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Evaluation of Nurse's Practice for Patient with Craniotomy after Discharge in Baghdad Teaching Hospitals

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ABSTRACT

Craniotomy is a terrifying ordeal for patients and their families. The postoperative period is a patient's weakest and most vulnerable time. Despite teaching moments about postoperative directions, patients' concerns about daily living activities prior to and after discharge are the most common.

Objectives: evaluation of Nurse's Practice for Patient with Craniotomy After Discharge and to find out the relationship between nurse's knowledge and practices and their demographics characteristics.

Methodology: A non-probability (purpose) sample of (60) nurses who were working in neurosurgery wards, were selected from Baghdad Teaching Hospitals. Study starting from march 16nd, 2022 up to the April 16th, 2023. Non-probability (purposive sample) of (80) nurses, who were working in emergency departments, were selected from Baghdad Teaching Hospitals.

The data were collected through the use of constructed questionnaire, which consist of two parts (1) Demographic data that consist (7) items and (2) Nurses' practice which consist of (24) items and Reliability was determined through a pilot study and the validity through a panel of (13) experts, Descriptive statistical analysis procedures (frequency, percentage, mean of score, Relative Sufficiency) and inferential statistical analysis procedures (anova) were used for the data analysis.

Results: The results of the study indicated that (66.7%) of the study sample were female, their advance age within 23-27years, (38.3%) were graduate from collage of nursing, (51.6%) had years of experience in neurosurgical ward within (1-5) years and (50.0%) Number of years of employment in hospitals within (6-10) years, (40.0%) had one training session (5.0 %).

Conclusions: The researcher can conclude that the majority of the nurses had poor practice concerning patient with craniotomy and There was non-significant association between the nurse's knowledge and their gender and age but there is significant association between nurse's knowledge and educational level.

Recommendations: The study recommends that the referral hospitals should develop procedure manuals that provide detailed information about all procedure and care for patient with craniotomy, the procedure manual should be subject to an annual audit, and active steps should be initiated to remedy identified deficiencies.

I. Introduction

A craniotomy is a surgical technique in which the surgeon exposes the brain by removing a piece of the skull bone. The bone flap removed by using specialized equipment to reach a piece of bone. Briefly bone flap is removed after brain surgery and subsequently reinstated (Johns Hopkins Medicine, 2022). Comasky (2020) defines craniotomy as a procedure that involves opening the head to access the brain. The term craniotomy refers to the procedure of creating a hole (-otomy) in the skull (cranium). A neurosurgeon, who specializes in brain and spinal cord surgery. A craniotomy is performed to treat a variety of disorders of the brain and its surrounding structures surgically. A subarachnoid hemorrhage (bleeding on the surface of the brain), a brain tumor (abnormal cell growth in the brain), or a catastrophic head injury are the most prevalent reasons for a craniotomy (Brain and Spine Foundation, 2018).

II. Methodology

An experimental design was conducted in the Baghdad teaching hospitals started from the March 22nd, 2022 up to the April 16th, 2023. A purposive "non-probability" sample of (60) nurses, who have been working at neurosurgical wards, were selected from Baghdad Teaching Hospitals which include Neurosurgical Teaching Hospital, Ghazi-Alhariri Teaching Hospital, and Neuroscience (sa'ad –alwetri) Teaching Hospital, the data were collected in the period from May 20th 2022 until the July 23rd 2022. The researcher collected the samples by observation through special designed questionnaire. This observation took a period of about 15- 30 Minutes for each sample. The questionnaire was constructed and composed of two parts **Part I:** Demographic Characteristics: It consists of (7) items which included: age, gender, level of education, Number of years in employment, Number of years in the neurosurgical wards, Number of training sessions, **Part II:** Nurses' practice toward patient with craniotomy includes (24) items. A pilot study was carried out between the periods from March 1nd, 2022, until March 20th; 2022.on (10) nurses who work at neurosurgery wards in Baghdad Teaching Hospital to determine the reliability of the questionnaire and content validity was carried out through the (13) experts. Descriptive and inferential statistical measures were used to analyze the data.

III. Results

Table 1. Participants' Socio-demographic Characteristics (N = 60)

Demographic Data	Groups	Freq.	%
Age / Years	18-22	6	10.0
	23-27	23	38.3
	28-32	7	11.7
	33-37	10	16.7
	38-42	7	11.7
	43 or more	7	11.7
	Total	60	100.0
Gender	Male	20	33.3
	Female	40	66.7
	Total	60	100.0
Level of education	Diploma degree	11	18.4
	secondary nursing school graduate	18	30.0
	college of Nursing graduate	31	51.6
	High institute graduate	0	0
	Total	60	100.0
Number of years of employment in hospitals	1-5	22	36.7
	6-10	24	40.0

	11-15	5	8.3
	16-20	2	3.3
	21-25	4	6.7
	26 or more	3	5.0
	Total	60	100.0
Number of years of experiences in neurosurgical ward	1-5	30	50.0
	6-10	23	38.4
	11-15	3	5.0
	16-20	2	3.3
	21-25	2	3.3
	26 or more	0	000.0
	Total	60	100.0
have you attended any educational training program regarding care of patient with craniotomy	Yes	3	5.0
	No	57	95.0
	Total	60	100.0
training session intra or exit Iraq	No	57	95.0
	Intra Iraq	3	5.0
	Total	60	100.0
Number of training course	No	57	95.0
	One	3	5.0
	Total	60	100.0

Table (1) This tables reveals that the majority of the sample were female (66.7%) while (33.3%) were males. According to their age; the highest percentage of the nurses (38.3%) was within the age group (23-27) years. Regarding their education level; the highest percentages of the nurses (51.6%) graduate from collage of nursing. Concerning Years of employment; the highest percentage of the nurses (40.0%)within the group (6-10) years. According to their Year of experience in neurosurgery ward; the highest percentage of the nurses (50.0%) within the group (1-5) years. Regarding their Training session; the highest percentage of the nurses (95.0%)the nurses had no training session regarding care of patient with craniotomy.

Table 2. Mean of Score of evaluation of nurses' practice Toward patient with craniotomy after discharge

No	Item	Rating	Freq.	%	M.S.	S.D	Assessment
1.	Monitor and record blood pressure	Never	50	83.3	1.18	.431	Never
		Sometime	9	15.0			
		Always	1	1.7			
2.	Monitor and record temperature	Never	23	38.3	1.67	.547	Sometime
		Sometime	35	58.3			
		Always	2	3.3			
3.	Monitor and record pulse rate	Never	31	51.7	1.48	.504	Never
		Sometime	29	48.3			
		Always	0	0			
4.	Monitor and record pupil reaction	Never	44	73.3	1.28	.490	Never
		Sometime	15	25.0			
		Always	1	1.7			
5.	Monitor and record level of consciousness	Never	42	70.0	1.32	.504	Never
		Sometime	17	28.3			
		Always	1	1.7			
6.	Elevate head of bed 30 degree as order	Never	31	51.7	1.50	.537	Never
		Sometime	28	46.7			

		Always	1	1.7			
7.	Provide mouth care	Never	49	81.7	1.20	.443	Never
		Sometime	10	16.7			
		Always	1	1.7			
8.	Provide nose car	Never	54	90.0	1.13	.430	Never
		Sometime	4	6.7			
		Always	2	3.3			
9.	Provide ear care	Never	49	81.7	1.22	.490	Never
		Sometime	9	15.0			
		Always	2	3.3			
10.	Maintain a good airway for patient	Never	28	46.7	1.55	.534	Never
		Sometime	31	51.7			
		Always	1	1.7			
11.	Provide a good ventilated and quite with suitable room temperature	Never	43	71.7	1.33	.572	Never
		Sometime	14	23.3			
		Always	3	5.0			
12.	Cleaning the skin by warm water and sponge	Never	39	65.0	1.35	.481	Never
		Sometime	21	35.0			
		Always	0	0			
13.	Apply N.G tube after 24- 48 hour in post craniotomy patient	Never	45	75.0	1.25	.437	Never
		Sometime	15	25.0			
		Always	0	0			
14.	Encourage the patient to take a deep breath every 2 hours	Never	32	53.3	1.50	.567	Never
		Sometime	26	43.3			
		Always	2	3.3			
15.	Administer artificial tears (eye drops) as ordered	Never	47	78.3	1.22	.415	Never
		Sometime	13	21.7			
		Always	0	0			
16.	Apply folly catheter for patient	Never	41	68.3	1.35	.547	Never
		Sometime	17	28.3			
		Always	2	3.3			
17.	Give the patient mild cathartic if he\she had constipation, and wash the colon in next day	Never	34	56.7	1.43	.500	Never
		Sometime	26	43.3			
		Always	0	0			
18.	accurate record of intake and output	Never	32	53.3	1.47	.503	Never
		Sometime	28	46.7			
		Always	0	0			
19.	Inspect side of operation for any bleeding or cerebrospinal fluid leakage	Never	51	85.0	1.15	.360	Never
		Sometime	9	15.0			
		Always	0	0			
20.	Provide skin care to prevent bedsore like change position	Never	27	45.0	1.55	.502	Never
		Sometime	33	55.0			
		Always	0	0			
21.	Assess for sign and symptom of meningitis,	Never	49	81.7	1.23	.533	Never
		Sometime	8	13.3			
		Always	3	5.0			
22.	Put the patient on semi-prone position or lateral position	Never	35	58.3	1.42	.497	Never
		Sometime	25	41.7			
		Always	0	0			
23.	Perform passive range	Never	50	83.3	1.17	.376	Never

	of motion exercises for upper and lower extremities every 2-4 hours	Sometime	10	16.7			
		Always	0	0			
24.	Continuously talks to the patient while providing care	Never	53	88.3	1.12	.324	Never
		Sometime	7	11.7			
		Always	0	0			

Table (2) shows the evaluation of nurses' practices about patient with craniotomy after discharge, which displays all nurses'' practices about patient with craniotomy after discharge never applied except in item (2).

Table (3) Mean Differences (ANOVA) Between the Overall evaluation of nurses' practice and Their Demographic Characteristic (N=60)

		Sum of Squares	df	Mean Square	F	Sig.
gender	Between Groups	2.171	10	.217	.953	.495
	Within Groups	11.162	49	.228		
	Total	13.333	59			
age	Between Groups	8.171	10	.817	.290	.980
	Within Groups	138.162	49	2.820		
	Total	146.333	59			
level of education	Between Groups	6.105	10	.610	.970	.481
	Within Groups	30.829	49	.629		
	Total	36.933	59			
Number of years of employment in hospitals	Between Groups	40.636	10	4.064	2.608	.013
	Within Groups	76.348	49	1.558		
	Total	116.983	59			
Number of years of experiences in neurosurgical ward	Between Groups	26.810	10	2.681	3.095	.004
	Within Groups	42.440	49	.866		
	Total	69.250	59			
A- have you attended any educational training program regarding care of patient with craniotomy	Between Groups	1.088	10	.109	3.026	.005
	Within Groups	1.762	49	.036		
	Total	2.850	59			
training session intra or exit Iraq	Between Groups	1.088	10	.109	3.026	.005
	Within Groups	1.762	49	.036		
	Total	2.850	59			
Number of training course	Between Groups	1.088	10	.109	3.026	.005
	Within Groups	1.762	49	.036		
	Total	2.850	59			

Table (3) shows that there is no statistically significant relationship between nurses' practice and their age, level of education, total number of service years, and number of experience years in neurosurgery wards with a p-value of less than 0.05, respectively.

IV. Discussion

Discussion of the Socio-demographic Characteristics of Studied Sample (Table 1):

Through the data analysis of distribution of the socio-demographic variables, (Table 1) reveals that approximately more than half of the study sample (66.7%) were female. This finding was in agreement with those of Huang et al. (2018), who found in a study entitled "Trends in the prevalence of congenital hydrocephalus in 14 cities in Liaoning province, China from 2006 to 2015 in a population-based birth defect registry from the Liaoning Women and Children's Health Hospital" that more than two thirds of studied nurses were females.

Omrani et al. (2018), who carried out a study entitled "Effect of introduction of a standardized peri- operative protocol on CSF shunt infection rate" and reported that more than half of studied nurses were males.

The highest proportion (38.3%) of the sample are within the age group (23-27). This result disagree with a study done by Kalu& Bwalya (2017), who found in a study entitled "Qualitative research in nursing and healthcare" that most of the nurses were in the age group ranged from 25<35 years.

Concerning the level of education, the results revealed that the half of the sample (51.6%) were graduated from nursing collage. This finding disagree with studies done by Mohammad, (2018), In relation to the level of education, it was noted that only (22.2%) of the study subjects were Secondary nursing. education, while the majority (51.1%) of them have Technical nursing degree. As regards to years of experience,

Regarding years of experiences in hospitals, one third of them (40.0%) are within (6-10) years, this result is disagree with study done by Clement et al., (2019), show the most of the samples i.e. 23 (46%) were having the experience of 1 to 5 years and 19(38%) samples were having the experience of less than 1 years.

Regarding the numbers of training session, the study demonstrated that (5%) had (1) training course. And this result disagrees with the study done by Taha (2012) in an published doctorate thesis entitled, a study to evaluate the impact of a designed teaching protocol about advanced cardiac life support on critical care nurses' knowledge and practices at Benha University Hospital, Cairo, Egypt, the study revealed that the most of studied nurses units had not trained.

Evaluation of nurses practices towards patient with craniotomy after discharge (Table 2)

The findings indicated that the study sample responses were evaluated. that the study of nurses practices towards patient with craniotomy after discharge in neurosurgical ward are inadequate.

Zhang et al. (2018), who found in a study entitled "Anti-VEGF treatment improves neurological function in tumors of the nervous system" that two thirds of the studied nurses were competent in caring of EVD among children with brain tumor.

Mean differences between the overall evaluation of the nurses' practices regarding patient with craniotomy after discharge according to nurses demographic characteristics (Table 3)

Findings shows that there is statistical significant between nurses practices their level of education and Number of experience years in neurosurgical ward, follow up p-value ≤ 0.05.

Nora et al.,2021 found in their study, no statistical significant differences between nurses' total practices and their characteristics.

Sam et al. (2018), who found in a study entitled "The organisms and factors affecting outcomes of EVD catheterrelated ventriculitis" that there was no statistical significant difference between nurses' total practices and their characteristics.

Ethical Considerations: Nurses were informed that their participation was voluntary in the study. The purpose and the benefits of the study was explained by the researcher. After they agreed to participate in the study.

V. Recommendation:

1. Developing the educational program about care of patient after craniotomy during academic educational program for nursing students.
2. Special and long continuing educational program should be established and applied for nurses who are working in neurosurgical ward concerning care of patient with craniotomy after discharge
3. Designating and distributing a booklet to all nurses, those who are working in neurosurgical ward about care of patient with craniotomy after discharge
4. Collaborate as a member of the multidisciplinary team in care of patient with craniotomy practice, education, and research

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