-designed questionnaire

Data on awareness, previous blood pressure status, and treatment modalities were collected using a self-designed questionnaire developed with guidance from the Health Belief Model (HBM). The HBM explains health-related behaviors based on individuals' perceptions of susceptibility, severity, benefits, barriers, and cues to action.[23] In this study, the questionnaire domains were aligned with key HBM constructs to explore how these perceptions influence hypertension awareness and treatment practices among older adults. Previous studies in African settings have demonstrated the relevance of these constructs in shaping hypertension awareness and adherence to treatment.[24] The questionnaire comprised four sections: Section A: Demographic Data contained 5 items. Section B: Previous Blood Pressure Readings Included 3 items. Section C: Level of awareness of hypertension contained 14 items and Yes or No response. Each correct or affirmative response indicative of accurate knowledge was scored as 1, while incorrect or negative responses were scored as 0. Section D: Treatment modalities comprised 19 items.

Validity of the iInstrument

Digital sphygmomanometer

The validity of the digital sphygmomanometer was ensured by cross-checking its readings against a mercury sphygmomanometer, the gold standard, to confirm measurement accuracy.

Self-structured questionnaire

Content and face validity of the questionnaire were established through review by a panel of experts in hypertension research and public health to ensure alignment with the study objectives and measured variables. The instrument was further refined following feedback obtained from a pilot test conducted among a small group of older adults to assess clarity and comprehensibility.

Reliability of the instrument

Internal consistency of the questionnaire was assessed using Cronbach's alpha.

A pilot study involving 31 older adults (10% of the sample) in Ugbowo Community yielded reliability coefficients of 0.74, 0.75, and 0.72 for Sections B, C, and D respectively, indicating satisfactory reliability.

Data collection

Data were collected using standardised procedures to ensure consistency and reliability across participants. Two trained research assistants, who were community health officers residing in Egor Community, supported the data collection process. Prior to data collection, the assistants received training on the study objectives, ethical considerations, and the standardised use of the research instruments. Residential buildings in Egor Community were systematically enumerated to identify eligible participants. Informed oral consent was obtained from all participants after a clear explanation of the study objectives and procedures, in accordance with ethical requirements of Helsinki Declaration.

Data collection comprised two components: blood pressure measurement and administration of a structured questionnaire. Blood pressure was measured using a validated sphygmomanometer following standard measurement protocols, and readings were recorded immediately. Questionnaire data were collected through face-to-face interviews using the standardised instrument. Where necessary, assistance was provided to participants to ensure accurate and complete responses. Data collection was conducted on weekdays (Monday to Friday) throughout March 2024. Completed questionnaires were reviewed on-site for completeness and collected immediately to minimise missing data and enhance data quality.

Data analyses

Data generated from the study were categorised into independent and dependent variables and analyzed using both descriptive and inferential statistical methods. The dependent variable was the prevalence of hypertension, determined from participants' blood pressure measurements.

Blood pressure readings were classified in accordance with established guidelines. [25,26] Normal blood pressure was defined as a systolic pressure of less than 120 mmHg and a diastolic pressure of less than 80 mmHg. Prehypertension was defined as a systolic pressure of 120–139 mmHg and/or a diastolic pressure of 80–89 mmHg. Stage 1 hypertension was classified as a systolic pressure of 140–159 mmHg and/or a diastolic pressure of 90–99 mmHg, while Stage 2 hypertension was defined as a systolic pressure of 160 mmHg or higher and/or a diastolic pressure of 100 mmHg or higher.

Level of awareness of hypertension was analysed as folows. The total score for each participant was calculated by summing the responses across all 14 items, giving a possible score range of 0–14. Participants' level of awareness was then classified as follows: Poor awareness: 0–6 correct responses (0–49.9%), Moderate awareness: 7–9 correct responses (50–69.9%) Good/high awareness: 10–14 correct responses (70–100%). Descriptive statistics, including frequency count and percentage, were applied to summarize the data. Inferential statistics, namely bivariate and multiple logistic regression, and Spearman correlation were used to test hypothesis at 5% level of significance. The data were analyzed using SPSS version 26.0.

Ethical considerations

Ethical clearance certifictae with ref. numnber EGLHA/001/V.04 was obtained form ethical and research committee of Egor Local Government Area Council located in the Local Government Areas's secretariat in Uselu. Permission to conduct the research was granted by relevant community and health authorities. All participants were fully informed about the purpose, procedures, potential risks, and benefits of the study, and written informed consent was obtained from each participant before their inclusion. Confidentiality and voluntary participation were assured throughout the study in compliance with ethical research standards.

Informed consent issues and permission to conduct the research.

Results

Socio-demographic characteristics of study participants

The socio-demographic characteristics of the study participants are presented to provide an overview of their background and context." This is summarize in Table 1 below.

Results showed a predominance of the respondents 165 (52.9%) of the respondents between 50 and 59 years with the mean age of 61.6 ± 9.8 years., while the majority 175 (56.1%) were married. Most of the respondents 161 (51.6%) had secondary level of education, and a preponderence of them 189 (60.6%) were self-employed. (Table 1)

Table 1. Socio-demographic characteristics of study population (N=312)

Variables	Frequency	Percentage(%)
Age (Years)		
50-59 years	165	52.9
60-69 years	84	26.9
70-79 years	52	16.7
80 years & above	11	3.5
Mean ± Std = 61.6 ± 9.8 years		
Gender		
Male	114	36.5
Female	198	63.5
Marital Status		
Single	0	0
Married	175	56.1
Divored/Separated	95	30.4
Widowed	42	13.5
Level of Education		
Primary	94	30.1
Secondary	161	51.6
Tertiary	21	6.7
No formal education	36	11.5
Occupation		
Government Employee	45	14.4
Non-government Employee	22	7.1
Self-employed	189	60.6
Unemployed	39	12.5
Others	17	5.4

Key to abbreviation: Std, standard deviation

Prevalence of hypertension among study participants

The prevalence of hypertension among participants was assessed to understand the distribution of blood pressure levels in the study population. Figure 1 summarizes the findings. Results displayed in Figure 1, show that 7.4% of the respondents had normal blood pressure, 41.5% are pre-hypertensive, 32.4% are in stage 1 hypertension while 19.2% are in stage 2 hypertension.

Therefore, the prevalence of hypertension among the respondents is the total stage 1 and stage 2 hypertension, which is computed as 51.6%.

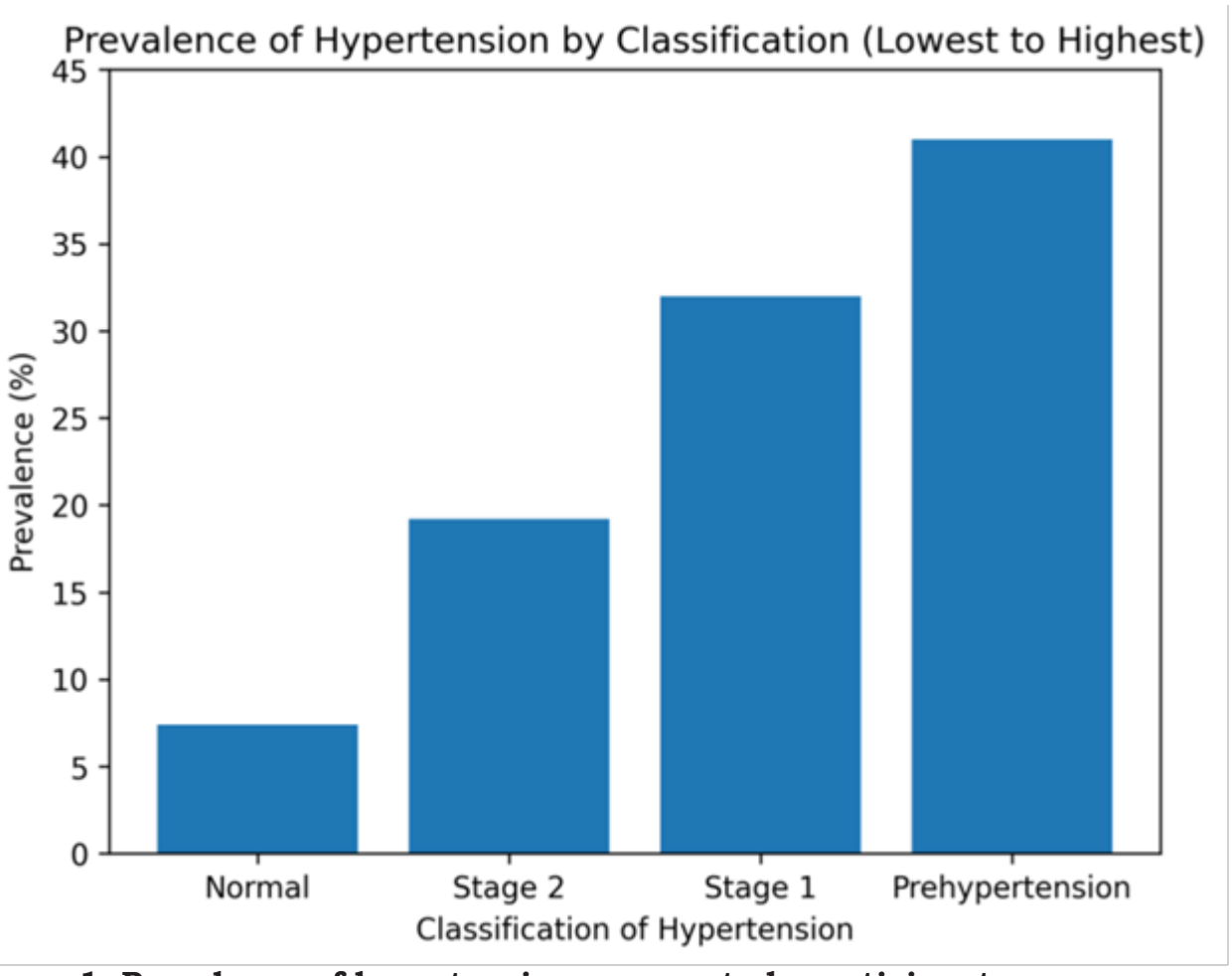

Figure 1. Prevalence of hypertension among study participants

Awareness of hypertension among study participants

Participants' awareness of hypertension was assessed to determine their knowledge and understanding of the condition, as summarized in Table 2.

The findings indicate variable knowledge of hypertension among respondents. While a high proportion correctly recognized its association with heart attack (94.9%) and the role of exercise in blood pressure control (77.9%), misconceptions were evident particularly regarding symptoms (86.9% believed hypertension usually presents with symptoms) and treatment (56.7% believed it cannot be treated with medicine). Knowledge of complications such as kidney disease (26.6%) and blindness (29.5%) was relatively low, suggesting important gaps in awareness that may require targeted health education. Overall, the majority of the respondents of the respondents had poor level of awareness of hypertension (Table 2).

Table 2. Particiants awareness of hypertension among older adults (N=312)

Items	Yes n (%)	No n (%)
High blood pressure means the same as hypertension?	195 (62.0)	117 (37.5)
High blood pressure usually comes with symptoms?	271 (86.9)	41 (13.1)
High blood pressure can cause a person to have stroke	172 (55.1)	140 (44.9)
High blood pressure can cause a person to have kidney problem	83 (26.6)	229 (73.4)
High blood pressure can cause a person to have heart attack	296 (94.9)	16 (5.1)
High blood pressure can cause a person to have blindness	92 (29.5)	220 (70.5)
High blood pressure can cause a person to have asthma	64 (20.5)	248 (79.5)
High blood pressure can be treated with medicine	135 (43.3)	177 (56.7)
High blood pressure cannot be cured	181 (58.0)	131 (42.0)
Hypertension is caused by stress	190 (60.9)	122 (39.1)
A person with high blood pressure should eat less salt	107 (34.3)	205 (65.7)
A person with high blood pressure should eat more fruits and vegetables	122 (39.1)	190 (60.9)
Eating more fruits and vegetables help to reduce a person's blood pressure	169 (54.2)	143 (45.8)
Exercising can help lower a person's blood pressure	243 (77.9)	69 (22.1)
Overall Mean	166 (53.1%)	146 (46.9%)
Class of Awareness of Hypertension	**Frequency**	**Percentage**
Poor (0-49.9%)	165	52.9
Moderate (50-69.9%)	90	28.8
High (70-100%)	57	18.3

Commonly used diet therapy among the study participants

The study examined the commonly used dietary therapeutic practices for hypertension management. The results are shown in Figure 2.

The results displayed in Figure 2 show that the most commonly used diet therapy are reducing sodium intake by reducing salt intake (93.9%), reducing sugary foods and drinks (91.0%), staying well hydrated (84.6%), eating fruits and vegetables (63.1%), intake of dietary supplements (52.9%) and limiting red meat and processed meats (49.4%).

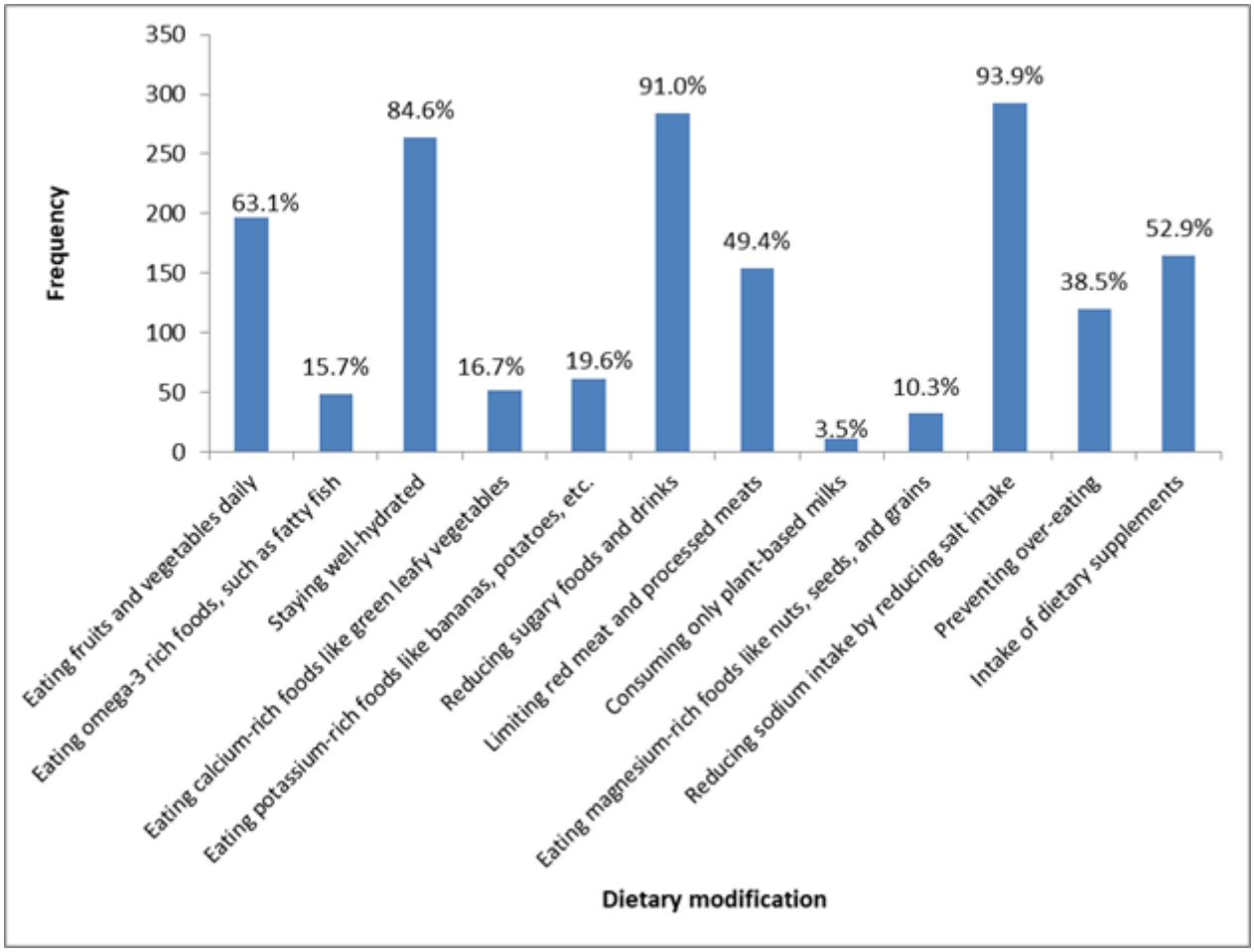

Figure 2. Commonly used diet therapy among the study participants

Common behavioural life changes among the study participants

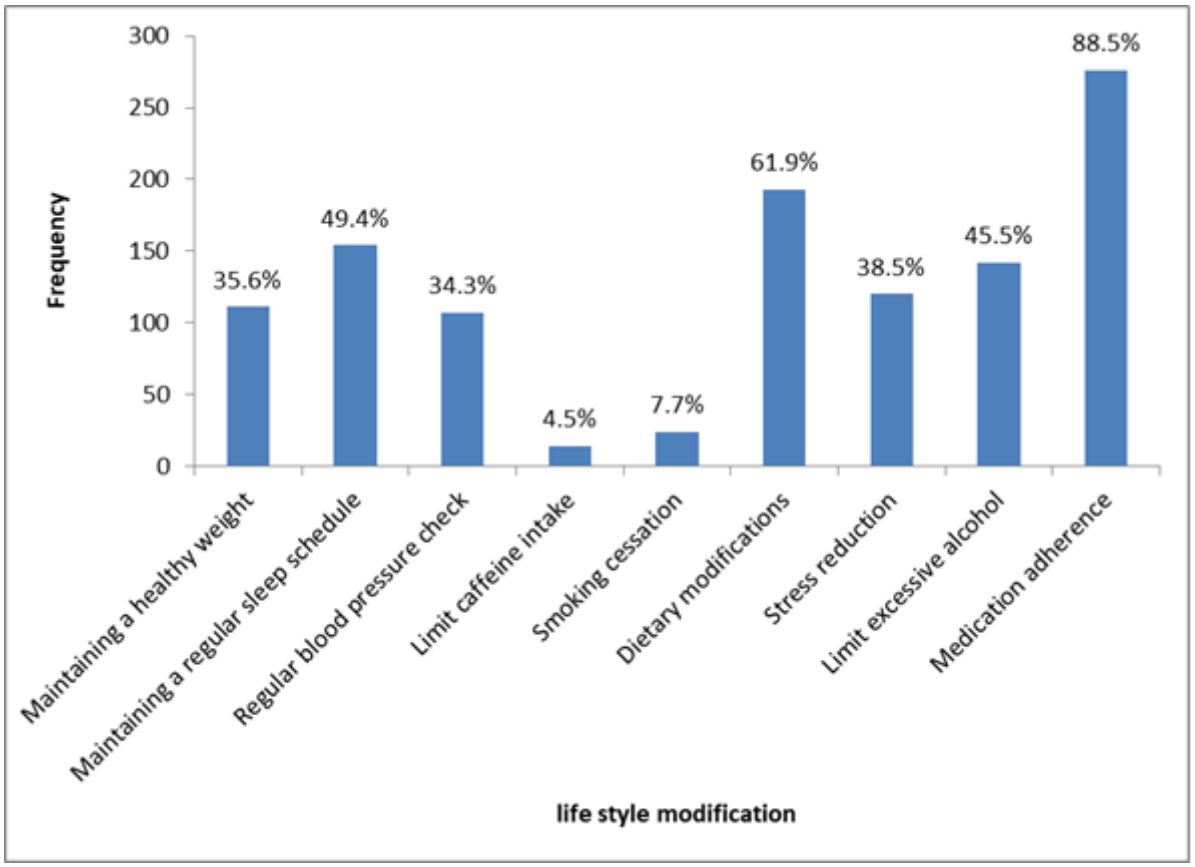

Figure 3. Commonly used behavioural life changes modality among the study participants

The common behavioral lifestyle changes adopted by the study participants for the management of hypertension are presented in Figure 3. Figure 3 results reveal that most common behavioural life changes among the respondents are medication adherence (88.5%), dietary modifications (61.9%), and maintaining regular sleep schedule (49.4%).

Commonly used exercise therapy among the study participants

The commonly used exercise therapies among study participants for the management of hypertension are shown in Figure 4. Results in Figure 4, show that the most commonly used exercise therapy among the respondents are brisk walking (67.9%), stretching exercises (16.3%), outdoor activities like hiking, gardening, etc. (15.7%).

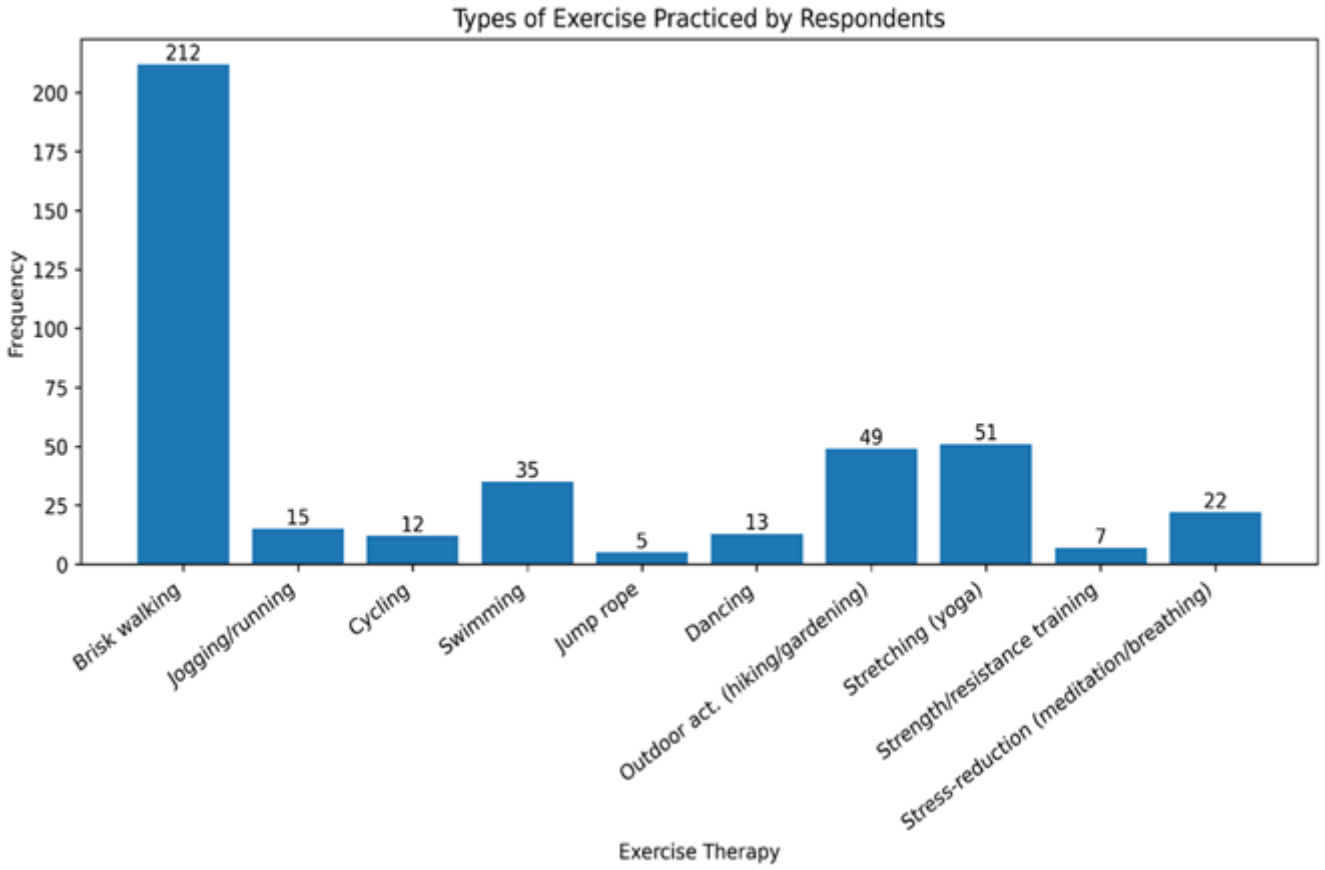

Figure 4. Commonly used exercise therapy treatment modality among the study participants

Age was inversely associated with awareness, indicating that increasing age from 70 years reduced the odds of adequate awareness remarkably. Gender was also a significant predictor, with males having higher odds of adequate awareness compared with females. The divorded, separated and the widows showed a lower awareness of hypertension than the married. Government employment, was associated with higher odds of awareness compared with the self-employment. However, the level of education was not a predictor of hypertension awareness (Table 3).

Table 3. Relationship between predictor variables and the level of awareness of hypertension among study participants (N = 312)

Variable	Odds Ratio (OR)	95% CI for OR		P Value
		Lower	Upper	
Age				
50–59 years	Ref			
60–69 years	0.78	0.60	1.01	0.061
70–79 years	0.64	0.48	0.86	0.012*
80 years & above	0.57	0.43	0.76	<0.001*
Sex/Gender				
Male	1.354	1.025	1.790	0.033*
Female	Ref			
Marital Status				
Single	0.82	0.60	1.12	0.214
Married	Ref			
Divorced/Separated	0.69	0.51	0.95	0.021*
Widowed	0.73	0.54	0.99	0.043*
Level of Education				
Primary	1.18	0.82	1.70	0.289
Secondary	Ref			
Tertiary	1.35	0.94	1.94	0.101
No formal education	0.88	0.60	1.29	0.512
Occupation				
Government Employee	1.36	1.04	1.78	0.024*
Non-government Employee	1.22	0.93	1.60	0.112
Self-employed	Ref			
Unemployed	0.79	0.58	1.09	0.148

Key: Ref, reference category

Correlation between blood pressure levels and the treatment modalities used among the study particioants

The correlation between blood pressure levels and the treatment modalities used by study participants was examined to understand the effectiveness of different management approaches.

The findings showed a statistically significant weak negative correlation between treatment modalities and blood pressure levels, indicating that as treatment modalities increase, blood pressure tends to decrease slightly, (Table 4).

Table 4. Correlation between blood pressure levels and the treatment modalities used among the study particioants

Variable			Treatment Modalities	Level of blood pressure
Spearman's rho	Treatment Modalities	Correlation Coefficient	1.000	-0.173**
		Sig. (2-tailed)		**0.002**
		N	312	312
	Level of blood pressure	Correlation Coefficient	-0.173**	1.000
		Sig. (2-tailed)	0.002	
		N	312	312

**Correlation is statistically significant at p < 0.01 (2-tailed).

Discussion

This study investigated the prevalence, awareness, and treatment practices of hypertension among older adults in Egor Community, Benin City, Edo State. The participants were predominantly aged 50–59 years, with a mean age of 61.6years, most of whom were married, had secondary education, and were self-employed. The prevalence of hypertension was 51.6%, with awareness levels generally low. Commonly reported management strategies included dietary adjustments, adherence to medications, and engagement in physical activity. Age was inversely associated with awareness, whereas higher educational attainment was positively associated. Gender, marital status, and occupation did not significantly influence awareness. Notably, a small but statistically significant negative correlation indicated that better treatment adherence corresponded with slightly lower blood pressure.

The prevalence rate observed in this study aligns with earlier research reporting high rates of hypertension among older adults,[12,15] confirming that this age group remains particularly vulnerable. Conversely, studies reporting lower prevalence rates, such as 37.7%.[8] likely included broader adult populations with fewer older individuals, illustrating how population demographics can influence reported prevalence. These variations underscore the importance of age-specific research and interventions. The high prevalence in the Egor Community emphasises the urgent public health need for targeted strategies addressing hypertension among older adults, as this group is particularly susceptible to associated complications such as stroke, heart disease, and renal impairment.

A central finding of this study is the low level of awareness regarding hypertension among older adults. Limited knowledge impairs the ability of participants to monitor blood pressure, adhere to prescribed therapies, and implement lifestyle modifications. These results are consistent with prior studies demonstrating that inadequate awareness significantly compromises hypertension management in rural and semi-urban populations.[13,16]

Low awareness directly affects treatment adherence, as observed both locally and in comparable populations.[15,18,19] The Egor-specific context further suggests that community characteristics including access to healthcare services, cultural beliefs, and socio-economic constraints may exacerbate this knowledge gap, emphasizing the need for targeted education and outreach programs.

Behavioral factors such as high salt intake, low fruit and vegetable consumption, and physical inactivity likely contribute to the high prevalence of hypertension in this population. While participants reported engaging in dietary and exercise interventions, the modest reductions in blood pressure observed suggest inconsistent adherence or partial implementation. Previous studies demonstrate that structured educational programs can improve both knowledge and adherence significantly,[17] indicating that similar interventions tailored to Egor's older adult population could have substantial impact. These findings reinforce the importance of culturally and contextually relevant health education strategies that address both knowledge gaps and practical barriers to behavior change.

The study highlights the role of education as a determinant of hypertension awareness. Participants with higher educational levels were more likely to understand hypertension, its risks, and the importance of adherence ($p = 0.022$, OR = 1.353). This aligns with global evidence that educational attainment enhances health literacy, facilitates engagement with healthcare providers, and improves adherence to both pharmacological and lifestyle interventions.[14,15,20–22] Age, conversely, was associated with lower awareness, reflecting accumulated gaps in knowledge, limited previous exposure to hypertension education, and age-related cognitive and physical limitations.[13,20,21] These findings underscore the need for age-specific, literacy-sensitive interventionsthat enable older adults to engage meaningfully with hypertension prevention and management strategies.

Treatment practices in Egor Community reflected a combination of pharmacological and non-pharmacological approaches, including medications (diuretics, beta blockers, calcium channel blockers), dietary modifications, and physical activity. Although these strategies are consistent with recommended guidelines,[13,14,20–22] the weak negative correlation between adherence and blood pressure reduction indicates that effectiveness may be constrained by multiple factors. Real-world adherence challenges including forgetfulness, comorbid conditions, socioeconomic constraints, and limited self-efficacy likely moderate the impact of these interventions. Such findings emphasize the complexity of hypertension management in community settings, where ideal clinical practices often confront practical limitations.

Lifestyle modifications, while essential, demonstrated limited impact when considered independently. Reducing sodium intake, engaging in regular exercise, and maintaining balanced diets are recognised globally as effective strategies for blood pressure control.[14] Yet, the weak correlation observed suggests that inconsistent application of these behaviors, combined with variability in pharmacological adherence, limits their overall effectiveness. Studies have similarly reported that patients combining medications with lifestyle interventions achieve improved outcomes, but inconsistent implementation and adherence issues reduce these gains.[22] Long-term adherence remains a persistent challenge, particularly for older adults who may experience physical limitations, cognitive decline, or insufficient support for sustained behavior change.[15]

The holistic nature of hypertension management is critical. In Egor, the integration of pharmacological treatment, dietary adjustments, behavioral strategies, and exercise remains central to achieving optimal blood pressure control. However, community-specific barriers such as limited access to healthcare facilities, inadequate health education, cultural perceptions of

disease, and economic constraints must be addressed to realize these benefits. The findings of this study contribute novel insights into the unique interplay of these factors within Egor Community, providing empirical evidence to guide local policy, health planning, and intervention design.
Overall, this study underscores the urgent need for integrated strategies that combine education, behavioral support, and pharmacological treatment, tailored to the socio-cultural and economic realities of Egor Community. Interventions should prioritize increasing awareness, enhancing treatment adherence, and providing ongoing support to overcome practical barriers. Such strategies have the potential to significantly reduce the burden of hypertension and improve health outcomes among older adults in this semi-urban Nigerian context, offering insights applicable to similar low-resource settings.

Limitation of the study

Cultural and Contextual Factors: The study's findings may be influenced by cultural, socioeconomic, or healthcare access factors specific to the Egor community, which may not be applicable elsewhere. Potential Confounding Variables: The study may not have accounted for all potential confounders, such as comorbidities or environmental factors that could influence hypertension management outcomes. Limited Focus on Certain Treatment Modalities: The study might have overlooked or not sufficiently explored other treatment options or interventions that could influence blood pressure management.

Strength of the study

Comprehensive Analysis of Hypertension Management: The study examines multiple dimensions, including prevalence, awareness, treatment, and behavioural modifications, providing a holistic understanding of hypertension among older adults. Rigorous Methodology and Statistical Analysis: It employs systematic random sampling, a validated questionnaire, and advanced statistical methods like bivariate and multinomial logistic regression, ensuring reliable and robust findings. Actionable Insights for Health Interventions: The study identifies key areas for intervention, such as dietary and behavioural changes, and emphasizes improving health education to develop effective public health strategies.

Conclusion

This study revealed a high prevalence of hypertension, indicating a substantial burden of disease within the study population. Despite this high prevalence, awareness levels were suboptimal, with over half of the participants demonstrating low awareness of their hypertensive status. Awareness significantly declined with age, while males were more likely to be aware of their condition than the the females. Educational level did not significantly predict awareness. Overall, while lifestyle modification and medication adherence were relatively favourable among participants, the combination of high prevalence and low awareness underscores persistent gaps in hypertension detection and health education. Strengthening awareness initiatives remains critical to improving early diagnosis and sustained blood pressure control.

Recommendations

1.Strengthen community-based screening programs: Routine blood pressure screening should be intensified at primary healthcare centers and through community outreach programs to improve early detection, particularly among older adults.
2.Targeted health education campaigns: Tailored awareness interventions should focus on older populations and groups with lower awareness levels to improve knowledge of hypertension risk factors, complications, and the importance of routine monitoring.
3.Sustain and enhance lifestyle modification programs: Given the positive adoption of dietary changes and physical activity, structured lifestyle counseling programs should be integrated into routine care to reinforce and sustain these behaviors.

Competing interests

The authors have no conflict of interest.

Author contributions

TAE designed the study, and prepared the manuscript. JU retrieved and analyzed the data and edited the manuscript. FEI Collection of data, MA proof reading and lauaguage editing.

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