

Effects of Nurse-Led Stroke Educational Programme on the Knowledge and Practice of Nurses Managing Stroke Patients in Two Teaching Hospitals, Ogun State, Nigeria

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Abstract: The increase in burden of stroke in less developed and developing countries of the world is due to epidemiologic, demographic and increasing cardiac risk which are resultant effect of alteration in the way people live. Therefore, this study investigated the effects of nurse-led training programme on the knowledge and practice of nurses managing stroke patients in the selected hospitals.

This study used a quasi-experimental design. The sample size of the study was determined using Leslie Kish formula, while forty-one participants participated in the study. Data were analysed using descriptive statistics (frequency, mean, percentages and standard deviation) to describe demographic data, knowledge and practice of nurses managing stroke patients, following training intervention given by the researcher. The research hypotheses were tested by using, student t-test.

Results indicated shows that there was an improvement in the level of knowledge of the participants after the intervention compared with the pre intervention mean knowledge (Mean difference = 3.902, $df = 39$, $t\text{-cal.} = 3.870$, $P = .000$). Also, a significant difference was found between the practice level of the pre and post intervention mean scores ($MD = 2.341$; $t - \text{calculated} = 2.0467 > \text{Sig.} = 0.003$ on managing stroke patients among nurses.

The study concluded that continuous training programme for nurses will enhance the knowledge and practice of nurses in managing stroke patients. It was recommended that multidisciplinary team approach should be encouraged in the management of stroke patients. This ill afford the individual discipline to play its therapeutic role.

Key words: Nurse-led training, knowledge, practice, nurses, stroke patients

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I. Introduction

Stroke is a chronically disabling disease. It usually incapacitates its victims to the extent that many of them live a life of dependence. Stroke is thought to be the most common cause of protracted disability in the elderly people globally (Donnam, 2008; Owolabi, 2011; Strong, 2007). Apart from the more dramatic motor disabilities, impairments in healthy and physical capability also exist. Post stroke depression is particularly common and contributes much to the general morbidity burden of stroke. The accompanied physiologic dysfunction usually lasts for more than 24 hours. This is usually a consequence of interruption of cerebral blood supply and indicates demise of tissue cells. Poor knowledge of effective control of risk factors of stroke which includes life style, high blood pressure, consumption of alcohol, smoking of cigarette, excessive body weight (obesity), eating highly saturated fatty diet were some of the factors suggested as contributing to stroke increase in Africa.

There is inadequate information on the epidemiology of stroke especially in countries of Africa. Incidentally the knowledge is very necessary in these areas. Dearth of manpower may be contributory to this occurrence (Bower, Oguniyi & Owolabi, 2007). Wahab, an associate professor of medicine Ilorin Teaching Hospital in a paper delivered entitled "Incidence of stroke cases and current treatment strategies in Nigeria" identified hypertension as the dominant or prominent predisposing factor to stroke in Nigeria. He stated further that it was not mere hypertension but the uncontrolled type that leads to majority of stroke cases. He went further by saying that every adult Nigerian should check his or her blood pressure at regular intervals to forestall occurrence of stroke. According to him, occurrence of stroke is high in Nigeria because Nigerians have a dominant risk factor which is hypertension. He observed that if one is able to control hypertension one would have been able to reduce his or her risk factor by 40%. In addition, he went further by stating that the prevalence of stroke is untreated hypertension. This usually happens as a result of refusal of being hypertensive.

Consequently, by the time they come for treatment in the hospital, the damage would have been done which means they would have been struck with stroke (Wahab, 2017).

Statement of the Problem

Stroke is a universal health problem. The increase in burden of stroke in less developed and developing countries of the world is due to epidemiologic, demographic and increasing cardiac risk which are resultant effects of alteration in the way people live (Bonita, Mathers & Strong 2007). A study carried out by Akinyemi et al (2009), on nurses knowledge and perception of stroke amongst hospital workers in an African community reported insufficient stroke knowledge among African health workers. Another study carried out by Akinyemi et al. (2014) to determine task-shifting training on stroke knowledge among Nigerian non-neurologist health workers (NNHEWs), showed that there was improvement in knowledge after the intervention.

Although, various studies have been carried out on knowledge of stroke, causes, symptoms and risk factors as well as its management, limited studies exist in the review of literature on knowledge of stroke management among nurses. Many of the studies had only included nurses as co-participants. In view of this gap this study wants to examine the effects of nurse-led intervention on the knowledge and practice of nurses managing stroke patients in two selected hospitals in Ogun State, Nigeria. Moreover, the researcher observed during clinical practice, variations in practice among the nurses managing stroke patients. These variations can be managed through proper nurse-led intervention, hence, the need for this study.

Research Questions

Attempts are made to answer the following questions:

1. What is the level of knowledge in managing stroke patients among nurses in the selected hospitals?
2. What is the reported practice of managing stroke patients among nurses in the selected hospitals?

Hypotheses

The following hypotheses were tested in this study

Ho₁: There is no significant difference in the level of knowledge of nurses managing stroke patients before and after the intervention programme.

Ho₂: There is no significant difference between the reported practices of the nurses before and after the intervention programme.

II. Methods

Research design: The research design selected for this study is quasi experimental.

Research Settings: The research settings selected for this study were Federal Medical Centre, Abeokuta, and Olabisi Onabanjo University Teaching Hospital, Sagamu.

Population: Nurses working in the Federal Medical Centre, Abeokuta, and Olabisi Onabanjo University Teaching Hospital, Sagamu.

Sample size: the sample size of the study was determined using Leslie Kish formula

Sample size determination

Sample size will be determined using Leslie Kish formula.

$$N = \frac{Z_a^2 P(1-P)}{\delta^2}$$

N = sample size

Z_a² = standard normal deviate at 95% confidence interval corresponding to 1.96

P is assumed baseline level of knowledge, put at 50%, i.e 0.5

δ is precision (difference between baseline knowledge and effect of a nurse-led educational intervention) put at 30%, i.e 0.3

For OOUTH

$$N = \frac{1.96^2(0.5)(1-0.5)}{0.3^2}$$
$$= 10.67 \approx 11$$

(17 participants will be used so that the difference of 7 will take care of attrition effect).

17 participants will be selected at OOUTH

For FMC

δ is precision (difference between baseline knowledge and effect of a nurse-led educational intervention) put at 20%, i.e 0.2

$$N = \frac{1.96^2(0.5)(1-0.5)}{0.2^2}$$
$$= 24$$

(28 participants will be used so that the difference of 4 will take care of attrition effect).

28 participants will be selected at FMC

Sample size and sampling Technique: Purposive sampling technique was used for this study

Instrumentation: The instrument used was questionnaire. The questionnaire was designed by the researcher. The researcher presented the designed items to the supervisor for necessary corrections and advice. It was divided into the following sections:

Section A: Demographic data: This section consists of age, gender, religious affiliation, educational qualification and ethnic group of the participants.

Section B: This section comprised structured questions constructed by the researcher. They were divided into two. The first part dealt with knowledge of the participants while the second part dealt with practice of the participants. A total of 25 questions were administered, eighteen of them elicited knowledge of the participants in the management of stroke patients and seven elicited practices. Each question was allocated one mark.

Categorisation of Scores

The scores were categorised as follows:

Knowledge:	Practice
8-12-High	5-6 Fair
4-7 Moderate	3-4 Average
0-3 Low	0-2 Poor

Validity of Instrument: The face and content validity of the instrument was established through the assessment of the researcher's supervisor and other lecturers in the school as well as the methodologist in the college of postgraduate studies. The instrument was given to them in order to ascertain and justify the validity of the language, the possibility of eliciting the accuracy of information and for the achievement of the stated objectives. Their contributions, led to the modification of the instrument.

Reliability and validity of Instrument: In order to ensure the reliability of the questionnaire, Cronbach's Alpha model was employed. This was done by administering the questionnaire to ten nurses at Babcock University teaching Hospital for the pre-test. As a result the coefficient reliability was determined using the SPSS computer software. The correlation coefficient of 0.7 was obtained.

Method of Data Collection: This was carried out in the following phases.

Assessment phase: Questionnaire was prepared by the researcher. A total number of twenty five questions were prepared, eighteen of them elicited knowledge of the nurses in maintaining stroke patients and seven elicited practice of nurses in managing stroke patients.

Selection of Research Assistant: Two research assistants were selected from each of the hospitals. This was done before the exercise. They were taught what to do and how to do it.

Planning Phase: In addition to the prepared questionnaire, other materials were also provided. These included the lecture put on slide, projector and electronic materials such as laptop and electricity as well as getting the room where the intervention was to take place. This preparation was made by the research assistants and the researcher.

Implementation Phase: The participants were arranged in the prepared venue by the help of research assistants. The programme began at about 9:30a.m was declared open by the head of the nurse. Introduction of the trainer (that is the researcher and his assistants) was done. The participants introduced themselves. The purpose of exercise was stated. The need for their cooperation was sought.

After the arrangement of the participants, pre-test was given to them. Questions were distributed to the participants by the research assistants. The time taken to do the test was one hour. The scripts were collected and marked by the researcher. Each question was allocated one mark. Any correct answer was scored one while any answer that was wrong scored zero. The total mark was 25.

Similar intervention was given during the third week of the programme for the participants. Post-test was given during the fourth week of the exercise. The test that was given to the participants at the pre-intervention stage was given at the post-intervention stage. This was to get the difference in knowledge of managing stroke patients by the respondents.

During the post-test exercise, research assistants were used to distribute the questionnaire to the participants. After finishing the post-test, scripts were collected from the participants. They were also marked by the researcher.

The two tests, pre-test and post-test were marked with adherence to the scheme or technique of scoring. The marks were coded and entered into the computer using descriptive (frequency, percentage, mean and standard deviation). The statistical Package for Social Science (SPSS) version 2.0 was used as the tool for analysis categorization of score.

Method of Data Analysis: The researcher carefully went through the answer scripts, marked them. He ensured that they were correct in terms of the number of the respondents. All the instruments were coded and entered into

the computer to run statistical analysis using software package for social sciences (SPSS) Version 21. Data were analysed using descriptive statistics (frequency, mean, percentages and standard deviation) to describe demographic data, knowledge and practice of nurses managing stroke patients, following training intervention given by the researcher. The research hypotheses were tested by using, student t-test

Ethical Consideration: In order to protect the rights of the respondents, ethical clearance was obtained before going to the field. Informed consent was gained through interaction and verbal approach with the respondents. They were, however allowed to participate voluntarily. Confidentiality was strengthened by being anonymous in the demographic data, hence, omission of names of respondents. They were told that no penalty would be meted on those who might later withdraw from the exercise.

III. Results and Discussion of Findings

Table 1: Information on the level of knowledge on stroke management

Level of Knowledge	N = 41			
	Pre-test score		Post-test score	
	Freq.	Percentage%	Freq.	Percentage %
High	37	90.00	38	93.0
Average	4	10.0	3	7.0
Low	-	-	-	-
Total	41	100.0	41	100.0
Mean	10.048		10.951	
Standard dev.	1.949		2.397	
Mean difference	0.903			
Maximum	14.00		17.00	
Minimum	6.00		6.00	

Table 1 presents the level of knowledge on stroke management by the nurses based on their pre-test and post-test scores. Their level of knowledge was categorized as (8-12) high, (4-7), average,(0-3), low. The results of pre-test (Mean = 10.048) and post-test (Mean = 10.951) scores of nurses shows that there was an improvement after the intervention with a mean difference of 0.903.

Table 2: Independent t-test shows the difference between the knowledge level of pre and post intervention on managing stroke patients.

Group	N	X	Std. Dev	Mean Diff.	Df	T-cal	Sig.
Pre-intervention	41	10.049	1.949	3.902	39	3.870	.000
Post-intervention	41	13.951	2.397				

Table 2 shows the descriptive and inferential statistics of post-intervention knowledge concerning management of stroke among nurses. At the pre- intervention level, the mean knowledge score was 10.048 while the post intervention mean score was 10.951, mean difference was 0.903. This showed that there was improvement in the level of knowledge of the participants after the intervention compared with the pre intervention mean knowledge. Student t-test was used to test the hypothesis as stated in table 2 and the result revealed that there is a significant difference in the level knowledge of nurses on knowledge concerning management of stroke patients (p = 0.000). Therefore, the research hypothesis was accepted. Which revealed that pre-intervention knowledge of the participants was significantly different from the post-intervention group.

The finding of this study revealed that before the intervention programme, there was low knowledge concerning management of stroke among nurses in Olabisi Onabanjo University Teaching Hospital Sagamu and Federal Medical Centre, Abeokuta as revealed by pre-intervention mean score. The finding supported a study conducted by Akinyemi et al. (2014) to determine task-shifting training on stroke knowledge among Nigerian non-neurologist health workers. Stroke knowledge was evaluated before and after training using a self-administered questionnaire. The finding showed that there was improvement in knowledge after the intervention.

Table 3: Information on the level of practice on stroke management

Level of Practice	N = 41			
	Pre-test score		Post-test score	
	Freq.	%	Freq.	%
Good	10	24.0	9	22.0
Average/fair	15	37.0	25	61.0
Poor	16	39.0	7	17.0
Total	41	100.0	41	100.0
Mean	3.073		3.415	

Standard dev.	1.752	1.140
Mean difference	0.342	
Maximum	6.00	5.00
Minimum	0.00	0.00

Table 3 presents the level of practice on stroke management by the nurses based on their pre-test and post-test scores. Their level of practice was categorized as (5-6), good, (3-4), fair, and (0-2) poor. The results of pre-test (Mean = 3.073) and post-test (Mean = 3.415) scores of nurses shows that there was an improvement after the intervention with a mean difference of 0.342.

Table 4: Independent t-test to show the difference between the practice level of pre and post intervention mean score on managing stroke patients.

Group	N	X	Std. Dev	Mean	Df	t-cal	Sig.
Pre-intervention	41	3.073	1.752	2.341	39	2.046	.003
Post-intervention	41	5.415	2.039				

Result on Table 4 shows a significant difference between the practice level of the pre and post intervention mean scores (MD = 2.341; t – calculated = 2.0467 > Sig. = 0.003 on managing stroke patients among nurses. Therefore, the null hypothesis of no significant difference between the practice level of pre and post intervention mean scores on the management of stroke patients was rejected and the alternate hypothesis accepted. It could therefore be inferred that the improvement in practice level of managing stroke patients was consequent of training received by the participants.

This study supported the finding of Christodoulou (2012) that stated that focused nursing education, training and evidence-based knowledge updates are key attributes that enable neurological nurse specialists to provide optimum care. Input of early advanced intervention and care are quite significant. Therefore, specialised and dedicated nursing is valuable for the achievement of better patient outcome.

The study also supported the findings of the study of Struwe, Baernholdtet, al. (2013) that the level of competence a nurse possesses is correlated with efficiency and effectiveness of pertinent nursing care. Thus, a nurse who specialises in stroke management would be able to give a better care to patient. The nurse who specialises in stroke management understands how to assess and give relevant nursing intervention. Such a nurse would be able to make reasonable contributions and suggestions among the members of specialists in stroke management.

IV. Conclusion

Stroke is one of the most serious diseases that causes everlasting disabilities in its victims. Many who survive it usually find it difficult to cope with life after the incidence. Some of them may fall into depression (Brunner & Suddarth, 2014). The realization that they are likely to become dependent may sometimes lead to committing suicide. The problem of rehabilitation is another thing that may affect their coping mechanism. Somebody who does not get support from relations may find it difficult if not impossible to adapt to a change in fortune.

The rate of occurrence of stroke in Nigeria calls for concerted efforts by the government. This was at the launching ceremony of Neuro Aid drug by Bola Pharmaceuticals in March 2017 that if care is not taken by the government and private health institutions to stop the increase in rate of stroke occurrence, the situation might become worse within the next ten years.

This study examined the effects of nurse-led training programme on the knowledge and practice of nurses managing stroke patients in two selected hospitals in Ogun State. The intervention, though, was effective, but the sustainance of the findings by the practitioners is very important. If this is done and knowledge and practice improved it would affect the management of patients. Similarly, it will also affect or improve holistic care needed by them.

V. Recommendations

Based on the findings of the study, the researcher recommended the following:

1. Nurses should be trained in neuroscience nursing
2. Stroke care units and relevant equipment should be provided.
3. Regular continuing education programme should be organised for nurses. This includes attending conferences, seminars, or workshop, and interactive programmes.
4. Multidisciplinary team approach should be encouraged in the management of stroke patients. This will afford the individual discipline to play its therapeutic role. Further studies are necessary to examine the challenges that may militate against the knowledge and practice of nurses in managing stroke patients.

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