Assessment of Nurses' Practices for Neurological Unconscious Patients in Intensive Care Units

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المستخلص

الهدف: لتقييم مهارات الممرضات والممرضين العاملين في وحدات العناية المركزة الخاصة بالجملة العصبية.

المنهجيّة: أجريت دراسة وصفية شملت (٥٠) ممرضة وممرض من العاملين في وحدات العناية المركزة في مستشفيات وأقسام الجملة العصبية في (٤) مستشفيات في بغداد (مستشفى العلوم العصبية، مستشفى جراحة الأعصاب التعليمي، مستشفى الجراحات التخصصية، ومستشفى الشيخ زايد) للمُدّة من ٣٠ آذار ٢٠٠٩ ولغاية ٣٠ حزيران ٢٠٠٩ لغرض تقييم مهاراتهم تجاه المرضى الفاقدين الوعي. اختيرت عيّنة غرضيّة "غير احتمالية"تكوّ نت من (٥٠) ممرضة وممرض يعملون في وحدات العناية المركزة. تمّ استعمال استبانة مصممة من جزئين؛ الجزء الأول يتضمن المعلومات الديموغرافية للعيّنة والجزء الثاني يتضمن أدوات الملاحظة والذي يتكوّ ن من (٧) أجزاء موزعة على(٦٤)فقرة. تمّ تحديد ثبات ومصداقية الاستمارة من خلال إجراء دراسةاستدلالية. تمّ تحليل بيانات الدراسة من خلال استعمال الإحصاء الوصفي الذي تضمّن التكرارات، النسب المئوية، والإنحراف المعياري؛ علاوة على استعمال الإحصاء الاستنتاجي الذي شمل معامل الارتباط ومعامل الاحتمال.

النتائج: بينت نتائج الدراسة عدم كفاية مهارات الممرضات والممرضين باتجاه العناية بالمرضى فاقدين الوعي في مجال العناية بمجرى الهواء وملاحظة وقياس مستوى الوعي والنظافة وتحفيز الحواس والعناية بالجهاز البولي والهضمي. وكفاية مهارات الممرضات والممرضين في مجال قياس وتسجيل العلامات الحيوية والتغذية والبيئة.

التوصيات:بناءاً على نتائج البحث فإنّ الدراسة توصي بإجراء دورات تدريبية في مجال العناية المركزة والعناية بالمرضى الفاقدين الوعي؛ فضلاً عن تصميم كتيب مصغر خاص لغرض العناية بالمرضى الفاقدين الوعي.

Abstract

Objective(s): To assess nurses' practices for neurological unconscious patients in intensive care units.

Methodology: A descriptive study was conducted that included (50) nurse who are working in intensive care units in hospitals and departments of the nervous system in (4) hospitals (neuroscience hospital, teaching neurosurgical hospital, surgical specialist hospital, and sheck zaied hospital) in Baghdad city from March, 30th, 2009 to July, 30th 2009 for the purpose of assessing their skills towards unconscious patients. A purposive "non-probability sample" was selected that consisted of (50) nurse who are working in intensive care units. A questionnaire format and observational checklist were used which consist of (2) parts, the first part includes demographic information of the sample and the second part includes tools which consists of the observation (7) parts distributed to (64) items. Reliability and validity of questionnaire and observational checklist was estimated through a pilot study and a panel of expert. The data were analyzed by using descriptive statistical measures which included frequencies, percentages, and standard deviation, as well as the use of inferential statistical measures which include the correlation coefficient and coefficient of probability.

Results: The results revealed the inadequacy of skills of nurses towards unconscious patients' care in the field of airway care, observation and record level of consciousness, hygiene, stimulate the senses and care of urinary and digestive tract and the adequacy of skills of nurses in the field of measuring and recording vital signs, nutrition, and the environment.

Recommendations: Based on the results of research, the study recommends initiating training courses in the field of intensive care and care of for unconscious patients as well as to design a special mini-booklet for the purpose of care for unconscious patients.

Keywords: Nurses' practices; Unconscious patients; Intensive care units

Introduction

Unconsciousness is a state of total absence of awareness and ability to respond even when stimulated [1], or it is the abnormal stat of complete or partial unawareness of self or environment [2] To the extent that all complex waking behavior requires the widespread participation of the cerebral cortex, conscious-ness cannot exist without the activity of this structure. The reticular activating system (RAS), a loosely grouped aggregation of neurons located in the upper brainstem and medial thalamus, maintains the cerebral cortex in a state of wakeful consciousness. It follows that the principle causes of coma are (A) lesion that damage the RAS or its projections (B) destruction of large portion of both cerebral hemispheres; (C) suppression of reticulocerebral function by drugs, toxins, or metabolic derangements such as hypoglycemia, anoxia, azotemia, or hepatic failure [3]. Consciousness has been particularly organized in a bicameral fashion (content and arousal) [4].

Coma is deep sleeplike state from which the patient cannot be aroused. Stupor refers to lesser degrees of unarousability in which the patient can be awakened only by vigorous stimuli. Three unique conditions of altered level of consciousness. **A persistent vegetative state** is unawake but unresponsive state. These patients have emerged from coma after period of days or weeks to an unresponsiveness state in which the eyelids are open. **Locked-in syndrome** describes a pseudocoma in which an awake patient has no means of producing speech or an awake patient has no means of producing speech or volitional movement in order to indicate that he is awake brain death is associated with specific feature. Severely brain injured [5].Depressed state of consciousness is the most common neurologic problem in intensive care units ranging from lethargy to coma [6]. Caring for unconscious patient is critical care nursing. The nurse plays an important role in prevention and early detection of complication by checking, reporting his/her observation, notifying the doctor, rehabilitation of patient and preventing disabilities. For this reason, the researcher does this research (The researcher).

Methodology:

A purposive "non-probability" sample of 50 nurses who work in (4) neurointensive care units in Baghdad city (neuroscience hospital, teaching neurosurgical hospital, surgical specialist hospital, and sheck zaied hospital). Data were collected through the use of the constructed questionnaire for demographical characteristics and observational checklist use for assessment of nurses' practices. The questionnaire and observational checklist was constructed by the investigator to achieve the objectives of the study, which consisted of two parts; the first part is concerned with the socio-demographic characteristics of the nurses which included; age, gender, marital status, level of education, years of employment as a nurse, years of experience in intensive care units and training session in intensive care units; the second part is consists of the seven domains of nurses' practices of unconscious patient (airway, observation and record, nutrition, hygiene, environment, sensory simulation, and bladder and bowel care) which consist of 64 items that. These items were measured, scored and rated of 3-level Likert rating scale; always (3), sometimes (2), never (1). For each level respectively so cut of point was (2) and the lowest value for acceptance (adequate) was (66.67) as and all value below (66.67) are inadequate. The validity and reliability for the constructed questionnaire were determined by using pilot study and the experts panel, and the application of alpha correlation coefficient (r= 0.80) which was statistically acceptable. Data were analyzed through the application of descriptive statistical analysis (Frequency, Percentage, Mean of score and Standard deviation) and inferential statistic (Alpha correlation coefficient, contingency coefficient) [6-7].

Results:

Part I: demographical characteristics

Table 1. Participants' demographical Characteristics (n=50)

List	Demographical Characteristics	Groups	Frequency	Percent
1.	Age of nurses	< 20	3	6
		20-29	17	34
		30-39	18	36
		40-49	10	20
		50 >	2	4
2.	Gender of nurses	male	30	60
		female	20	40
3.	Level of education of nurses	Intermediate nursing school graduate	3	6
		High Nursing school graduate	25	50
		nursing institute graduate	16	32
		nursing college graduate	5	10
		others	1	2
4.	Marital status	married	32	64
		single	17	34
		widowed	1	2
5.	Years of employment as a nurse	< 1	4	8
		1 -	5	10
		5 -	19	38
		10 -	11	22
		15 -	4	8
		20 -	5	10
		25 >	2	4
6.	Years of experience in intensive care units	< 1	4	8
		1 -	5	10
		5 -	19	38
		10 -	11	22
		15 -	4	8
		20 -	5	10
		25 >	2	4
7.	Training session in intensive care units	Non	48	96
		yes	2	4
8.	Training session in the nursing care of unconscious patient	Non	48	96
		yes	2	4

This table reveals that the majority of nurses' ages between (30-39) years old who were accounted for (36%). (60 %) were males, level of education represents that half of them (50%) were secondary school education; most of nurses (64%) were married (64%). (38%) of nurses had (5-10) years of employment. (44%) of nurses had (1-5) years of experience in intensive care unit. The majority of nurses (98%) did not have training sessions in intensive care unit and the same percentage did not have training session in nursing care of unconscious patients.

Part II: assessment of nurses' practices:

Table 2. Summary statistics of the nurses' practices for the studied items concerning airway

List	Nurses Practices of the Studied items concerning airway	Never		Sometimes		Always		MS	SD	RS	Assessment
		f	%	f	%	f	%				
Nurses' practices of studied items concerning suctioning											
1.	Elevating head of bed 30 degree	11	22	33	66	6	12	1.90	0.58	63.33	inadequate
2.	Positioning the patient in lateral or semipron position	24	48	25	50	1	2	1.54	0.54	51.33	inadequate
Nurses' practices of studied items concerning suctioning											
1.	Adequately ventilated before and after suctioning within 100% oxygen for 20-30 second	38	76	9	18	3	6	1.30	0.58	43.33	inadequate
2.	Osculating of respiration every 8 hours	38	76	11	22	1	2	1.26	0.49	42.00	inadequate
3.	Turning the suction device to 80-120 mm/hg	10	20	35	70	5	10	1.90	0.54	63.33	inadequate
4.	Removing secretion within time limited to 15 seconds	17	34	31	62	2	4	1.70	0.54	56.67	inadequate
5.	Using the catheter once only and then discard	50	100	0	0	0	0	1.00	0.00	33.33	inadequate
6.	Rinsing the suction tube through with sterile water	0	0	8	16	42	84	2.84	0.37	94.67	adequate
7.	Giving the patient at least 60 second to recover before suctioning again	13	26	30	60	7	14	1.88	0.63	62.67	Inadequate
8.	Document and report changing in breathing pattern	48	96	2	4	0	0	1.04	0.20	34.67	inadequate
9.	Provide tracheotomy care every 4 hours if present	8	16	42	84	0	0	1.84	0.37	61.33	inadequate

f=Frequency; MS= Mean of scores; RS= Relative sufficiency; SD=Standard deviation; %= Percent

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2.	Osculating of respiration every 8 hours	38	76	11	22	1	2	1.26	0.49	42.00	inadequate
3.	Turning the suction device to 80-120 mm/hg	10	20	35	70	5	10	1.90	0.54	63.33	inadequate
4.	Removing secretion within time limited to 15 second	17	34	31	62	2	4	1.70	0.54	56.67	inadequate
5.	Using the catheter once only and then discard	50	100	0	0	0	0	1.00	0.00	33.33	inadequate
6.	Rinsing the suction tube through with sterile water	0	0	8	16	42	84	2.84	0.37	94.67	adequate
7.	Giving the patient at least 60 second to recover before suctioning again	13	26	30	60	7	14	1.88	0.63	62.67	inadequate
8.	Document and report changing in breathing pattern	48	96	2	4	0	0	1.04	0.20	34.67	inadequate
9.	Provide tracheotomy care every 4 hours if present	8	16	42	84	0	0	1.84	0.37	61.33	inadequate

f=Frequency; MS= Mean of scores; RS= Relative sufficiency; SD=Standard deviation; %= Percent

The finding of this table indicates that the nurses' have inadequate practices concerning airway management except in item (6) rinsing the suction tube through with sterile water.

Table 3. Summary statistics of the nurses' practices for the studied Items concerning observation and record

List	Nurses' practices of the studied items concerning measurement and record	Never		Sometimes		Always		MS	SD	RS	Assessment
		f	%	f	%	f	%				
A. level of consciousness											
1.	Measurement and recording the level of consciousness by application of Glasgow coma scale	50	100	0	0	0	0	1.00	0.00	33.33	inadequate
2.	Monitoring and recording any spontaneous behavior.	50	100	0	0	0	0	1.00	0.00	33.33	inadequate
3.	Monitoring and recording patient resistant to care	50	100	0	0	0	0	1.00	0.00	33.33	inadequate
4.	Monitoring and recording patient response to noxious stimuli	50	100	0	0	0	0	1.00	0.00	33.33	inadequate
5.	Measurement and recording equality of pupils ,their size	50	100	0	0	0	0	1.00	0.00	33.33	inadequate
B. Vital signs											
1.	Monitoring and recording pulse rate	3	6	32	64	15	30	2.24	0.56	74.67	Adequate
2.	Monitoring and recording respiratory rate	4	8	19	38	27	54	2.46	0.65	82.00	Adequate
3.	Monitoring and recording blood pressure	2	4	26	52	22	44	2.40	0.57	80.00	Adequate
4.	Monitoring and recording body temperature	18	36	14	28	18	36	2.00	0.86	66.67	Adequate

f=Frequency; MS= Mean of scores; RS= Relative sufficiency; SD=Standard deviation; %= Percent

The finding of this table indicates that the nurses' have inadequate practices in all items concerning measurement and recording level of consciousness and have adequate practices in all items concerning measurement and recording vital signs.

Table 4. Summary statistics of the nurses' practices for the studied items concerning nutrition

List	Nurses' practices of the studied items concerning nutrition	Never		Sometimes		Always		MS	SD	RS	Assessment
		f	%	f	%	f	%				
1.	Aspiration of stomach secretion before each eating	37	74	11	22	2	4	1.30	0.54	43.33	inadequate
2.	Using funnel in tube feeding	50	100	0	0	0	0	1.00	0.00	33.33	inadequate
3.	Administration of feeding 100 cc -300cc every 2-3 hours or according to doctor order	11	22	39	78	50	100	2.78	0.42	92.67	adequate
4.	Administration 30 ml of water after each feeding	6	12	44	88	0	0	2.88	0.33	96.00	adequate
5.	Clamping the tube after each feeding	0	0	0	0	50	100	3.00	0.00	100.00	adequate
6.	Examination of tissue turgor and mucous membranous	35	70	13	26	2	4	1.34	0.56	44.67	inadequate
7.	Monitoring and recording intake and output fluid	15	30	20	40	15	30	2.00	0.78	66.67	adequate

f=Frequency; MS= Mean of scores; RS= Relative sufficiency; SD=Standard deviation; %= Percent

The finding of table (4) indicates that the nurses' have inadequate practices in items (1, 2, and 6) and have adequate practices in items (3, 4, 5, and 7).

Table 5. Summary statistics of the nurses' practices for the studied items concerning personal hygiene

List	Nurses' Practices of the Studied items concerning personal hygiene	Never		Sometimes		Always		MS	SD	RS	Assessment
		f	%	f	%	f	%				
1. Mouth care											
1.	Inspecting and the mouth daily for dryness inflammation and crusting	31	62	18	36	1	2	1.40	0.53	46.67	inadequate
2.	Cleansing the mouth daily and rinsed	32	64	14	28	4	8	1.44	0.64	48.00	inadequate
3.	Using attain coating of petroleum on the lips	17	34	28	56	5	10	1.76	0.62	58.67	inadequate
4.	Moved the end tracheal tube to the opposite side of the mouth	50	100	0	0	0	0	1.00	0.00	33.33	inadequate
2. Skin and joint integrity											
1.	Bathing the patient daily with soap and warm water	28	56	17	34	5	10	1.54	0.68	51.33	inadequate
2.	Turning the patient each 2 hours	8	16	35	70	7	14	1.98	0.55	66.00	inadequate
3.	Maintaining correct body position	10	20	35	70	5	10	1.90	0.54	63.33	inadequate
4.	Using passive exercise of the extremities	24	48	23	46	3	6	1.58	0.61	52.67	inadequate
5.	Using splints or foam boots aid to prevent foot drop	33	66	15	30	2	5	1.38	0.57	46.00	inadequate
6.	Using trochlear roll to support the hip joint	32	46	17	34	1	2	1.38	0.53	46.00	inadequate
7.	Lubricate skin with emollient lotions	25	50	23	46	2	4	1.54	0.58	51.33	Inadequate
8.	Inspecting the skin for pressure ulcer	19	38	26	52	5	10	1.72	0.64	57.33	Inadequate
9.	Clip patient nails	38	76	11	22	1	2	1.26	0.49	42.00	Inadequate
10.	Keeping patient skin and under patient linen tight and dry	6	12	36	72	8	16	2.04	0.53	68.00	inadequate
11.	Monitoring and recording color of face ,lips, extremities and trunk	0	0	0	0	50	100	3.00	0.00	100.00	Inadequate
3-Eye Care											
1.	Cleaning the eye with cotton balls moister with normal slain every 8 hours	31	62	18	36	1	2	1.40	0.53	46.67	inadequate
2.	Using of artificial tears every 2 hours	19	38	27	54	4	8	1.70	0.61	56.67	inadequate
3.	Monitoring and recording any sign of eye irritation or inflammation	20	40	26	52	4	8	1.68	0.62	56.00	Inadequate
4.	Closuring of eyelids with eye shields	32	64	17	34	1	2	1.38	0.53	46.00	Inadequate
4. Nose Care											
1.	Cleaning the nose daily with normal saline	49	98	1	2	0	0	1.02	0.14	34.00	inadequate
2.	Placing sterile cotton in the nose if there is sign of rhino rhea	23	46	26	52	1	2	1.56	0.54	52.00	inadequate
3.	Avoid remove nose clot	21	42	28	56	1	2	1.60	0.53	53.33	Inadequate
4.5. Ear care											
1.	Clean the ear daily	41	82	9	18	0	0	1.18	0.39	39.33	inadequate
2.	Place sterile cotton in the ear if there is sign of outorrea	27	54	21	42	2	4	1.50	0.58	50.00	inadequate

f=Frequency; MS= Mean of scores; RS= Relative sufficiency; SD=Standard deviation; %= Percent

The finding of this table indicates that the nurses' have inadequate practices in all items concerning hygiene.

Table 6. Summary Statistics of the Nurses' practices for the studied items concerning environment

List	Nurses' Practices of the Studied items concerning Environment	Never		Sometimes		Always		MS	SD	RS	Assessment
		f	%	f	%	f	%				
1.	Keep room temperature at 68-74 F	16	32	33	66	1	2	1.70	0.51	56.67	inadequate
2.	Provide good ventilation	9	18	29	58	12	24	2.06	0.65	68.67	adequate
3.	Provide safety and privacy for the patient	19	38	21	42	20	40	1.82	0.75	60.67	inadequate
4.	Keep patient away from bad order	6	12	24	48	20	40	2.28	0.67	76.00	adequate
5.	Using bedside rails	2	4	15	30	33	66	2.62	0.57	87.33	adequate

f=Frequency; MS= Mean of scores; RS= Relative sufficiency; SD=Standard deviation; %= Percent

The finding of this table indicates that the nurses have inadequate practices in items (1, 3) while have adequate practices in items (2, 4, and 5).

Table 7. Summary statistics of the nurses' practices for the studied items concerning sensory stimulation

List	Nurses Practices of the Studied items concerning Sensory stimulation	Never		Sometimes		Always		MS	SD	RS	Assessment
		f	%	f	%	f	%				
1.	Touch and talk with the patient	35	70	12	24	3	6	1.36	0.60	45.33	Inadequate
2.	Encourage family and friend to talk with the patient	47	94	2	4	1	2	1.08	0.34	36.00	Inadequate
3.	Orient the patient to time and place at least once every 8 hours	48	96	1	2	1	2	1.06	0.31	35.33	Inadequate
4.	Monitoring and recording convulsion site ,time	49	98	0	0	1	2	1.04	0.28	34.67	Inadequate

f=Frequency; MS= Mean of scores; RS= Relative sufficiency; SD=Standard deviation; %= Percent

The finding of this table indicates that the nurses have inadequate practices in all items concerning sensory stimulation.

Table 8. Summary statistics of the nurses' practices for the studied items concerning bladder and bowel care

List	Nurses' Practices of the Studied items concerning bowel and bladder care	Never		Sometimes		Always		MS	SD	RS	Assessment
		f	%	f	%	f	%				
1.	Palpate abdomen for bladder fullness	35	70	12	24	3	6	1.36	0.60	45.33	Inadequate
2.	Observe and document urine color	19	38	21	42	10	20	1.82	0.75	60.67	Inadequate
3.	Osculate bowel sound daily	48	98	0	0	1	2	1.08	0.40	36.00	Inadequate
4.	Observe fecal impaction by finger exam	50	100	0	0	0	0	1.00	0.00	33.33	Inadequate

f=Frequency; MS= Mean of scores; RS= Relative sufficiency; SD=Standard deviation; %= Percent

This table indicated that the nurse's practices in all items concerning bladder and bowel care are inadequate.

Table 9. Cross tabulation causes correlation ships between nurses practices in compact form for all studied domains and some demographical characteristics and related variables towards nurses' practices studied

List	Demographical Characteristics and some related variables	Practices in compact form for all studied domains	
		CC	P-value
1.	Age of nurses	0.133	0.925
2.	Gender of nurses	0.042	0.768
3.	Level of education of nurses	0.522	0.001
4.	Marital status	0.072	0.877
5.	Years of employment in nursing	0.287	0.610
6.	Years of experience in intensive care units	0.224	0.618
7.	Training session in intensive care units	0.042	0.768
8.	Training session in the nursing care of unconscious patients	0.042	0.768

CC= Contingency Coefficient; P-value= Level of Probability

The finding of this table had revealed highly significant association between nurses' practices and level of education of nurses, and no significant between nurses practices and other demographical characteristics.

Discussion:

Through the data analysis distribution of demographic variables the present study reports that the majority of nurse's ages between (30-39) years old who are accounted for 18 (36%). Most of study group are males 30(60%). 20 (40%) are females. Most of nurses Graduated from secondary nursing school 25 (50%). Then nursing institute 16 (32%). Most of the nurses 32(64%) are married. 19 (38%) have 5-10 years of employment as a nurses and they have (5-10) years of experience in intensive care units (Table 1).

Through the use of observational checklist the highly percentage of nurses' have inadequate practices in items concerning airway management (positioning and suctioning), mea-surement and record level of consciousness, personal hygiene, sensory stimulation, bladder and bowel care, while they have adequate practices in items concerning measurement and record vital signs, nutrition, environment). These finding are indicate that the unconscious patient may be susceptible to many problems like pneumonia, bed sores, contracture, risk of infections, fecal impaction, and other problems that may lead death or permanent disability. This finding agrees with study conducted by Jaddoue and Mohabbes that find poor nursing care and increase complications (Tables 2, 3, 4, 5, 6, 7, and 8).

Through the use of contingency coeff-icient there were no significant relationships between nurses' practices and age, gender, marital status, years of experience in intensive care units, and training session in intensive care unit and nursing care of unconscious patients, while they were high significant relationships between nurses' practices and their level of education this results are due to lack of training courses in the field of intensive care about the job description and responsibility between nurses according to their education so nurses with low certification cannot do difficulty responsibilities like assessment level of consci-ousness (Table 9) .

Recommendations:

The study recommends developing assessment sheet for skills and daily nursing not for neurological unconscious patients, release guideline in neurological hospital for care of unconscious patients depends upon hospital policy and strategy, and increase training-session program for nurses for care of unconscious patient and intensive care unit.

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