A Retrospective Review of Stroke Cases in Okposi General Hospital, Ohaozara Local Government Area, Ebonyi State, Nigeria: A 5-Year Analysis (2019-2023)

COSMAS NNADOZIE EZEJINDU¹, UGWUEKE IFEOMA VIVIAN², LINDA CHIDINMA CHUKWUEMEKA-ANI³, MARTIN CHINEMEREM ONUIGBO⁴

^{1,2} Department of Public Health, Faculty of Allied Health Sciences, David Umahi Federal University of Health Sciences Uburu, Ebonyi State, Nigeria

³Department of Public Health, Faculty of Health Sciences, Abia State University, Uturu Abia State Nigeria

⁴Department of Pharmacy, Faculty of Pharmacy, Abia State University Uturu, Abia State, Nigeria

Abstract Background:

Stroke continues to pose a significant global health burden, ranking among the leading causes of death and long-term disability. Its growing incidence in sub-Saharan Africa, particularly in rural communities with limited access to preventive and therapeutic services, highlights an urgent public health concern. In Nigeria, the burden of stroke is compounded by a dual challenge of rising noncommunicable diseases such as hypertension and diabetes, alongside persistent infectious conditions like tuberculosis.

Methods

A retrospective research design was used. A proforma was used to gather the data that was assessed from the Okposi General Hospital from 2019 – 2023. This retrospective study was conducted to examine the frequency, demographic patterns, clinical presentations, and associated risk factors of stroke over a five-year period at Okposi General Hospital in Ebonyi State, Nigeria.

Results

A total of 314 stroke cases were identified between January 2019 and December 2023. The hospital witnessed a notable increase in the annual frequency of stroke cases, from 10.2% in 2019 to 32.5% in 2023, suggesting a growing trend likely linked to both population health transitions and improved diagnosis. The majority of cases were recorded among individuals aged 60 to 79 years, accounting for over 60% of the cohort, and males were more commonly affected than females (67.5% vs. 32.5%). Strikingly, 77.7% of patients were overweight, underscoring the possible contribution of poor lifestyle habits and metabolic syndrome to stroke risk. Ischemic stroke was the most common subtype, comprising 57.6% of cases, followed by hemorrhagic stroke (30.9%) and transient ischemic attacks (11.5%). Clinical symptoms at presentation were often multifaceted, with memory loss (28.3%), speech difficulty (27.7%), and blurred vision (27.4%) being the most frequent. The presence of underlying medical conditions was prevalent: diabetes mellitus (39.8%), hypertension (34.7%), and tuberculosis (25.8%) featured prominently as comorbidities.

Conclusion

The findings from this study suggest that stroke incidence is rising within this rural Nigerian setting, especially among older, overweight males with existing noncommunicable or infectious diseases. These data highlight the need for integrated screening, prevention, and early intervention programs tailored to rural populations. Moreover, they emphasize the significance of reinforcing public health education, communitybased risk assessment, and affordable chronic disease management to curb the stroke epidemic in low-resource settings.

Indexed Terms- Retrospective, Review, Stroke, Cases, General hospital

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I. INTRODUCTION

In a stroke, there is insufficient blood supply to the brain, which results in the death of brain cells [9]. There are two basic types of stroke: hemorrhagic (caused by bleeding) and ischemic (caused by a lack of blood supply). Both lead to abnormal brain function in certain areas [12].

An inability to move or feel on one side of the body, difficulty speaking or understanding, dizziness, or loss of vision on one side are some signs and symptoms of stroke [9]. Symptoms and indicators frequently show up quickly after the stroke. A transient ischemic attack (TIA), sometimes referred to as a mini-stroke, is a stroke if symptoms go away in less than an hour or two. A strong headache may potentially be a sign of a hemorrhagic stroke. Stroke symptoms can sometimes last a lifetime. According to Janz and Becker (2019), pneumonia and loss of bladder control are examples of long-term consequences.

Stroke stands as the second most prevalent cause of both mortality and adult disability globally. In 2005, an estimated 5.7 million deaths occurred, with 87% transpiring in low-income and middle-income countries. Unchecked, global deaths were anticipated to escalate to 6.5 million in 2015 and 7.8 million in 2030 [10]. While treatments for select stroke patients have emerged, prevention remains the paramount approach to mitigating the burden of stroke, necessitating robust epidemiological data In developed countries, epidemiological data are wellestablished, but a dearth of reliable information persists in the developing world [19].

Stroke exacts a substantial toll on disability and diminishes quality-adjusted life years [6]. Enhancing public awareness of stroke risk factors holds promise for improved prevention strategies, as perceived risk correlates with better compliance and risk factor control [5]. Population-based surveys indicate that 60% to 76% of participants could identify at least one correct stroke risk factor [9].

Paradoxically, individuals at elevated risk for stroke exhibited similar or even lower knowledge about stroke risk factors [20]. In these surveys, hypertension emerged as the most frequently cited risk factor, followed by smoking, alcohol, or an unhealthy diet (Sappok et al., 2021; Segura et al., 2019). Stress also featured prominently as a perceived stroke risk factor in both the general population and high-risk patients [21].

Various information sources, including mass media, friends and family, or medical professionals, are tapped into by individuals seeking knowledge about stroke [7]. However, the characteristics of people utilizing these diverse information sources remain undescribed. It is imperative, prior to developing and implementing effective health education programs on stroke risk factors, to identify individuals at risk for lower knowledge levels and analyze the prevalence of stroke in these populations.

Therefore, this study aims to assess stroke among patients that attended Okposi General Hospital in Ohaozara Local Government Area, Ebonyi State from 2019 - 2023.

II. METHODOLOGY

• Area Of Study

Ohaozara, situated in Ebonyi State, Nigeria, is a Local Government Area comprising the communities of Ugwulangwu, Uburu, and Okposi, with its administrative headquarters located in the town of Uburu. Encompassing an area of 312 km2 (120 sq mi), Ohaozara had a population of 148,626 according to the 2006 census. The local government is predominantly made up of the Ohaozara people, a subgroup of the Igbo community, and they communicate in the Ohaozara dialect. The Okposi Okposi General Hospital in Ohaozara, Ebonyi State, Nigeria, serves as a crucial healthcare facility for the local community. The hospital is equipped with facilities, including wards, essential medical consultation rooms, an emergency department, a pharmacy, laboratory services, and imaging facilities. The infrastructure is designed to cater to a range of medical needs, from routine check-ups to emergency care. Situated in the town of Uburu within the Ohaozara Local Government Area, the hospital serves the entire region, including Ugwulangwu, Uburu, and Okposi. Its central location ensures accessibility for residents within the 312 km2 (120 sq

mi) area. The fertile lands of Ohaozara are wellsuited for various agricultural activities, making farming a primary occupation for many residents. This includes the cultivation of crops such as rice, yams, maize, and plantains, which are staple foods in the Igbo diet. Farming not only provides food for local consumption but also serves as a vital source of income for many families. According to Okoro and Ijeoma (2021), agricultural activities in rural Igbo communities are essential for both economic stability and cultural continuity.

• Research Design

The researcher utilized a retrospective research design. This design is a type of research design that looked backward in time to examine and analyze past events, situations, or outcomes. In this type of study, researchers investigated and collected data from historical records, existing databases, or individuals' recollections to understand the relationships between.

III. POPULATION OF STUDY

The population of the study comprised all assessed medical records from the Okposi General Hospital from 2019 - 2023 in Ohaozara local government area, Ebonyi State, inclusive of male and female medical records.

• Sample And Sample Size

The sample size for this study was all the patients who attended the hospital from 2019 – 2023 at the Okposi General Hospital in Ohaozara local government area, Ebonyi State.

• Sampling Technique

All patients that was diagnosed of stroke from 2019 - 2023 will be sampled from the study, as the study will not use a sampling technique.

• Instrument Of Data Collection

A proforma was used to gather the data that was assessed from the Okposi General Hospital from 2019 - 2023 in Ohaozara local government area, Ebonyi State for the study. Data collection was from the hospital's stroke records from 2019 - 2023, utilizing the help of a registered nurse.

• Ethical Clearance

Ethical clearance for the study was obtained from the Ethical Clearance office in the Research and Publications department of Abia State University. The ethical clearance was gotten after providing them with a clear explanation of the study's purpose. The consent of the hospital management was acquired using the ethical clearance letter obtained from the University. The confidentiality and anonymity of their information were strictly maintained and also communicated to the respondents. The respondents were not coerced into participating and had the freedom to withdraw from the study at any time if they chose to do so.

• Method Of Data Collection

The researcher collected data using a well-structured proforma for completion with the help of the nurse in charge. This approach ensured that all medical records collected had a clear record and could accurately respond to each item of the research question.

• Method Of Data Analysis

The data collected through the proforma underwent descriptive analysis that involved examining the sociodemographic characteristics of the respondents as well as the variables from the objectives. To accomplish this, various statistical techniques such as frequency distribution and percentages were employed.

III. RESULTS

Table 1: Number of Patients who had Stroke that Attended Okposi General Hospital Ohaozara Local Government Area, Ebonyi State from 2019 – 2023

Year		Percentage
	Frequency	(%)
2019	38	12.1
2020	35	11.1
2021	93	29.6
2022	46	14.6
2023	102	32.5
Total	314	100%

The data in table 1, reveals an upward trend in the frequency of stroke cases over the years, with the highest 100 (32.3%) number of cases recorded in 2023, followed closely by 93(23.6%) in 2021. This trend suggests an increasing prevalence of stroke cases in the hospital during the study period.

Table 2: Age Distribution of Patients who had Stroke that Attended Okposi General Hospital Ohaozara Local Government Area, Ebonyi State from 2019 –

2023							
Ag	2019	2020	2021	2022	2023	Total	
e							
<	1	0	0	0	0	1	
20y	(0.3	(0.0	(0.0	(0.0	(0.0	(0.3%	
rs	%)	%)	%)	%)	%))	
20-	-	-	-	-	-	-	
29							
30-	-	-	-	-	-	-	
39							
40-	0	0	5	2	0	7	
49	(0.0	(0.0	(1.6	(0.6	(0.0	(2.2%)	
	%)	%)	%)	%)	%))	
50-	12	4	21	11	13	61	
59	(3.8	(1.3	(6.7	(3.5	(4.1	(19.4	
	%)	%)	%)	%)	%)	%)	
60-	14	12	29	13	26	94	
69	(4.5	(3.8	(9.2	(4.1	(8.3	(29.9	
	%)	%)	%)	%)	%)	%)	
70-	8	14	24	14	35	95	
79	(2.5	(4.5	(7.6	(4.5	(11.1	(30.3	
	%)	%)	%)	%)	%)	%)	
\geq	3	5	14	6	28	56	
80y	(1.0	(1.6	(4.5	(1.9	(8.9	(17.8	
rs	%)	%)	%)	%)	%)	%)	
Tot	38	35	93	46	102	314	
al	(12.1	(11.1	(29.6	(14.6	(32.5	(100.	
	%)	%)	%)	%)	%)	0%)	

Table 3 presents the gender distribution of stroke cases. Overall, the data demonstrates that males consistently had higher stroke cases across all years, with their numbers peaking 74 (23.6%) in 2023. This indicates that males accounted for more than two-thirds of the stroke cases during the study period, reflecting a significant gender disparity in stroke prevalence.

Table 4: BMI Distribution of Patients who had Stroke
that Attended Okposi General Hospital Ohaozara
Local Government Area, Ebonyi State from 2019 -

2023							
BMI	2019	2020	2021	2022	2023	Total	
(kg/							
m ²)							
18.5	1	6	35	20	8	70	
_	(0.3	(1.9	(11.1	(6.4	(2.5	(22.3	
24.9	%)	%)	%)	%)	%)	%)	
25.0	37	29	58	26	94	244	
_	(11.8	(9.2	(18.5	(8.3	(29.9	(77.7	
29.9	%)	%)	%)	%)	%)	%)	
Tota	38	35	93	46	102	314	
1	(12.1	(11.1	(29.3	(14.6	(32.5	(100.	
	%)	%)	%)	%)	%)	0%)	

Table 4 illustrates the distribution of Body Mass Index (BMI) among stroke patients. The overweight category (25.0-29.9 kg/m²) comprised the majority of stroke cases, with 244 patients (77.7%). The number of overweight cases increased substantially over the study period, peaking in 2023 with 94 cases (29.9%). A notable rise was also observed in 2021, with 58 cases (18.5%), while 2019 and 2020 recorded 37 (11.8%) and 29 (9.2%) cases, respectively. A smaller number of overweight cases was documented in 2022 (26 cases, 8.3%). The data suggests a strong association between being overweight and the prevalence of stroke among patients in the study population. Overweight individuals consistently represented the majority of cases across all years, with their numbers increasing significantly in 2023.



Figure 1: Types of Strokes among Patients that Attended Okposi General Hospital Ohaozara Local Government Area, Ebonyi State from 2019 – 2023

Figure 1: Overall, the data indicates that ischemic stroke was the predominant181 (57.6%) type of stroke across all years, with its frequency increasing significantly in 2023. Hemorrhagic stroke 97 (30.9%). Showed a less consistent pattern but

remained the second most common type. TIAs 36 (11.5%)., while relatively rare, demonstrated a slight upward trend by the end of the study period.

Table 5: Symptoms of Stroke among Patients that Attended Okposi General Hospital Ohaozara Local Government Area, Ebonyi State from 2019 – 2023

Symptoms*	2019	2020	2021	2022	2023	Total
Blackened/ Blurred	12 (3.8%)	9 (2.9%)	24 (7.6%)	7 (2.2%)	34 (10.8%)	86 (27.4%)
Vision						
Fever	7 (2.2%)	2 (0.6%)	5 (1.6%)	19 (6.0%)	12 (3.8%)	45 (14.3%)
Urine Retention	6 (1.9%)	3 (0.9%)	2 (0.6%)	10 (3.2%)	18 (5.7%)	39 (12.4%)
Weakness of the	4 (1.3%)	2 (0.6%)	9 (2.9%)	9 (2.9%)	16 (5.1%)	40 (12.7%)
Limbs						
Trouble Speaking	17 (5.4%)	10 (3.2%)	23 (7.3%)	28 (8.9%)	9 (2.9%)	87 (27.7%)
Trouble Walking	3 (0.9%)	6 (1.9%)	17 (5.4%)	3 (0.9%)	8 (2.5%)	37 (11.8%)
Memory Problem	7 (2.2%)	6 (1.9%)	29 (9.2%)	2 (0.6%)	45 (14.3%)	89 (28.3%)
Shoulder Joint Pain	3 (0.9%)	2 (0.6%)	8 (2.5%)	6 (1.9%)	0 (0.0%)	19 (6.0%)
Difficulty Lifting	4 (1.3%)	3 (0.9%)	7 (2.2%)	8 (2.5%)	2 (0.6%)	24 (7.6%)
Arm						
TOTAL	63 (20.1%)	43 (13.7%)	124 (39.5%)	92 (29.3%)	144 (45.9)	466 (100.0%)

*= Multiple Symptoms

Overall, the data highlights a diverse range of symptoms experienced by stroke patients, with some

symptoms, such as memory problems 89 (28.3%) and trouble speaking 87 (27.7%), being consistently prevalent across the years.

Table 6: Side Affected among Patients who had Stroke that Attended Okposi General Hospital Ohaozara LocalGovernment Area, Ebonyi State from 2019 - 2023

Age	2019	2020	2021	2022	2023	Total
Right	10 (3.2%)	10 (3.2%)	22 (7.1%)	7 (2.2%)	35 (11.2%)	84 (26.9%)
Left	10 (3.2%)	7 (2.2%)	24 (7.7%)	17 (5.4%)	16 (5.1%)	74 (23.7%)
None	18 (5.8%)	18 (5.8%)	46 (14.7%)	22 (7.1%)	52 (16.0%)	156 (49.4%)
Total	38 (12.2%)	35 (11.2%)	92 (29.5%)	46 (14.7%)	103 (32.4%)	314 (100.0%)

In total, the data highlights that a significant proportion 156 (49.4%) of stroke cases did not exhibit side-specific effects, particularly in 2021 and

2023. Among cases with side-specific impacts, the right side 84 (26.9%) was slightly more frequently affected than the left 74 (23.7%).

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Comorbidities*	2019	2020	2021	2022	2023	Total
Malaria	4 (1.3%)	2 (0.6%)	8 (2.5%)	8 (2.5%)	9 (2.9%)	31 (9.9%)
Hepatitis	1 (0.3%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	1 (0.3%)
Tuberculosis	0 (0.0%)	4 (1.3%)	25 (8.0%)	4 (1.3%)	48 (15.2%)	81 (25.8%)
Diabetes	24 (7.6%)	26 (8.3%)	46 (14.6%)	22 (7.0%)	7 (2.2%)	125 (39.8%)
Hypertension	13 (4.1%)	7 (2.2%)	19 (6.0%)	25 (8.0%)	45 (14.3%)	109 (34.7%)
TOTAL	42 (12.1%)	39 (11.2%)	98 (28.2%)	59 (17.0%)	109 (31.4%)	347 (100.0%)

Table 7: Comorbidities of Stroke among Patients that Attended Okposi General Hospital Ohaozara Local Government Area, Ebonyi State from 2019 – 2023

*= Multiple Comorbidities

Table 8 presents the distribution of comorbidities among stroke patients. In total, the most common comorbidities among stroke patients were diabetes 125 (39.8%), hypertension 109 (34.7%), and tuberculosis 81 (25.8%), with hypertension showing a gradual increase over the years, while hepatitis remained rare.

Table 8: Outcome of Visits among Patients who had Stroke that Attended Okposi General Hospital Ohaozara Local Government Area, Ebonyi State from 2019 – 2023

Outcome	2019	2020	2021	2022	2023	Total
Treated	38 (12.1%)	35 (11.1%)	93 (29.6%)	46 (14.6%)	102 (32.5%)	314 (100.0%)

Table 8 outlines the outcomes of visits among patients who had a stroke. The year 2023 recorded the highest number of treated cases, with 102 patients (32.5%), indicating a notable rise compared to earlier years. This was followed by 2021 93 (29.6%). In

2022, 46 patients (14.6%) were treated, showing a decrease compared to 2021 but remaining higher than earlier years. In 2019 and 2020, 38 patients (12.1%) and 35 patients (11.1%) were treated, respectively, reflecting the lowest frequencies during the period under review.

Table 9: Factors Associated with Types of Strokes among Patients who had Stroke that Attended Okposi General Hospital Ohaozara Local Government Area, Ebonyi State from 2019 – 2023

	Variables	Ischemic	Hemorrhagic	Transient Ischemic	Total	
		(n=181)	(n= 97)	Attack (n= 36)	(n=314)	
Age	< 20yrs	1 (0.3%)	0 (0.0%)	0 (0%)	1 (0.3%)	
	20-29	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	
	30-39	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	$X^2 = 22.719$
	40-49	0 (0.0%)	3 (1.0%)	4 (1.3%)	7 (2.2%)	df = 10
	50-59	32 (10.2%)	21 (6.7%)	8 (2.5%)	61 (19.4%)	p = 0.012
	60-69	52 (16.6%)	31 (9.9%)	11 (3.5%)	94 (29.9%)	
	70-79	63 (20.1%)	26 (8.3%)	6 (1.9%)	95 (30.3%)	

	\geq 80yrs	33 (10.5%)	16 (5.1%)	7 (2.2%)	56 (17.8%)	
Sex	Male	131 (41.7%)	58 (18.5%)	23 (7.3%)	212 (67.5%)	X ² =4.802
	Female	50 (15.9%)	39 (12.4%)	13 (4.1%)	102 (32.5%)	df = 2
						<i>p</i> =0.091
BMI	18.5 - 24.9	25 (8.0%)	34 (10.8%)	11 (3.5%)	70 (22.3%)	$X^2 = 18.048$
(kg/m^2)	25.0 - 29.9	156 (49.7%)	63 (20.1%)	25 (8.0%)	244 (77.7%)	df = 2
						<i>p</i> =0.000
0.1	D' 1.	40 (15 70()	24 (7 70()	11 (2 50/)	04 (06 00/)	
Side	Right	49 (15.7%)	24 (7.7%)	11 (3.5%)	84 (26.9%)	$X^2 = 6.526$
Affected	Left	43 (13.8%)	28 (9.0%)	3 (1.0%)	74 (23.7%)	df = 4
	None	89 (28.5%)	43 (13.8%)	22 (7.1%)	154 (49.4%)	p = 0.163

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Table 9 examines the factors associated with the types of stroke among patients. In summary, age and BMI were significantly associated with the types of stroke, while sex and the side of the body affected were not statistically significant factors. The results highlight the importance of monitoring age and BMI in assessing stroke risk and outcomes.

IV. DISCUSSION

The findings indicate that stroke prevalence at Okposi General Hospital from 2019 to 2023 was highest among older adults, particularly those aged 70–79 years (30.3%), followed by the 60–69 years age group (29.9%). Younger populations (below 50 years) had significantly fewer cases, highlighting age as a major risk factor. Similarly, a study by [16] emphasized that stroke occurrence increases with age, particularly among individuals over 60 years. Gender distribution revealed a higher prevalence among males (67.5%) than females (32.5%), aligning with the findings of [15], who reported a greater susceptibility of males to stroke, potentially due to lifestyle and cardiovascular risk factors.

Regarding BMI, 77.7% of stroke patients were overweight $(25.0-29.9 \text{ kg/m}^2)$, suggesting a strong correlation between excess body weight and stroke occurrence. This is consistent with the findings of [1], which identified overweight and obesity as significant contributors to stroke risk.

• Research Question 1: What is the total number of patients that had stroke cases?

The data reveals an increasing trend in stroke cases at Okposi General Hospital from 2019 to 2023, with a total of 314 cases documented. The lowest number of cases was recorded in 2020 (11.1%), while 2023 had the highest prevalence (32.5%), followed by 2021 (29.6%). This upward trajectory suggests a growing burden of stroke in the hospital over the years, possibly linked to worsening risk factors such as hypertension, obesity, and inadequate preventive healthcare. According to [4], the increasing incidence of stroke in Nigeria has been associated with a rise in modifiable risk factors, including poor dietary habits and physical inactivity. Similarly, [7] highlighted that the burden of stroke in Nigerian hospitals has been exacerbated by late presentation, poor health-seeking behavior, and limited access to specialized care.

• Research Question 2: What are the types of stroke?

The distribution of stroke types at Okposi General Hospital from 2019 to 2023 indicates that ischemic stroke was the most prevalent, accounting for 57.6% of all documented cases, followed by hemorrhagic stroke (30.9%) and transient ischemic attack (TIA) (11.5%). The data show a progressive increase in ischemic stroke cases, peaking at 20.4% in 2023, which aligns with global trends suggesting that ischemic strokes constitute the majority of stroke cases due to their strong association with

hypertension, diabetes, and dyslipidemia [17]. Similarly, hemorrhagic stroke exhibited fluctuations, with the highest occurrence in 2021 (9.9%) and a decline in 2022, which may be attributed to improved management of hypertension, a major risk factor [7].

• Research Question 3: What are the symptoms of stroke that influence the number of patients that had stroke?

The symptoms reported by stroke patients at Okposi General Hospital from 2019 to 2023 highlight the diverse and multifaceted nature of stroke-related complications, with memory problems (28.3%), trouble speaking (27.7%), and blackened or blurred vision (27.4%) being the most prevalent. The increasing trend in memory problems, peaking at 14.3% in 2023, aligns with findings by [17], who noted that cognitive impairment is a major poststroke complication, often linked to vascular damage and delayed rehabilitation. Similarly, trouble speaking, which was most frequent in 2022 (8.9%), is a well-documented stroke outcome, particularly affecting patients with left-hemisphere infarcts, as reported by [7]. The progressive increase in blackened or blurred vision cases, peaking at 10.8% in 2023, corresponds with the findings of [2], who observed that vision disturbances in stroke patients are often associated with posterior circulation strokes. Less frequent symptoms, such as fever (14.3%) and urine retention (12.4%), have been noted in studies like that of [22], who emphasized that fever is often linked to post-stroke infections, while urinary dysfunction is commonly associated with brainstem and cortical involvement. Additionally, the presence of limb weakness (12.7%) and difficulty walking (11.8%) aligns with global reports highlighting motor deficits as hallmark stroke impairments [18].

• Research Question 4: What are the demographic factors that influence the number of patients that had stroke?

The data from Okposi General Hospital highlights several significant patterns in the distribution of stroke types, with age being a prominent factor. Ischemic stroke was most prevalent among patients aged 70–79 years (20.1%), followed by hemorrhagic stroke in the same age group (8.3%), which aligns with findings by [3], who reported that older adults are at a higher risk for ischemic and hemorrhagic

strokes due to age-related vascular changes. Similarly, according to [4], ischemic stroke was more common in older age groups, while transient ischemic attack (TIA) remained relatively lower, particularly among those under 20 years, where only one case was recorded, as also noted in similar studies by [10]. Regarding sex distribution, males were predominantly affected by ischemic stroke (41.7%), hemorrhagic stroke (18.5%), and TIA (7.3%), a finding consistent with the study by [13], which suggested that males have a higher incidence of stroke compared to females, though no significant association was found between sex and stroke type (p = 0.091), as observed in this study as well. Concerning BMI, the highest prevalence of all stroke types was observed in patients with a BMI in the overweight range (25.0-29.9 kg/m²), comprising 77.7% of cases. This mirrors the findings of [5], who linked overweight and obesity to an increased risk of stroke. Finally, the side of the body affected by stroke showed a preference for the right side in both ischemic and hemorrhagic strokes, though no significant association was found between side affected and stroke type (p = 0.163), which corresponds with the results from a study by Akintoye et al. (2020), where the right side was more frequently affected in stroke patients.

• Research Question 5: What are the comorbidities infections among patients that had stroke?

The distribution of comorbidities among stroke patients who attended Okposi General Hospital between 2019 and 2023 reveals that hypertension, diabetes, and tuberculosis were the most prevalent conditions. Diabetes mellitus was the leading most common comorbidity, affecting 125 patients (39.8%). The number of diabetic stroke patients peaked in 2021 at 46 cases (14.6%) before declining to 7 cases (2.2%) in 2023. According to [8], diabetes is a major contributor to stroke risk due to its impact on vascular health, with prevalence rates among stroke patients reaching 30% in some populations.

Hypertension was the second comorbidity, affecting 109 patients (34.7%), with an increasing trend over the years, reaching 45 cases (14.3%) in 2023. According to [14], hypertension remains the most significant risk factor for stroke, with a global prevalence among stroke patients exceeding 40%.

Tuberculosis affected 81 stroke patients (25.8%), with the highest number recorded in 2023 (48 cases, 15.2%). Notably, there were no cases in 2019, but the incidence gradually rose in subsequent years. According to [14], tuberculosis has been linked to an increased risk of stroke due to chronic inflammation and vascular damage.

• Research Question 5: What is the outcome of visits of patients that had stroke?

The data from Okposi General Hospital reveals a steady increase in the number of stroke patients treated over the years, with 102 patients (32.5%) treated in 2023, followed by 93 patients (29.6%) in 2021, indicating a rising trend in the treatment of stroke cases. This upward trend could be attributed to factors such as an increase in stroke incidence, better reporting, and improved healthcare accessibility, which aligns with findings by [16], who observed an increase in the number of stroke patients treated in Nigerian hospitals due to improved healthcare facilities and early diagnosis.

CONCLUSION

This study on stroke cases at Okposi General Hospital, Ohaozara Local Government Area, Ebonyi State, between 2019 and 2023 highlights several key findings regarding stroke incidence, types, symptoms, and treatment outcomes. The data reveals a rising trend in the frequency of stroke cases, with ischemic stroke being the most prevalent type, followed by hemorrhagic stroke and transient ischemic attacks. Age emerged as a significant factor, with patients aged 70-79 years showing the highest incidence across all stroke types. Additionally, the data suggests that males were more frequently affected by ischemic and hemorrhagic strokes, while BMI also played a crucial role, with overweight patients showing higher prevalence across all stroke types.

Overall, the findings underscore the importance of age, sex, and BMI as critical factors in stroke occurrence and outcomes, while also pointing to improvements in healthcare services that could contribute to better stroke management and treatment outcomes in the region. Further studies are recommended to explore the underlying factors influencing the rising stroke incidence, as well as to assess long-term patient outcomes and the effectiveness of stroke prevention programs.

RECOMMENDATIONS

Based on the findings of this study on stroke patients at Okposi General Hospital, Ohaozara Local Government Area, Ebonyi State, the following recommendations are proposed by the researcher:

1.Targeted Health Awareness Campaigns: Given the high prevalence of stroke among patients aged 70–79 years and the significant association between age and stroke types, health awareness campaigns should be tailored to older adults. These campaigns should focus on stroke prevention, early detection, and management strategies.

2.Improved Screening and Risk Factor Management: The study identified overweight patients as having the highest prevalence of ischemic stroke, hemorrhagic stroke, and transient ischemic attacks. Health interventions focusing on weight management, diet, and exercise should be promoted, alongside routine screening for stroke risk factors like hypertension and diabetes.

3.Gender-Specific Stroke Management Programs: Since males were found to be predominantly affected by ischemic and hemorrhagic strokes, gender-specific healthcare initiatives should be implemented to address the unique risks and health behaviors in males, such as smoking and excessive alcohol consumption.

4.Strengthening Healthcare Capacity: The rising number of treated stroke cases over the years indicates both an increase in stroke incidence and improved healthcare access. It is recommended to continue strengthening healthcare infrastructure, especially in rural areas, to ensure that patients have access to timely and effective stroke care.

5.Training for Healthcare Providers: Continuous professional development and training for healthcare providers are essential to ensure that they are equipped with the latest knowledge and skills in stroke diagnosis, treatment, and rehabilitation.

6.Promotion of Early Stroke Detection: Early detection of stroke symptoms, especially in high-risk groups, should be encouraged through regular health check-ups and screenings. Public health programs should emphasize the importance of recognizing symptoms such as memory problems, difficulty speaking, and blurred vision, which were commonly reported in this study..

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