Nurses' Performance Regarding the Neurological Assessment in Neurosurgical Unit

Thesis

Submitted for Partial Fulfillment of Requirement of Master Degree Nursing Science

(Medical –Surgical Nursing (Critical Care Nursing)

By

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Hadeer Ahmed Hashem Hassanin

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List of abbreviations

AANN : American Association of Neuroscience Nurses

CN : Cranial Nerve

CNS : Central Nervous System

CSF : Cerebrospinal fluid

CT : Computed Tomography

EEG : Electroencephalogram

EMG : Electromyogram

GCS : Glasgow Coma Scale

ICP : Intracranial pressure

LMN : Lower Motor Neurons

MRI : Magnetic Resonance Imaging

N : Number

SD : Standard deviation

SPSS : Statistical package for social science

UMN : Upper Motor Neurons

WHO : World Health Organization

ABSTRACT

The neurological assessment is a key component in the care of the neurological patient. It can help to detect the presence of neurological disease or injury and monitor its progression, determine the type of care you will provide, and gauge the patient's response to your interventions. **Aim of the study:** to assess nurses' performance through assess nurses' knowledge, practice and attitude regarding neurological assessment in neurosurgical units. **Research design:** A descriptive exploratory design was utilized. **Methods:** Subject include All available nurses working in Neurosurgical units Ain Shams University Hospitals, 50 nurses from both genders, with different ages, educational levels and years of experience was selected for this study. Data were obtained through three main tools; Self-administered questionnaire tool, observational checklist and attitude questionnaire tool. **Results:** Nurses had unsatisfactory level of knowledge, practice and negative attitude. There were statistically significance relation between level of knowledge, practice and attitude. Knowledge, practice & attitude were found to differ significantly in relation to socio-demographic data. **Conclusion:** About two thirds of studied nurses had unsatisfactory knowledge, more than three quarters of them had unsatisfactory practice regarding neurological assessment and about two thirds of them had negative attitude **Recommendation:** Furthers study to evaluate the reflection of educational program regarding nurses' performance & consequently on the patient outcome. The study should be replicated on large sample & in different hospitals setting in order to generalize the results.

Key words: Knowledge, Practice, Attitude, Neurological assessment, Neurosurgical patients, Neurosurgical units.

Introduction

A neurological disorder is any disorder of the body nervous system. Structural, biochemical or electrical abnormalities in the brain, spinal cord or other nerves can result in a range of symptoms. Examples of symptoms include paralysis, muscle weakness, poor coordination, loss of mental control, sensation, seizures, confusion, pain and altered levels of consciousness.These disorders include epilepsy, Alzheimer disease, stroke, migraine and other headache disorders, multiple sclerosis, Parkinson's disease, neuroinfections, brain tumors, traumatic disorders of the nervous system such as brain trauma, and neurological disorders as a result of malnutrition **(WHO, 2014).**

Medical care for patients with neurological disorder involves not only treatment of injuries but also predictions and treatment of potential long-term disability**.** Complex neurological conditions, similar to other long-term illnesses, affect the relationship between the affected person and relatives and also the relationship between the affected person and the nurses **(Jumisko, Lexell & Soderberg, 2007).**

Assessment is an essential nursing skill that gathers clinical information to strengthen decisions about health interventions and priorities inpatient care delivery. Neurological assessment provides the cornerstone for early

diagnosis, appropriate prognostic evaluation, and optimal management to obtain favorable patient outcomes. The nursing approach to neurological assessment has been enhanced in recent years through the development of new evidence-based assessment tools and the support of best practice guidelines **(Fisher&Gocan, 2010).**

Significance of study:

Neurological conditions are a major cause of disability. A report by the World Health Organization stated that neurological disorders affect up to one billion people world-wide. It is clear that this number is set to rise as the world's population is ageing **(WHO, 2014).**

Nervous system diseases such as cerebral vascular accident (CVA) are frequently found to be the third leading cause in the top ten causes of death. On average, one in every six people is either diagnosed with CVA or affected with problems such as head injury, brain tumor, headache, dementia, and spinal cord injury ***(Department of Health, 2011).***

The number of patients diagnosed with nervous system diseases increases year by year, and patients have been known to suffer impairment in activity, speech, swallowing, cognition, or breathing Patients with various acute or chronic neurosurgical diseases have multiple physical, psychosocial, and spiritual needs **(Skelly, Lindop & Johnson, 2012).**

Epidemiology of neurological disorders is still lacking in Egypt. Screening had been carried out to ascertain the incidence and prevalence rate of neurological disorders among the urban and rural population of Al Kharga District, New Valley, Egypt. A total of 62, 583 people were screened by 3 neurologists ***(El Tallawy, Farghaly & Metwaly, 2010).***

Assessment and monitoring of a patient's neurological status is an important nursing intervention. Nurses spend the greatest amount of time with patients, providing direct care, allowing for early detection of changes in a patient's condition. The role of nurse is to be supportive of the patient, providing brief explanations, emotional support, and physical support as necessary ***(Sadaka, Patel& Lakshmanan, 2012).***

Aim of the Study

This study aims to assess nurses' performance regarding the neurological assessment in neurosurgical unit.

This aim will be achieved through the following:

1. Assessing the nurses' level of knowledge regarding the neurological assessment of patients in neurosurgical unit.
2. Assessing the nurses' practice and attitude regarding the neurological assessment of patients in neurosurgical unit.

Research questions

To fulfill the aims of this study the following research questions will be formulated:

1. What are the nurses' levels of knowledge regarding the neurological assessment of patients in neurosurgical unit?
2. What are the nurses' practice and attitude regarding the neurological assessment of patients in neurosurgical unit?

Literature Review

Over view of Anatomy and Physiology of nervous system

The nervous system consists of two major parts: the central nervous system (CNS) including the brain and spinal cord, and the peripheral nervous system, which includes the cranial nerves, spinal nerves, and autonomic nervous system.The function of the nervous system is to control motor, sensory, autonomic, cognitive and behavioral activities ***(Klein& Stewar-Amidei, 2012).***

The basic functional unit of the brain is the neuron. It is composed of dendrites, a cell body, and an axon. The dendrites are branch-types structures for receiving electrochemical messages. The axon is a long projection that carries electrical impulses away from the cell body. Some axons have a myelinated sheath that increases speed of conduction. Nerve cell bodies occurring in clusters are called ganglia or nuclei. A cluster of cell bodies with the same function is called a center***(Hickey, 2009).***

Neurotransmitters communicate messages from one neuron to another or from a neuron to a target cell, such as muscle or endocrine cells. It can either excite or inhibit activity of the target cell. All brain functions are modulated

through neurotransmitter receptor site activity, including memory and other cognitive processes ***(Porth, 2011).***

The brain is the main organ of the human central nervous system. It is located in the head, protected by the skull. It composed of the cerebrum, the cerebellum and the brainstem. The brain weighs on average about 1.3–1.5 kg, or about 2% of total body weight. The cerebrum is the largest part of the brain; it composed of two hemispheres, the thalamus, the hypothalamus and the basal ganglia. The brain stem includes the midbrain, pons, medulla oblongata. The cerebellum is located under the cerebrum and behind the brain stem ***(Tupaia belangeri, 2016).***

A-Cerebral hemisphere: located above the thalamus and hypothalamus, take up most of the room inside the skull. The outer covering of the cerebral hemispheres is known as the cerebral cortex. The cerebral hemispheres are what most people think of when they think of the brain. They are the most recently evolved portion of the brain, and they regulate the most complex behavior. Each cerebral hemisphere is divided into 4 lobes, delineated by deep fissures on the surface of the brain ***(Snell, 2009).***

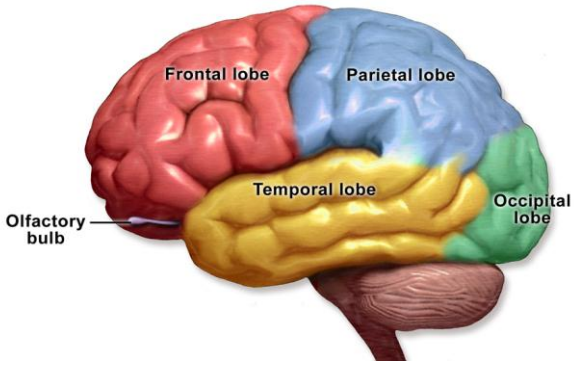

Figure (1): Anatomy of the brain lobes *(***Blausen gallery (2014)**: Wikiversity Journal of Medicine. Available at: URL http:// dol: 10.15347/wjm/2014.010. ISSN 20018762. Accessed on 1/2/2016.*)*

The frontal lobe: is the part of the cerebral cortex responsible for voluntary movement and attention as well as goal-directed behavior. The brain starts response messages in the motor projection areas, from which they proceed to the muscles and glands. **The parietal lobe** is a predominantly sensory lobe posterior to the frontal lobes. It analyzes sensory information and essential to a person's awareness of body position in space, size and shape discrimination, and right –left orientation***(Turlough, Gruener&Mtui, 2011)***.

The temporal lobe is located on each side of the brain. It involved in processing sensory input into derived meanings for the appropriate retention of visual memories, language comprehension, and emotion association. **The occipital lobe** is located at the back of the brain. Its major function is visual