Evaluation of Nurses' Practices about Care of Children with Traumatic Head Injury

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ABSTRACT

Background: The expertise and experience of nurses is absolutely necessary for the treatment of children who have suffered catastrophic brain injuries. Because of the potential for these injuries to have significant and long-term repercussions, it is imperative that nurses have a solid understanding of the right methods for assessing, treating, and following up with the children who have sustained them.

Objective(s): This study aims to evaluate nurses' practices about care of children with Traumatic Head Injury.

Methodology: A descriptive study design was conducted in February 22th ,2023 to May 22th, 2023, for (30) nurses who work in intensive care unit in Neurosurgery teaching hospital at Baghdad city. The nurses were selected from morning and night shift. The study questioner was consisting to tow parts, demographic data, nurses' practices about care of children with traumatic head injury. The reliability of questioner was determined through a pilot study consist from (10) nurse and validity through a panel of (10) experts

Results: The result of this study show that the age group (20-less than 25) takes the highest percentage, most of the study sample 64% was females, more of nurses are married 72%, the years of experience in which 25% of them seen with"6- less than 11", the highest percentage, regarding level of education refer to "diploma" in the 65%of nurses, only 32%of nurses reported they participated in the trending courses about traumatic head injury, the study show that the overall of nurses' practices about traumatic head injuries in children; the findings reveals the nurses are poor level of practices during the test time (100%, M±SD= 67.28 ± 3.714).

Conclusion: the age for nurses refers to "20-less than 25" years. The gender refers to that two thirds are female, most of the nurses are married, more than half of them seen with "6-less than 11" years of experience. Only one third of nurses are participated in training courses about traumatic head injury. And the study show that the nurses are poor level of practices during the test time.

Recommendations: The study recommended to Provide ongoing training on traumatic head injury: As the participation in training courses about traumatic head injury is relatively low practices during the test, it is recommended to offer regular and mandatory training sessions on this topic to enhance nurses 'practices and improve patient care outcomes.

Keywords: Evaluation, Nurses, Practices, Care, Children, Traumatic Head Injury.

INTRODUCTION

In developing countries, trauma is a primary cause of disability among the working population and the second greatest cause of death overall and for both sexes. The working-age population is often larger in emerging nations. Among children, head trauma (HT) has the highest occurrence rate (39.7%). Additionally, it is the biggest cause of death and disability among children aged 1 to 14 [1].

The expertise and experience of nurses is absolutely necessary for the treatment of children who have suffered catastrophic brain injuries. Because of the potential for these injuries to have significant and long-term repercussions, it is imperative that nurses have a solid understanding of the right methods for assessing, treating, and following up with the children who have sustained them [2]. It is important for nurses to have a solid understanding of the many types of brain injuries, the signs and symptoms to watch out for, and the potential problems that can develop [2].

They should also be able to execute appropriate interventions, such as pain management and wound care, and they should be able to recognize when a child's condition is worsening and needs to be referred to a higher level of care in order to receive appropriate treatment. It is possible for nurses to guarantee that they are providing the highest possible level of care for children who have had traumatic brain

injuries by being current on the most recent evidence-based procedures [3].

Traumatic brain damage, often known as TBI, is the disruption of normal brain function that occurs when the brain is subjected to direct, rotational, or shear stresses. The primary cause of traumatic brain injury is the application of external mechanical forces to the skull. Primary and secondary head injuries are the two categories that make up THI [4].

The accumulation of lactic acid, increased cell membrane permeability, and eventual brain edema are all consequences of ischemia, which was induced by the primary head injury that was created by the mechanical damage of the trauma. This injury was caused by the primary head injury. It was then followed by a secondary brain insult that developed within hours or days after the primary brain insult as a result of the release of excessive excitatory neurotransmitters such as glutamate and aspartate. These neurotransmitters activate the apoptotic cascade, which ultimately leads

to membrane degradation, neural cell damage, and death [5].

METHODOLOGY

Design of the Study: A descriptive study design was conducted in December 12th ,2022 to March 12th, 2023, for (30) nurses who work in intensive care unit in Neurosurgery teaching hospital at Baghdad city. The nurses were selected from morning and night shift. The study questioner was consisting to tow parts, demographic data, nurses' practices about care of children with traumatic head injury. The reliability of questioner was determined through a pilot study consist from (10) nurse and validity through a panel of (10) experts.

Sample of the Study: A non – probability purposive sample selected from nurses who were working in intensive care unit. The sample is study (30) nurses.

Data Analysis: The data were analyzed and interpreted through use of the application of Statistical Package for Social Sciences (SPSS), version 26.

RESULTS OF THE STUDY

Table (1): Distribution of the Sample according to their Socio-demographic Characteristics:

No.	Characteristics		Sample of Study	
			f	%
1	Age (Years)	20 – less than 25	7	28
		25 – less than 30	6	24
		30 – less than 35	4	16
		35 – less than 40	8	32
		40 and more	0	0
		Total	*25*	*100*
		M ± SD	*28.5 ± 8.5*	
2	Gender	Male	9	36
		Female	16	64
		Total	*25*	*100*
3	Marital Status	Married	18	72
		Unmarried	7	28
		Divorced	0	0
		Total	*25*	*100*
4	Years of experience	1 – less than 6	9	36
		6 – less than 11	13	52
		11 or more	3	12
		Total	*25*	*100*
		M ± SD	*6.8 ± 3.3*	
5	Level of education in nursing	Secondary school	8	32
		Diploma	14	56
		Bachelor	3	12
		Postgraduate	0	0

		Total	*25*	*100*
6	Training	No	17	68
		Yes	8	32
		Total	*25*	*100*
7	Courses inside country	None	17	68
		1 – 3	8	32
		4 or more	0	0
		Total	*25*	*100*
8	Courses outside country	None	25	100
		1 – 3	0	0
		Total	*25*	*100*
9	Having information	No	4	16
		Yes	21	84
		Total	*25*	*100*
7	Sources of information	None	4	16
		Internet	20	80
		Books	1	4
		Total	*25*	*100*

Table 4-1 shows that average age for nurses is 28.5 ± 8.5 and the highest percentage of age group refers to "20-less than 25" years (28%). The gender refers to female among 64% of nurses. Relative to marital status, more of nurses in the group are married as reported among 72% of them. Regarding years of experience, the average refers to 6.8 ± 3.3 years in which 52% of them seen with "6-less than 11" years of experience. The highest percentage regarding level of education in nursing refers to "diploma "in the56 % of nurses. Regarding in training, only 32% of nurses reported they participated in training courses about traumatic head injury. Concerning information about traumatic head injury, 84% of nurses reported they have information which they got from internet.

Table (2): Overall of Nurses' Practices about Traumatic Head Injuries in Children

Levels of practices	Sample of Study Group (N= 30)			
	f	%	M	S.D
Poor	25	100	67.28	3.714
Fair	0	0		
Good	0	0		
Total	*25*	*100*		

f: Frequency, %: Percentage, M: Mean of total score, SD Standard deviation of total score.
Poor= 45 – 75, Fair= 75.1 – 105, Good= 105.1 – 135

This table (1) displays the overall of nurses' practices about traumatic head injuries in children; the findings reveals that nurses are show poor level of practices during the test time (100%, M±SD= 67.28 ± 3.714)

Table (3): of Nurses' Practices related to "Preoperative Care" in Children with Traumatic Head Injury

List	Preoperative Care	Sample of Study (N=30)	
		M	Ass.

	Documenting the sick history of the affected child.		
1	Write the patient's name in the space designated for the nurse	1.60	Poor
2	Medical Diagnosis	1.56	Poor
3	Age of the child	1.48	Poor
4	Install the measurement of vital signs and the hour at which the measurement was taken	1.64	Poor
5	Recording the treatments that were given before the operation	1.48	Poor
6	If blood is given, the nurse must document it	1.52	Poor
7	Write the name of the nurse in clear handwriting with the signature	1.48	Poor
	Mental status assessment includes:		
8	monitoring the patient's behavior, such as emotions and eye contact	1.44	Poor
9	His ability to remember events, people, or names	1.60	Poor
10	Attention	1.48	Poor
11	Evaluation of the patient's level of response by using the Glasco coma scale	1.52	Poor
12	Placement of tracheal intubation in case of inability to protect the airway or Glasco scale less than 8	1.48	Poor
13	Using a suction device to clear the airway and stimulate natural response (coughing, swallowing).	1.52	Poor
14	Attention should be paid to impaired perfusion in brain tissue because it is associated with the effects of increased cerebral hypertension.	1.48	Poor
15	Treatment of the disorder caused by the lack of body fluids due to the inability of the child to feed and take fluids.	1.68	Fair
16	There is a risk of infection related to the patient's monitoring system (intravenous catheters and cerebral hypertension monitors).	1.48	Poor
17	Nurse monitoring of the child's urine volume, bowel condition due to drug effects, follow-up of urethral catheterization and fluid/food intake	1.56	Poor
18	Keep the patient's head in a midline position to prevent an	1.40	Poor

	increase in cerebral pressure		
	Total	*1.52*	*Poor*

M: Mean, Poor= 1 – 1.66, Fair= 1.67– 2.33, Good= 2.34 – 3

The table (2) presents of the nurses' practices about "pre-operative care"; the findings indicate that nurses in the study group show poor level of practices during the test time (mean= 1.52).

Table (3): The Nurses' Practices related to "Post-operative Care" of Children with Traumatic Head Injury

List	Post-operative Care	Sample of Study (30)n	
		M	Ass.
1	Keep dressings sterile and dry	1.56	Poor
	Using accurate sterilization techniques when changing the dressing, including:		
2	Cleaning hands	1.48	Poor
3	Wearing gloves	1.60	Poor
4	Recruitment of sterile instruments	1.68	Fair
5	Maintaining the efficiency of the airways by: Perform an initial assessment and prompt management so that they are guided by the ABCDs of the initial survey (airway, breathing, circulation, obstruction).	1.70	Fair
	Maintain an ideal breathing position as much as possible.		
6	Suction of fluids and secretions from the airways	1.52	Poor
7	Give oxygen according to the doctor's orders	1.68	Fair
8	Follow-up of tissue perfusion in the brain.	1.48	Poor
9	Ensure that there is no infection or signs of inflammation.	1.52	Poor
10	Ensure that there is no redness, swelling, or purulent abscess from the intracranial monitoring device.	1.60	Poor
	Ensuring that the child eats food adequately and correctly, according to the nutritional plan. Through:		
11	If the patient is conscious and able to eat by mouth	1.44	Poor
12	By nasogastric feeding tube	1.40	Poor
13	By parenteral nutrition	1.48	Poor
14	Ensure that the child is not exposed to secondary or accidental injuries due to his health condition	1.36	Poor
15	Examination of the child's body continuously to ensure that he does not suffer from bedsores or any skin problems if the child is unconscious	1.36	Poor
16	Giving the necessary medicines to the injured child, including painkillers,	1.36	Poor

	sedatives, anticoagulant drugs inside the vein, and drugs to prevent stomach ulcers, according to the doctor's orders.		
17	Examination of the nose and ear in anticipation of any leakage of cerebrospinal fluid	1.36	Poor
	Monitoring laboratory analyzes, including:		
18	Blood sample tests	1.44	Poor
19	Tests of urine or stool samples	1.52	Poor
20	Throat or bronchial secretions tests	1.44	Poor
	Nursing documentation includes:-		
21	The patient's name, age, and diagnosis	1.44	Poor
22	the time of his exit from the operation	1.36	Poor
23	Measurement of vital signs	1.32	Poor
24	Recording the amount of urine and the amount of fluids in the gastric vacuum device or the operation site vacuum	1.44	Poor
25	Recording the treatments that were given with writing the time and dose	1.48	Poor
26	Write the nurse's name and signature in clear handwriting	1.44	Poor
Total		*1.47*	*Poor*

M: Mean, Poor= 1 – 1.66, Fair= 1.67– 2.33, Good= 2.34 – 3

The table (3) presents the nurses' practices about "post-operative care"; the findings indicates that nurses show poor level of practices during the test time (mean= 1.47)

DISCUSSION

Table (1) show that the predominant age for nurses in the group refers to "20-less than 25" years.

The finding of the result of the study in Iraq by Thamar and Abbas (12) who stated that about one third of the participants were in their twenties.

In regards to the gender refers to that two thirds are female in the nurses of the group.

In agreement with the findings of the present study, the result of study (24) from Egypt also found that the vast majority of nurses in the study were females.

Accordingly, a study conducted by Ahmed and his co-authors (139) said that more than half of the participants are female.

In regards to the marital status, more nurses are married as reported in the three quarters of them in the group.

This result supported by that of Abbas and Mohammed (24) who conducted a study in Iraq and stated that more than half of the nurses were married. In the same line another Iraqi study by Mohammed and Bakey (12) (26) revealed the same findings of ours.

While a third Iraqi study by Aziz (20) in 2018 discovered that about half of the nurses are singles.

In regards to the years of experience, in the group in which more than half of them seen with "6-less than 11" years of experience.

A study by Aly and his colleagues (5) show that about two third of studied nurses had less than ten years of experience, this finding is in agreement with our results.

In regarding of highest percentage regarding level of education in nursing refers to "diploma" in more than half of nurses in the group.

In this respect, alsolamy (4) reported that less than two third of studied nurses were graduated from secondary nursing school and more than one third of them graduated from technical nursing institute.

In regarding the training, only one third of nurses in the group reported they participated in training courses about traumatic head injury.

Shehab and colleagues (7) who reported that all of studied nurses had no training and also there is no protocol of care

In regarding the Concerning information about traumatic head injury, the vast majority of nurses in the group reported they have information which they got from internet.

The result in table (2) show that the overall of nurses' practices about traumatic head injuries in children reveals that nurses in the study group are show poor level of practices during the test time.

The presentation on the table (3) show that the nurses' practices about "pre-operative care"; the findings indicate that nurses in the study group show poor level of practices during the test time.

In the table (4) shoe that the nurses' practices about "post-operative care"; the findings indicate that nurses in the study group show poor level of practices during the test time,

In a study by Ehwarieme [11] found that the majority of the respondents/participants exhibited poor skills when using the GCS in neurological assessment of THI children in the hospitals. Generally, the participants demonstrated a poor level of skills in the GCS. Findings from the quantitative strand of the study show that most of the participants had poor skills in the using for children assessment [6,16,17,18,19].

Also, Basauhra Singh [8] found that only two percent of the nurses they studied had good skills of the GCS in THIs, while more than half (55.56%) of them had poor practice. Moreover, a study revealed unsatisfactory nursing practices regarding head trauma nursing management in the intended ICUs. This may be due to a shortage of nursing staff to provide high quality nursing care for pediatric traumatic head injury [4,20,21,22,23,24].

In a comparative study conducted by Ghoneim [9], the results indicate that the implementing nursing care protocol for moderate head injured patients associated with polytrauma had best effect on minimize the incidence of all systemic complications, decrease morbidity as well as mortality rate [5,14,25,26].

According to Santos [10], nurses should know and recognize changes that may occur in the children in order to act promptly because nursing care is based on critical observation and the right evaluation.

CONCLUSION

The age group (20-less than 25) takes the highest percentage, most of the study sample64% was females, more of nurses are married 72%, the years of experience in which 25% of them seen with"6- less than 11", the highest percentage regarding level of education refer to "diploma" in the 65%of nurses, only 32%of nurses reported they participated in the trending courses about traumatic head injury, and the nurses in the group are show poor level of practices during the test time.

RECOMMENDATIONS

Provide ongoing training on traumatic head injury: As the participation in training courses about traumatic head injury is relatively poor level of practices, it is recommended to offer regular and mandatory training sessions on this topic to enhance nurses' practices and improve children care outcomes.

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