Prevalence of Hypertension and Knowledge of Hypertension among Elderly People in Tudun Wada LGA, Kano State, Nigeria

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ABSTRACT

Hypertension is an important cardiovascular risk factor among older adults and may remain undetected because it often has no obvious symptoms. Local information on hypertension prevalence and disease-related knowledge can support appropriate screening and health education. This study determined the prevalence of hypertension and assessed knowledge of hypertension, its risk factors, prevention and management among elderly people in Tudun Wada Local Government Area (LGA), Kano State, Nigeria. A cross-sectional survey of 391 respondents aged 60 years and above was analysed. Survey hypertension was defined as the mean of the second and third seated blood-pressure readings showing systolic pressure of at least 140 mmHg or diastolic pressure of at least 90 mmHg, or current use of prescribed antihypertensive medication. Knowledge was assessed using ten factual questions, scored as correct or incorrect, and results were analysed descriptively with unweight 95% confidence intervals (CI). Survey hypertension was identified in 255 of 391 respondents (65.2%; 95% CI: 60.4–69.8). Raised blood pressure at the survey encounter, excluding medication status, was observed in 201 respondents (51.4%; 95% CI: 46.5–56.3). Previous diagnosis was reported by 139 respondents (35.5%), while 104 (26.6%) reported current antihypertensive medication use. The mean knowledge score was 6.27 out of 10 (SD 2.26); knowledge was poor in 136 respondents (34.8%), moderate in 125 (32.0%) and good in 130 (33.2%). Recognition that hypertension increases stroke risk was the most frequently correct response (74.9%), while correct responses were lower for hypertension occurring without symptoms (52.4%) and physical inactivity as a risk factor (52.4%). Hypertension was common among the analysed older respondents, and knowledge was mixed, with specific gaps in asymptomatic disease and lifestyle risk factors. Community screening should be linked to clinical confirmation and follow-up, while health education should address the knowledge gaps identified. Because sampling documentation was incomplete and blood pressure was assessed at one encounter, the results describe the analysed sample and are not a fully weighted population estimate.

KEYWORDS

Hypertension, prevalence, knowledge, elderly, older adults, Tudun Wada, Kano State, Nigeria

I. INTRODUCTION

Hypertension is a major non-communicable disease and an important modifiable risk factor for stroke, cardiovascular disease, heart failure and chronic kidney disease. It may occur without noticeable symptoms, making blood-pressure measurement an essential part of

detection (World Health Organization [WHO], 2025). Older adults are a priority group because vascular ageing, other health conditions and differences in access to healthcare can complicate prevention and continuing management.

Nigerian evidence indicates a substantial burden of hypertension, although estimates vary according to age range, setting, sampling method and diagnostic criteria. Prevalence, awareness of diagnosis, treatment and control describe different aspects of the problem and should not be used interchangeably. In particular, facility attendance figures cannot represent community prevalence without an appropriate population denominator. For older people, knowledge about the possibility of asymptomatic hypertension, its risk factors, complications and continuing management may help inform decisions about screening and care. However, knowledge scores do not necessarily translate directly into behaviour, because access, cost, social support and individual circumstances may also affect health actions. Locally relevant data are therefore needed to identify both the scale of hypertension and specific educational needs.

This paper reports findings from a larger dissertation study conducted in Tudun Wada Local Government Area (LGA), Kano State, and is limited to its first two objectives: to determine the prevalence of hypertension among elderly people in Tudun Wada LGA, and to assess their knowledge of hypertension, its risk factors, prevention and management.

II. MATERIALS AND METHODS

A. Study Design, Area and Population

A cross-sectional design was used in Tudun Wada LGA, Kano State, Nigeria. The study population comprised residents aged 60 years and above. Of 395 questionnaires administered, 391 respondent records were available for analysis. The original sample-size calculation indicated a planning requirement of 641; therefore, the analysed records represented 61.0% of that requirement. (The study was conducted at Tudunwada Local Government Area of Kano State Nigeria. It was located at the southern part of Kano State About 130km apart from the Kano metropolis it has the total population of 480,000 number of people it has 11ward, 30PHC and I General Multistage sampling technique was used , about 395 sample size was used and 395 Questionnaire was distributed. The sample Size was obtained through Cochran/Fisher formula of z2xpxq/d2.

B. Measurement of Hypertension

Blood pressure was measured at the survey encounter. (The blood pressure was measured using both digital and android spegmomeno meter to measure the blood pressure 2 to 3 times for at least 5 minutes apart. 5 minutes sited time and 5minute in between each measurement, each to interview and measurements of 140/90mmHg and above for 15--20 minutes).The operational definition of survey hypertension was a mean of the second and third seated blood-pressure readings with systolic pressure ≥140 mmHg or diastolic pressure ≥90 mmHg, or current use of prescribed antihypertensive medication. Raised blood pressure alone was also described separately. This distinction was retained because a respondent receiving treatment may have a reading below the thresholds while still having

hypertension. A single survey encounter does not, by itself, confirm persistent hypertension in a previously undiagnosed individual.

C. Assessment of Knowledge

Knowledge was assessed using ten factual questions on hypertension, complications, risk factors, prevention, and blood-pressure monitoring and medication management. Each correct answer contributed one point, giving a possible total score of 0–10. Following the study codebook, scores of 0–5 were classified as poor knowledge, 6–7 as moderate knowledge and 8–10 as good knowledge. Item-level responses were also examined to identify specific areas of understanding and uncertainty.

D. Data Analysis

Descriptive statistics were used to summarise prevalence and knowledge responses. Percentages were calculated using the stated denominator of 391 unless otherwise indicated. Unweight Wilson 95% confidence intervals were reported for the main hypertension indicators. The reported confidence intervals do not adjust for possible clustering or unequal selection probabilities. Knowledge was summarised using the mean, standard deviation, median and interquartile range.

E. Ethical Considerations

Ethical approval was obtained from the Al-Hikmah University Ethical Committee, and administrative permission was obtained from the Kano State Ministry of Health and Tudun Wada LGA Ethical Committee. Informed consent was obtained before participation, and confidentiality was maintained.

III. RESULTS

A. Prevalence of Hypertension

Of the 391 respondents analysed, 255 met the study definition of survey hypertension, giving a prevalence of 65.2% (95% CI: 60.4–69.8). Raised blood pressure alone was recorded in 201 respondents (51.4%; 95% CI: 46.5–56.3). Previous diagnosis was reported by 139 respondents (35.5%), while 104 respondents (26.6%) reported current use of prescribed antihypertensive medication (Table 1).

Table 1: Hypertension Indicators among Elderly Respondents

Indicator	Cases (n)	Total (N)	Percentage (95% CI)
Survey hypertension	255	391	65.2 (60.4–69.8)
Raised blood pressure (excluding medication status)	201	391	51.4 (46.5–56.3)
Previous diagnosis	139	391	35.5 (31.0–40.4)
Current antihypertensive medication use	104	391	26.6 (22.5–31.2)

Confidence intervals are unweight Wilson intervals; survey hypertension included raised blood pressure or current prescribed medication.

B. Knowledge of Hypertension

The mean knowledge score was 6.27 out of 10 (SD 2.26), with a median of 6 and an interquartile range of 5–8. Based on the study scoring categories, 136 respondents (34.8%) had poor knowledge, 125 (32.0%) had moderate knowledge and 130 (33.2%) had good knowledge (Table 2). Item-level responses are shown in Table 3.

Table 2: Knowledge Categories among Respondents

Knowledge category	Frequency (n)	Percentage (%)
Poor (0–5)	136	34.8
Moderate (6–7)	125	32.0
Good (8–10)	130	33.2
Total	391	100.0

Table 3: Correct Responses to the Ten Hypertension Knowledge Items (n = 391)

Knowledge item	Correct responses (n)	Correct (%)
High blood pressure increases stroke risk	293	74.9
High blood pressure affects the heart or kidneys	263	67.3
High blood pressure may require long-term monitoring	262	67.0
Too much salt contributes to high blood pressure	267	68.3
Regular BP checks are useful when feeling well	257	65.7
Tobacco increases cardiovascular risk	257	65.7
Healthy weight reduces risk	221	56.5
Do not stop prescribed medicine when symptoms disappear	220	56.3
High blood pressure can occur without feeling ill	205	52.4
Lack of physical activity increases risk	205	52.4

IV. DISCUSSION

The analysis found survey hypertension in 65.2% of respondents aged 60 years and above. The raised-blood-pressure-only proportion was lower at 51.4%, because the main definition also included respondents currently using prescribed antihypertensive medication. Presenting these indicators separately is important: a blood-pressure reading below the threshold during treatment does not necessarily mean that a person has no history of hypertension.

The result indicates a substantial burden among the respondents analysed, but it should not be interpreted as a fully representative, weighted estimate for all elderly people in Tudun Wada. The ward codes in the analytical file could not be reconciled with the five wards described in the sampling plan, and participant selection probabilities were unavailable. The

confidence interval reflects unweight binomial uncertainty and does not resolve these design limitations.

Knowledge results were mixed. Recognition that hypertension increases stroke risk was relatively high (74.9%), and more than two-thirds correctly identified its effects on the heart or kidneys. In contrast, only 52.4% correctly recognised that hypertension can occur without feeling ill, and the same proportion recognised physical inactivity as a risk factor. These findings suggest that health education should reinforce the need for blood-pressure checks even when a person feels well and explain modifiable risk factors in practical, accessible language.

A further knowledge gap concerned medication continuity. Although 220 respondents correctly rejected stopping medication when symptoms disappear, 126 answered incorrectly and 45 did not know. These answers indicate a potential educational need, but they do not show that all respondents giving an incorrect answer had actually stopped medication. Messages should encourage people to follow their prescribed treatment and consult qualified health workers before making changes.

The average knowledge score of 6.27 out of 10 should also be interpreted alongside item-level responses. A total score can conceal important gaps in specific areas. In addition, the main-sample internal consistency coefficient for the knowledge items was 0.611, indicating limited consistency; the locally developed ten-item measure should therefore be refined and tested further before strong comparisons are made with other populations. The findings are broadly consistent with the importance of distinguishing prevalence, awareness, treatment and control described in Nigerian and international evidence.

Limitations of the study are as follows. The analysis included 391 available records compared with a calculated sample-size requirement of 641. The mapping between the ten ward codes in the analytical file and the five wards described in the sampling plan was unavailable, and selection probabilities were not documented; the estimates were therefore unweight. Blood pressure was assessed during one survey encounter, so elevated readings in previously undiagnosed respondents require clinical confirmation. The knowledge questionnaire showed limited internal consistency in the main sample.

V. CONCLUSION AND RECOMMENDATIONS

Among the 391 elderly respondents analysed in Tudun Wada LGA, 65.2% met the study definition of survey hypertension. Knowledge of hypertension was mixed: respondents more often recognised stroke risk than asymptomatic disease and physical inactivity as a risk factor. Misunderstanding about stopping medication when symptoms disappear was also evident. These findings support accessible blood-pressure screening linked to clinical confirmation and follow-up, together with targeted health education on asymptomatic hypertension, lifestyle risks and continuing prescribed care. Incomplete sampling documentation and single-encounter blood-pressure assessment limit generalisation and clinical interpretation.

Based on these findings, it is recommended that: (i) community-level blood-pressure screening for older adults be strengthened, with clear referral and follow-up pathways for

elevated readings; (ii) targeted education explain that hypertension may occur without symptoms and that regular blood-pressure measurement remains important even when a person feels well, and explain the role of salt reduction, physical activity appropriate to ability, healthy weight and other modifiable risk factors; and (iii) people be advised that prescribed antihypertensive medication should not be stopped or changed without advice from a qualified health professional. Future studies should document sampling frames, ward crosswalks, recruitment outcomes and selection probabilities, confirm elevated blood pressure on a separate occasion where clinically appropriate, and refine and re-test the knowledge questionnaire to improve its reliability and local validity.

DECLARATIONS

Ethics approval:

Ethical approval was obtained from the Al-Hikmah University Ethical Committee, and administrative permission was obtained from the Kano State Ministry of Health and Tudun Wada LGA Ethical Committee before data collection. Informed consent was obtained before participation

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