

# Nurses' Practices and Perception of Delirium in the Intensive Care Units of a Selected University Hospitals in Egypt

Hanaa Ali Elfeky, Fatma Shoeib Ali

Lecturers of Critical care and Emergency Nursing, Faculty of Nursing -Cairo University.

\*Email of the corresponding author: hanaa\_elfeky@yahoo.com

## Abstract:

Delirium is a common but frequently undetected complication in hospitalized critically ill patients leading to poor outcomes, prolonged hospital stays, and increased costs of care. Therefore, because of their daily contact with critically ill patients, critical care nurses are at the frontline of patients' care and are in a unique position to improve their outcomes through timely identification of individuals at risk, early detection of signs and symptoms of delirium, and providing the needed intervention. **Aim of the study:** to assess critical care nurses' practices and perception of delirium among critically ill patients in different critical care settings. **Research Design:** A descriptive exploratory research design was utilized in this study. **Research questions:** To achieve the aim of the present study, the following two research questions were formulated: 1-What is the current nurses' practice of delirium assessment in the critical care units? 2- How critical care nurses perceive delirium among critically ill patients?. **Setting:** The study was carried out at different Critical Care Departments at Cairo University Hospitals, in Egypt. **Sample:** A sample of convenience including all nurses (120) working at different critical care departments was included in the current study. **Tools of data collection:** Two tools were used to collect data pertinent to the current study: **Socio demographic data sheet** (covers data such as gender, age, years of experience, attended staff development courses, working hours, etc.....); and **Nursing practices and perceptions assessment sheet:** was adopted from Devlin, et al., (2008). It covers data related to frequency of evaluating patients for level of sedation and presence of delirium; presence of delirium; frequency of using delirium assessment sheet; received education regarding ICU sedation assessment and ICU delirium assessment, and statements that pertain to delirium in the ICU. **Results:** the current study revealed that inspite of having many years of experience in working with critically ill patients, all ICU nurses (100%) ranked delirium assessment as the fourth priority after level of conscious, pain assessment, handling agitation, and caring for devices. More than half of the studied nurses (54.2%) never assessed delirium, and 100% of nurses never received training about assessing and handling delirium. **Conclusion:** delirium is an under diagnosed problem in the ICU; it is a common response to the ICU environment. It is challenging to be assessed among critically ill patients and represents a problem that requires active intervention on the part of caregivers. **Recommendations:** Incorporating cognitive assessment in general, and delirium assessment in particular into nursing education courses; Integration of delirium assessment and management into daily nursing care of critically ill patients, and training critical care nurses about early recognition of delirium among critically ill patients  
**Keywords:** delirium, delirium assessment & nurses' perception and practices.

## 1. Introduction

Delirium or acute brain dysfunction is a potentially reversible organic brain syndrome. It is a common consequence of critical illness among critically ill patient (Thomason, et al., 2005, Ely, et al., 2001 & Mc Nicoll, et al., 2003, In Cadiz, 2012). Delirium is prevalent across different treatment settings and is more frequent in critically ill patients, elderly, and patients with cognitive impairment (Jackson, et al. 2010, and Mattoo 2010 In Grover & Kate 2012). It is characterized by changes in mental status, inattention, disorganized thinking, and altered consciousness that may be accompanied by agitation. In the intensive care unit (ICU), delirium is independently associated with several complications and adverse outcomes, such as cognitive decline, prolonged mechanical ventilation, self-extubation, failed extubation, removal of catheters, functional impairment, significant increase in the length of hospital stay, increased healthcare costs, increased burden to the patient and family, and independently predicts higher mortality rate (Ely, Shintani, Bernard et al, 2008, and Cadiz, 2012). In addition, approximately one third of ICU patients receiving mechanical ventilation have long-term cognitive impairment that has been documented up to 6 years after hospital discharge. This post-ICU long-term cognitive impairment involves memory, attention, and executive function problems and leads to inability to return to work, impaired activities of daily living, increased risk of institutionalization, and decreased quality of life (Pandharipande , et al. 2007).

Several risk factors have been identified to increase the risk and severity of delirium, of these are advanced age, prolonged ICU stay, in addition to sedative and narcotic use (Adamis, Treloar, Martin, Macdonald, 2006, Inouye, 2006 & Grover, & Shah, 2011, In Grover & Kate, 2012 and Ely, et al. 2004, In Banerjee, Vasilevskis, and Pandharipande, 2010). Delirium is a multi-factorial problem for ICU patients and requires an

interdisciplinary approach for assessment, and management (Lin, et al., 2008). The prevalence of delirium in medical and surgical ICU varies from 20-80% depending on the severity of illness (Department of Surgical Education, Orlando Regional Medical Center, 2011). Greater incidence of delirium of up to 87% was reported to occur in ICU patients receiving mechanical ventilation (Devlin, et al 2008, and Inouye, Foreman, Mion, Katz & Cooney 2001, In Cadiz, 2012). Despite high prevalence of delirium, it is often under-recognized in 66-84 % of critically ill patients and may be difficult to assess due to severity of illness, frequent use of sedation and analgesia, lack of verbal communication, and lack of an easy to use screening tool which may lead to difficulty in diagnosis (Department of Surgical Education, Orlando Regional Medical Center, 2011, Devlin, Fong, Fraser & Riker 2007, In Devlin, et al 2008, and McNicoll, 2005 In Grover & Kate, 2012).

Numerous national and international surveys have highlighted the importance of recognizing delirium in the ICU. Most of these studies show disconnection between the perceived importance of delirium and steps taken to improve diagnosis and treatment. Delirium was found among approximately one quarter (23.69%) of the totally admitted critically ill patients (N = 650) during the first 36-48 hours of their stay in the ICU in a study done by Shoeib, Abdelhalim, Radwan & Sayed (2012), in Egypt. However, the medical records of the critical care departments at Cairo University-Kasr Elani hospital didn't have statistical data about delirium in the ICU.

As well, delirium is associated with a threefold increase in risk for 6-month mortality after adjusting for age, severity of illness, co-morbidities, coma, and exposure to psychoactive medications. It may be a predictor of long-term cognitive impairment in survivors of critical illness. It is associated with cognitive decline over 1 to 3 years after hospital discharge (Ely, Shintani, Bernard et al, 2008). The serious threat of delirium among ICU patients should spark the urgency of its prevention, identification, and treatment. However, due to severity of illness, frequent use of sedation and analgesia, and lack of verbal communication, it may be difficult to assess delirium in the critically ill population. Practice guidelines for sedation and analgesia in the ICU recommended that patients must be routinely screened for delirium using a validated assessment tool (Jacobi, 2002, in Gesin, et al., 2012 ).

Given the fluctuating nature of delirium symptoms, the bedside nurse is the ICU caregiver who is best suited to screen for delirium (Ely, et al, 2004 In Devlin, 2008). As indicated by Sona, (2009), nurses caring for ICU patients do not recognize delirium in up to two thirds of cases. Whereas many barriers to the recognition of delirium have been hypothesized, and patients' related factors contributing to under recognition have not been directly examined. As well, baseline assessment of ICU patients for delirium is often limited. That is why there is a need for interdisciplinary approach to assess, and manage delirium. Critical care nurses should assume a leading position in the ICU regarding delirium monitoring. They are the best suited members of the ICU team to successfully implement this essential component of patient management (Lin, et al 2008). Through assessment and management of delirium, reduction of morbidity and mortality in critically ill patients can be achieved. Prompt recognition of delirium in the ICU allows caregivers to differentiate patients symptoms (eg, pain, anxiety) from other conditions with similar features (eg, psychomotor agitation) and facilitates the initiation of both pharmacological & non pharmacological therapies (Devlin, et al 2008).

More specifically, integration of delirium assessment and monitoring into the daily workflow of the ICU nursing staff may be the least disruptive, most reliable method and potentially effective strategy of incorporating delirium monitoring into routine patients' care (Mehta, Meade, Hynes, 2007, In Devlin, et al 2008.). Nursing interventions should not only be aimed at minimize factors that contribute to delirium, but also utilizing curative measures such as: frequent reorientation of patients to date, time, places, and persons; providing cognitive stimulating activities; following non-pharmacological sleep protocols; early mobilization activities; range-of-motion exercises; removal of catheters and restraints; use of patients eye glasses and magnifying lenses; use of hearing aids and removing earwax; correcting dehydration; scheduled pain relive protocols; minimizing unnecessary noise and stimuli; and decreasing interruptions in the sleep- wake cycle (Devlin, Fong, Fraser & Riker, 2007). However, health care providers are facing major problems related to early detection and management of patients experiencing ICU delirium; some of these problems are; absence of assessment tool, and subsequently delirium is misdiagnosed, treated inappropriately or even neglected. Therefore this study could highlight the role of the nurse in the assessment and care of delirious patients. Also it is hoped that findings of this study might help in shaping or describing the role of ICU nurses in identification, assessment and perception of delirium among critically ill patients. It could provide evidence based data about nursing practice of delirium management.

## **2. Subjects and Method:**

**2.1. Aim of the study:** To assess critical care nurses' practices and perception of delirium among critically ill patients in different critical care settings.

**2.2. Research Design:** A descriptive exploratory research design was utilized in this study.

**2.3. Research questions:** To achieve the aim of the present study, the following two research questions were formulated:

**2.3.1.** What is the current nurses' practice of delirium assessment in the critical care units?

**2.3.2.** How critical care nurses perceive delirium among critically ill patients?

**2.4. Setting:** The study was carried out at different Critical Care Departments at Cairo University Hospitals, in Egypt.

**2.5. Sample:** A sample of convenience including all nurses (120) working at different critical care departments was included in the current study.

**2.6. Tools of data collection:**

Two tools were used to collect data pertinent to the current study: Socio demographic data sheet, and nursing practices and perceptions assessment sheet.

**2.6.1. Socio demographic data sheet:** was developed by the researchers. It covers data such as gender, age, years of experience, attended staff development courses, working hours, etc.....);

**2.6.2. Nursing practices and perceptions assessment sheet:** was adopted from Devlin, et al., (2008). It covers data related to how often nurses evaluate patients for level of sedation and presence of delirium? Conditions that require nurses' evaluation of level of sedation and/or for the presence of delirium, frequency of using delirium assessment, factors that might prevent/ hinder the nurse from evaluating patients for the presence of delirium, received education regarding ICU sedation assessment and ICU delirium assessment, and statements that pertain to delirium in the ICU.

**3. Tools validity and reliability:**

The adopted tool (nursing practices and perceptions assessment sheet) is a valid and reliable assessment tool for delirium assessment. It has an intrarater reliability of 86%.

**4. Pilot study:** A pilot study was done on 10 nurses to test clarity, applicability and to estimate the needed time to complete the data collection tools. No modifications were done in the data collection tools, and the pilot study sample was not included in the main study sample.

**5. Protection of human rights:** The current study was approved by human research, and ethical committees at the faculty of nursing – Cairo University. Official permissions to conduct the study were obtained from medical and nursing directors of ICUs. Official permission was obtained from John W. Devlin, (the developer of the Nursing practices and perceptions assessment sheet) to use the assessment sheet in the current study. As well written consents were obtained from critical care nurses after their informing about the purpose and nature of the study. Each nurse was informed that participate is volunteer and has the right to withdraw from the study at any time without any rational.

As well, obtained data will be used only for research purpose and not for their evaluation. Also, nurses were informed that data will not be included in any further researches without another new consent. Confidentiality and anonymity of each nurse were assured through coding of all data.

**6. Procedure:**

Conduction of the current study started with extensive literature review, selection and preparation of the data collection tools and obtaining managerial agreements to carry out the study. Once official permissions were granted, actual implementation of the study was done. The researchers visited the selected ICUs on daily basis, and approached the involved nurses during the morning shifts, and explained the purpose and nature of the study. Nurses who agreed to participate in the study were submitted with the data collection tools. The researchers were available at the ICUs during the time of filling the questionnaires by the involved nurses to answer any question, and to provide the needed explanations. Filling the data collection questionnaire required 30- 45 minutes from each nurse.

**7. Results:**

**7.1. Figure (1)** clarifies percentage distribution of the studied sample as regards to their age. It reveals that 74.2% of the studied sample was in the age groups ranged from 20 to less than 36 years old.

**7.2. Figure (2)** shows percentage distribution of the studied sample as regards to their Qualifications. It indicates that the great majority (95.8%) was diploma nurses.

**7.3. Figure (3)** shows percentage distribution of the studied sample as regards to years of experience. It clarifies that more than half (53.3%) of the studied nurses had 6 -16 years of experience in working with critically ill patients.

**7.4. Figure (4)** represents nurses' rank of conditions that routinely evaluated during their work in the ICU. It reveals that all ICU nurses (100%) ranked level of conscious as the first priority, pain assessment as the second priority, and assessing and caring for devices as the fifth priority. However, 80% ranked handling agitation as the third priority and delirium as the fourth priority.

**7.5. Figure (5)** clarifies that more than half of the studied nurses (51.7%) revealed unavailability of sedation protocol to be utilized by critical care nurses.

**7.6. Figure (6)** shows frequency of delirium and degree of anesthesia assessment by ICU nurses. It reveals that more than half of the studied nurses (54.2%) never assessed delirium, while approximately the other half (45.8%) rarely assessed delirium, and usually assessed degree of anesthesia.

**7.7. Figure (7)** shows frequently used methods of assessing delirium by ICU nurses. It clarifies that asking for psychiatric consultation was the only used approach to examine for presence of delirium by 100% of the ICU nurses, and done only once.

**7.8. Figures (8)** shows barrier to nurses' evaluation of ICU patients for presence of delirium. It clarifies that 100% of the studied nurses indicated that only doctors are concerned with assessment of delirium among critically ill patients, in addition to unavailability of delirium assessment sheet in the ICU. As well, 77.5% of the studied nurses indicated unreliability of their assessment by ICU doctors.

**7.9. Figure (9)** shows percentage distribution of the studied sample as regards to received education / training about assessment and handling sedation and delirium. It indicates that 100% of the studied nurses never receive training about assessing and handling delirium; however, 44.5% of the nurses indicated that, from clinical experience they acquired the ability to assess and handle sedation.

**7.10. Figure (10)** shows percentage distribution of the studied sample as regards to their perception of delirium assessment. It clarifies that all the studied nurses (100%) strongly agreed that: delirium is an under diagnosed problem in the ICU; it is a common response to the ICU environment; and it is a problem that requires active intervention on the part of caregivers. As well, more than two thirds (67.5%) of the studied nurses agreed that delirium is challenging to assess in intensive care unit patients.

## 8. Discussion:

Critical care nurses are the health care providers who have the opportunity to early detect delirium symptoms and continuously monitor critically ill patients for these symptoms. In their daily assessment of critically ill patients in the current study, most of the studied nurses gave delirium the fourth priority after handling agitation (as the third priority), and before assessing and caring for devices (the fifth priority). However, all of the studied critical care nurses gave the first priority to assessing level of consciousness; and the second priority to pain assessment. This may be due to unawareness or inability of the studied nurses to identify patients' needs and preferences. In agreement with the current study findings was that of McNicoll, et al., (2003) who revealed that delirium in the critical care unit may incorrectly be perceived or often goes unrecognized by healthcare providers as a "normal" reaction by patients to a potentially life-threatening situation, or incorrectly attributed to dementia, depression, or ICU syndrome. It has been linked to adverse outcome, increased length of stay and higher mortality (Kress, et al, 2008).

Concerning frequency of assessing patients for delirium and degree of anesthesia, the current study clarifies that, more than half of the studied nurses never assessed delirium, while less than half of them rarely assessed delirium, and usually assessed degree of anesthesia. They reported that they assessed patients' condition as if they had mental confusion and not exactly as delirium. This finding is similar to that of Devlin et al (2008) who found regular screening for delirium to be only practiced by fewer than half of their studied sample despite local institutional guidelines, advocating assessment of delirium and the crucial role that delirium assessment plays in enabling nurses to reassure and comfort patients.

Frequency of assessing patients for delirium in the current study did not differ significantly among the studied nurses in relation to their age, qualifications (the great majority are diploma nurses), and years of experience (ranged from 6-16 years) in working with critically ill patients. Findings of the present study are in part contradicted with that of Hashim & Ismail, (2012) who found a remarkable positive correlation between years of experiences and knowledge of the nurses about delirium. However, the present study findings are in agreement with that of the same author who found no relation between nurses' age and their knowledge about delirium. In this regards, the American Nursing Association (2000) revealed that nurses with years of experiences may require a minimum of additional instructions before they are ready to deal with patients and nurses with years of experiences in one clinical specialty may need a moderate amount of instructions to acquire though educational training.

In an attempt to identify why nurses don't routinely assess patients for delirium, and sedation in the current study, more than half of the studied nurses revealed unavailability of sedation protocol to be utilized by nurses. When observing abnormal behaviors by the patients, all the studied nurses reported that, the only used approach



to examine for presence of delirium was asking for psychiatric consultation which is done only once. They also indicated that only doctors are concerned with assessment of delirium among critically ill patients. As well, nurses in the current study revealed unavailability of delirium assessment sheet in the ICU, and most of them revealed that critical care physicians don't rely on their assessment of critically ill patients. This could be due to unreliability of their assessment especially where all the studied critical care nurses indicated that they never receive training about assessing and handling delirium. In this regards, Hashim & Ismail (2012) revealed the effectiveness of assessment for delirium in the ICU especially if nurses are trained about it. They added that the ability to identify delirium in the ICU improves when a validated and standardized delirium assessment tools is used.

Concerning their perception of delirium assessment in the current study, all the studied critical care nurses revealed their strong agreement that delirium is an under diagnosed problem in the ICU. It is a common response to the ICU environment; and it is a problem that requires active intervention on the part of caregivers. As well, more than two thirds of the studied nurses agreed about the challenging nature of assessing critically ill patients for delirium. In this regards Pandharipande, Jackson, & Ely, (2005) revealed that nurses' perception, when categorized by frequency of assessing delirium, provides some helpful clues about the low frequency of their assessment. Nurses who do not routinely evaluate patients for delirium are unaware that: delirium is an under diagnosed problem in the ICU; patients with delirium are often hypoactive; and often have fluctuating signs and symptoms therefore, non pharmacological therapies should be considered before antipsychotic therapy. In this regards Roberts et al (2005) highlighted three major barriers to assessment of delirium: difficulty in evaluating delirium in patients who are intubated; the inability to complete delirium assessment in sedated patients; and the use of delirium assessment tools that are too complex.

Concerning nurse-patient ratio, Park, et al (2001) indicated that it is unclear if the increasing ratio of patients to staff nurses in some ICUs is compromising the ability of nurses to screen for delirium or if the increasing level of acuity of care of patients is resulting in deeper sedation of patients and a greater emphasis on sedation rather than delirium. As well, Hashim & Ismail, (2012) revealed that health care providers are facing major problems related to early detection and management of critically ill patients with delirium. They commented that delirium is commonly misdiagnosed, inappropriately treated or even neglected. Thus could increase the risk for morbidity and mortality.

Also, Devlin, Fong, & Fraser, (2007), & Pisani, et al, (2007) revealed that it may sometimes be difficult to separate manifestations of pain, anxiety and delirium due to their overlapping and confounding symptoms and commonality among critically ill patients. As revealed by, Devlin et al., (2008), despite the complexity associated with detecting delirium in the ICU, more than one third of the nurses reported receiving no training about delirium. They attributed low frequency of delirium assessment to lack of any published studies that evaluate the impact of delirium screening in the ICU on patients' outcomes.

The same authors added that lack of institutional teaching about assessment of delirium most likely is due in part to a lack of clarity about the optimal way to educate nurses about assessment of delirium or due to that decisions about nursing curriculum are made by persons who are either not aware of delirium assessment in the ICU or who think that assessment of delirium is not important. Therefore, critical care nurses require clinical reasoning to optimally evaluate patients for the presence of delirium and/or sedation. On the same line were Devlin, Brumme, & Al-Qadheeb (2012) who suggested ICU clinical road map that should be used on daily basis to promote delirium assessment, establish a targeted sedation goal and define the analgesic/sedative regimen that is best suited to maintain patients' comfort, prevent delirium and promote wakefulness. Therefore, critical care nurses should assume a leading position in the ICU regarding delirium monitoring, as they are the best suited members of the ICU team to implement successfully this essential component of patient management (Lin, et al, 2008).

## **9. Conclusion:**

Based on findings of the current study, it can be concluded that, inspite of being at the front line in the management of critically ill patients, all critical care nurses in the current study revealed that delirium is an under diagnosed problem in the ICU; it is a common response to the ICU environment. It is challenging to be assessed among critically ill patients and represents a problem that requires active intervention on the part of caregivers. In the current study, critical care nurses didn't give a priority to delirium assessment in the current study. More than half of the studied nurses never assessed critically ill patients for delirium. The only used approach to examine critically ill patients for presence of delirium was asking for psychiatric consultation by all the studied nurses who reported that they never received any training about assessing and handling delirium. They also indicated unavailability of delirium assessment sheet in the ICU.

## 10. Recommendations:

Based upon findings of the current study, the followings are recommended:

- Incorporating cognitive assessment in general and delirium assessment in particular into nursing education courses.
- Integration of delirium assessment and management into daily nursing care of critically ill patients.
- Training critical care nurses about early recognition of delirium among critically ill patients

### Recommendations for further researches:

- Repetition of the study on a larger population.
- Monitoring nursing interventions regarding assessment and management of delirium in the ICU.
- Carrying out educational programs about delirium assessment and management in critically ill patients.

## Acknowledgement:

The authors would like to express their sincere gratitude to the hospital administrating team who helped in facilitating conduction of this study. Great appreciation as well is to the critical care nursing staff who accepted to participate in the current study. The authors also acknowledge the expertise of Critical Care Medicine and Critical Care Nursing staff for their efforts in revising the data collection instruments.

## 11. References:

1. Adamis D, Treloar A, Martin FC, Macdonald AJ. (2006). Recovery and outcome of delirium in elderly medical inpatients. *Arch Gerontol Geriatr*, 43: 289-298.
2. American Nurses Association. (2000). *Standards of Nursing Staff Development*. Kansas City, Mo.
3. Banerjee A., Vasilevskis E. E., & Pandharipande P., (2010). Strategies to Improve Delirium Assessment Practices in the Intensive Care Unit , Vol. 17, No. 10 October JCOM
4. Brummel NE, Jackson JC, Girard TD, et al. (2012). A combined early cognitive and physical rehabilitation program for people who are critically ill: the activity and cognitive therapy in the intensive care unit (ACT-ICU) trial. *Phys Ther*. Oct 25; [Epub ahead of print]. [go to PubMed].
5. Cadiz, M, (2012). Delirium in the ICU @ [www.MichiganPharmacists.org/education/continuingEducation](http://www.MichiganPharmacists.org/education/continuingEducation).
6. Devlin, J.W., Brummel, N., & Al-Qadheeb, N.S. (2012). Optimizing the Recognition of Delirium in the Critically Ill. *Best Practices and Research in Clinical Anaesthesiology*; 26(3):385-93.
7. Devlin JW, Fong JJ, Fraser GL, Riker RR. (2007). Delirium assessment in the critically ill. *Intensive Care Med*.;33 (6):929-940.
8. Devlin JW. et al. (2008). Combined didactic and scenario-based education improves the ability of intensive care unit staff to recognize delirium at the bedside. *Crit Care*.;12(1):R19.
9. Department of Surgical Education, Orlando Regional Medical Center, (2011). *Delirium Management in the ICU*, @ <http://www.surgicalcriticalcare.net/Guidelines/delirium.pdf>.
10. Ely, E., Shintani, A., Bernard, G. (2008). Delirium in the ICU is associated with prolonged length of stay in the hospital and higher mortality. *Am J Respir Crit Care Med*. 165, A23.
11. Ely EW, Shintani A., Truman B, Speroff T, Gordon SM, Harrell Jr FE, et al. (2004). Delirium as a predictor of mortality in mechanically ventilated patients in the intensive care unit. *JAMA* ,291:1753—62
12. Ely, E.W., Siegel, M.D., & Inouye, S.K. (2001). Delirium in the intensive care unit: An under-recognized syndrome of organ dysfunction. *Seminars in Respiratory and Critical Care Medicine*, 22, 115-126. doi:10.1055/s-13826.
13. Gesin, G., Russell, B.B., Lin, A.P., Norton, H.J., Evans, S.L., & Devlin, J.W. (2012). Impact of a delirium screening tool and multifaceted education on nurses' knowledge of delirium and ability to evaluate it correctly. *American Journal of Critical Care*, 21, e1-e11. doi: 10.4037/ajcc2012605.
14. Grover S., & Kate N. (2012). Assessment scales for delirium: A review. *World J Psychiatr*; 2(4): 58-70 Available from: URL: <http://www.wjgnet.com/2220-3206/full/v2/i4/58.htm> DOI: <http://dx.doi.org/10.5498/wjp.v2.i4.58>.
15. Grover S. & Shah R. (2011). Distress due to delirium experience, *Gen Hosp Psychiatry*; 33: 637-639.
16. Hashim H.Y and Ismail M.S (2012). Impact of A Scenario- Based Educational Intervention about Delirium Assessment in Critically Ill Patients on Nurses' Knowledge and Practices, The 2012 International Nursing Research Conference, Royal College of Nursing of the United Kingdom, April.
17. Inouye SK., (2006). Delirium in older persons. *The New England journal of medicine*, 354(11):1157-1165. PubMed Abstract | Publisher Full Text
18. Inouye, S.K., Foreman, M.D., Mion, L.C., Katz, K.H., Cooney, K., (2001). "Nurses' recognition of

delirium and its symptoms: comparison of nurse and researcher ratings,” *Archives of Internal Medicine*, 161: 2467-73.

19. Jackson JC., Girard TD., Gordon SM., et al. (2010). Long-term cognitive and psychological outcomes in the awakening and breathing controlled trial. *Am J Respir Crit Care Med* 182:183–91.
20. Jacobi, J., Fraser, G.L., Coursin, D.B., Riker, R.R., Fontaine, D., Wittbrodt, E.T., Lumb, P.D. (2002). Clinical practice guidelines for the sustained use of sedatives and analgesics in the critically ill adult. *Critical Care Medicine*, 30, 119141.
21. Kress G.TD, JP. & Fuchs BD, et al. (2008). Efficacy and safety of a paired sedation and ventilator weaning protocol for mechanically ventilated patients in intensive care (Awakening and Breathing Controlled trial): a randomised controlled trial. *Lancet*, 371:126-134. [go to PubMed]
22. Lin SM, Huang CD, Liu CY, et al. (2008). Risk factors for the development of early-onset delirium and the subsequent clinical outcome in mechanically ventilated patients. *J Crit Care*, 23: 372–379.
23. McNicoll, L., Pisani, M.A., Zhang, Y., Ely, E.W., Siegel, M.D., & Inouye, S.K. (2003). Delirium in the intensive care unit: Occurrence and clinical course in older patients. *Journal of the American Geriatrics Society*, 51, 591-598.
24. McNicoll L, Pisani MA, Ely EW, Gifford D, Inouye SK. (2005). Detection of delirium in the intensive care unit: comparison of confusion assessment method for the intensive care unit with confusion assessment method ratings. *J Am Geriatr Soc*, 53: 495-500.
25. Mattoo SK, Grover S, Gupta N. Delirium in General Practice, (2010). *Indian J Med Res* 131: 387-398.
26. Pandharipande PP, Pun BT, Herr DL, Maze M, Girard TD, Miller RR, .et al. (2007). Effect of sedation with dexmedetomidine vs lorazepam on acute brain dysfunction in mechanically ventilated patients: the MENDS randomized controlled trial. *JAMA* ,298:2644—53.
27. Park G, et al. (2001). Commentary: balancing sedation and analgesia in the critically ill. *Crit Care Clin*. 17(4):1015-1027, Published online <http://www.ajcconline.org>.
28. Pisani MA, Murphy TE, Van Ness PH, Araujo KL, Inouye SK. (2007). Characteristics associated with delirium in older patients in a medical intensive care unit. *Arch Intern Med*.,167:1629-1634. [go to PubMed].
29. Roberts B, et al. (2005). Multicentre study of delirium in ICU patients using a simple screening tool. *Aust Crit Care*. 18(1):6, 8-9, 11-15.
30. Shoeb, F.A. Abdelhalim, Z. Radwan & Sayed (2012). Relationship Between Intensive Care Unit (ICU) Delirium And Patient’s Outcomes in the Critical Care Department El-Manial University Hospital : A Suggested Nursing Intervention Protocol, unpublished master thesis, Faculty of Nursing, Cairo University.
31. Sona, C. (2009). Assessing Delirium in the Intensive Care Unit. *Critical Care Nurse*, 29(2), 103-105. doi:10.4037/ccn.329.
32. Thomason, J.W., Shintani, A., Peterson, J.F., et al., (2005). Intensive care unit delirium is an independent predictor of longer hospital stay: a prospective analysis of 260 non ventilated patients,” *Critical Care*, 9: R375-R381,.

**List of figures:**

Fig. (1): Percentage Distribution of the studied Group as regards Age, (N=120).

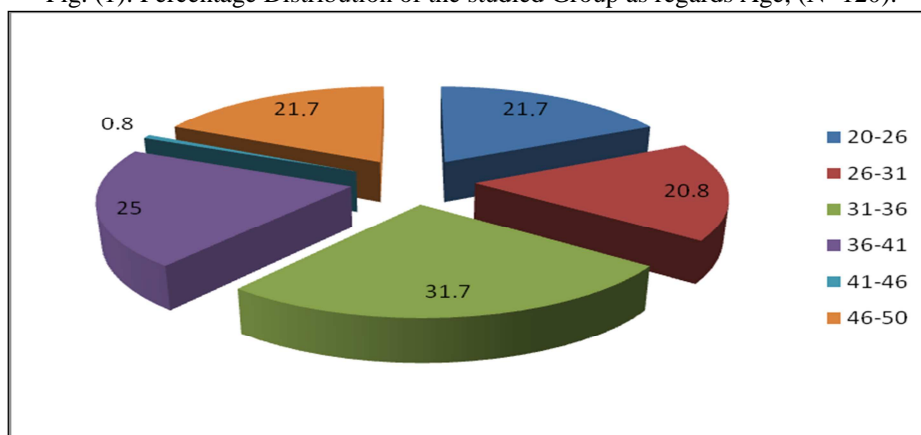


Fig. (2): Percentage Distribution of the studied Group as regards Qualifications (N=120).

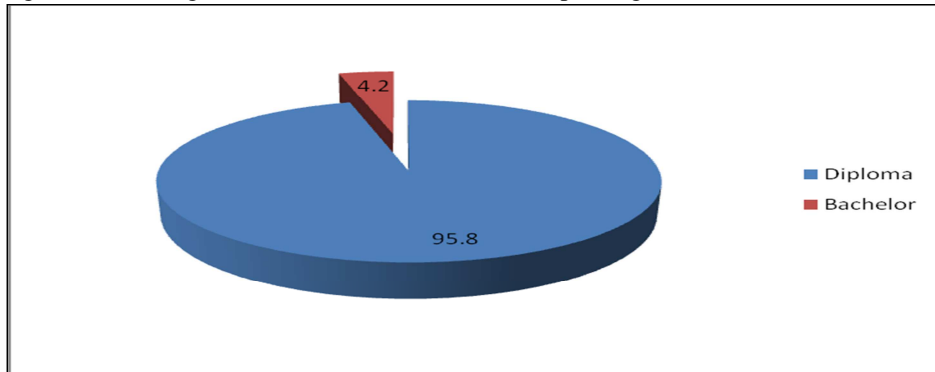


Fig. (3): Percentage Distribution of the studied Group as regards Years of Experience (N=120).

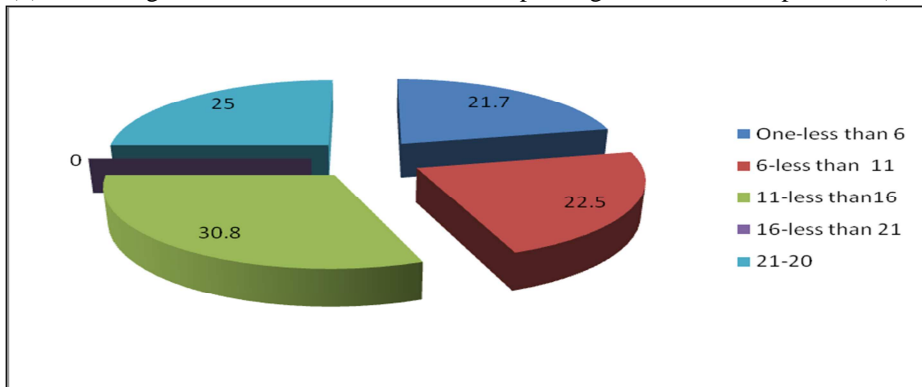


Fig. (4): Nurses' Rank of Conditions that Routinely Evaluated among critically ill patients, (N=120).

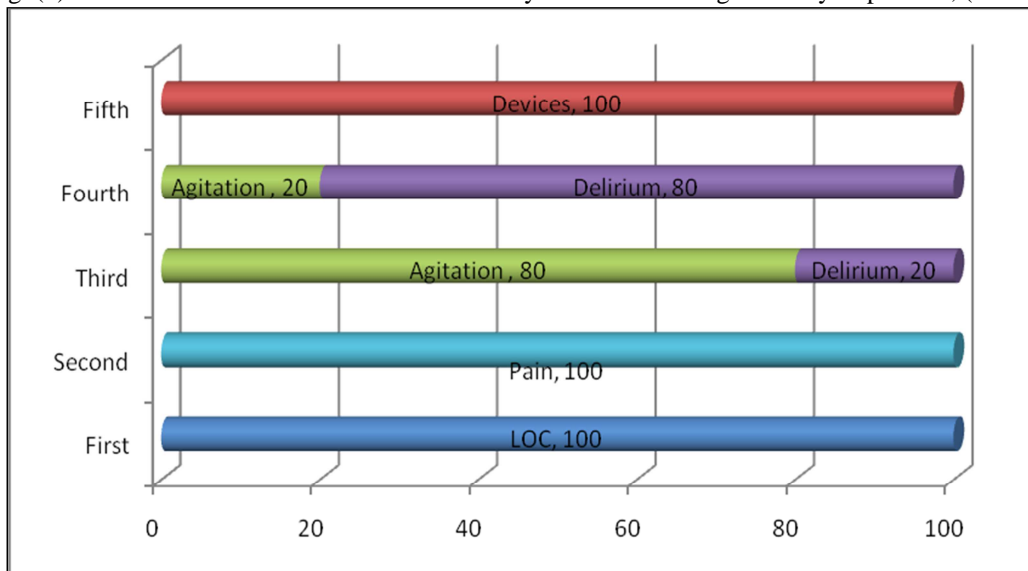




Fig. (5): Availability of Sedation Protocol as Indicated by Nurses, (N=120).

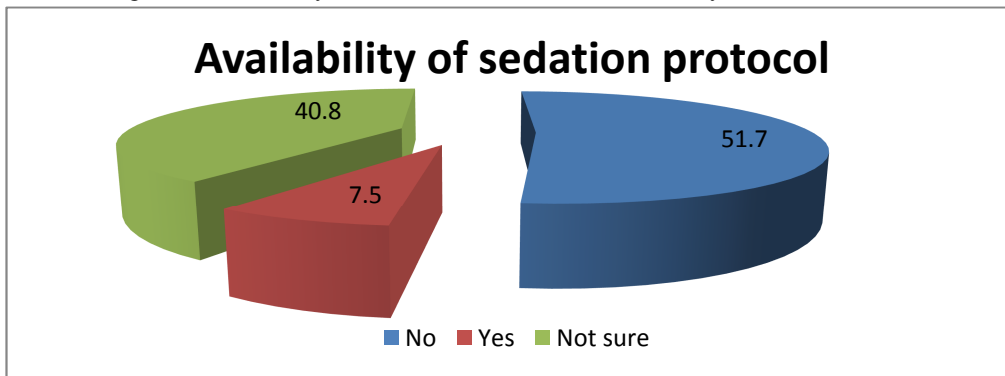


Fig. (6): Frequency of Assessing Delirium and Degree of Anesthesia by ICU Nurses, (N=120).

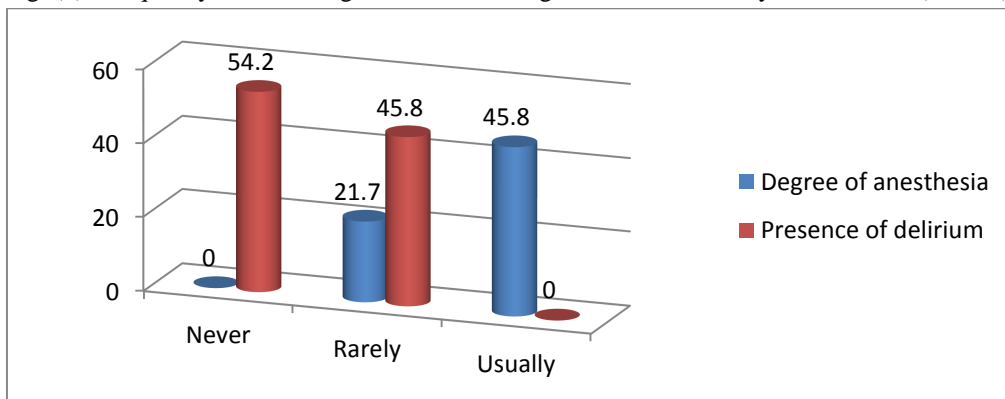


Fig. (7): Frequently used Methods of Assessing Delirium by Critical Care Nurses (N=120).

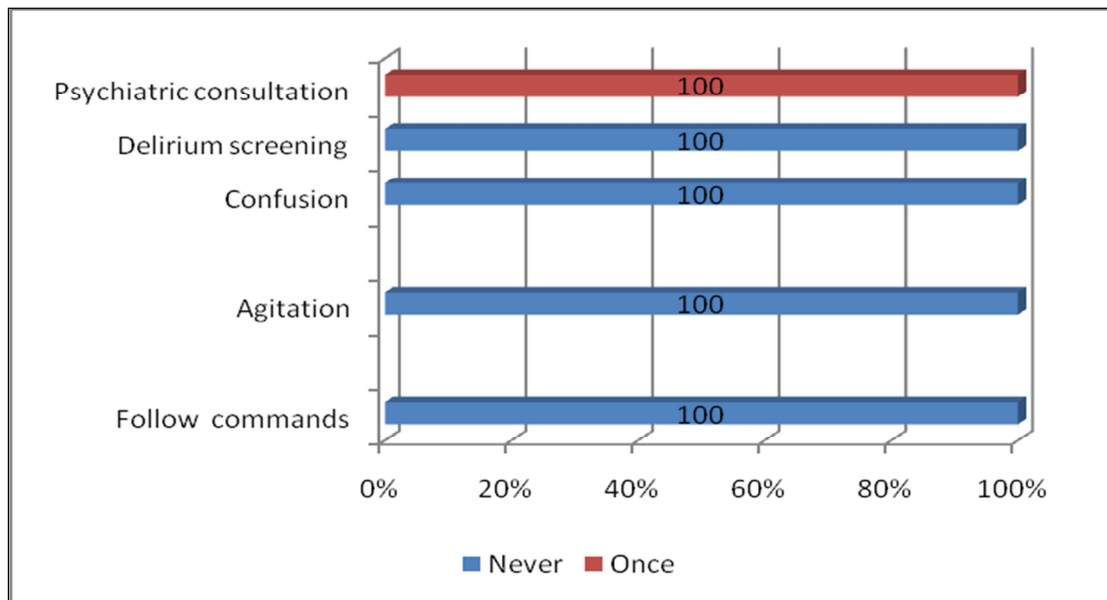


Fig. (8): Barrier to Nurses' Evaluation of ICU Patient for Presence of Delirium (N=120).

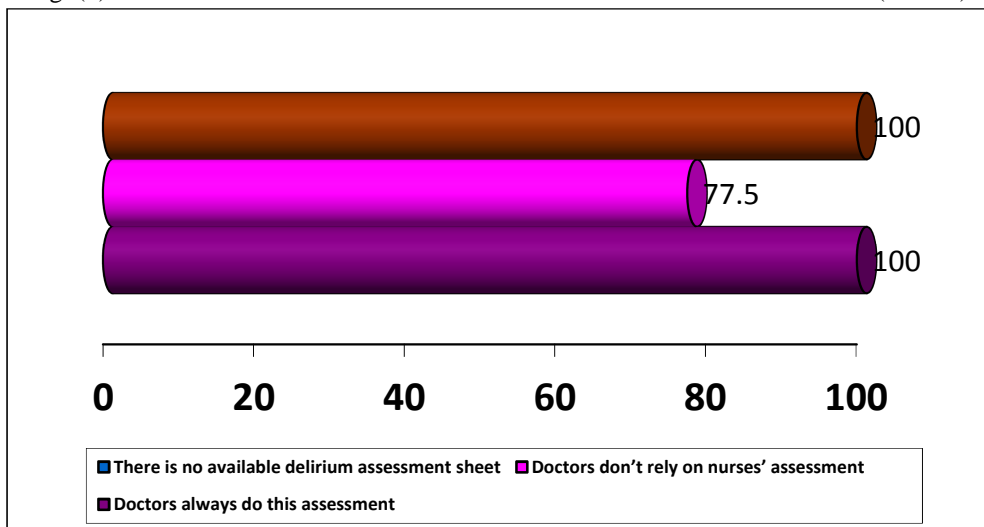


Fig. (9): Percentage Distribution of the Studied Sample as Regards to Received Education / Training about Assessment and Handling Sedation and Delirium (N=120).

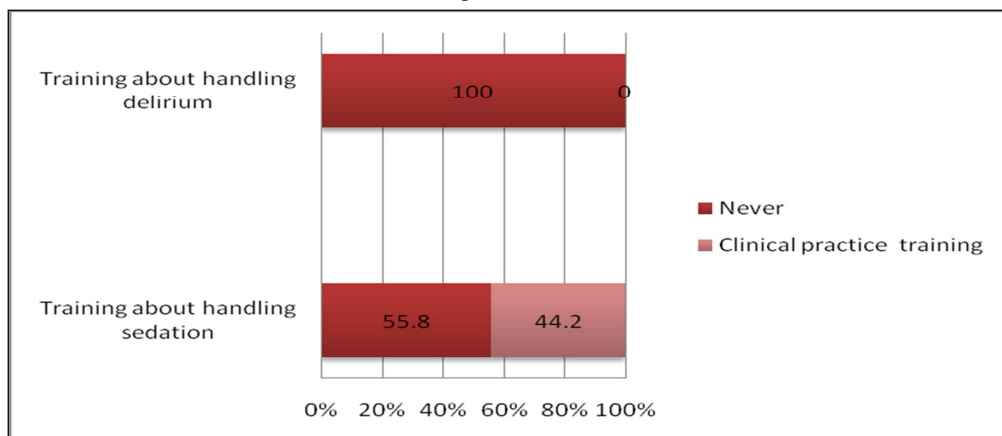
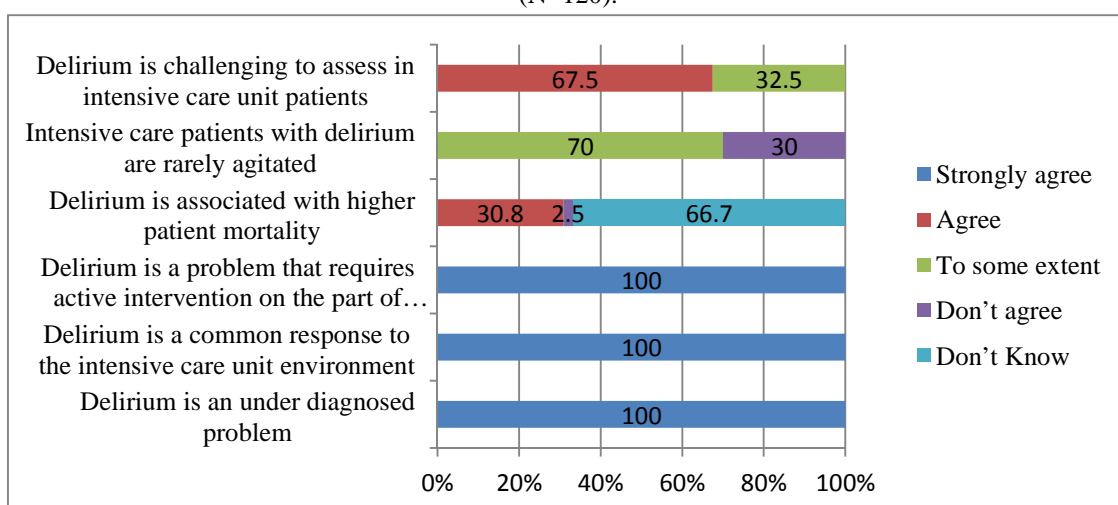


Fig. (10): Percentage Distribution of the Studied Sample as Regards to their Perception of Delirium Assessment (N=120).



This academic article was published by The International Institute for Science, Technology and Education (IISTE). The IISTE is a pioneer in the Open Access Publishing service based in the U.S. and Europe. The aim of the institute is Accelerating Global Knowledge Sharing.

More information about the publisher can be found in the IISTE's homepage:

<http://www.iiste.org>

## CALL FOR JOURNAL PAPERS

The IISTE is currently hosting more than 30 peer-reviewed academic journals and collaborating with academic institutions around the world. There's no deadline for submission. **Prospective authors of IISTE journals can find the submission instruction on the following page:** <http://www.iiste.org/journals/> The IISTE editorial team promises to review and publish all the qualified submissions in a **fast** manner. All the journals articles are available online to the readers all over the world without financial, legal, or technical barriers other than those inseparable from gaining access to the internet itself. Printed version of the journals is also available upon request of readers and authors.

## MORE RESOURCES

Book publication information: <http://www.iiste.org/book/>

Recent conferences: <http://www.iiste.org/conference/>

## IISTE Knowledge Sharing Partners

EBSCO, Index Copernicus, Ulrich's Periodicals Directory, JournalTOCS, PKP Open Archives Harvester, Bielefeld Academic Search Engine, Elektronische Zeitschriftenbibliothek EZB, Open J-Gate, OCLC WorldCat, Universe Digital Library, NewJour, Google Scholar

