

Effect of Educational Program on Nurses' Performance Caring for Patients with Cerebrovascular Stroke

Thesis

Submitted for Partial Fulfillment of The Requirement of The
Doctorate Degree in Nursing Science
(Medical Surgical Nursing)

By

Enas Ibrahim Elsayed

Assist. Lecturer of Medical Surgical Nursing
Faculty of Nursing/Helwan University

*Faculty of Nursing
Ain Shams University*

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Under Supervision of

Prof. Dr.

**Kamelia Fouad
Abd-Alla**

Professor of Medical Surgical Nursing
Faculty of Nursing/Ain Shams University

Prof. Dr.

**Mamdoh Mahmoud
Mahdy**

Professor of Internal Medicine
Dean of Faculty of Nursing
Helwan University

Assist. Prof.

Soheir Tawfeek

Assistant Professor of Medical Surgical Nursing
Faculty of Nursing/Ain Shams University

Dr.

Mona Nadr Ebraheim

Lecturer of Medical Surgical Nursing
Faculty of Nursing/Ain Shams University

*Faculty of Nursing
Ain Shams University
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بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

قالوا

لسبب انك لا تعلم لنا
إلا ما علمتنا إنك أنت
العليم العظيم

صدق الله العظيم

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List of Abbreviations

<i>Abbrev.</i>	<i>Full term</i>
AANN	American Association of Neuroscience Nurses
ABG	Arterial Blood Gases
AEDs	Antiepileptic Drugs
ATP	Adenosine Tri-Phosphate
AVM	Arteriovenous Malformation
BDNS	Bachelor Degree in Nursing Science
BP	Blood Pressure
CEA	Carotid End Arterctomy
CNS	Central Nervous system
CSF	Cerebrospinal fluid
CT	Computed Tomography
CVAs	Cerebrovascular accidents
CVS	Cerebrovascular Stroke
DVT	Deep Venous Thrombosis
ECG	Electrocardiogram
EEG	Electroencephalogram
ICP	Intracranial Pressure
ICU	Intensive Care Unit
ICA	Internal Carotid Artery
ICH	Intracerebral Hemorrhages
MCQ	Multiple Choice Questions
MRA	Magnetic Resonance Angiography
MRI	Magnetic Resonance Imaging
MRS	Magnetic Resonance Spectroscopy
PET	Positron Emission Tomography
ROM	Range Of Motion
RT-PA	Recombinant Tissue Plasminogen Activator

List of Abbreviations

<i>Abbrev.</i>	<i>Full term</i>
SPECT	Single Photon Emission Computed Tomography
SAH	Subarachnoid Hemorrhage
TCD	Transcranial Doppler
TIA s	Transient Ischemic Attacks
VBA	Vertebral- Basilar Artery
VS	Vital Signs
USA	United States of America
UTI	Urinary Tract Infection
UI	Urinary Incontinence
VEM	Very Early Mobilization
WHO	World Health Organization

Statistical Abbreviations

No	Number
F-test	Fisher test
P	Probability that observed data is consistent with null hypothesis
R	Multiple correlation coefficients
SD	Sample standard deviation
%	Percentage
<	Less than
>	Greater than

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ABSTRACT

Cerebrovascular stroke (CVS) is the third leading cause of death in the United States of America (USA), and the most common cause of long-term disability in adults. Experts estimate up to 30% of all patients with stroke will deteriorate in the first 24 hours. This statistic supports the need for intensive monitoring by nurses specifically trained in acute stroke care. **Aim of this study:** aimed to assess the effect of an educational program on nurses' performance regarding caring for patients with cerebrovascular stroke in intensive care unit. **Design:** A quazi experimental design was used. **Setting:** This study was conducted in Emergency Medicine ICU, Geriatric ICU and Neurological ICU at Ain Shams University Hospital. **Study subjects:** A convenience sample of all available nurses (no=37 nurses) were included in this study. **Data collection tools:** self-administered questionnaire sheet and nurses' practice observational checklist. **Results:** the present study revealed that, most of the nurses had got unsatisfactory level of performance (knowledge & practice) regarding caring of patients with CVS pre the program implementation (8.1% and 10.8% respectively). Meanwhile the majority of the study sample had got statistically significant improvement in their knowledge and practice regarding caring of patients with CVS post program implementation (89.2% and 78.4% respectively). While this improvement lowered slightly post 3 months at follow up (83.8% and 62.2% respectively). **Conclusion:** inadequacy of the nurses' performance regarding caring of patients with CVS pre the program implementation. Meanwhile the majority of the study sample had got statistically significant improvement in their performance post the program implementation; while this improvement lowered slightly post 3 months at follow up. **Recommendations:** the importance of establishing booklet guideline for neurointensive nurses caring of patients with CVS based on evidence based practice.

Key words: Brain attack, cerebrovascular accident, Training program & Performance.

Introduction

The central nervous system (CNS) is considered the master system of the body, it allows humans to interpret, use and act on the input from body senses. It also helps protect and maintain the integrity of normal functions of the body. Regardless of the cause, dysfunctions in the nervous system can adversely affect the ability to think, reason, predict or carry out simple activity of daily living (*Broderick, 2013*).

Cerebrovascular stroke (CVS) is a neurological deficit lasting over twenty four hours that occurs as a result of interrupted arterial blood flow to parts of the brain. With CVS the impairment of oxygen and nutrients to brain cell causes permanent brain damage and impaired function. There are two main types of CVS: ischemic stroke and hemorrhagic stroke. Ischemic strokes are more common than hemorrhagic strokes, they account for 83% of all strokes. Ischemic stroke results from disruption of cerebral blood flow caused by total or partial occlusion by a thrombus or an embolus. Hemorrhagic stroke accounts for 17%, it results from a ruptured blood vessel and hemorrhage into brain tissues. Hemorrhagic stroke has two main subtypes according to the site: intracerebral hemorrhage and subarachnoid hemorrhage (*Gocan & Fisher, 2008*).

The American Association of Neuroscience Nurses (AANN) supports the importance of nursing in the care of patient with stroke. Nurses are the caregivers that have the most contact with the patient and have the ability to notice subtle changes quickly. This quick assessment and report to the physician can make a difference in the outcome of the patients. Because "time is brain", nursing professionals must be knowledgeable about stroke care standards to manage these patients quickly and appropriately (*AANN, 2004*).

Care of patients with CVS is directed toward minimizing damage resulting from stroke, maintaining adequate cerebral perfusion and decreasing risk of further damage. Nurses play a pivotal role in all phases of care of the patient with stroke. Stroke management has two main phases: acute phase and rehabilitation phase. During the acute phase immediately after patient admission nursing care focuses on monitoring the patients' neurological status, assessing the severity of stroke and preventing complications associated with immobility, hemiparesis, or any neurological deficit produced by stroke (*Ellis & Hartley, 2007*).

Nurses' role in management of patients with CVS at intensive care unit (ICU) is vital. The nurse has a critical role to optimize acute patient care and move the patient to rehabilitation quickly to maximize the patient's outcome. The

rehabilitation phase begins from time of admission. A high quality performance of the nurses in ICU would decrease morbidity, mortality and improve quality of care for such group of patient (*Nursing Times, 2012*).

While nurses are best placed to meet the needs of patients and carers in the acute setting (*Department of Health, 2008; Royal College of Nursing, 2008*), evidence suggests they are inadequately prepared to fulfill their role. So educating nurses remains a significant challenge, despite considerable efforts by stroke leaders and educators to support best practice adoption. With increased focus on development and implementation of Stroke Strategy, Provincial Stroke Action Plan, gaining a better understanding of what is required to improve stroke education for registered nurses has been identified as a priority. As patients with stroke may be encountered at different points within the acute care setting and different acuity levels, all nurses working within the acute care setting must be prepared to care for such group of patients. Without a plan to train and educate this essential group of service providers, adoption of best practices in stroke care will be challenging to implement (*Truran, 2010*).

Significance of this study

The CVS is the third leading cause of death in the United States of America (USA) and the most common cause of long-term disability in adults. Over 150,000 people with

stroke die each year. There are approximately 5.5 million CVS survivors in the USA and it is estimated that about 13 million individuals have sustained a so-called “silent” stroke. In Egypt the incidence of CVS per year was 1.8% in suburban regions, 2.1% in rural regions, while it recorded only 1.5% in urban population (*Nursing Times, 2012*) & (*Khalifa, 2005*).

The estimated number of patients admitted at Ain shams University Hospitals ICUs (Emergency Medicine ICU, Geriatric ICU & Neurological ICU) during 2012-2013 were 1820 patients; about 350 patients with CVS which constitutes 19% of the total number of patients admitted at ICUs.

As found by the researcher in master thesis study (*El sayed, 2012*) that all nurses caring for patients with CVS in ICUs at Ain Shams University Hospitals didn't have or receive any training program related to CVS that reflected negatively on their performance (knowledge & practice) whereas most of them had got unsatisfactory level of performance (knowledge & practice) that can increase the patients risk for complications.

So the updated knowledge and using of evidence-based practice are essential to nurses caring of patients with CVS at ICUs. They must be knowledgeable of this initiative to support clinical practice toward improved outcomes of such group of patients. A high quality performance of nurses'