NURSES' KNOWLEDGE AND PRACTICES ABOUT DELIRIUM AMONG INTENSIVE CARE UNITS PATIENTS AT EMERGENCY HOSPITAL, MANSOURA UNIVERSITY

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Abstract:

Background: Delirium is considered a common, life threatening and a cause of morbidity and mortality that can be prevented in ICU patients. Undetected and untreated delirium is a catalyst to increase mortality, morbidity, functional decline and result in increasing requirement for nursing care, healthcare expense and hospital length of stay. Several studies have indicated that nurses' knowledge and practices for delirium are inadequate. Therefore, **the aim of this study** is to assess nurses' knowledge, and practices about delirium at the ICU of the Emergency Hospital, Mansoura University. **Subjects and Methods:** A descriptive exploratory design was used to carry out this research on fifty four nurses who are involved in providing direct care for ICU patients in Emergency Hospital, Mansoura University. Two tools were used to collect data: the knowledge evaluation sheet and observational checklist. **Results:** the findings showed that knowledge and practices for majority of studied nurses were unsatisfactory regarding delirium and there is no correlation between nurses' knowledge and practices scores. **Conclusion:** there is need for continuing education to upgrade nurses' knowledge and improve their practical skills regarding delirium. **Recommendations:** enrichment of nurses' knowledge and practices related to delirium to be the corner stone in care of ICU patients. As well, replication of this study on large probability sample.

KEY WORDS: Nurses' Knowledge and Nurses' Practices, Delirium, ICUs patients

Introduction

ICU patients are those patients who are seriously ill, with acute illnesses which could be respiratory, cardiovascular, neurological, or other diseases. Typically, these patients require constant care, which could be in the form of cardiac and neurological monitoring. ICU patients commonly experience brain dysfunction as a result of pain, invasive procedure, unfamiliar environment and fear of death. Delirium is a common manifestation of acute brain dysfunction in ICU patient. According to American Association of Retired Persons, delirium is considered one of six leading causes of injuries associated with hospitalization in patients over 65 years of age([1, 2, 3 and 4).

ICU patients are likely to develop delirium due to acute multisystem illness, associated diseases, medications and other environmental factors such as the

absence of visible light of day, isolation, limited visiting hours, and the use of physical restraints, tube feeding and catheterization. Other factors that can lead to delirium in ICU: preexisting dementia, history of hypertension, alcoholism and high severity of illness at admission. Exposure to sedative medications poses a threat to the development of delirium in patients in ICU. Benzodiazepines and Dexmedetomidine are considered as independent risk factors for delirium. Delirium has been suggested as an additional vital sign and it can be often the first sign of a change in clinical status (5, 6 and7).

ICU nurses are in a better position to assess the cognition of their patients due to the amount of time they spend at the bedside. If nurses do not have the necessary knowledge and skills to evaluate patients carefully, they cannot intervene early enough to prevent further deterioration in their patient's mental status. According to multiple studies, unrecognized delirium in older adults results in complications during hospitalization, increased length of stay, and death. There are many factors that negatively affect how well nurses assess for delirium in their patients; the term "delirium" itself can be problematic for healthcare professionals. Knowledge deficits are perpetuated because of health professionals are routinely documenting cognitive and behavioral changes under the term of "confusion" (8 and 9).

Significance of the study

Through our empirical observation and reviewing the medical records in ICU at Emergency Hospital, Mansoura University in relation to the incidence of delirium among ICU patients . We found that there were no recorded data. So, the health care providers were facing major problems related to early detection and management of patients suffering from ICU delirium. Some of these problems are absence of assessment tool and subsequently delirium is misdiagnosed, treated inappropriately or even neglected. This situation boosts the potential for substantial increases in morbidity and mortality.

So, it is imperative that nurses should be aware of these risks and be able to practice according to current research recommendation; therefore, there is a need for such research that investigates nurses' knowledge and practices regarding assessment of delirium in ICU patients. It is hoped that this research will help to provide evidence based data about nurses' knowledge and practices regarding delirium among ICU patients.

Aim of study:

The study aim was to assess nurses' knowledge and practices about delirium among ICU patients at Emergency Hospital, Mansoura University.

Research Questions:

Q1: What is the level of knowledge that nurses have about delirium?

Q2: What is the level of practice that nurses perform regarding delirium assessment for ICU patients?

Subjects & Method

Research design:

A descriptive exploratory design was used to implement this study.

Setting:

This study was conducted at general surgery department at Mansoura University Hospital.

Subjects:

This study was conducted in the Intensive Care Units at Emergency Hospital, Mansoura University (Three Intensive Care Units: ICU1, ICU2, ICU3). ICU1 consist of 10 beds with 10 cardiac monitor and 8 mechanical ventilation while, ICU2 consist of 8 beds with 8 cardiac monitor and 8 mechanical ventilation while ICU3 consist of 4 beds with 4 cardiac monitor and 4 mechanical ventilation. The nurse patient ratio was nearly 1:2.

Sample:

A purposive sample of nurses (54) working in the Intensive Care Units, providing direct care to ICU patients with various levels of education and different ages, and have at least one year of experience . Nurse must gave consent prior the implementation of the study.

Tools of Data Collection:

Data were collected using two tools:

Tool I: Nurses' knowledge questionnaire of delirium

This tool was consisted of two main parts as following

Part (1): "nurses' background data sheet" It included nurses' age, years of experience in ICU, working hours, educational level, attending training program related to care of delirious patients and type of training programs.

Part (2): "Nurses' knowledge questionnaire of delirium" This tool was adopted from ([10]) and modified by the researcher after reviewing the literature ([11 and 12]) to assess the level of intensive Care nurses' knowledge about delirium. This tool consists of seven main parts and included 43 multiple choices and true/false questions.

Scoring system: each correct answer will have (1) mark, false and missed or unknown answer will have (0). Total scoring (43 marks) is classified into two categories as follows: unsatisfactory knowledge level with scores less than 75% while satisfactory knowledge level scores is equal or more than 75%.

Scoring system: each correct answer will have (1) mark, false and missed or unknown answer will have (0). Total scoring (43 marks) is classified into two categories as follows: unsatisfactory knowledge level with scores less than 75% while satisfactory knowledge.

Tool II: "Observational checklist for Assessment of Nurses' practices about Delirium" It was constructed and developed by the researcher after reviewing the literature (Devlin, et al., 2008) to assess the level of nurses' practices about delirium. This tool consists of two main items: assessment of delirium and management of delirium.

Scoring system: each adequately done practice will have (1) mark, false or missed practice will have (0) mark. Total scoring will be classified into two categories as follow: incompetent practice level (< 75 %) and competent practice level (>75%).

Validity and reliability:

Test validity: The tools was tested for validity of the content by a group of experts in the field of 5 researcher allocated to, Medical-Surgical Nursing Department, Anesthesia and Intensive Care Department Faculty of Medicine from Mansoura university and Cairo university who reviewed the English and Arabic tool for clarity, relevance, understanding, and the applicability for implementation.

According to their opinions modifications were done.

Test reliability: The internal consistency of the reliability of the tool whether all of the items of the tool measure the same variable were done through Cronbach Alpha. The tools have been established and analyzed by Cronbach's Alpha test (r. alpha) based on standardized items and found to be (r =0.8) for knowledge test while (r =.0.85) for practice tool.

Pilot study: 5 nurse (10% of the total sample) who chosen as a pilot study to assess, objectivity and the applicability of the tools and estimate the time required to fill an evaluation form were excluded from the study. Based on results of the pilot study, necessary modifications were done accordingly prior to data collection. Some items have been rephrased to be clear and understood**.**

Protection of Human Rights

An official permission was obtained from the ethics committee of the faculty of Nursing, Mansoura University and director of the hospital to conduct the proposed study. A written consent from each participant was obtained after explaining the purpose of this study. There was flexibility for each nurse either to take part or not without any justification. Anonymity and confidentiality were assured through coding of all

data; subjects were assured that these data would not be reused in another research without their permission.

Procedure

There were two phases to implement the study: preparation and implementation phase:

Preparation phase

This phase started from September till December 2014. This phase involved review of literature related to the study subjects, preparation of data collection based on reviewing current, past local and international related literature. The tools were modified and developed by the researcher. Then, tool (I) was translated by the researcher into Arabic and tested for validity & reliability.

A. Implementation phase

Data were collected over five months from January to May 2015: nurses who agreed to participate in the study were contacted by the researcher to explain to them the nature and purpose of the study. A written consent was obtained from them before data collection. Then, they were provided with the evaluation sheet (tool1) to fill it for 20-30 minutes.

Statistical analysis:

Data entry and analysis were performed using the Statically Package for Social Sciences version 21 (SPSS, Inc., Chicago, IL, USA). The quantitative data were presented as numbers and percentages. The chi- square (χ^2) was used to find the association between variable of qualitative data. The p value of < 0.05 Indicates a significant result while, p value of > 0.05 indicates a non-significant result.

Limitations of the study:

The study was conducted on a small sample of (54), of nurses in Emergency hospital for short-term; therefore the results may not be representative of all the population at large number of nurses .This may threaten the validity of the findings and then another research on large sample size is needed. The scope of the study is limited because it was limited to the nurses, who decided to contribute to the study.

Results

Table (1) shows that more than half of the study subjects were in the age group between 30 and less than 40 years with a mean age of (32.5 ± 5.5), also, majority of them were having secondary school diploma. More than one-third of the studied subjects had experience between 15 and less than 20 years with mean years of experience of (14.56 ± 5.38) and all of them (100) didn't attend training programs, workshops or scientific conferences regarding the care of patients with delirium.

Figure (1) clarifies that knowledge level of 96% of studied nurses was unsatisfactory (< 75%).

Figure (2) clarifies that more than half of studied nurses (59.3) have got satisfactory knowledge level regarding definition of delirium. While, majority of studied nurses (98.1) have got unsatisfactory knowledge level regarding incidence of delirium, while, all the studied nurses (100) have got unsatisfactory knowledge level regarding assessment of delirium. Also, more than two thirds of studied nurses (79.6) have got unsatisfactory knowledge level regarding risk factors of delirium. As regards to clinical manifestations and management of delirium, 74% of the studied nurses have got unsatisfactory knowledge level.

Figure (3) clarifies percentage distribution of total satisfaction score level of nurses' practices related to delirium: shows that majority of studied nurses (98.1) have got unsatisfactory practice level regarding assessment of delirium while, all the studied nurses (100) have got unsatisfactory practice. level regarding management of delirium.

Table (2) reflects that there was a significant statistical differences among the studied nurses' by age (F=7.1, P=0.002), and education level (P=0.02) as regards total knowledge scores, as the nurses aged between (40-50) has got the highest mean (24.6667 ± .57735), while secondary diploma nurses has got a higher mean (22.72 ± 3.63) than the technical diploma nurses. In relation to years of experience to total knowledge scores, nurses with years of experience (15- < 20) has got the highest mean (26.8333 ± 1.83485).

Table (3) reflects that there was no significant statistical differences between the personal background data; age and years of experience in ICU as regards total practices scores. Only education level had significant statistical (Z=2.3,P=0.02) as the technical nurses has got high median 6.5 (3 - 8)than the secondary nurses 3(0- 8).

Table (4) reveals that there is no significant statistical correlation existed between total knowledge scores and total practices scores of nursesICU patients are those patients who are seriously ill, with acute illnesses which could be respiratory, cardiovascular, neurological, or other diseases. Typically, these patients require constant care, which could be in the form of cardiac and neurological monitoring. ICU patients commonly experience brain dysfunction as a result of pain, invasive procedure, unfamiliar environment and fear of death. Delirium is a common manifestation of acute brain

dysfunction in ICU patient. According to American Association of Retired Persons, delirium is considered one of six leading causes of injuries associated with hospitalization in patients over 65 years of age[1, 2, 3 and 4].

Table (1): Percentage Distribution studied nurses' personal background data (No. = 54)

Variables	No. = 54	
	No.	%
Age group (years)		
20 – 29	22	40.7
30 – 39	29	53.7
40 – 49	3	5.6
Mean ±SD 32.5 ± 5.5		
Educational level		
Technical Diploma Nurses	4	7.4
Secondary school Diploma Nurses	50	92.6
Years of working experience in ICU by year		
5 – 9	19	35.1
10 – 14	11	20.3
15 – 19	21	38.33
≥ 20	3	5.5
Mean ±SD 5.5 ± 6.8		
Attending training programs / workshops / scientific conferences regarding the care of patients with delirium		
Yes	--	--
No	54	100

Figure (1): Percentage Distribution of the Studied Sample as regards to Knowledge level about delirium (No. = 54)
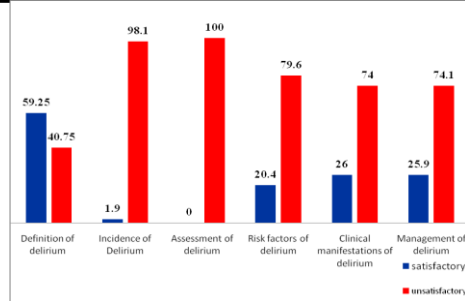

Figure (1): Percentage distribution of total satisfaction score level of nurses' knowledge related to delirium (No. = 54).
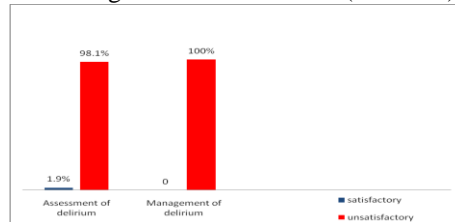

Figure (3): Percent distribution of total satisfaction score level of nurses' practices related to delirium (No. = 54).

Table (2): Comparisons of the   total knowledge scores among studied subjects by their personal background data (No. = 54).

Variables	Mean ±SD	Test of significance
Age in years		
20 – 29 30 – 39 40 – 49	20.2727 ± 4.03770 23.7241 ± 3.02249 24.6667 ± .57735	One Way ANOVA F = 7.1 P =0.002*
Educational level		
Technical Diploma Nurses Secondary Diploma Nurses	18.00 ± 3.56 22.72 ± 3.63	P = 0.02*
Years of experience		
5 – 9 10 – 14 15– 19 20 – 25	20.2727 ± 4.03770 23.7000 ± 1.63639 26.8333 ± 1.83485 22.7500 ± 3.10913	One Way ANOVA F = 7.5 P < 0.0001**

** Highly statistical significant difference (P < 0.001)

*statistical significant difference (P < 0. 05)

Table (3): Comparisons of the total practices scores among studied subjects by their personal background data (No. = 54).

Variables	Median (min - max)	Test of significance
Age in years		
20 – 29	3.5 (1- 8)	Kruskal
30 – 39	3 (0 - 8)	Wallis test
40 – 49	4 (1 - 4)	P = 0.3
Educational level		
Technical Diploma Nurses Secondary Diploma Nurses	6.5 (3 - 8) 3 (0 - 8)	Z = 2.3 P = 0.02*
Years of experience		
5 – 9	3.5 (1 - 8)	Kruskal
10 – 14	3 (0 - 8)	Wallis test
15– 19	2 (0 - 6)	P = 0.4
20 – 25	2.5 (1 - 6)	

** Highly statistical significant difference (P < 0.001)

*statistical significant difference (P < 0. 05)

Table (4) Correlation between total scores of knowledge and total scores of practices of studied nurses (No. = 54)

Variable	Total practices scores	
	r	P value
Total knowledge scores	0.1	0.5

** Highly statistical significant difference (P < 0.001)

*statistical significant difference(P<0. 05)

Discussion

As regards the knowledge of nurses about delirium, majority of the studied subjects (96%) got unsatisfactory knowledge level. The reasons for lack of knowledge pertinent to delirium "from the researcher's point of view" may be related to lack of continuing educational programs or sessions about this intervention, supervision, continuous evaluation of nurses' practice, and cooperation between multidisciplinary health care team members (nurses - physicians) and lack of protocols and guidelines on delirium, curriculum gaps during training, lack of funding for organizing regular workshops; and negative attitude of nurses whereby new information learned at workshops was not readily applied in clinical practice   The previous finding was contradicted by [14] who revealed that, nurses' knowledge level about ICU delirium are ranged from moderate to low level . Also [15] who revealed that, the knowledge of studied sample about the potential influence of delirium on duration of mechanical ventilation was lacking. Similarly, [16] who revealed that, nurses in their study had some knowledge of delirium, and some ability to recognize delirium and (57%) of studied samples had correct delirium knowledge questions.

Regarding the practice of nurses for delirium, it was revealed that, the level of all nurses' practices about delirium was unsatisfactory. The reasons for the lack of practice according to researcher's point of view is increase in the number of patients

and work load, lack of education, lack control and lack of continuous evaluation of nurses. In addition, nurses practice was based on the traditions and imitations. This finding disagreed with [14]who revealed that, 77% of studied sample had a fair to low level of effective nursing practice to manage ICU delirium

Conclusion

Based on the findings of the study, it can be concluded that, ICU nurses in the current study had unsatisfactory level of knowledge and practice regarding delirium among intensive care unit patients at Emergency hospital, Mansoura University and there is no correlation between knowledge and practices of nurses .

Recommendations

In the light of the findings of the present study, the following recommendations are suggested:

- Nurses should require extensive education and support to be able to care for these patients.
- Cognitive assessment in general and delirium in particular should be incorporated into nursing education.
- Programs to improve nurses' knowledge in caring for patients with delirium are needed, with further research to evaluate their effectiveness.
- More work is needed to improve nurses' ability to detect delirium early as well as to improve their

management skills. Further researches are needed to explore the perceptions, competencies, and educational needs of critical care nurses caring for ICU patients.

- Replication of the study on a larger sample from different geographical areas in Egypt is needed.

Conflict of interest:

The authors declare that they have no conflict of interests.

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