



شبكة المعلومات الجامعية
التوثيق الإلكتروني والميكرو فيلم

بسم الله الرحمن الرحيم



MONA MAGHRABY



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شبكة المعلومات الجامعية التوثيق الإلكتروني والميكرو فيلم



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جامعة عين شمس

التوثيق الإلكتروني والميكروفيلم

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MONA MAGHRABY

**Assessment of Nurses Performance Regarding
External Ventricular Drain among Children □
with Brain Tumor**

Thesis

Submitted for Partial Fulfillment for the Requirements
of the Master Degree in Pediatric Nursing

By

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2020**

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List of Abbreviations

ABCD.....	Airway, Breathing, Circulation and Disability
AT\RTS.....	Atypical teratoid/rhabdoid tumors
CNS	Central nervous system
CPP.....	Cerebral perfusion pressure
CSF.....	Cerebrospinal fluid
CT	Computed tomography
DNA.....	Deoxyribonucleic acid
EEG	Electroencephalogram
ETMRS	Embryonal tumors with multilayered rosettes
EVD	External ventricular drain
ICH	Intracranial hemorrhage
ICP.....	Increased intracranial pressure
INP	Intracranial pressure
IPH	Intraparenchymal hemorrhage
IRB.....	Institutional reviser board
IVH.....	Intra- ventricular hemorrhage
LOC	Level of consciousness
MRI.....	Magnetic resonance imaging
PBTS.....	Pediatric brain tumors
PNETS.....	Primitive neuroepithelial tumors
PVH	Pre-ventricular hemorrhage
RSR.....	Relative survival rate
RT	Radiotherapy treatment
SAH	Subarachnoid hemorrhage
SMAC	Scientific medical advisory committee
US	United state
WHO.....	World health organization

Abstract

Background: Brain tumors are the second most common childhood malignancies, after hematologic malignancies and are the most common pediatric solid organ tumor. External Ventricular Drain is indicated for management of infection, intra ventricular hemorrhage, intra cranial pressure monitor or after tumor excision. **Aim:** This study aimed to assess nurses' performance regarding external ventricular drain among children with brain tumor. **Design:** A descriptive design was used. **Setting:** Inpatient Departments and Surgical Intensive Care Unit at Children Cancer Hospital Foundation in Egypt (57357). **Subject:** A purposive sample included 100 nurses out of total number 152 nurses who working in the previously mentioned setting. **Tools:** Two tools were used; interviewing questionnaire sheet and observational checklist. **Results:** most of studied nurses were females and also more than two thirds of nurses practices have competent, while there was a highly statistical significant between nurses' total knowledge and practice and their age also statistical significant between nurses' total knowledge and practice and their years of experience. **Conclusion:** Slightly more than two thirds of studied nurses have unsatisfactory knowledge while more than three quarters of them were competent in caring of external ventricular drain among children with brain tumor. There was no correlation between nurses' total knowledge and their total practices regarding care of external ventricular drain among children with brain tumor. **Recommendations:** Development of guidelines based on evidence-based nursing practices to promote excellence of nursing care and provides high-quality patient care regarding children with external ventricular drain.

Key words: Nurses' performance, external ventricular drain, brain tumor.

INTRODUCTION

Brain tumors are the second most common childhood neoplasm, after hematological malignancies and are the most common pediatric solid organ tumors. The most common brain tumor in children is astrocytoma followed by embryonic tumors. The standard treatment of pediatric brain tumor (PBTs) is surgery, to remove the tumor, followed by chemotherapy and radiotherapy. However, the resection is not always easy due to the localization and characteristics of the tumor (*Varela-Guruceaga et al., 2018*).

Pediatric brain tumors are classified into supra and infratentorial tumors. They could also be classified according to the age of diagnosis into congenital brain tumors, tumors of the infancy and older children. The prognosis of pediatric brain tumors depends on the age at presentation, histological type and extent of resection (*Faltermeier et al., 2019*).

External ventricular drain (EVD) placement is used as a temporary treatment for hydrocephalus, increased intracranial pressure and for temporary cerebrospinal fluid diversion in patients with altered cerebral spinal fluid circulation or craniocerebral infections. One remarkable aspect is that external ventricular drain as the most accurate, reliable and cost-effective method for intracranial pressure monitoring. it is indicated for monitoring and management of intracranial hypertension after severe brain trauma. External ventricular drain is also an option in the management of post hemorrhagic hydrocephalus (*Fried et al., 2016*).

External ventricular drain complications including hemorrhage and infection in addition to malposition which can be associated with significant morbidity and mortality. If external ventricular drainage tube is displaced, it might cause unexpected complications (*Anami et al., 2016*).

Nursing management of children with external ventricular drain includes, assess physical condition, from head to toe and monitor ABCD. Assess neurological condition to detect any signs and symptoms of intracranial hypertension. Assess site of insertion and monitor any signs and symptoms of infection. Check patient position to prevent over or under drainage. Check EVD for potentially as needed by lowering the entire system and document amount, color and report changes in color which may indicate to infection or bleeding (*liu et al., 2020*).

Significance of the study

According to the research department at Children's Cancer Hospital Foundation- Egypt a total of 1,101 children diagnosed as brain tumor were enrolled from 2015 till the end of 2017, and 132 of them inserted external ventricular drain (EVD) for management of infection, intra ventricular hemorrhage, intra cranial pressure monitor or after tumor excision; When the EVD is inserted, the children may be at risk for emergent situation or complications as subdural hematomas, hemorrhage, slit ventricle syndrome (collapsed ventricles). Therefore, the pediatric oncology nurse must be knowledgeable and competent in caring for children with EVD. Moreover, the nurse must establish a baseline for each children and assess the neurological changes, in addition to the position of the drainage system that must be checked by the nurse to ensure its patency and appropriate function to prevent over or under drainage.