DELIRIUM ASSESSMENT IN THE MEDICAL-SURGICAL POPULATION: A QUALITY IMPROVEMENT PROJECT

by

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Abstract

Background: Delirium is a complex syndrome that can affect many patients resulting in adverse outcomes. The use of a delirium assessment tool assists in the identification of delirium. The aim of this project was to determine whether delirium education and the use of a validated assessment tool can assist in the early identification of delirium.

Methods: The Iowa Model of Evidence-Based Practice was utilized for this project. This model involves the identification of a problem and the application of evidence based research. The collaboration of the organization and an interdisciplinary team is required to implement and sustain change.

Interventions: The intervention implemented included educating the staff regarding delirium and the implementation of a delirium assessment tool. Ongoing mentoring of the staff was required.

Data Collection: All patients admitted to the unit that meet inclusion criteria will be included in the project. Retrospective chart reviews were conducted weekly to determine the results of the delirium assessment and nursing compliance.

Results: The delirium assessment was completed on 67 out of 76 patients. Delirium was identified in 36 patients. These results were found to be statistically significant.

Conclusions: The aim of the project was to determine if education and the use of a validated assessment tool would assist nurses in identifying delirium. The early

identification of delirium will assist the healthcare team in implementing strategies to mitigate the adverse outcomes of delirium.

Key Words: Delirium, CAM, confusion assessment method, delirium assessment

Delirium Assessment in the Medical-Surgical Patient: A Quality Improvement Project

Caring for patient's experiencing delirium can be very challenging for nurses in the hospital environment. Delirium is defined as an acute confusion with fluctuating mental status (Layne, Haas, Davidson, & Klopp, 2015). These patients often exhibit behaviors that are difficult to deal with. Nurses, through their assessment skills and their relationships with patients and families, can identify acute changes in patients (Faught, 2014).

Delirium can affect up to 56% of patients admitted to the hospital (Day, Higgins, & Koch, 2008). In specific patient populations, such as, post-surgical, critical care and palliative care, the risk of delirium is increased. Nurses play a pivotal role in the early identification of delirium. To prevent adverse outcomes, it is essential that delirium be recognized early (Olson, 2012). These adverse outcomes include increased length of stay, increased mortality, cognitive deficits, and increased costs associated with hospitalization. Additionally, these patients have an increased risk of being admitted to a long- term facility (Faught, 2014). The utilization of an assessment tool, will assist nurses in the early recognition of patients experiencing delirium.

Problem

The development of delirium in hospitalized patients is associated with serious consequences, such as, increased length of stay, increased morbidity, long

term cognitive dysfunction and increased mortality that may last up to one year (Vasilevskis et al., 2011). Nurses play an important role in the early identification of delirium. Prompt assessment and early identification of delirium may help to prevent adverse outcomes (Olson, 2012). Strategies to treat delirium are based on the ability to accurately recognize and diagnose the syndrome (Scott, McIIveney, & Mallice, 2013). It was noted by Day et al (2008) that many healthcare disciplines lack the education and preparation to easily identify delirium and a high level of clinical nursing skill is needed to identify delirium. Failure to identify delirium was noted in up to 50% of cases (Lemiengre et al., 2006).

Currently, the Confusion Assessment Method (CAM) tool is being utilized in the critical care units to identify patients at risk for developing delirium. A tool is not available for use on the medical-surgical units. The nurses on the medical-surgical units conduct a neurological assessment twice daily on all patients' A neurological assessment checks for level of consciousness and orientation at that time (Wei, Fearing, Sternberg, & Inouye, 2008). Delirium is present in 6% to 56% of medical patients and 15 to 53% of surgical patients (Saczynski et al., 2014). These patients are currently being cared for outside of the critical care areas. Strategies to treat delirium are based on the ability to accurately recognize and diagnose the syndrome (Baker, Taggart, Nivens, & Tillman, 2015; Lemiengre et al., 2006; Scott et al., 2013; Vasilevskis et al., 2011). Without the use of an assessment tool, it can be difficult for nurses to recognize

delirium (Morandi et al., 2008). The use of the CAM tool assesses for the presence of cognitive decline and fluctuating levels of consciousness (Wei et al., 2008). The PICOT question utilized for this DNP project is "In medical-surgical nurses, how does the education of nurses and the implementation of the Confusion Assessment Method influence the identification of delirium in patients over a three-month period".

Available Knowledge

Delirium is defined as a syndrome that begins acutely with changes in consciousness and cognition with a fluctuating course (Van den Boogard, Schoonhoven, Van der Hoeven, Van Achterberg, & Pickkers, 2012). Three different subtypes have been identified: hyperactive, hypoactive, and mixed. With hyperactive delirium, the patient exhibits symptoms of agitation, hallucinations, and delusions (Van den Boogard et al., 2012). In hypoactive delirium, the patient is lethargic, responds slowly and has inappropriate speech (Van den Boogard et al., 2012). In the mixed type of delirium, there is alterations between the hyperactive and hypoactive types (Van den Boogard et al., 2012).

Delirium is associated with adverse outcomes, such as, increased mortality, increased length of stay, and the increased risk of being institutionalized after discharge (Fortini et al., 2014; Kiely et al., 2009; Tan & Scott, 2015; Tomasi et al., 2012). It has been associated with one-year mortality and these rates are higher than those for heart disease and pneumonia (Kiely et al.,

2009). The risk of mortality increases over time. The affected patients are unable to interact within their environment, which leads to increased debility and adverse events (Kiely et al., 2009). Delirium is more common in adult hospitalized patients (Lemiengre et al., 2006; Mudge, Maussen, Duncan, & Denaro, 2012).

Confusion Assessment Method

The CAM is an instrument and diagnostic algorithm utilized for the identification of delirium and was designed for non-psychiatric health care professionals to diagnose delirium quickly and accurately (Wei et al., 2008). It is designed to be used with hospitalized adult patients and can be used in a variety of settings (Waszynski & Petrovic, 2008; Wei et al., 2008). The tool assesses for the presence of delirium, severity, and fluctuation of delirium (Wei et al., 2008). The CAM consists of nine criteria for delirium: acute onset and fluctuation, inattention, disorganized thinking, altered level of consciousness, disorientation, memory impairment, disturbances in perception, psychomotor dysfunction and an altered sleep cycle (Lemiengre et al., 2006; Wei et al., 2008).

Sands, Dantoc, Hartshorn, Ryan, & Lujic (2010) found that when nurses received appropriate education on the CAM, the tool had a sensitivity of 94% and a specificity of 89%. The sensitivity decreased to 40% when the staff had minimal training. Additions have been made to the CAM to allow it to be used for different patient populations, such as critical care, emergency department, and long term care (Wei et al., 2008). The efficacy of the tool is dependent on the patient

population, comorbidities, and severity of illness (Powers et al., 2013). The CAM tool is most effective in identifying patients with hypoactive delirium (Saczynski et al., 2014).

Recognition of Delirium

Van Ejik et al. (2011) demonstrated that the identification of delirium by critical care physicians and nurses was noted to show a sensitivity of 29% and 35% respectively as compared to physicians and nurses that were specifically educated in the recognition of delirium. Iseli, Brand, Telford, & LoGuidice (2007) found that 20% of delirium cases go unrecognized. This lack of recognition may be due to the lack of an assessment tool for cognitive impairment and a lack of awareness surrounding hypoactive delirium (Fortini et al., 2014). Nurses failed to recognize delirium in more than 50% of cases and this may be due to a lack of knowledge and training (Lemiengre et al., 2006). This under recognition can lead to adverse outcomes (Sands, Dantoc, Hartshorn, Ryan, & Lujic, 2010) and delays treatment (Van Ejik et al., 2011).

Education and Training

In a study by Baker, Taggart, Nivens and Tillman (2015), 8.33% of nurses reported minimal competency in the ability to recognize delirium. The discrepancy in different results may be related to inadequate training or incomplete implementation of an assessment tool (Van Ejik et al., 2011). To improve the recognition of delirium, it is essential that adequate training be

provided. Early recognition is needed to develop a multifaceted and interdisciplinary approach to treat and prevent delirium (Lemiengre et al., 2006).

Nursing Implications

Key nursing responsibilities in the recognition of delirium include completion of routine assessments, recognizing pre-disposing and precipitating factors, and the use of delirium assessment tools (Baker et al., 2015). In a study by Scott et al., (2013), nurses felt that the use of a screening tool enhanced care and improved their neurological assessments. After attending educational sessions, the nurses felt that delirium was a very serious problem and that delirium assessment should be a standard of care (Scott et al., 2013).

Assessing delirium can be challenging for nurses due to the fluctuating and variability of the disease process. Some of the barriers that nurse may encounter in the utilization of assessment tools include time, perceived difficulty in using the tools and the generalizability of the different tools (Voyer et al., 2015). The amount and type of education the nurses receive will reflect on their confidence level in administering the tool (Voyer et al., 2015). It is essential that nurses have education and mentoring to develop confidence in performing the assessment (Waszynski & Petrovic, 2008).

Rationale

The implementation of an assessment tool assists the bedside nurse in recognizing the presence of delirium early in their hospitalization and is critical to

prevent adverse outcomes. A multitude of factors can cause delirium. With the prompt recognition of delirium, the interdisciplinary team can put into place strategies to treat the patient's condition.

The nurses' ability to conduct the assessment accurately and with confidence is essential. Education of the staff along with role playing and mentoring is necessary for the successful implementation of the tool. Implementing change in practice is not always easy. Nurses need support and engagement to make a successful change in practice. The process should be used facility wide to decrease variation and to provide consistency in the evaluation (Andrews, Silva, Kaplan, & Zimbro, 2015).

The integration of evidence-based practice (EBP) into clinical practice will facilitate the ability to provide higher quality care to patients. Nurses at the bedside can recognize clinical problems but may have difficulty clarifying the exact problem and what the next steps are. To initiate EBP, there are several components that need to be in place. These include: support from hospital administration, adequate resources, unit based clinical leaders, and mentors to assist them with the process (Lusardi, 2012). The Iowa Model of Evidence-Based practice was utilized as the framework for this project. This model can help nurses translate research into clinical practice (Brown, 2014). The model focuses on a lack of knowledge or a problem focused trigger and whether the quality of care can be improved (Doody & Doody, 2011).

Aims

The aim of this project was to determine whether the education of the nurses regarding delirium and use of the CAM tool could identify the presence of delirium in the medical-surgical patient. The CAM tool is easy to use and can be completed quickly, so the compliance of the nurses in completing the assessment was collected. If the presence of delirium is recognized earlier, interventions can be put into place to decrease to improve the quality of care.

Methods

Context

This project took place at a tertiary care hospital located in Western New York. The Intermediate Care Unit was chosen as the setting. This is an 18- bed unit, consisting of all private rooms. The hospital has several critical care units and many of the patients admitted to this unit are received from these units. The patient population on the unit includes a variety of diagnoses and those who require complex care and closer monitoring. The average nurse patient ratio is 1:3. The unit is staffed with Registered Nurses, Certified Medical Assistants (CMA's), and Nurse Practitioners. This unit was chosen for the project due to the consistency of the medical team.

Interventions

The nurses were educated on delirium and on how to utilize the CAM tool. The nurses were educated on-line with a PowerPoint tool prior to the

implementation of the assessment tool. The project leader proctored all classes to answer questions. The education included a definition of delirium, the differences between the subtypes and how to recognize them, risk factors and complications of delirium, and the use of the CAM tool. A case study was included in the education. Additionally, documentation of the results of the assessment was reviewed. The setting for the education was the hospital library, where several computers are located. The education was continued until all the nurses were educated. The nurse practitioners and CMA's were invited to the education sessions. The PowerPoint was posted on the education board as reference for the staff. Additional educational sessions were added throughout the implementation period, as needed.

Each patient room is equipped with a laptop computer. A copy of the assessment tool was attached to each computer for staff reference. The assessment tool was to be completed on admission to the unit, each shift and with any behavioral change.

Study Interventions

Retrospective chart reviews were conducted to determine the compliance of the nurses in completing the assessment tool. It was completed on admission, if it was done within 24 hours of admission. Additionally, the assessment results were noted. Descriptive statistics will be used to analyze the data. The Chi Square was used to determine if statistical significance was found in the ability of the

nurses to identify the presence of delirium. The statistics was conducted using SPSS software, version 22.

Analysis

Data were collected via retrospective chart reviews and analyzed utilized SPSS software. Descriptive statistics collected will include percentages and frequency distributions for both types of data being collected: compliance of the nursing staff in completing the CAM assessment tool and whether the use of the tool could identify delirium (Heavey, 2015). Inferential statistics will be conducted using a contingency table and the chi square test. The contingency table will assist in the organizing of the data and the chi square test will be able to assist the project leader in determining whether the results are statistically significant (Khan Academy, 2015).

Ethics

IRB approval was not needed as this project was exempt. All patients that met the inclusion criteria were included in the study and received the assessment. The assessment was used to improve the care provided to the patient. During the data collection period, each patient was assigned a unique identification number. It was determined since this was a quality improvement project, informed consent was not needed.

Results

Compliance

Ninety patients were admitted to the unit during the data collection period. Sixty-six (73.3%) patients were assessed within 24 hours of admission to the unit. Six patients (6.7%) were not assessed within the first 24 hours. Four patients (4.4%) were not assessed for delirium during the project period and 14 patients (15.6%) were excluded from the study. Exclusion criteria included those patients under age 18, previously diagnosed with delirium, suffered from a brain injury, those that are comatose and those patients that do not understand English.

Identification of Delirium

Of the 90 patients admitted to the unit during the data collection period, 36 patients (40%) were found to be CAM positive and 31 patients (34.4%) were noted to be negative. One patient (1.1%) was unable to be assessed and eight assessments (8.9%) was never completed. Fourteen patients (15.6%) were excluded. The results of the assessment were entered into SPSS software and utilizing the chi square statistic the results were found to be statistically significant using a p value of 0.05.

Discussion

Summary

One of the aims of this project was to assess whether specific education of nurses on delirium will influence their ability to identify patients experiencing

delirium. For this project, the nurses received education via a PowerPoint, which included the use of the CAM tool. The detection of delirium can be a challenge for nurses. The compliance of the nurses completing the assessment upon admission was 73.3%. This assessment was completed within 24 hours of admission to the unit. Of the completed assessments 36 patients (40%) were found to be positive for delirium using the CAM tool. Thirty-one patients (34.4%) were found to be negative for delirium utilizing the tool.

This project demonstrated that with education and consistent mentoring, along with the implementation of an assessment tool, nurses could improve their detection of delirium in patients. With the diagnosing of delirium earlier in their hospital stay, strategies can be put into place to prevent the development of delirium. This project highlighted the importance of bringing this knowledge to the bedside to assist the healthcare team in developing treatment strategies.

Interpretation

This project demonstrated that nurses could identify delirium utilizing the CAM tool. Forty percent of patients were found to be positive for delirium. It was also noted that the nursing staff needed consistent mentoring to complete the assessment. The selected tool was straightforward for the nurses to complete in this setting. There was no baseline data at the facility to be able to improve whether there was improvement in the identification of delirium.

Various studies have found different prevalence rates of delirium in patients. Day et al (2008) found that delirium was identified in up to 56% of hospitalized patients. In the study by Saczynski et al (2014) the prevalence of delirium was found to be 22.7% when trained interviewers completed the assessments. In this study, there was a comparison between chart reviews and the use of an interview method in the identification of delirium. Trained researchers completed the assessments. In this study, it was noted that the research staff may have included information from the family when completing the assessment. Fortini et al (2013) found that 11% of patients of older adults hospitalized in internal medicine units developed delirium. This study was completed over a two-month period and only included geriatric patients.

It has been noted that many healthcare disciplines lack the knowledge base to adequately identify delirium in patients. Prior to implementing an educational program, a baseline assessment of nursing knowledge should be determined (Middle & Miklancie, 2015). To design an effective program, nurses should be included to determine their preferred venue of learning. The use of an assessment tool coupled with the appropriate education has been found to improve nurses' knowledge of delirium (Middle & Miklancie, 2015). For this project, the education was accomplished using a PowerPoint presentation, along with informational huddles throughout the data collection period.

This project is aligned with the strategic plan of the hospital. Through the development of a delirium protocol, the hospital would like to improve patient outcomes and decrease the utilization of critical care beds. These patients are often transferred to critical care beds as they are unable to be managed on medical-surgical units. To sustain change, the facility needs to have sustained leadership support and ongoing monitoring to determine compliance. Some of the barriers the nurses encountered were that the assessment was not included in the EMR and they needed to free text the results of the delirium assessment. When the assessment was positive for delirium there was no protocol in place for the nurses to implement. It is essential the development of protocols occur to support interventions to mitigate the adverse outcomes of delirium. In the study by Mudge et al., (2012), their interventions include the use of a delirium bay, which supported the use of targeted interventions. These interventions included both behavioral and medications.

Limitations

There were several limitations noted with this project. There was no baseline data collected prior to the initiation of the project. The study included a small number of patients, since only one nursing unit was included. The three-month data collection period limited the number of patients that could be identified with delirium. For this project, the nurses needed to document the presence of delirium in the Electronic Medical Record as a clinical note as there

was no area in the medical record for the documentation of the results. Since, the CAM was originally developed to be utilized in the critical care environment, another limitation of the project is this tool may not be the appropriate to be used with the medical-surgical population. Additionally, there was delay in the nurses adopting the use of the tool and this may be related to competing projects. At the facility, a new SMART pump was being implemented at the same time.

Conclusion

The identification of delirium early in a patient's hospitalization is essential for the prevention of adverse outcomes. Bedside nurses are the perfect candidates to conduct delirium assessments due to the amount of time they spend with patients and their families. It is essential that nurses receive appropriate education and mentoring to develop confidence in completing the assessment. With the use of the CAM tool and the implementation of proper protocols and policies, patients' experiencing delirium will receive a higher quality of care in medical-surgical units.

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