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Survey Article

‘This stroke was sent...’: Stroke-related illness concepts and attendant health-seeking behaviours of educated Nigerians

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ABSTRACT: Illness concepts affect health-seeking behaviours (HSB) which in turn can determine disease outcomes. Though there is evidence that stroke incidence is increasing even in low and middle income countries, there is no study of stroke-related illness concepts and HSB in Nigerians. Data from 960 educated Nigerians were analysed. Eight hundred and fifty four respondents (431 aged 20-40 years and 423 aged 41 years or older) of the 960 knew what a stroke was, and their data were analysed further. As much as 55% of them however did not know the warning signs of an impending stroke (and only 0.9% of those who claimed to know these signs correctly described any one of them). Twenty one percent of the population (and 36% of those who have had a stroke) believed spiritual events cause strokes; while 10% and 16% of the respondents (and 7% and 20% of those who have had a stroke) believed a prayer house and traditional healing home, respectively, were the best places to manage stroke cases. These data underscore the need to urgently embark on mass education and enlightenment campaigns aimed at correcting these poor stroke-related illness concepts and HSB.

KEYWORDS: health-seeking behaviour, illness concepts, Nigeria, stroke.

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INTRODUCTION

Stroke is one of the most important leading causes of death globally, and there are indications that its incidence is increasing in low and middle income countries. The interruption of blood flow, otherwise known as ischemia, which results from thrombosis or embolism is thought to be responsible for the sudden paralysis, speech impairment or loss of vision which stroke victims’ experience. Less than 15% of strokes are however caused by hemorrhage or cardiac arrest. Irrespective of its cause, the work capacity of stroke survivors is negatively affected in 70% of victims, and as much as 30% of victims are unable to subsequently live independently (Moskowitz *et al.*, 2010). Furthermore, stroke, apart from other effects, doubles the risk of developing dementia (Leys *et al.*, 2005).

An estimated 16 million new cases of stroke and 62 million stroke survivors were reported globally in 2005, while deaths from stroke accounted for 9.7% of all global deaths. By the

year 2030, it is projected that (if there is no significant global public health response) there will be more than 23 million new stroke cases and 7.8 million stroke deaths globally (WHO 2004; Strong *et al.*, 2007). In the United States, it is estimated that stroke strikes once every 40 seconds and mortality from stroke occurs every 4 minutes (Moskowitz *et al.*, 2010). Lloyd-Jones *et al.* (2009) reported that in Russia and China, the estimated death rates per 100,000 of the population are 5–10 times higher than the figure reported for the USA. According to Mensah (2008), “the available data show that age-standardised mortality, case fatality and prevalence of disabling stroke in Africa are similar to or higher than those measures in most high-income regions”. In Nigeria, the prevalence of stroke is reported to be 1.14 per 1000 while the 30-day case fatality rate is said to be as high as 40% (Wahab, 2008). Considering the high morbidity and mortality that come with strokes, especially given the currently ageing population of the world, stroke management has become a public health priority for many countries.

An individual's or group's perception of any disease and the illness concepts around that disease are known to influence treatment choices or health-seeking behaviours (HSB). Olenja (2003) defines HSB as "any action taken by someone in order to find an appropriate remedy for themselves or for the person whom they take care of, when they have a health problem or illness". Cultural beliefs and practices, economic conditions and education, disease patterns, and the state of health facilities/services are some of the factors that affect HSB (Katung, 2001; Fatimi and Avan, 2002; Shaikh and Hatcher, 2005; Webair and Bin Ghouth, 2013). For many diseases, stroke inclusive, improving the patient's or caregivers' HSB could help reduce disease burden, provided healthcare facilities can provide adequate quality care (D'Souza, 2003; Webair and Ghouth, 2014). Unfortunately, there is no study, in the accessible literature, on stroke-related illness concepts and HSB among Nigerians.

Since the prevalence of, and mortality from, stroke is reportedly high, even in Nigeria, and the morbidity from the disorder results in lost man-hours; and whereas inappropriate stroke-related illness concepts and the attendant HSB have the potential of increasing the burden of stroke; this study investigated the self-reported awareness, occurrence, illness concepts and HSB of educated Nigerians older than 19 years. The findings are expected to be useful in health policy formulation and action, and health education (curriculum) development and implementation.

SUBJECTS AND METHODS

Adult Nigerians aged 20 years or older who are members of staff or students of Michael Okpara University of Agriculture, Umudike, Abia State, Nigeria, were randomly recruited for this study. The only exclusion criteria were being younger than 20 years of age or not having the Senior Secondary Certificate of Education (or its equivalent). Eligible candidates were approached and those who consented were given the study questionnaire to conscientiously complete. The questionnaire sought to identify the respondents' age-range, and responses to questions on stroke awareness, occurrence, illness concepts and HSB. It was conducted in July, 2014, and no honoraria were paid to participants.

The responses of respondents were collated, tallied, and presented in bar charts plotted using Microsoft Excel. The Chi-square test (two-tailed) was used to test for significant differences between data for those aged 20-40 years and those aged 41 years or older. A significance threshold of *P* < 0.05 was employed. Data analyses were done using IBM-SPSS for windows version 20.0 (IBM Corp. Atlanta, GA).

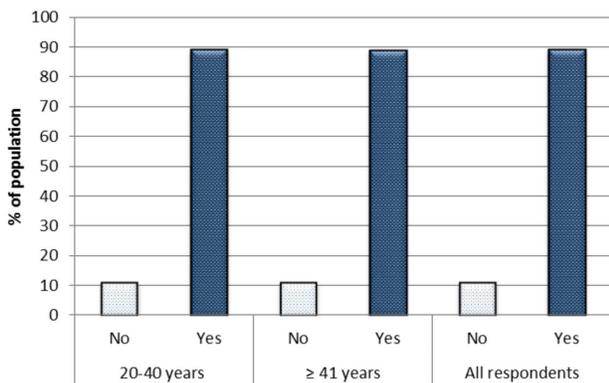


Figure 1: Respondents awareness of what constitutes a stroke (partial or total).

RESULTS

A total of 1,100 questionnaires were distributed while 1,024 of them were recovered, giving a recovery rate of 93.1%. Of the recovered questionnaires, 64 were discarded for incomplete or multiple entries and the other 960 questionnaires, representing 93.8% of the recovered questionnaires and 87.3% of the distributed questionnaires were analysed further.

Eleven percent of the respondents reported not knowing what a stroke was (Fig 1) and were therefore excluded from further analyses. Data from 854 respondents (431 aged 20-40 years and 423 aged 41 years or older) were therefore included in the remaining analyses, and are reported where necessary as those aged 20-40 years versus those aged 41 years or older.

Seven percent of the respondents [20-40 years old vs ≥ 41 years old; 3.9% vs 10.2% ($\chi^2 = 2.765, P = 0.096$)] reported having had a stroke (Fig. 2). As much as 83.7% of the

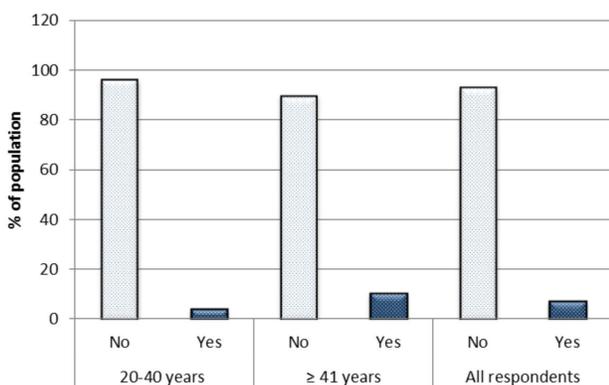


Figure 2: Proportion of the studied population who have had a stroke

respondents [96.1% vs 89.8% ($\chi^2 = 148.45, P < 0.001$)] knew someone who has had a stroke (Fig. 3). Twenty one percent of the respondents [18.3% vs 24.3% ($\chi^2 = 0.767, P = 0.381$)] believed that a stroke was caused by spiritual events while 12.6% [11.8% vs 13.2% ($\chi^2 = 0.046, P = 0.831$)] believed both natural events and spiritual events were responsible for strokes (Fig. 4). From Figure 5, it is seen that among those who have had a stroke, 36.1% [23.5% vs 40.9% ($\chi^2 = 6.587, P = 0.010$)] believed it was caused by spiritual events while 8.2% [17.6% vs 4.5% ($\chi^2 = 8.303, P = 0.004$)] believed it was caused by both spiritual and natural events.

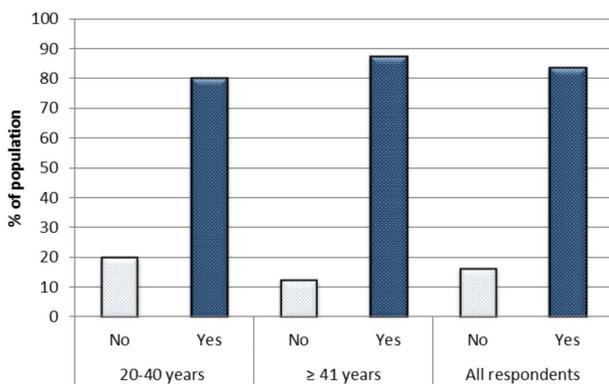


Figure 3: Proportion of the population who reported knowing someone who has had a stroke

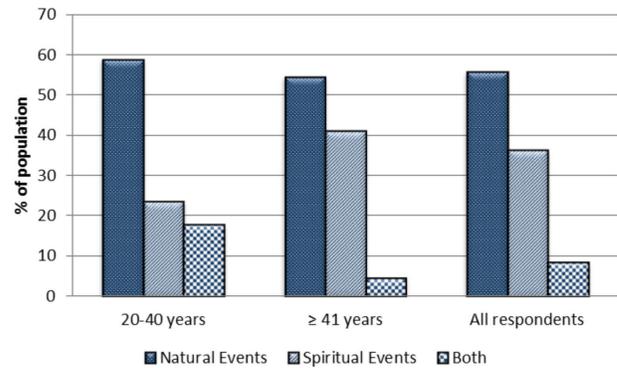


Figure 5: Stroke-related illness causation concepts of respondents who have had a stroke

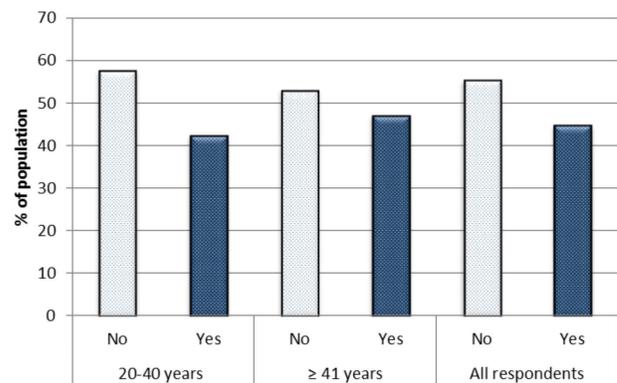


Figure 6: Respondents awareness of the warning signs of an impending stroke

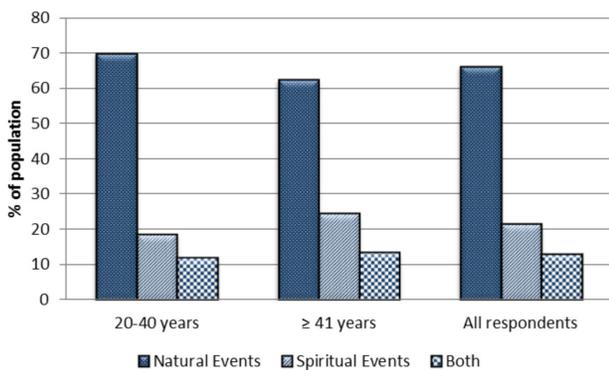


Figure 4: Respondents stroke-related illness causation concepts

Figure 6 shows that 44.6% [42.2% vs 47.0% ($\chi^2 = 0.506, P = 0.447$)] of the respondents claimed to know the warning signs of an impending stroke, even though only 0.9% (2% of those aged 41 years or older) correctly mentioned at least one warning sign of an impending stroke. The others either did not know what the signs were or confused risk factors for stroke with its warning signs.

A total of 22.4% of the respondents [20.9% vs 23.9% ($\chi^2 = 0.258, P = 0.661$)] believed that prayers were the best means of preventing a stroke, while 64.9% [67.5% vs 62.2% ($\chi^2 = 0.791, P = 0.374$)] believed that healthy living was the best way to prevent a stroke (Fig. 7). Among those who reported to have had a stroke, 37.7% [52.9% vs 31.8% ($\chi^2 = 9.023, P = 0.003$)] reported that prayers were the best way to prevent a stroke while 55.7% [41.2% vs 61.4% ($\chi^2 = 8.003, P = 0.005$)] believed that healthy living was the best stroke prevention method (Fig. 8).

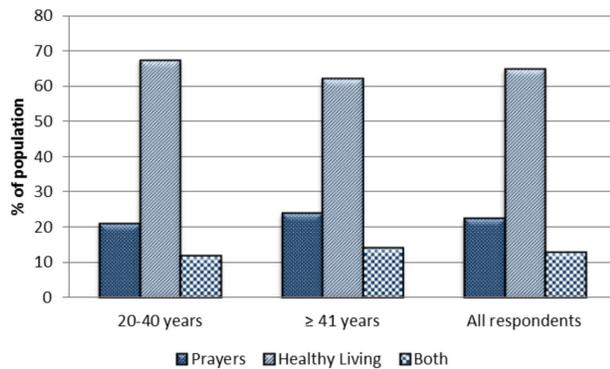


Figure 7: Respondents' perception of the best method for preventing a stroke

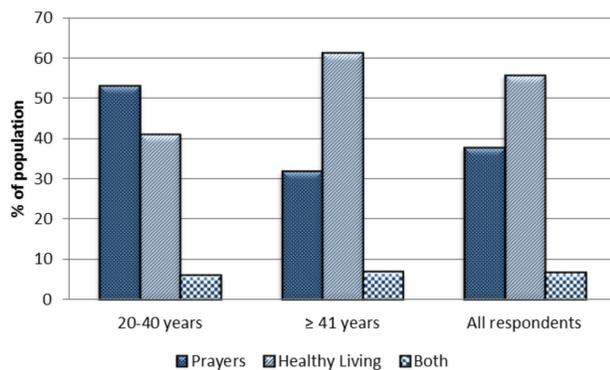


Figure 8: Perceptions of respondents who have had a stroke on the best method for preventing a stroke

From Figure 9, it is seen that 60.5% of the respondents [65% vs 56% ($X^2 = 1.695$, $P = 0.193$)] believed that the hospital was the best place to manage a stroke; 9.8% [10.8% vs 9.5% ($X^2 = 0.053$, $P = 0.818$)] believed a prayer house was the best place for stroke management; while 16.4% [13.2% vs 19.6% ($X^2 = 1.778$, $P = 0.182$)] believed a traditional healing home was the best place for managing a stroke. Interestingly, 50.8% [47.1% vs 52.3% ($X^2 = 0.500$, $P = 0.479$)] of those who reported having had a stroke believed hospital was the best place for stroke management; 19.7% [11.8% vs 22.7% ($X^2 = 4.190$, $P = 0.041$)] reported that traditional healing centres were the best places to manage a stroke (Fig. 10).

DISCUSSION

Local illness concepts that are at variance with scientific realities are a barrier against appropriate HSB which translates to seeking proper medical care (Hill *et al.*, 2003). Given the role of education in shaping local illness concepts (Webair and Bin Gouth, 2013), this study investigated stroke-related illness concepts and HSB among educated Nigerians, studying or working in a specialised University devoted principally to the sciences. Educated people usually affect the society, as less educated friends and relations often look up to them for counsel on health matters. It is therefore important that such a section of the society should have proper illness concepts and HSB.

Given the high morbidity from stroke in Nigeria, it is surprising and worrisome that as much as 11% of the studied population do not know what a stroke is. More worrisome is also the finding that among those who knew what a stroke is, more than half of them reported not knowing the warning signs of a stroke; and even those who claimed to know (45% of the population) only 0.9% (2% of the older population and none of the younger group) could correctly describe any of the warning signs of an impending stroke. Implicit in this is that most of the subjects would not be in a position to identify an individual who is on the verge of having a stroke, not to mention helping such an individual get to the hospital at the shortest possible time. Such ignorance about the warning signs of a stroke has however been reported previously (Jurkowski *et al.*, 2008). Studies have shown that if an individual got appropriate medical attention before a stroke builds up sufficiently to cause serious vascular and/or nervous damage, the situation is usually arrested (Jauch *et al.*, 2013).

The fact that 7% of respondents reported having had a stroke is mind-boggling. It suggests that stroke incidences were more common than previously appreciated, and calls for urgent public health action aimed at lowering its incidence. Data from developing countries report a prevalence ranging from 0.0 to 10.2 per 1,000 population for stroke (Feigin *et al.*, 2003; Danesi *et al.*, 2007; Enwereji *et al.*, 2014). It is nonetheless plausible that some of the reported events (in this study) may not have been strokes in the scientific sense of the term as the HSB of the subjects suggest that they may have thought (or been told) they had a stroke without proper medical determination (see Figures 5, 8 and 10). Conversely, Adelaye (2014) notes that “the low incidence rates (for stroke in many African countries) may still be indicative of incompleteness of stroke registries in many African settings, and that data obtained from these registries may be unreliable and inappropriate for estimation of stroke burden”, suggesting that stroke prevalence and incidence rates may be under-reported in these countries. The reported HSB of respondents, in this study, support this position.

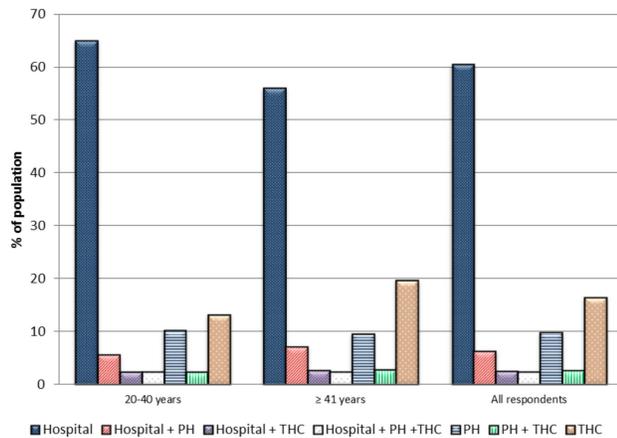


Figure 9: Stroke-related health seeking behaviours of respondents

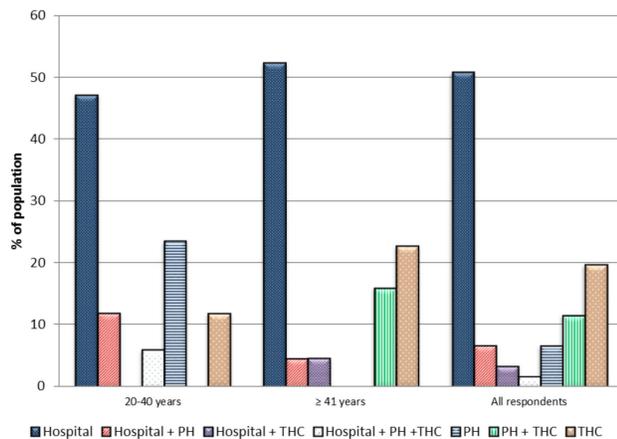


Figure 10: Stroke-related health seeking behaviours among respondents who have had a stroke

As much as 21% of respondents believed spiritual events caused strokes and the figure increased to 36% among those who have had a stroke. Similarly, approximately 22% of respondents (and 38% of those who have had a stroke) believed that prayers were the best method for preventing a stroke. These wrong illness causation and prevention concepts in such a large swathe of the population are dangerous as they negatively affect HSB. Cultural beliefs and practices are reported to be the most important factors that affect illness concepts and HSB (Shaikh and Hatcher, 2005). It is therefore inferable that deep-seated cultural beliefs about the causes of ill-health are responsible for the illness concepts and HSB of more than 20% of the studied population. Given that HSB derive from illness concepts, an aggressive education programme aimed at exorcizing

superstitious beliefs about illnesses is sorely needed. This is particularly important especially as the figures reported in this paper are indictments on the quality of education Nigerians receive (and give). It is bothersome that only 66% of respondents in a Nigerian University believed natural events caused strokes and only 56% believed healthy living could prevent strokes.

HSB are directly products of illness concepts. Improving the patient's or care-givers' HSB could help reduce morbidity and mortality from diseases (D'Souza, 2003; Webair and Ghouth, 2014). Against this backdrop, the finding that 10% and 16% of the respondents (and 7% and 20% of those who have had a stroke) believed a prayer house and traditional healing home, respectively, were the best places to manage stroke cases partly explains the high mortality from stroke [40%, Wahab (2008)] reported in Nigeria. Prayer houses offer hope to the subjects and an assurance that they will be spiritually healed of their disease. Hope is tactfully used by operators of such houses to relieve the emotional challenges of suffering that come with stroke. Prayers therefore play nicely into the narrative that strokes are caused by spiritual events and therefore require spiritual solutions. The seeking of help from traditional healing centres is considerably akin to seeking help from prayer houses, the difference being largely with the religious persuasions of the individuals involved.

It is however important to note that there are differences between traditional and complementary medicine. Traditional medicine refers to a set of healthcare practices that are part of that country's own tradition (WHO, 2000). It is therefore more common to find people who fall back to traditional medicine especially if their illness concepts are poor. Interestingly, it is common to find people who though they recognise that the hospital was the right place to seek help in the event of a stroke, would still combine it with prayers and/or traditional practices (see Figures 9 and 10). The integration of traditional healing practices with modern health services has been reported elsewhere (Gilman *et al.* 1992) and patients have been reported to prefer such combinations (Buchwald *et al.*, 1992; Bamatraf, 2008). Visiting traditional healing homes and prayer houses may be unfavourable if patients present late at hospitals for treatable conditions. Furthermore, some traditional practices can have harmful effects (Buchwald *et al.*, 1992).

The prevalence of stroke in Nigeria and other African countries might increase due to significant changes in major stroke risk factors (that are attributable to urbanisation and westernisation of diets) coupled with the biased focus on the prevention and control of infectious diseases, without regard to many non-communicable diseases (NCDs) which are becoming commonplace (Truelsen, 2010; Chin, 2012). It is therefore imperative that proper attention be paid to NCDs such as stroke with a view to improving the quality of life of the population and in so doing, improve productivity.

Improving the illness concepts and HSB surrounding stroke through aggressive education is warranted. The data from this study carried out in a Nigerian University suggests that an overhaul of the education system in Nigeria should be considered and public education campaigns using the popular mass-media should be initiated as soon as possible. Such aggressive public health education about stroke has been successful elsewhere (Chiti *et al.*, 2007) and can be replicated in Nigeria. It is important that such campaigns include strategies to educate the public about the 5 “Suddens” of stroke warning signs – sudden weakness; sudden speech difficulty; sudden visual loss; sudden dizziness; and sudden, severe headache. The public in this case should not only be those at risk, but also family members and prospective care-givers. It is known that awareness of these signs shortens the time it takes for cases to be presented for appropriate medical attention (Jauch *et al.*, 2013) and ultimately improves outcomes.

Governments have an important role to play in ensuring that the populace receive proper education about illnesses and in reducing poverty through deliberate economic policies. Economic wellbeing (which is often associated with educational attainment) is reported to be a strong predictor of stroke risk and fatalities (Johnston *et al.*, 2009). The average cost of a cranial CT could be as high as \$60 USD and this is expensive especially in Nigeria where many still live below \$1.25/day – the poverty index (World Bank, 2014). The high cost of health services may affect HSB (Connor *et al.*, 2007) even among educated people. It is also possible that reports of challenges arising from poor quality of care in some standard health facilities (Lemogoum *et al.*, 2005) disenchant patients and may play a part in people seeking spiritual, and other, alternatives.

This study is limited by its reliance on self-reported stroke incidences and the inaccessibility of the subjects hospital records that would have corroborated (or otherwise) the claims of the respondents. It would also be interesting to extend the study to illiterate members of the society and see how the data compare to that of educated individuals. This study is however an important first step in awakening Nigerians and health policy makers to the challenges of poor stroke-related illness concepts and HSB among Nigerians.

In conclusion, the stroke awareness, illness concepts and HSB were investigated in an educated population of Nigerians. As much as 11% of the population reported not knowing what a stroke is while 55% of those who reported knowing what a stroke is did not know the warning signs of an impending stroke. Unfortunately, only 0.9% of those who claimed to know these signs correctly described any one of them. Twenty one percent of the population (and 36% of those who have had a stroke) believed spiritual events cause strokes; while 10% and 16% of the respondents (and 7% and 20% of those who have had a stroke) believed a prayer

house and traditional healing home, respectively, were the best places to manage stroke cases. These data cast aspersions on the quality of health education available to Nigerians. There is an urgent need to correct these poor stroke-related illness concepts and HSB through aggressive education and enlightenment campaigns.

Conflict of Interest

The author has no real of potential conflicts of interest to declare.

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