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Original Research Article

Awareness Level of Nurses Regarding Management of Stroke Patients in Rajshahi Medical College Hospital

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Abstract

This descriptive cross-sectional design study aimed to assess the awareness level of nurses regarding the management of stroke patients in Rajshahi Medical College Hospital. A simple random sampling technique selected the 296 senior staff nurses who met the inclusion criteria. The study period was January 2018 to July 2018. The instruments consisted of the demographic questionnaire and awareness level of nurses regarding the management of stroke questionnaire. The researcher developed all questionnaires from the literature reviews. This study result indicated that the mean age of the subjects was 30.1, with an SD of 8.9. Their age range was 21-56 years. Most of the subjects, 232 (78.4%) was female and fewer males 64 (21.6%). Principles of management of stroke management include airway, breathing and circulation management (ABC management), specified by most 290 (98.0%) of the respondents. An equal portion of the respondent mentioned semi-prone position 264 (89.2%) and fluid management 264 (89.2%). The awareness level of nurses regarding the management of stroke revealed that (63%) of the respondents had satisfactory levels (20%) excellent and (17%) had low awareness regarding management of stroke. It had been seen that nurses did not answer some part of the questions, in which they needed reinforcement. This could be done by engaging them in continuous learning through the various approach to the training program. This finding suggests that the nurse's awareness need to be increased up to the highest possible mark to ensure safe and quality health care services regarding stroke management.

Keywords: Nurses Management, Stroke Patients, Rajshahi Medical College Hospital.

INTRODUCTION

A stroke is a medical disorder with insufficient blood supply to the brain, resulting in the loss of brain cells. Stroke is defined by the American Heart Association (AHA) as an abrupt loss of brain function caused by a disruption in the cerebral blood flow that lasts at least 24 hours or results in death (Kopyta & Zimny, 2015). Stroke is one of the major causes of disability and death worldwide. Almost half of the patients suffering from stroke are dead by one year. There are two main types of strokes: ischemic, due to lack of blood flow, and haemorrhage, due to bleeding accounting for approximately 85% and 15%, respectively (Osama, Aziz, Saeed, Fawzy, 2014; Hinkle & Guanci, 2007; Chang Yen-Liang *et al*., 2013).

An ischemic stroke occurs when an artery that supplies oxygen-rich blood to the brain becomes blocked. Blood clots often cause blockages that lead to ischemic strokes (Osama, Aziz, Saeed, Fawzy, 2014; Hinkle & Guanci, 2007 D'souza *et al*., 2008). Ischemic stroke is further subdivided into the thrombotic and embolic stroke. In a thrombotic stroke, a blood clot (thrombus) forms in an artery that supplies blood to the brain. However, in an embolic stroke, a blood clot or plaque blocks the bloodstream to the artery results less or no oxygen-rich blood in the brain.

An initial couple of months is a crucial period for stroke survivors to improve their health. However, because of the lack of adequate knowledge, the caregivers cannot manage the complexity of the care needed during this period (Islam, Moniruzzaman,

Khalil, Basri, Alam, Loo, & Gan (2013). Novice caregivers are usually inadequately prepared for their caregiving role and lack the information and skills to provide appropriate care. Stroke patients require long-term care for a better outcome. Most often, family members assist community-living stroke patients. These caregivers play a very important role amongst the service providers to people with stroke. Stroke patients and their caregivers have inadequate stroke knowledge and poor personal health behaviors. This large gap in stroke knowledge makes patients vulnerable to stroke-related complications (Islam *et al*., 2013). This study was conducted to understand the existing knowledge regarding basic stroke care amongst stroke patients' caregivers, which can help design appropriate intervention programs and may enhance stroke care and outcome.

Stroke remains one of the most devastating of all neurological diseases, globally the second leading cause of death and the third leading cause of disability. In the U.S., the prevalence of stroke is roughly 3% of the adult population. Of these strokes, approximately 87% are ischemic infarctions, 10% are primary haemorrhages, and 3% are subarachnoid haemorrhages. Worldwide estimates indicate that primary haemorrhages constitute a higher percentage of all strokes, ranging from 10% to 25% (Roger *et al.*, 2011). Strokes mainly affect individuals at the peak of their productive life and layer a greater range of disabilities than any other condition. It is estimated that 60% of stroke survivors have visual problems immediately after their stroke, and this reduces to about 20% by three months after stroke (Rowe, F., 2013). Engelter ST *et al*., (2006) reported that approximately a third of stroke survivors experience some level of aphasia, a complex disorder of language and communication caused by damage to the brain's language centers. Persons with aphasia have difficulty speaking, reading, writing, or understanding language. The Royal College of Physicians Sentinel Stroke National Audit Programme investigators explores that the limb weakness is around half of the stroke survivors require speech and language therapy during their hospital stay.

In Bangladesh, Stroke ranks the third position among the causes of death in Bangladesh. Islam *et al*., (2013) conducted a study titled on the burden of stroke in Bangladesh reported that stroke mortality increased from 6% to approximately 9% from 2006 to 2011. Stroke is increased with the increment of age. In this regard, Mohammad *et al*., (2011) reported that younger having an age of 40 years or more. In this age group, the stroke prevalence rate is 0.3% and this rate increases to 1% by increasing aged 70 years or more.

Moreover, this study also reported that being a male person is prone to developing a risk of stroke than a female. Another hospital registry-based study was carried out over six months enrolled 679 stroke patients. The investigators reported that 68% of the patients were found, male. Their age was ranged from 45 to 70 years (Bhowmik *et al.*, 2016).

OBJECTIVES OF THE STUDY

General objective

To explore the awareness level of the nurses regarding the management of stroke patients at Rajshahi Medical College Hospital.

Specific objectives

1. To find out the socio-demographic characteristics of the nurses.
2. To find out the knowledge about risk factors of stroke.
3. To find out the knowledge of nurses about the management of stroke.
4. To find out the relation between socio-demographic indicators and knowledge about risk factors of stroke.

SCOPE OF THE STUDY

This descriptive design study was implemented to identify the awareness level of the nurses regarding the management of stroke patients at Rajshahi Medical College Hospital. The subjects were 296 stroke patients receiving treatment at Rajshahi Medical College Hospital, a 1200 bed teaching hospital in Bangladesh. This study was conducted during the study period of January 2018 to July 2018.

CONCEPTUAL FRAMEWORK

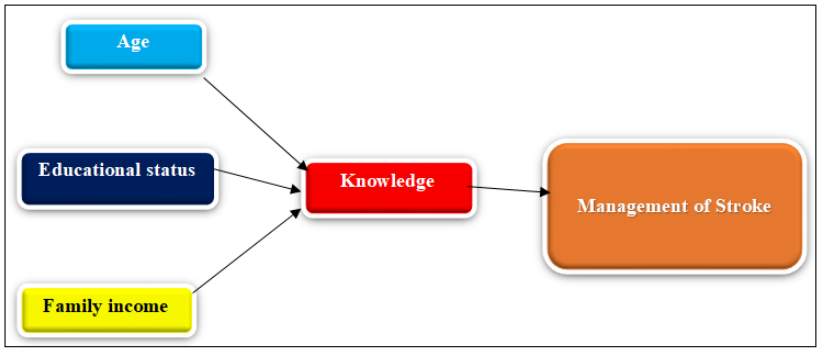

Figure 1: Conceptual Framework of the study

OPERATIONAL DEFINITIONS

Nurse: A nurse is a person who has received the maximum amount of education and recognized and accredited nursing institution and has registration under the Bangladesh Nursing Council to practice nursing in the country and outside of the country

Knowledge: It refers to the correct responses of the women to the items listed in the structured questionnaire on stroke

Management: Management is a respective process that involves the steps of planning, organizing, actuating, activating, and regulating to define and achieve goals via the utilization of people and resources.

Stroke: A stroke occurs when blood flow to the brain is interrupted. When a stroke happens, the brain cells in the local region start to die because they don't get enough oxygen or nutrition.

LITERATURE REVIEWS

According to World Health Organization (WHO) criteria, stroke is defined as "rapidly developing clinical symptoms and/or focal and at times global loss of cerebral function, with symptoms lasting more than 24 hours or leading to death, with no apparent cause other than of vascular origin". Brain infarctions (BI), also known as cerebral infarctions or ischemic strokes, intracerebral haemorrhages (ICH), and subarachnoid haemorrhages are subgroups of stroke (SAH). As a result, TIA is not included in the criteria because the symptoms vanish within 24 hours after commencement. However, the risk of stroke after a TIA might be as high as 10% to 20% in the first three months (Rothwell & Warlow, 2005; Eliasziw Kennedy, Hill, Buchan & Barnett, 2004).

Classification of Stroke

There are two main types of strokes: ischemic, due to lack of blood flow, and hemorrhagic, due to bleeding accounting for approximately 85% and 15%, respectively (Osama, Aziz, Saeed, Fawzy, 2014; Hinkle & Guanci, 2007; Chang Yen-Liang *et al*., 2013).

An ischemic stroke occurs when an artery that supplies oxygen-rich blood to the brain becomes blocked. Blood clots often cause blockages that lead to ischemic strokes (Osama, Aziz, Saeed, Fawzy, 2014; Hinkle & Guanci, 2007 D'souza *et al*., 2008). Ischemic stroke is further subdivided into the thrombotic and embolic stroke. In a thrombotic stroke, a blood clot (thrombus) forms in an artery that supplies blood to the brain. However, in an embolic stroke, a blood clot or plaque blocks the bloodstream to the artery results less or no oxygen-rich blood in the brain.

A hemorrhagic stroke occurs when an artery in the brain ruptures and leaks blood. The pressure from the leaked blood damages the surrounding brain cells. There are two types of hemorrhagic stroke: intracerebral and subarachnoid. In an intracerebral haemorrhage, a blood vessel inside the brain leaks blood or ruptures (Guo *et al*., 2013; Mohr *et al*., 1997). On the other hand, in a subarachnoid haemorrhage, a blood vessel on the surface of the brain ruptures and leaks blood between the inner and middle layers of the membranes that cover the brain (Guo *et al*., 2013; Mohr *et al*., 1997).

Risk factors for stroke

Risk factors of ACS are the states, conditions that increase the probability to get sickness and enhance to development of disease. There are several factors responsible for the stroke. These risk factors can be classified as 1) non-modifiable and 2) modifiable risk factors (Boehme, Esenwa, & Elkind, 2017).

Non-modifiable risk factors: Non-modifiable risk factors are those that cannot be modified or changed. The important non-modifiable risk factors for stroke include age, gender, ethnicity, and heredity.

Diagnosis of stroke

Patients with symptoms that maybe indicate a stroke or TIA have their brains scanned using computed tomography (CT). CT has a great sensitivity for identifying bleeding. It's approximately 100 percent in the case of haemorrhage, and it's around 95 percent in the case of SAH. The CT evidence of an infarction can take a long time to appear, and even big infarctions might be undetected for hours. The initial tomographic symptom of a developing infarction is hyper density (increased attenuation), which most typically indicates an acute intramural thrombosis. However, the diagnosis is clinically verified following a patient's neurological examination, not based on tomography or other imaging data. A later CT picture, generally an hour or more later, may reveal less attenuation (hypoattenuation). Another tool for diagnosing stroke is magnetic resonance imaging (MRI), which is more sensitive and shows both the pathophysiology and the anatomy, making it more demanding for the emergency patients. During the recent age, this method has advanced at a quick pace. The MRI examination takes longer. Abnormalities can be detected early using MRI, in some cases in only a few minutes. MRI identifies abnormalities in the brainstem more accurately. It's also utilized to figure out where haemorrhages come from.

After a stroke or TIA, B-mode ultrasonography is also utilized to view the common carotid and vertebral arteries. This can detect atherosclerotic alterations that might explain why the attack happened. When a doctor suspects stenosis and the amount of stenosis have reached 50% or more, many stroke patients receive this evaluation.

Management of stroke: Stroke management can be classified into three ways, medical, surgical and nursing management.

Medical management

Thrombolytics

Thrombolytic medicines work by activating plasminogen and forming plasmin, which dissolves blood clots. Plasmin is a proteolytic enzyme that breaks cross-links between fibrin molecules, limiting the harm that a blood artery blockage might inflict. It is also known as a "plasminogen activator" and "fibrinolytic medicines" because of its activity. (Parihar L, Kumar and Gupta, 2014). In acute ischemic stroke, the primary purpose of thrombolysis is to recanalize an occluded intracranial artery. The only treatment drug authorized for achieving arterial recanalization and tissue reperfusion in acute ischemic stroke is intravenous tissue plasminogen activator (TPA), given within 4.5 hours of symptom onset. According to current American Stroke Association guidelines, a standard dosage of 0.9 mg/kg body weight with a maximum of 90 mg of TPA should be used (Jauch *et al*., 2013).

Antiplatelet therapy

Because few people may be treated with thrombolysis due to tight criteria, such as a time window, early antiplatelet therapy is advised for most patients with acute ischemic stroke (Zhong-He and Hui-Sheng, 2013). Aspirin, the most common antiplatelet medication, should be started within 48 hours after symptom onset with aspirin 160-325mg daily. When given early during an ischemic stroke, aspirin shows a little advantage (Benavente *et al*., 1999). A study of 4782 ischemic stroke inpatients in urban China in 2006 showed that in-hospital initiation of antiplatelet therapy was acceptable (81%). In the CHANCE study, 5170 patients with mild ischemic stroke were compared to aspirin monotherapy 75 mg once daily for 90 days against clopidogrel 300 mg loading followed by 75 mg once day for 90 days with aspirin 75 mg once daily for the first 21 days. Compared to aspirin monotherapy, the incidence of a recurrent stroke within 90 days was considerably reduced with combination treatment.

Surgical Management

Mechanical thrombectomy, in combination with therapeutic thrombolysis, has been demonstrated to enhance functional outcomes in patients. This intravenous thrombolysis is approved for acute stroke patients with major artery occlusions in the anterior circulation up to 6 hours after symptoms start if they are eligible within 4.5 hours. Mechanical thrombectomy followed by recanalization with the Solitaire and TREVO devices (Roman, Obach, Blasco *et al*., 2012), a new generation of endovascular tools, were proven to be promising for new patients as well as stent retrievers in clinical settings.

Nursing management of stroke

Secondary Stroke Prevention: secondary stroke prevention mainly focuses on early recognition, response, risk factors modification, and maintaining a healthy lifestyle. The Canadian Stroke Best Practice Recommendations: Stroke Recognition and Response (2015) emphasize the importance of urgent assessment and intervention following stroke. Recommendations for initial management include the development of policy regarding hospitalization and referrals following stroke, availability of specialized stroke clinics for rapid assessment (within 24 to 48 hours) and access to urgent investigations, including same-day imaging (CT, MRI and vascular imaging including ultrasound).

Risk factor management strategies play a crucial role in the prevention of recurrence. Several studies indicated that the risk factors management strategies include the reductions in smoking, cholesterol levels, and blood pressure and increasing treatment with antiplatelet, lipid-lowering and blood pressure-lowering medications (Hardie *et al*., 2005; Rothwell and warlow 2005). Several strategies initiatives that reinforced secondary prevention include bedside teaching, patients logs, information brochures and letters. Rahiman *et al*., (2008) found that adherence to medication interventions over 3 months to one-year periods. The rates of adherence to interventions were lower, although providing in-hospital counselling helped to create a direct link between stroke and lifestyle modification, particularly concerning tobacco use. Rates of smoking cessation, for instance, were reported to be 97% at 3 months and 94% at one year (Ovbiagele *et al*., 2005). Additionally, the patients should be suggested for lifestyle modification.

Incidence and prevalence of stroke at a global perspective

Stroke remains one of the most devastating of all neurological diseases, globally the second leading cause of death and the third leading cause of disability. In the U.S., the prevalence of stroke is roughly 3% of the adult population. Of these strokes, approximately 87% are ischemic infarctions, 10% are primary haemorrhages, and 3% are subarachnoid haemorrhages. Worldwide estimates indicate that primary haemorrhages constitute a higher percentage of all strokes, ranging from 10% to 25% (Roger, *et al*., 2011).

Incidence and prevalence at Bangladesh perspective

Stroke ranks the third position among the causes of death in Bangladesh. Islam *et al*., (2013) conducted a study titled on the burden of stroke in Bangladesh reported that stroke mortality increased from 6% to approximately 9% from 2006 to 2011. Stroke is increased with the increment of age. In this regard, Mohammad *et al*., (2011) reported that younger people have 40 years or more. In this age group, the stroke prevalence rate is 0.3% and this rate increases to 1% by increasing aged 70 years or more.

Moreover, this study also reported that being a male person is prone to developing a risk of stroke than a female. Another hospital registry-based study was carried out over six months enrolled 679 stroke patients.

The investigators reported that 68% of the patients were found, male. Their age was ranged from 45 to 70 years (Bhowmik *et al*., 2016). various types of strokes that affected persons of Bangladesh mentioned that ischemic stroke accounts for 17.2% intracerebral 4.8% and 1.1% subarachnoid.

METHODOLOGY

The descriptive cross-sectional study was designed to explore the nurses' awareness level regarding the management of stroke patients at Rajshahi Medical College Hospital. The study period was started from January 2018 to July 2018. RMCH is selected because it is one of the largest tertiary level hospitals, which received huge patients from the whole Rajshahi divisional attachment area includes nearly thousands of senior staff nurses were joined in this hospital to take care of the patients. Thus, to get a sufficient sample, the researcher chooses this hospital.

Sampling Techniques

The researcher has used the purposive sampling technique in order to collect the sample.

The following criteria will be used to select the respondents.

Inclusion Criteria

a. nurses who have completed at least a diploma in nursing and a midwifery degree
b. Nurses were assigned to take care of the stroke patients at least once in their service life.
c. Nurses who were working at the Rajshahi Medical college hospital.
d. Nurses who were willing to participate in this study.

Exclusion criteria

a. Nurses who did not take care of stroke patients during their service period.
b. Nursed those were not willing to participate in the study.

Method of data analysis

All the data collected were coded numerically and entered the SPSS version 22.0 software program for analysis. Descriptive statistical analysis was used to calculate the frequencies and percentages. The descriptive analysis of data was presented as tables and figure.

RESULTS

This section consists of the findings and discussions of the respondents' demographic characteristics, including the nurses' awareness level regarding stroke patients' management. The following sections describe the findings in detail.

Table 1: Demographic characteristics of the respondents

Demographic characteristics	**N**	**(%)**
Distribution of respondents	296	100
Age (Years) M = 30.1, SD = 8.9		
Age range	21- 56	
Gender		
Male	64	21.6
Female	232	78.4
Marital status		
Married	202	68.2
Unmarried	86	29.1
Widow	08	2.7
Religion		
Muslim	246	83.1
Hindu	40	13.5
Christian	06	2.0
Buddhist	04	1.4
Academic qualification		
SSC	46	15.5
HSC	248	83.8
Others	02	0.7
Professional qualification		
Diploma in Nursing and Midwifery	164	55.4
B.Sc. in Nursing	118	39.9
B.Sc. in Public Nursing	08	2.7
MPH/M.Sc. in Nursing	06	2.0
Length of service (Years)		
1 – 10	238	80.4
11 – 20	26	8.8
21 – 30	24	8.1
>30	08	2.7

Table 2: Distribution of the respondent regarding the awareness of stroke

Meaning of stroke	**Yes**	**No**
Rapidly developed clinical signs of focal or global disturbance of cerebral function	268(90.5)	28 (9.5)
lasting more than 24hours or until death, with no apparent non-vascular cause	228 (77.0)	68 (23.0)
Stroke is a leading cause of disease and death throughout the world	248 (83.8)	48(16.2)
lasting less than 24hours	164 (55.4)	132 (44.6)
When blood supply to the part of the brain is disrupted, leading to inadequate o2 supply causing brain cell death	252 (85.1)	44 (14.9)
Types of stroke?		
Cardio-embolic stroke	192 (64.9)	104 (35.1)
Large artery stroke	122 (41.2)	174 (58.8)
Cerebral haemorrhage	246 (83.1)	50 (16.9)
Subarachnoid haemorrhage	244 (82.4)	52 (17.6)
Arachnoid haemorrhage	250 (84.5)	46 (15.5)
Controllable risk factors of the stroke		
High blood pressure	284(95.9)	12 (4.1)
Alcohol and smoking	250 (84.5)	46 (15.5)
High cholesterol	258 (87.2)	38 (12.8)
Diabetes	132 (44.6)	164 (55.4)
Uncontrollable risk factors?		
Age	276 (93.2)	20 (6.8)
Gender	243 (82.1)	53(17.9)
Family history	262 (88.5)	34(11.5)
Overweight	90 (30.4)	206 (69.6)
None of the above	64 (21.6)	232 (78.4)
Sign and symptoms of stroke		
Numbness	266 (89.9)	30 (10.1)
Dizziness	260 (87.8)	36 (12.2)
Confusion	234 (79.1)	62 (20.9)
Dehydration	72 (24.3)	224 (75.7)
Rash	56 (18.9)	240 (81.1)

Table 3: Complication

	Yes	**No**
Complication of stroke		
Confusion	198 (66.9)	98 (33.1)
Depression	186 (62.8)	110 (37.2)
Fall	258 (87.2)	38 (12.8)
Fever	136 (45.9)	160 (54.1)
Fatigue	148 (50.0)	148 (50.0)
Common activity limitations after stroke		
Bathing	224 (75.7)	72 (24.3)
Communication	222 (75.0)	74 (25.0)
Eating	236 (79.7)	60 (20.3)
Toileting	156 (52.7)	140 (47.3)
Vomiting	70 (23.6)	226 (76.4)
Type of food are used for stroke patients		
Liquid	282 (95.3)	14 (4.7)
Solid	64 (21.6)	232 (78.4)
Normal	114 (38.5)	182 (61.5)
All of the above	40 (13.5)	256 (86.5)
None of the above	46 (15.5)	250 (84.5)
Common investigations for stroke patients		
CT scan	274 (92.6)	22 (7.4)
MRI	256 (86.5)	40 (13.5)
Complete blood count and ESR	230(77.7)	66 (22.3)
ECG	112 (37.8)	184 (62.2)
None of the above	51 (17.2)	245 (82.8)

	Yes	No
Position used for caring of stroke patients		
Prone	112 (37.8)	184 (62.2)
Semi-prone	244 (82.4)	52 (17.6)
Fowler	100 (33.8)	196 (66.2)
All of the above	46 (15.5)	250 (84.5)
None of the above	58 (19.6)	238 (80.4)
Principles of management of stroke management		
ABC management	290 (98.0)	6 (2.0)
Positioning-semi prone	264 (89.2)	32 (10.8)
Fluid management	264 (89.2)	32 (10.8)
Hypothermia-aggressive treatment	62 (20.9)	234 (79.1)
Hyperthermia-aggressive treatment	76 (25.7)	220 (74.3)

Table 4: Most popular classes of drugs used for treatment of stroke

Anti-coagulant	**278 (93.9)**	**18 (6.1)**
Thrombolytics	226 (76.4)	70 (23.6)
Antihypertensive	258 (87.2)	38 (12.8)
Antipyretic	94 (31.8)	202 (68.2)
Anti-platelet agent	100 (33.8)	196 (66.2)
Stroke prevention approach includes		
Identifying and controlling blood pressure	292 (98.6)	4 (1.4)
Not smoking	266 (89.9)	30 (10.1)
Lowering cholesterol, sodium and fat intake	268 (90.5)	28 (9.5)
High cholesterol and sodium	58 (19.6)	238 (80.4)
Treating diabetes properly	108 (36.5)	188 (63.5)

Graphical Presentation

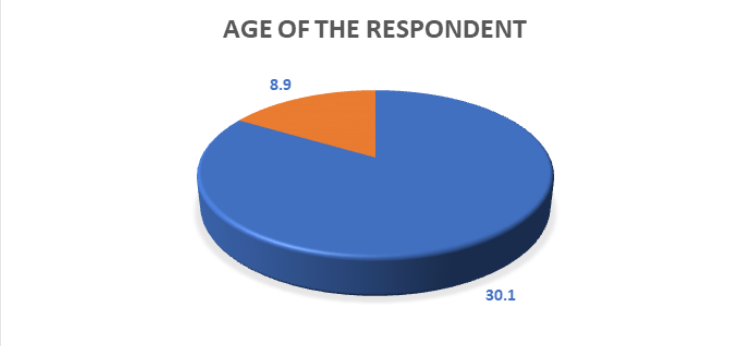

Figure 2: Distribution of the respondents by age (n=296)

Figure 2, showed the distribution of the respondents by age. It is illustrated that the mean age of the respondent 30.1 years and Standard deviation is 8.9.

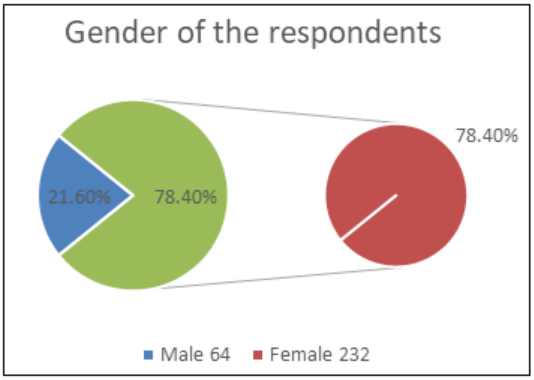

Figure 3: Distribution of the respondents by gender (n=296)

This figure indicates that there were 64 (21.60%) males and 232 (78.40%) females.

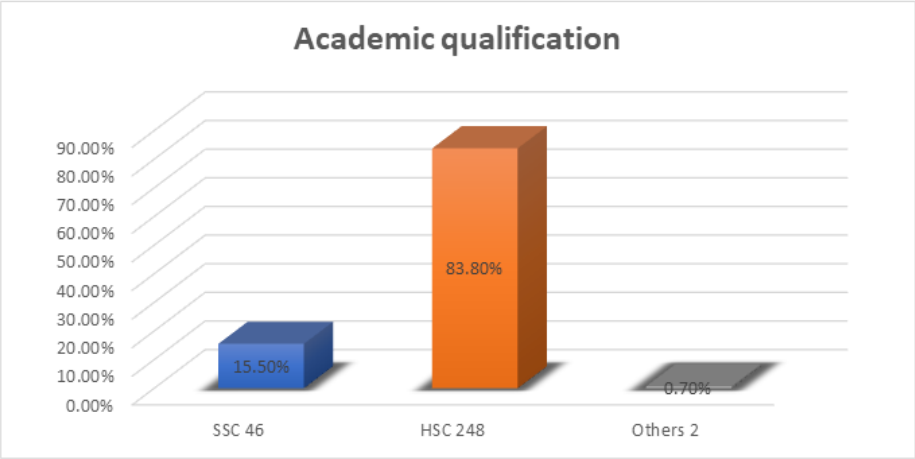

Figure 4: Distribution of the respondents by academic qualification (n=296)

This figure indicates that the academic qualifications of the respondents are the majority of them HSC level 248 (83.80%), SSC level 46 (15.5%) and least of them 0 other 2 (.7%).

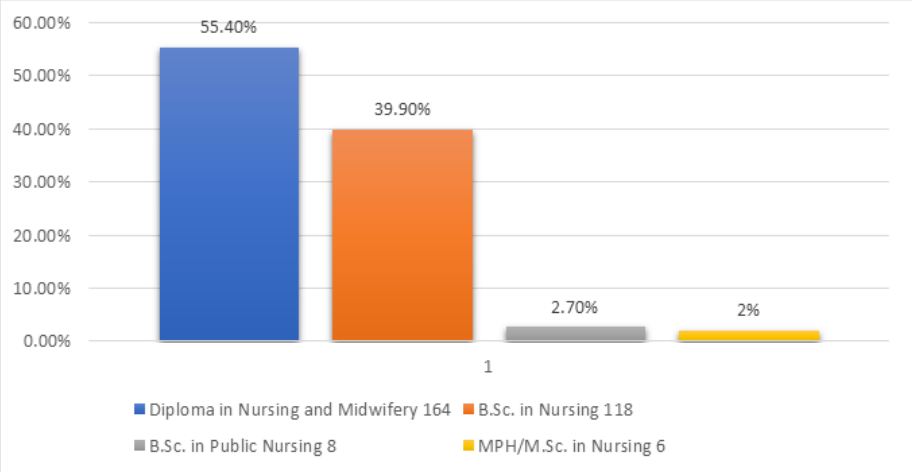

Figure 5: Distribution of the respondents by professional qualification (n=296)

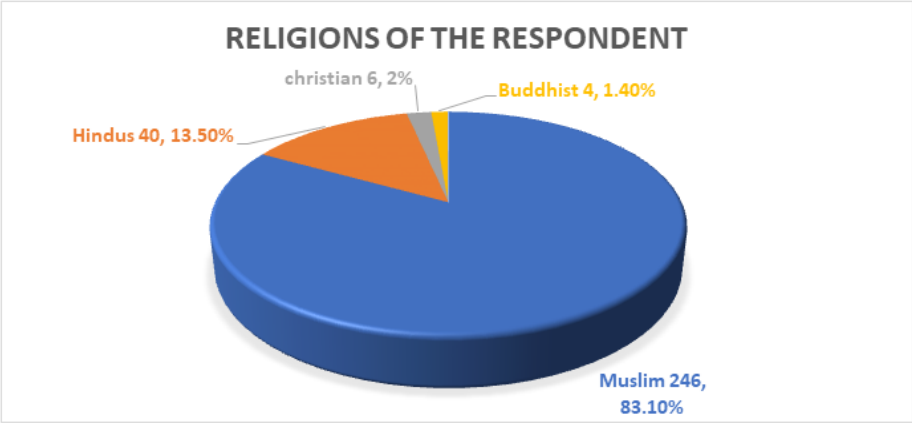

Figure 6: Distribution of the respondents by religion (n=296)

This figure shows the distribution of respondents by religion. Muslim 246 (83.10%), Hindus 40(13.5%), Christian 6 (2%) and Buddhist 4 (1.40%).

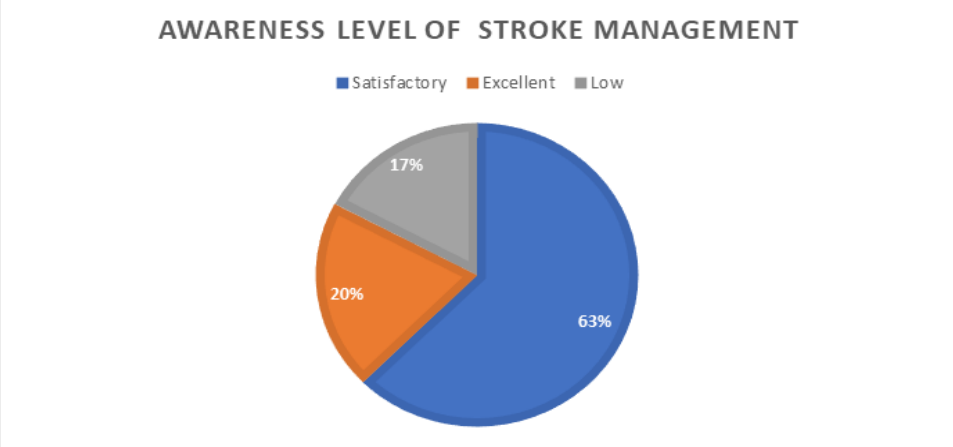

Figure 7: Awareness level of nurses regarding the management of stroke (n = 296)

Figure: 7 shows the awareness level regarding the management of stroke patients. A total of 5 questions on the management of stroke of patients were asked to the respondents. In these 5 questions, 18 were correct answers. To score 5.56 number for each correct answer and then categories as follows: low level of awareness scoring below 60; satisfactory for 60 – 80; and excellent for above 80 respectively. The result showed that most of the respondents had a satisfactory level of awareness regarding the management of stroke.

DISCUSSION

This study revealed that the subjects were female and fewer males' majority of them married and still some unmarried and widows. Most of the subjects were believed in Islam and Hindus. The majority of the subjects received higher secondary education. In terms of professional qualification, more than half had a diploma in nursing and midwifery, and more than one-third of the subjects were already completed a bachelor's degree in nursing. Their length of service experience was ranged from 1- 10 years. The most frequent reasons where they joined in their work a couple of years ago. Traditionally, the nursing profession is dominated by female nurses rather than males. From the country perspective, the Government of Bangladesh is committed to ensuring health for its entire people, in this regard, recruited more nurses in the health care organization. Apart from that, very recently, the nursing education system has been upgraded to a bachelor's degree. Thus, nurses get opportunities to get higher education in Nursing at the university level. As the education system uplifted and the status of the nurses upgraded,

In most of the respondents mentioned that stroke is a rapidly developed clinical sign of focal or global disturbances of cerebral function and when blood supply is disrupted to the part of the brain and lead to inadequate oxygen supply causing brain cell death. Likewise, the most common types of strokes were haemorrhage, subarachnoid haemorrhage, and arachnoid haemorrhage, which most respondents mentioned. Similarly, high blood pressure, alcohol and smoking, high cholesterol were controllable risk factors. On the other hand, age, gender, and family history were uncontrollable risk factors spoken by a majority of the respondents. Additionally, the characteristic symptom of the disease is a very significant issue. In terms of signs and symptoms of stroke, most of the respondents stated numbness, dizziness, and confusion correctly. These might be due to the recent completion of education and active engagement in clinical practice. Studies mentioned that when nurses are actively engaged in their concern work that helps to enhance awareness at the optimum level on that disease, risk factors, and signs & symptoms (Shehata, Ahmed, Abdelalim, & El Sherbiny, 2016; Adelman, Meurer, Nance, Kocan, Maddox, Morgenstern, & Skolarus, 2014).

Awareness about the complication of stroke among nurses mentioned (87.2%) falls (66.9%), confusion and (62.8%) depression sequentially. The present survey explores the awareness rate of 92.6% Computerized Tomography, 86.5% CT scan, and 77.7% Magnetic Resonance Imaging (MRI) to diagnose stroke. Similarly, the common activity limitation includes bathing (75.7%), communication (75.0%) and eating (79.7%). In a caring situation, stroke patients were kept in an (82.4%) semi-prone position usually. Principles of management of stroke management include Airway, Breathing and Circulation management (ABC management) (98.0%), prone position (89.2%), and fluid management (89.2%) specified by the respondents. The above result was congruent with the previous study finding carried out in the same hospital, including 50 participants working at the neuro-medicine and medicine unit during 2015. The investigators found awareness (96%) for positioning, (98%) for ABC management, (94%) fluid management (Zaman & Afroze, 2015).

Stroke is a condition that requires rapid reaction and specific treatment that gives a chance to survive and return to fitness. The analysis of the collected data indicates that nurses' awareness regarding treatment consists of anticoagulant drugs (93.9%), (76.4%) thrombolytic and 258 (87.2%) antihypertensive agents. While, prevention approach (98.6%) spoke about and controlling blood pressure, (89.9%) lower intake of cholesterol, 268 (90.5%) sodium and fat content foods, (36.5%) of them favors treating diabetes properly. This result could be partially explained by the fact that when the nurses work in the unit where they contact a physician and other specialists, they may attain in the discussion of patient treatment protocol and case studies. Moreover, they used various types of drugs to manage patients, which might help to increase their awareness levels. Finally, this study about the awareness level of nurses regarding the management of stroke revealed that (63%) of the respondents had satisfactory levels (20%) excellent and (17%) had low awareness regarding the management of stroke. It had been seen that nurses did not answer some part of the questions, in which they needed reinforcement. This could be done by engaging them in continuous learning through the various approach to the training program. This finding suggests that the nurse's awareness needs to increase up to the highest possible mark to ensure safe and quality health care services regarding stroke management.

CONCLUSION

Implications of the findings

The study's outcomes contribute to nursing education, nursing practice, nursing administration, and future nursing research in Bangladesh are as follows.

1. Nursing education: The study findings will provide and improve the quality of nursing education. It can provide awareness of risk factors and management of stroke patients in Rajshahi Medical College Hospital.
2. Nursing practice: Nurses can use the study findings can be used by nurses to improve and safe stroke management. Nurses can conduct health education programs and involve the stroke management nurses and give awareness and discuss how to develop stroke management. It can be group health education, lift let distribution, brainstorming, social support, and arranging a seminar to enhance nurses' awareness level regarding the management of stroke.
3. Nursing administration: This finding would be helpful to guide nursing administration. Nursing administrators can provide baseline data for a higher authority to plan interventions to enhance nurses' awareness of stroke management.
4. Nursing research: The study would be expected to show the relationships of patients' risk factors of stroke. Nurse researchers can use it as a foundation for future research and development programs to enhance the awareness level of nurses regarding stroke management.

Limitations of the study

There were some limitations in this study. The samples were recruited only from Rajshahi Medical College Hospital in Bangladesh. The duration of the data collection period was too short and small. The method was applied the first time to provide information about stroke management.

Recommendation of the study

The results can be used as evidence-based nursing practice and applied in a similar population and reference for further descriptive correlational study for increasing awareness of risk factors stroke patients

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