International Journal of Neurological Nursing
Vol. 1: Issue 1
eISSN: 2456-5229
www.journalspub.com

Knowledge of Stroke amongst Nursing Students: Effect of an Intervention

Avondeep Dhaliwal, Harpreet Kaur, Navdeep Kaur, Sukhpal Kaur*
*National Institute of Nursing Education, PGIMER, Chandigarh, India

Abstract

Nurses play pivotal role in stroke management. Generally the nursing care provided to a patient is proportionate to the knowledge and skill of nursing personnel. The current article is about the effect of an educational intervention on the knowledge of nursing students regarding stroke. A total of 127 nursing students undergoing graduation programme underwent one day educational programme on stroke. A multiple choice questionnaire was used to assess the knowledge. The maximum attainable score was 17. Each correct answer was graded as one and incorrect answer as zero. The test was administered twice i.e. before and immediately after the intervention. The various aspects of stroke covered during the programme included the incidence, types and risk factors of stroke, importance of atrial fibrillation in stroke, acute stroke triage; assessment of patient for hemorrhagic stroke, thrombolysis in ischemic stroke and care of the patient in hospital, and home based settings. Stroke unit care and care after discharge from the hospital were discussed. There was a statistically significant difference in the mean knowledge score between the pre-test and post-test. ($t = 15.36$, $p < 0.001$). After intervention, around one third (35%) scored between 86–100% and approximately half of the participants scored between 71–85%. It is concluded that intervention was effective in enhancing the knowledge of nursing students regarding stroke.

Keywords: *Knowledge, Stroke, nursing students*

****Author for Correspondence:*** *E-mail: sukhpal.trehan@yahoo.in*

INTRODUCTION

Stroke is a complex disease that requires the efforts and skills of all members of the multidisciplinary team. Nurses are often responsible for the coordination of care throughout the continuum[1,2]. Coordinated care of the stroke patient results in improved outcomes, decreased lengths of stay, and decreased hospital costs[3]. Nurses play a pivotal role in all phases of care of the stroke, i.e., in the hospital and home based settings. It is important that nurses understand the early symptoms of stroke, patho-physiology, develop appropriate skills to care for stroke patients and to educate patients and families about secondary stroke prevention[4,5].

Stroke and its long-term neurological disabilities can be prevented by management of risk factors and seeking medical care as early as possible following onset of stroke symptoms. There are modifiable and non-modifiable risk factors of stroke. Proper management of some of these risks could significantly reduce the risk of incidence of stroke. Effective stroke interventions, and risk reductions depend on general public's awareness and knowledge of stroke among nurses[5].

Continuing education of nursing personnel is challenging and requires frequent updates. A nurse cares for about 4 to 10 stroke patients in a given year[6]. She needs to keep herself up to date with her knowledge to provide quality care to the patients. Thus periodic reinforcement of knowledge and practice in caring for acute stroke patients is necessary. It has been concluded that the knowledge gained from training on stroke decreased by about 50% over 1 year[7]. Therefore, educational programs should be repeated periodically[8]. The current study was carried out to evaluate the effect of an intervention on the knowledge of stroke amongst the nursing students.

MATERIALS AND METHODS

The study was evaluative in nature. A purposive sampling technique was used for the study. A total of 127 nursing students undergoing graduation underwent training programme. A structured multiple choice questionnaire was administered to assess the knowledge regarding stroke. The maximum attainable score was 17. Each correct answer was graded as one and incorrect answer as zero. The test was administered two times, i.e., before and immediately after all the teaching sessions got over. Research design was one group pre- and post-test design (Table 1).

Table 1: *Research Design.*

	Pre-test	**Intervention**	**Post-test**
Group	O_1	X	O_2

O_1- Assessment of knowledge before planned teaching programme;
O_2- Assessment of knowledge after planned teaching programme;
X - Information through planned teaching program.

The study was conducted at National Institute of Nursing Education, PGIMER, Chandigarh. Planned teaching program of 5 hours was developed under the guidance of experts and after reviewing the relevant literature. The topic discussed during the teaching programme were regarding stroke: incidence and types, risk factors, importance of atrial fibrillation in stroke, acute stroke triage, assessment of patient for hemorrhagic stroke, thrombolysis in ischemic stroke, stroke unit care and care after discharge from the hospital. Information gathered was coded and analyzed by using descriptive statistics. Permission for organising the programme was sought from the principal of the institution.

RESULTS

The mean age of the participants was 21.59 years±1.76 with the range of 19–30 years. All were females. None of the participants had ever attended any educational programme on stroke.

Mean knowledge score of the participants

The mean knowledge score of the participants before starting the planned teaching programme was 8.72±2.49 with the range 2–14. It increased to 13.29±2.22 with the range of 7–17 at the end of teaching session. There was a statistically significant difference between pre-test and post-test scores ($t = 15.36$, $p < 0.001$) (Table 2).

Table 2: *Mean Knowledge Score of the Participants (Max. Attainable Score: 17) (N = 127).*

	Mean± SD	**Range**	**t, df, p**
Pre-test	8.72 ±2.49	2–14	15.36 , 126, <0.001
Post-test	13.29± 2.22	7–17	

Percentage Marks During Pre-test and Post-test

Table 3 illustrates that before the intervention**,** 44% of participants had their score less than 50% and same percentage scored between 51–70% and just 11% could score between 71–85%. None of the participant scored above 85% in pre-test.

However, after attending the teaching programme, one third of participants scored more than 86% and approximately half of the participants scored between 71–85%. Only 4.7% scored less than 50%

Table 3: *Percentage marks during pre-test and post-test (max. attainable score = 17) (N= 127).*

Scores	Scores (%)	Pre-test n(%)	Post-test n(%)
≤ 8	≤50	56 (44.1)	06 (04.7)
9–11	51–70	57 (44.9)	18 (14.2)
12–14	71–85	14 (11.0)	58 (45.7)
15–17	86–100	00	45 (35.4)

DISCUSSION

Stroke has been defined by the World Health Organization as a clinical syndrome consisting of rapidly developing clinical signs of focal disturbance of cerebral function lasting more than 24 hours or leading to death with no apparent cause other than a vascular origin[9]. Stroke is the third major death causing disease[10]. The nurses are members of the stroke team participating in the detection of stroke symptoms, making referrals, informing the physician and coordinating care between various departments.

Today's nurse faces many challenges in the workplace. They are required to keep up in a constantly changing knowledge-based environment. Continuing education must, therefore, be highly flexible and responsive to the personal and professional needs of the nurse learner. The present study was aimed about the effect of an educational intervention on the knowledge of nursing students regarding stroke.

In the present study the mean age of the 127 nurses who participated in the study was 21.59 years±1.76 with the range of 19–30 years. All the participants verbalized that they did not attend any in service education programme on stroke. In a pilot study done by Harper in 2007, found that the nurses demonstrated a knowledge-deficit in stroke care and majority of the nurses had not attended any continuing education on stroke care within the previous 12 months[11].

In the present study mean knowledge score of the participants before starting the planned teaching programme was 8.72±2.49 with the range 2–14. In fact all the student nurses who participated in the programme have read about stroke in their respective curriculum. However, hardly one or two hours are allotted to the topic. It becomes impossible to cover each and every aspect of stroke in the given time. So the students had less knowledge regarding prior to the programme. It increased to 13.29±2.22 with the range of 7–17 at the end of teaching session.

There was a statistically significant difference between the pre-test and post-test scores ($t = 15.36$, $p < 0.001$). In a systematic review conducted in 2006 on the content and delivery of educational programs for nurses on stroke and its impact on their practice and how it influenced patient outcomes, it was found that continuing education improved patient outcomes which in turn helped to decrease patients complications and the length of hospital stay[12].

In the current study, 44% of participants had their score less than 50% and same percentage scored between 51–70% and just 11% scored between 71–85% before the intervention. None of the participant scored above 70% in the pre-test. However, after attending the programme on stroke, one third of participants scored more than 86% and approximately half of the participants scored between 71–85%. Only 4.7% scored less than 50%. These

results reflect the effect of organising educational programme. Similar results were found in another study conducted by Kaur *et.al.*,[13] in year 2007. They reported that there was a significant difference in mean knowledge scores of nursing students after attending workshop on diabetic care. Bagheri *et al.,* in 2004 also claimed that educational programmes could improve the nurses' knowledge and clinical practice[14].

The limitation of the study is that post knowledge was assessed only once, and that to immediately after the intervention. But it is a well-known fact that the knowledge fades away after a period of time. So, it is recommended that more such programmes should be organised. Periodic evaluation of the trainers should also be carried out.

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