

Awareness of Stroke Risk Factors and Preventive Health Practices among Federal Civil Servants in Ogun State, Nigeria

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ABSTRACT

Background: Stroke is a growing public health problem worldwide. It is most especially common among regions with limited resources and high disease burden with low per capita income such as Nigeria, where 60% of the Nigerian populace lives below 40% of the poverty line. Civil servants form a significant population of the vulnerable group at risk of stroke in Nigeria. Hence this study aims to investigate stroke awareness, its risk factors and preventive health practices of stroke among federal civil servants in Ogun State, Nigeria.

Methods: Study utilized a work-place based survey design, adopting a systematic randomized sampling technique to recruit 400 participants for this study. A self-designed questionnaire was used to elicit information from the respondents. 384 questionnaires were retrieved and analyzed using SPSS 20.0 version.

Results: Majority (91.9%) of the respondents have heard about stroke. However, they lack adequate information on some associated health risk factors attributed to stroke. Also, stroke preventive health practices among the respondent is poor. Although more than half (60.7%) of the respondents said they carryout routine medical check-up, their practice of dietary intake is inadequate. There is a statistical difference ($P < 0.05$) between respondent's level of education and awareness of stroke.

Conclusions: Awareness of risk factors of stroke and preventive practices is low. This indicates an urgent need for intensified programs on awareness campaigns and public education on stroke, its risk factors and various preventive health practices of stroke in order to reduce the burden of stroke in Nigeria.

Keywords: Awareness, stroke, risk factors, preventive health practices, federal civil servants.

INTRODUCTION

The World Health Organization (WHO) defines stroke as rapidly developing clinical signs of focal (or global) disturbance of cerebral functions with symptoms lasting 24hours or longer or leading to death, with no apparent cause other than of vascular origin. ⁽¹⁾ As a vascular disease of the brain, it affects both men and women mostly within the age

range of 25 and 65years, with about 15million new cases diagnosed in 2004. ⁽²⁾ However, it is estimated that 23 million new cases of stroke would be diagnosed by year 2030 if no significant global public health response is achieved. ⁽³⁾ Hence, stroke continues to be regarded as a major global health problem. ⁽⁴⁾ This is because stroke imposes the greatest burden of Disability-Adjusted Life Years (DALYs) when

compared with other neurological disorders. (5) According to WHO, the burden of stroke is projected to globally increase from 38 million DALYs lost in 1990 to 61 million DALYs in 2020. (6)

However, findings obtained from the Global Burden of Diseases study showed that although the age standardized rates of stroke mortality has decreased worldwide over the past two decades, there is a significant increase in the number of people affected by stroke worldwide between 1990 and 2013. (4) As opposed to the WHO's projections of year 2020, in 2013, there were almost 25.7 million stroke survivors (71% with Ischemic stroke), 6.5million deaths (51% Ischemic stroke) 113 million DALYs lost due to stroke (58% Ischemic stroke) and 10.3 million new strokes (67% Ischemic). (4)

These high incidence rates have largely been attributed to growth of the population, ageing population and numerous transitions in health sector which has been observed in both developed and developing countries. (7) Nevertheless, majority of this stroke burden (75.2% of global deaths from stroke and 81% of global stroke-related DALYs) occurred in developing countries due to increased rate of undetected cases of hypertension as well as poorly controlled arterial hypertension. (8-10) In Nigeria, there still remains dearth in number of studies examining the incidence of stroke, (3) although evidence has shown an age standard annual stroke incidence rate in Africa to be 316 per 100,000 population, (11) of which Nigeria being Africa's most populous country features prominently. However, few published studies conducted in Nigeria have shown that the knowledge of stroke and its risk factors is low (12,13) and where the awareness exists, its preventive health practices is poor due to the fact that large proportions of Nigerians are still living in Poverty. (13)

Prevention of new stroke cases has been identified as the main solution to the growing stroke burden. (4) These preventive strategies of stroke as included in major

Cerebro-Vascular Disease guidelines includes: modification of lifestyle and reduction of behavioral risks such as unhealthy diet, physical inactivity, tobacco & alcohol use and obesity; early detection and prompt management of elevated blood pressure; management of any medical condition that could lead to atherosclerosis and reduction of exposure to air pollution. (4) In addition, body of evidence has also identified that aggressive lowering of systolic blood pressure to less than 130mmHg is another important target for stroke prevention even in people with only borderline hypertension. (15) The reduction of behavioral and other modifiable risk factors of stroke is feasible, improves health outcome, and reduces health care cost. (4,16) Ultimately, it reduces both the burden of stroke and individual's risk of stroke by 80%. (4)

Despite these benefits identified, in Nigeria, the word stroke continues to be shrouded by mysticism, misconception, misinformation and mismanagement. Also irrespective of religion, education, ethnicity or social status of the Nigerian populace, it has been observed that many would rather prefer to visit a traditional or alternative health care other than seeking orthodox medical assistance for proper management. Sometimes, this could result into a more complicated situation and eventually leads to death. Therefore, it is relevant to change the public knowledge of stroke and practice of its prevention in order to improve access to better care and proper management.

Stroke has been identified to be common among regions with limited resources and high disease burden with low per capita income (17) such as Nigeria, where more than half of the Nigerian populace lives below 40% of the poverty line. Civil servants form a significant population of the vulnerable group at risk of stroke in Nigeria. Hence, this study aims to assess level of awareness of stroke, its risk factors and preventive health practices among federal civil servants in Ogun State, Nigeria.

OBJECTIVES

1. To examine the level of awareness of stroke and its risk factors among federal civil servants in Ogun State, Nigeria.
2. To investigate strokes preventive health practices among federal civil servants in Ogun State, Nigeria.
3. To compare the level of significance between respondent's level of education and awareness of stroke.

METHODS

Table 1: Demographic characteristics of the respondents

| Age (Years) | Frequency (n= 384) | Percentage (100%) |
|---------------------|--------------------|-------------------|
| 21 – 25 | 22 | 5.7% |
| 26 – 30 | 11 | 2.9% |
| 31 – 35 | 43 | 11.2% |
| 36 – 40 | 53 | 13.8% |
| 41 – 50 | 127 | 33.1% |
| 51 – 55 | 96 | 25% |
| 56 – 60 | 32 | 8.3% |
| Gender | Frequency (n= 384) | Percentage (100%) |
| Male | 213 | 55.5% |
| Female | 171 | 44.5% |
| Education | Frequency (n= 384) | Percentage (100%) |
| Primary | 22 | 5.7% |
| Secondary | 10 | 2.6% |
| College | 11 | 2.9% |
| Polytechnic | 128 | 33.3% |
| University | 202 | 52.6% |
| Post Graduate | 11 | 2.9% |
| Marital Status | Frequency (n= 384) | Percentage (100%) |
| Single | 64 | 16.7% |
| Married | 309 | 80.5% |
| Separated | 11 | 2.9% |
| Religion | Frequency (n= 384) | Percentage (100%) |
| Christianity | 307 | 79.9% |
| Islam | 66 | 17.2% |
| Traditional | 11 | 2.9% |
| Ethnic Group | Frequency (n= 384) | Percentage (100%) |
| Igbo | 11 | 2.9% |
| Hausa/Fulani | 33 | 8.6% |
| Yoruba | 330 | 85.9% |
| Others | 10 | 2.6% |
| Profession | Frequency (n= 384) | Percentage (100%) |
| Account Officer | 54 | 14.1% |
| Technical Officer | 64 | 16.7% |
| Admin Officer | 76 | 19.8% |
| Others | 131 | 34.1% |
| Educational Officer | 40 | 10.4% |
| Town Planner | 10 | 2.6% |
| Security Officer | 9 | 2.3% |
| Level of Employment | Frequency (n= 384) | Percentage (100%) |
| GL 1-3 | 11 | 2.9% |
| GL 4-6 | 43 | 11.2% |
| GL 7-9 | 129 | 33.6% |
| GL 10-12 | 82 | 21.4% |
| GL 13-15 | 119 | 31.0% |
| Income | Frequency (n= 384) | Percentage (100%) |
| Below 49,000 | 42 | 10.9% |
| 50,00 – 99,000 | 169 | 44.0% |
| 100,000-149,000 | 64 | 16.7% |
| 150,000-190,000 | 88 | 22.9% |
| 200,000 above | 21 | 5.5% |

GL: Grade Level

This study utilized a work-place based cross sectional survey design to assess

the level of awareness of stroke, its risk factors and preventive health practices among federal civil servants. A systematic random sampling technique was used to recruit 400 participants within the age bracket of 20-60 years and works at Federal Secretariat Office Complex, Ogun State. After obtaining ethical approval, informed consent was gained from participants. Self-designed questionnaires were administered and a guideline on how to complete the questionnaires was explicitly explained. Completed questionnaires were retrieved the same day. Data analysis was done using Statistical Package of Social Sciences (SPSS 20.0. version). Data was presented using tables and percentages. Inferential statistics of chi-square was used to test the hypothesis at a significant level of 0.05.

Table 1 above showed that 33.1% and 25% of the respondents are within the ages of 41-50 and 51-55 years. 55.5% respondents are males while 44.5% respondents are females. 52.6% respondents are university graduates while 33.3% respondents graduated from a polytechnic. Majority of the respondents 80.5% are married. 85.9% respondents are of the Yoruba ethnic group while 8.6% are Hausa's and Fulani's. 33.6% and 31.0% respondents are between level 7-9 and 13-15 of the employment cadre. 44.0% and 22.9% respondents receive a monthly income of N50, 000-N99, 000 and N150, 000-N190, 000 respectively.

Table 2 showed responses of the participants on the level of awareness of stroke. 91.9% of the respondent confirmed that they have heard about stroke. 61.2% said their source of information was by seeing someone with stroke. 64% of the respondents identified the brain as major organ affected. In the assessment of symptoms suggestive that someone is beginning to develop stroke, 83.3% respondents agreed that the individual will experience pounding heartbeat, dizziness 74.7%, difficulty in breathing 77.9% and altered consciousness 91.9%, difficulty in speech 97.1%, chest pain 94.5%, weakness

on any part of the body 94%, loss of vision 97.4%, severe headache or migraine 97.4%, fainting attack and collapse 94.3% and high blood pressure 97.4%.

Table 2: Participant's responses on the awareness of stroke

| Items | Frequency (n= 384) | Percentage (100%) |
|--|--------------------|-------------------|
| Have you ever heard about stroke before? | | |
| Yes | 353 | 91.1% |
| No | 31 | 8.1% |
| If yes, what was the source of information? | | |
| (a) I have seen some one with stroke | 235 | 61.2% |
| (b) Friend | 43 | 11.2% |
| (c) I have read about it | 31 | 8.1% |
| (d) Family member | 22 | 5.7% |
| (e) I learnt about it in school | 0 | 0% |
| (f) Health facility | 21 | 5.5% |
| (g) Mass Media | 21 | 5.5% |
| (i) I can't remember | 11 | 2.9% |
| In which organs(s) does stroke occur? | | |
| a. Brain | 249 | 64.8% |
| b. Heart | 72 | 18.8% |
| c. Kidney | 11 | 2.9% |
| d. Bones | 21 | 5.5% |
| e. Spinal cord | 20 | 5.2% |
| f. Blood | 11 | 2.9% |
| What symptoms suggest that someone is beginning to develop a stroke? (multiple choice option responses) | | |
| a. Pounding Heart beat | 320 | 83.3% |
| | 64 | 16.7% |
| b. Dizziness | 287 | 74.7% |
| | 97 | 25.3% |
| c. Difficulty in Breathing | 299 | 77.9% |
| | 85 | 22.1% |
| d. Altered/Poor Consciousness | 353 | 91.9% |
| | 31 | 8.1% |
| e. Slurring difficulty of speech | 373 | 97.1% |
| | 11 | 2.9% |
| f. Chest pain | 363 | 94.5% |
| | 21 | 5.5% |
| g. Weakness on any part of the body | 361 | 94% |
| | 23 | 6% |
| h. Loss of vision | 374 | 97.4% |
| | 10 | 2.6% |
| i. Severe headache/migraine | 374 | 97.4% |
| | 10 | 2.6% |
| j. Fainting attack and collapse | 362 | 94.3% |
| | 22 | 5.7% |
| k. High blood pressure | 374 | 97.4% |
| | 10 | 2.6% |
| What are the symptoms of stroke? | | |
| a. Headache with neck stiffness | 50 | 13% |
| b. Sudden loss difficulty of speech | 132 | 34.3% |
| c. Sudden weakness on one side of the body | 106 | 27.6% |
| d. Chest pain and difficulty in breathing | 32 | 8.3% |
| e. Confusing general disorientation | 32 | 8.3% |
| f. Sudden loss of sense of balance (vertigo) | 22 | 5.7% |
| g. Sudden loss of sight in or both eye | 4 | 1.04% |
| h. Transient loss of memories forgetfulness | 6 | 1.56% |
| i. Sudden loss of the ability to swallow | 0 | 0% |
| j. Collapse and loss of consciousness | 0 | 0% |

Table 3 above reveals the participants responses on the risk factors of stroke. 83.3% said cigarette smoking can cause stroke, unhealthy diet 77.9%, spiritual attack 70.8%, lack of good daily exercise 97.4%, kolanut and other stimulants e.g.

jeddi, opa-eyin, paraga and snuffs 89.1%, coffee/caffeine stimulant 98.2%, aphrodisiacs 83.3%, alcohol consumption 77.9%, and indiscriminate use of over the counter medication 73.2% respondents.

Table 3: Responses on causes or conditions that can put someone at risk to developing stroke

| Predisposing factors | Frequency (384) | Percentage (100%) |
|---|-----------------|-------------------|
| Cigarette smoking | 320 | 83.3% |
| Yes | 64 | 16.7% |
| No | | |
| Overbearing stress | 0 | 0% |
| Yes | 0 | 0% |
| No | | |
| Unhealthy diet | 299 | 77.9% |
| Yes | 85 | 22.1% |
| No | | |
| High blood pressure | 0 | 0% |
| Yes | 0 | 0% |
| No | | |
| High blood cholesterol | 0 | 0% |
| Yes | 0 | 0% |
| No | | |
| Diabetes Mellitus | 0 | 0% |
| Yes | 0 | 0% |
| No | | |
| Spiritual attack | 272 | 70.8% |
| Yes | 112 | 29.2% |
| No | | |
| Repercussion of sin | 0 | 0% |
| Yes | 0 | 0% |
| No | | |
| Previous history of stroke | 0 | 0% |
| Yes | 0 | 0% |
| No | | |
| Personal history of heart disease | 0 | 0% |
| Yes | 0 | 0% |
| No | | |
| Older age (> 60 years) | 0 | 0% |
| Yes | 0 | 0% |
| No | | |
| Family history of stroke | 0 | 0% |
| Yes | 0 | 0% |
| No | | |
| Lack of good daily exercise | 374 | 97.4% |
| Yes | 10 | 2.6% |
| No | | |
| Kolanut and other stimulants e.g. jeddi, opa-eyin, paraga, snuffs | 342 | 89.1% |
| Yes | 42 | 10.9% |
| No | | |
| Coffee/caffeine stimulant | 377 | 98.2% |
| Yes | 7 | 1.8% |
| No | | |
| Aphrodisiacs (drugs for enhancing sexual performance) | 320 | 83.3% |
| Yes | 64 | 16.6% |
| No | | |
| Alcohol consumption | 299 | 77.9% |
| Yes | 85 | 22.1% |
| No | | |
| Indiscriminate use of over counter medication | 281 | 73.2% |
| Yes | 103 | 26.8% |
| No | | |

Table 4: Participants responses on consequences of stroke and preferred choice of treatment

| Items | Frequency(n= 384) | Percentages (100%) |
|---|-------------------|--------------------|
| What are the consequences of stroke? (multiple choice response options) | | |
| Loss of speech | 266 | 69.3% |
| Yes | 118 | 30.7% |
| No | | |
| Loss of sight | 321 | 83.6% |
| Yes | 63 | 16.4% |
| No | | |
| Frail health and well-being | 226 | 69.3% |
| Yes | 118 | 30.7% |
| No | | |
| Loss of the ability to walk | 341 | 88.8% |
| Yes | 43 | 11.2% |
| No | | |
| One sided paralysis | 353 | 91.9% |
| Yes | 31 | 8.1% |
| No | | |
| Loss of economic power | 373 | 97.1% |
| Yes | 11 | 2.9% |
| No | | |
| Loss of ability of hearing | 225 | 58.6% |
| Yes | 159 | 41.4% |
| No | | |
| Re- learning necessity | 374 | 97.4% |
| Yes | 10 | 2.6% |
| No | | |
| Loss of bowel or bladder control | 374 | 97.4% |
| Yes | 10 | 2.6% |
| No | | |
| What will you do, in cases where you or a relative is experiencing symptoms suggestive of stroke? | | |
| Go to the chemist shop | 33 | 8.6 |
| Call a Nurse | 43 | 11.2 |
| Go to a hospital | 254 | 66.1 |
| Take medications to relieve symptoms | 22 | 5.7 |
| Call an ambulance | 0 | 0 |
| Go to a specialist doctor | 0 | 0 |
| Go to a traditional healer | 11 | 2.9 |
| Consult friends for advice | 0 | 0 |
| Wait to allow symptoms to resolve on its own | 0 | 0 |
| Use traditional herbs | 21 | 5.5 |
| Allow my relatives to decide | 0 | 0 |
| Seek spiritual help | 0 | 0 |
| Use nutritional supplement | 0 | 0 |

Table 4 above showed the participants responses on consequences of stroke and their preferred choice of treatment. Many of the respondents are aware of consequences of stroke as shown above. Although majority of the respondents 72.1% said they will prefer being treated in the hospital, however 13.8% said they prefer spiritual or church healing; 8.3% prefers traditional healing while 6.7% respondents indicated that they don't know their choice of treatment.

Table 5 above shows the participant's responses on preventive health practices of stroke. Many of the respondents 60.7% said they go for routine medical check-up. Also 7.6% of the respondents said they smoke, take snuff, eat kolanut and use

tobacco products. 33.3% respondents said they take alcoholic drinks and beverages while 19% respondents do not take alcohol. 39.3% respondents take carbonated drinks, 77.1% respondents eat red meat, organ meat, poultry meat and cheese. 85.4% eat confectionaries. However, it is alarming to know that out of 384 respondents, 28.6% eat vegetables, fruits and nuts as part of their diet while 71.4% said no. In addition, only 12.1% respondents said they have undergone blood lipid profile check. 35.2% respondents said they check their blood sugar 2 weekly while 25% said they check their blood pressure daily. 47.9% respondents said they participate in sport activities and also exercise.

Table 6: Test of Hypothesis

| LEVEL OF EDUCATION OF RESPONDENTS | Are you aware of stroke? | | STATISTICAL TEST |
|-----------------------------------|--------------------------|-----------|--|
| | YES | NO | |
| Primary | 11(2.86%) | 11(2.86%) | X ² = 99.29 df= 5 P< 0.0001 |
| Secondary | 10(2.60%) | 0(0%) | |
| College | 11(2.86%) | 0(0%) | |
| Polytechnic | 118(30.7%) | 10(2.60%) | |
| University | 202(52.6%) | 0(0%) | |
| Post graduate | 11(2.86%) | 0(0%) | |

X²= Chi-square value, df= degree of freedom

Table 6 above provides a statistical test on the level of significance between respondent's level of education and awareness of stroke. Result above shows a significant difference (P<0.05) between level of education of the respondents and awareness of stroke.

DISCUSSION

400 participants were recruited for the purpose of this study; however 384 participants completed the questionnaires administered and returned it the same day. The results showed that majority 91.9% of the respondents have heard about stroke. Major source of information identified was by seeing an individual suffering from stroke (61.2%). Also 64% of the respondents identified the brain as the major organ affected by stroke.

It is noteworthy to observe that some risk factors which could predispose an individual to stroke as identified by the

respondents includes alcohol consumption (77.8%), aphrodisiacs (83.3%), cigarette smoking (83.3%), coffee/caffeine stimulant (77.4%), kolanut and other herbal stimulant such asjeddi, opaeyin, paraga (89.1%). However, stroke was viewed as being caused by evil spirit (70.5%). In addition, none of the respondents mentioned stress, hypertension, high blood cholesterol, diabetes, age, previous and family history of stroke as major risk factors of stroke. This shows that they lack adequate information on some associated health risk factors attributed to stroke. This result is similar to the findings of a study conducted in Nigeria which observed that the baseline knowledge of stroke among adults is poor. (13) Study also recommended that the development of educational strategies to enlighten the general public about stroke is important since ignorance of stroke risk factors and inability to control these risk factors could contribute to high prevalence of stroke

among blacks.

Some of the consequences of stroke as identified by the respondents includes loss of speech (69.3%), loss of sight (83.6%), frail health and well-being (69.3%), loss of ability to walk (88.8%), one sided paralysis (91.9%), loss of economic power (97.1%), loss of ability to hear (58.6%), re-learning necessity (97.4%), and loss of bowel and bladder control (97.4%). Although majority of the respondents (72.1%) prefers a hospital-based treatment of stroke, some of the respondents still prefer spiritual or church healing (13.8%) and traditional healing (8.3%) as a choice of treatment. The choice of treatment of stroke in Nigeria could be influenced by some cultural and religious beliefs. ⁽¹²⁾

The preventive health practices of stroke among the respondent is poor. Although more than half (60.7%) of the respondents said they carryout routine medical check-up, their practice of dietary intake is inadequate. Also only 47.9% respondents participate in exercise and sports activities. This indicates the need for a more pragmatic and comprehensive approach which targets not only the primary prevention of stroke in individuals who are at risk of cerebro-vascular disease ⁽⁴⁾ but also targets other prominent non-communicable diseases like Diabetes, Kidney diseases and Ischemic heart diseases, since major behavioral and lifestyle risk factors identified are also implicated in them. ⁽¹⁸⁾

There are some implications for nursing practice. Findings of this study revealed that Nigerian workers lack adequate information on stroke risk factors. Also poor practice of stroke prevention was identified. Hence, there is need for nurses to modify the health information usually given to clients attending various outpatient clinics in Nigeria to include stroke awareness and prevention in their daily talks since major lifestyle risk factors are also implicated in the cause of other non-communicable disease like diabetes and hypertension. Also nurses should encourage

individuals to practice healthy dietary intake, avoid the intake of alcohol and cigarette smoking and also participate in range of motion exercises. Additionally symptoms suggestive of hypertension and stroke should be promptly reported to the hospital for proper management. This would bring about behavioral and lifestyle modification and ultimately reduce the burden of stroke in Nigeria.

CONCLUSION

This study revealed that the awareness of stroke risk factors is inadequate. Also there is poor practice of stroke prevention. This implies the need for intensified programs on awareness campaigns and public education of stroke, its risk factors and various preventive health practices of stroke in order to reduce the burden of stroke in Nigeria. The use of mass media especially television is recommended for use in such campaigns. In addition, government and legislature should formulate health policies which will mandate all organizations whether government owned or private to ensure that every worker irrespective of their age goes for quarterly routine medical check-up. This will ensure prompt and early diagnosis of stroke and its further prevention. In the future, more studies should be carried out on strokes prevention in other parts of Nigeria. Also barriers to effective treatment and management of stroke should be investigated.

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