Original Research Article

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Profile of stroke cases managed at physiotherapy department of a teaching hospital in Maiduguri, Nigeria

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ABSTRACT

Background: Apart from the long term disability inflicted on stroke survivors, stroke also imposes heavy emotional and financial burden on the families, care givers and the society. Knowledge of the pattern of presentation, clinical characteristics and the socio-demographic distribution of stroke survivor patients can serve as a guide to physiotherapists in clinical decision making. This study reviewed clinical presentation, types and socio-demographic distribution of stroke survivors attending physiotherapy clinic at a teaching Hospital in Maiduguri, Nigeria.

Methods: Purposive sampling was employed to retrieve and review folders of stroke survivors that attended physiotherapy clinic at a teaching Hospital in Maiduguri, Nigeria between January, 2006 and December, 2010. Sociodemographics of the stroke survivors, clinical characteristics and risk factors for stroke were extracted from the retrieved folders. The extracted data were summarized using descriptive statistics of percentages, frequency counts and bar chart.

Results: A total of 283 folders of stroke survivors from January, 2006 to December, 2010 were reviewed. Mean age and age range of the stroke survivors in years were 45.2 ± 1.40 and 16-85 respectively. Stroke survivors between the ages of 56 and 75 years were in the majority (42.8%). Male stroke survivors accounted for 58% and those that suffered ischemic stroke comprised 85.9% of the stroke survivors. Hypertension was the dominant (62.5%) risk factors among the stroke survivors.

Conclusions: Awareness campaign is needed to enlighten the populace on healthy lifestyle and prevention of hypertension and other risk factors for stroke. Also, early presentation for physiotherapy management should be encouraged.

Keywords: Stroke, Stroke survivors, Socio-demographic distribution teaching hospital, Physiotherapy

INTRODUCTION

Stroke is defined as a syndrome of rapidly developing clinical sign of focal or global loss of cerebral functions with symptoms lasting more than 24 hours. It is a common neurological disorder, and described as the third leading cause of death after heart disease and cancer.

About two decades ago, Murray and Lopez reported this neurological ailment as a major cause of long term disability especially in the adult population.³ In addition to its reported long term disability, stroke imposes heavy emotional and financial burden on the patient, his/her family members, friends and the society at large.⁴ According to Schulte both gender are affected, but males

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are more likely to suffer stroke than their female counterparts.² Stroke incidence seems to increase from the sixth decade of life and people of African descent are more susceptible to this ailing disorder than the Whites or Caucasians.⁵ Globally, over 80% of all stroke death occurs in low and middle income countries of the world. For instance, the occurrence of stroke in a hospital population was reported to vary from 0.9% to 4.0% among Africans.7 High risk of death from stroke with more than 30% of patients dying within the first month of onset had been reported in Sub-Saharan Africa.4 In the United States of America (USA), according to lopez et al in 2001, it was estimated that 700,000 American residents experience new episode or recurrent stroke.⁴ In Nigeria, despite reports that stroke is one of the leading cause of admissions in most tertiary hospitals, an overall national statistics on the incidence of the disease is not easily available for referencing, therefore it is difficult to have a true picture on the national burden of this disorder.⁸⁻¹⁰ As a result of this difficulty, pockets of retrospective studies from various geographical zones of the country had been conducted and still ongoing, as this present study showcases. At the Lagos University Teaching Hospital (LUTH), located in the South-western Nigeria, stroke was implicated as the most common cause of neurologic admission.⁹ At a stroke registry in Ibadan, another Southwestern city of the country, a study of 318 patients with stroke showed that 207 (65.1%) survived at the end of three weeks, after three months, only 76 (24%) were alive. 10 In South-southern Nigeria, Ansa et al reported an in-hospital mortality rate of 7.8% among persons that suffered stroke. 11 At a tertiary hospital in Sokoto, Northwestern Nigeria, stroke constituted 1.2% of all hospital admissions and 8.5% of deaths in the medical unit. 12 More than half a decade ago, Maduagwu et al found that 12.4% of 1905 patients referred to the physiotherapy clinic of a tertiary hospital in the North-east of the country were stroke survivors. 13

The management of patients with stroke involves several episodes of care or phases, and is tailored around multidisciplinary team approach. The acute phase includes ambulance services and care, emergency and neuro-intensive care. The sub-acute phase management is mainly supportive and takes place at the stroke wards and physiotherapy units. The chronic phase takes place in the community and at the out-patient clinics. Rehabilitation therapy is the main stay in the management of stroke. Major players in the rehabilitation of a stroke patient includes; neurologists, physiotherapists, occupational therapists, language and speech therapists, and psychologists.

Physiotherapists are professionals trained among other services to provide rehabilitative care in a wide range of disabling conditions with a view of restoring, maintaining and promoting functions. ¹⁴ Interventions utilized by physiotherapists are aimed at restoring the lost or impaired functional ability of the stroke survivor, thereby restoring the individual's ability to perform activities of

daily living (ADL). Physiotherapists are vast in the basic medical and clinical sciences, and are independent clinical decision makers in Nigeria. Information on pattern of recovery and clinical presentation, gender distribution modifiable risk factors and occurrence of stroke type may serve as a guide for physiotherapists in clinical decision making at any hospital setting in Nigerian. Such information will inadvertently improve management and outcome of stroke survivors, and thus reduce the burden of stroke in the country Based on this premise, the present study was conceived and designed to survey in retrospect, the profile of stroke cases managed at the physiotherapy department of the University of Maiduguri Teaching Hospital, Maiduguri (UMTH), Nigeria.

METHODS

Study design

A retrospective design was used to survey the past clinical records of stroke cases seen and managed at the department of physiotherapy, UMTH, Maiduguri, Nigeria over a five year period (January 2006- December 2010).

Study setting

This study was conducted at the physiotherapy department of the UMTH, a tertiary health institution located in Maiduguri, the capital city of Borno State in the Northern-eastern Nigeria. The UMTH was officially commissioned in 1983 and presently has a total capacity of 530 beds. The Hospital serves a population of about 25 million people across the Northern-eastern region of Nigeria and a sizeable number from neighboring countries of Cameroun, Niger and Chad republics. The hospital was designated by the federal government of Nigeria in 1986 as center of excellence in immunology and infectious disease.

Study protocol

All case notes/folders and registers of patients diagnosed with stroke from January 2006 to December 2010 and referred for physiotherapy management at the UMTH were retrieved and reviewed. The case notes/folders and patients' registers were all retrieved from the departments of medical records and physiotherapy of the hospital. To eliminate duplication of records, the case notes and registers were scrutinized and cross-checked using the stroke survivors' hospital numbers. All cases of stroke within this period were diagnosed and managed by resident doctors using acceptable best clinical evidence based practice, and was referred to the department of physiotherapy for rehabilitative management.

Data collection procedure

The study was approved by the Review and Ethical Committee of the UMTH. The heads of the departments

of medical records and physiotherapy of the hospital granted permission to the researchers in order to have access to the case notes/folders and registers of patients with stroke managed within the period in review (January 2006 to December 2010). The data extracted from the case notes/folders and registers of patients were vital socio-demographics and clinical characteristics of the stroke survivors as well as risk factors for stroke.

Data analysis

Descriptive statistics of mean, standard deviation, percentages, frequency tables and charts were used to summarize the data. This data summary was performed using Statistical Package for Social Sciences (SPSS), (Windows Version 19.0, Chicago, IL, USA).

RESULTS

A total of 283 stroke survivors within the period of study were reviewed from the case notes/folders and patients' registers retrieved from the departments of physiotherapy and medical records of the teaching hospital. The mean age and age range in years of the stroke survivors were 45.2±1.4 and 16 – 85 respectively. The folders and patients' registers of stroke survivors within the age group of 56-75 years were in preponderance (42.8%). The case notes designated for male stroke survivors accounted for 58.0% and those representing house wives predominated (35.6%) in the occupational category.

Table 1: Socio-demographic profile of the stroke survivors.

Variable	Frequency	%
Age (years)		
16-35	22.0	7.8
36-55	118.0	41.7
56-75	121.0	42.8
≥76	23.0	8.1
Gender		
Male	164 .0	58.0
Female	119.0	42.0
Occupation		
Government employed	67.0	23.7
Self-employed	94.0	33.2
Students	3.0	1.1
Full time house-wives	101.0	35.6
Unemployed/retiree	18.0	6.4
Marital status		
Single	3.0	1.1
Married	270.0	95.4
Widowed	10.0	3.5

Table 1 summarizes the socio-demographic characteristics of the stroke survivors. Most (51.2%) stroke survivors had right hemiplegia and those with spastic stroke were in majority (46.3%). Folders of stroke

survivors with ischemic stroke accounted for 85.9%. Table 2 summarizes the clinical characteristics of the stroke survivors. Hypertension was the most (62.5%) dominant risk factors documented in the folders of the stroke survivors as displayed in Figure 1.

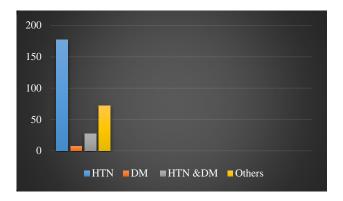


Figure 1: Risk factors for the stroke.

Table 2: Clinical characteristics of the stroke survivors.

Characteristics	Frequency	%
Side of affectation		
Right hemiplegia	145.0	51.2
Left hemiplegia	132.0	46.6
Quadriplegia (double stroke)	6.0	2.1
Type of muscle tone		
Flaccidity (Atonia)	109.0	38.5
Spasticity (Hypertonia)	131.0	46.3
Hypotonia	43.0	15.2
Type of stroke		
Ischemic stroke	243.0	85.9
Hemorrhagic stroke	40.0	14.1

DISCUSSION

Stroke still contributes to the increasing mortality and morbidity among in-hospital admissions and attendance. In our study, the stroke cases reviewed showed that stroke was most prevalent among the 56-75 years age group. This finding corroborates the fact that stroke is the most common cause of neurological disability in the adult population.¹⁵ The second most affected age group in this study was between 46 and 55 years, this is in tandem with a report from similar study Komolafe et al in which 95% of stroke cases occurred in people aged 45 years and above. 16 A male to female ratio of 1.4:1 was recorded in this study. This is almost in agreement with 1.5:1 ratio reported by Maduagwu et al in the same hospital setting about four years back. 13 It also supports previous study in which men were reported as the gender more likely to suffer stroke. 16,17 This observation may in addition related to the fact that several established lifestyles that predispose an individual to hypertension (a dominant risk factor for stroke) are exhibited more among men compared to women. Such lifestyles include cigarette

smoking, heavy alcohol consumption and drug use among others. 18-20 This higher number of male stroke survivors in our study could also be attributed to male: female ratio attendance to the hospital. In this part of Nigeria where the survey was conducted, females in most cases are restricted to the four walls of their houses due to socio-cultural and religious factors. 13 However, sex difference in stroke survivors is still a subject under debate and therefore reports have not been consistent. Majority of stroke survivors in this study were full time housewives. This is not confounding, because this population, in most cases is saddled with rigors of child bearing and domestic chores, as a result confined to their homes due to socio-cultural and religious factors in this part of Nigeria.¹³ This implies restriction to physical activity. Physical inactivity is associated with various non-communicable/hypokinetic diseases, such hypertension, type 2 diabetes mellitus, obesity, coronary heart disease etc. Relationship between physical inactivity and these disorders (which are risk factors for stroke) is well documented in literature. 21,22 Lack of knowledge on risk factors for stroke and the inability to recognize such risk factors may also be deduced for this preponderance of stroke among this group. Married stroke survivors were the most vulnerable category affected by stroke among the marital status group in our study. The reason for this may not be easily ascertained. Studies that focused specifically on the association between marriage and stroke seem not available for referencing. In a study by Zhijie et al in 2000, marital status was reported to be inversely associated with obesity and number of cigarettes smoked daily.²³ Obesity and cigarettes smoking are associated with cardiovascular disease which is one of the risk factors for stroke concluded that marital status is not a risk factor for cardiovascular disease.²³ Marshall et al posited that stroke not only disproportionately affects low-income and middle-income countries, but also socioeconomically deprived populations within high-income countries. Although our study did not take into cognizance the socioeconomic status (SES) of the stroke survivors, this preponderance of married stroke survivors may be attributed to low SES inherent in our milieu, Maiduguri, Nigeria, a developing nation. Among the stroke cases reviewed, Ischemic stroke was more predominant than hemorrhagic stroke. This agrees with a report by the national association of neurological disorder and stroke in which 87% of stroke is known to be ischemic in nature.⁶ Right sided hemiplegia was in preponderance in our survey. This is in agreement with a previous study by Komolafe et al in which 66% of stroke survivors at a university teaching hospital, Ile Ife located in Southwestern Nigeria presented with right hemiplegic stroke. 16 Substantial number of stroke survivors in this study presented with spastic stroke. This finding corroborates the assertion by Wissel that spasticity is common after stroke, with most stroke survivors presenting with some increase in muscle tone within one week post stroke.

Hypertension was the most dominant risk factor for stroke among the stroke survivors in this study. This is not surprising because previous studies in Nigeria and globally have confirmed hypertension as the most culpable dominant determinant of stroke. 1,3,6,13,16,17,25 This may be ascribed to the fact that most people in Nigeria and indeed elsewhere (especially in low-income countries) are ignorant of risk factors for stroke, and partly due to poverty get involved in unhealthy lifestyles such as poor dieting, heavy alcoholic intake, cigarette smoking, and physical inactivity which are risk factors for non-communicable diseases such as hypertension and diabetes. 18-20,26

CONCLUSION

Apart from the long term disability imposed on stroke survivors, stroke also imposes a heavy emotional and financial burden on the families, care givers and the entire society. In view of these, awareness campaign is imperative to enlighten the populace on healthy lifestyles, and on prevention of hypertension and other risk factors for stroke. Also, early presentation for physiotherapy management is very vital and therefore should be encouraged. Implementing these aforementioned suggestions, may ultimately reduce the high incidence and prevalence of stroke pervading Nigeria and other low-income countries of the world.

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Institutional Ethics Committee

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