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Impact of Nursing Interventions on Positive Confusion Assessment Method (CAM) Scores

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Abstract

Delirium occurs in patients of all ages, especially in the older adult population. Symptoms vary from patient to patient, and delirium is often misdiagnosed. Patients with delirium have a higher cost of care and a longer length of stay in the hospital. Delirium is a stressful event for both the nurse and the patient, resulting in poor patient outcomes. The Confusion Assessment Method (CAM) tool is used to diagnose delirium in confused patients; a positive CAM score indicates delirium. Nursing interventions are used to treat delirium. Interventions used range from non-pharmacologic measures to use of pharmacological measures and restraints. This project will be a quality improvement project for patients with positive CAM scores. The most common nursing interventions used will be identified for possible bundling purposes.

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Background and Significance

Delirium is an acute state of confusion that can demonstrate varying characteristics. Delirium can present as a fluctuating mental status, an altered level of consciousness, disorganized thinking, or inattention (Olson, 2012). Subtypes of delirium include hyperactive, hypoactive, or mixed delirium. Hypoactive delirium is most often misdiagnosed due to its similarities to depression, while hyperactive delirium is identified by a more prominent change in behavior (Faught, 2014). Delirium occurs in patients of all ages, but older adults greater than 65 years of age are most prone to delirium due to increased safety issues, pressure ulcers, restraint use, urinary catheter insertion, and anticholinergic drugs (Khan et al., 2013). Delirium can occur to anyone at any age, but is most prevalent in the older, hospitalized population. This prevalence is somewhere between 3 and 29% in this population (Beary, 2013). Patients with delirium have a greater risk for poor outcomes and greater length of stay. Symptoms typically last seven days but can continue up to six to eight weeks. It is estimated these factors increase the cost of care, adding billions of dollars annually to Medicare (Faught, 2014). Tools such as the Confusion Assessment Method (CAM) are used to evaluate and diagnose delirium in a patient. Further research is needed to examine patient outcomes following implementation of nursing care interventions for delirium (Andrews, Silva, Kaplan, & Zimbro, 2012).

Delirium is treated in many nonpharmacological ways. One of the most common nursing interventions is to orient the patient to person, time, and place upon entering the patient's room. However, more research needs to be conducted to evaluate the effectiveness of this intervention (Day, Higgins, & Keatinge, 2011). Delirious patients need access to assistive devices to reduce

communication barriers, such as glasses or hearing aids. Promoting a regular circadian rhythm is also important in treating a delirious patient (Balas et al., 2012). Pharmacologic interventions for delirium often include haloperidol or antipsychotics. Studies have shown that haloperidol is well tolerated and may improve outcomes in delirious patients (Crawford et al., 2013). Other studies found that antipsychotics may not help resolve delirium (Flatherty, Gonzales, & Dong, 2011). It is recommended that physicians be cautious when prescribing antipsychotics to delirious patients and use of sedatives should be kept to a minimum (Beary, 2013).

Despite extensive research in delirium prevention, awareness of delirium is lacking and often misdiagnosed (Yevchak et al., 2014). Delirium is often under detected due to lack of nurse understanding of delirium detection and management (Agar et al., 2011). The CAM tool is used to diagnose delirium at the patient's bedside in three to five minutes. The CAM has a high degree of sensitivity and specificity; however, it does not indicate severity of the delirium (Faught, 2014). This assessment tool is more sensitive and less time consuming than unstructured bedside assessments made by the nurse. The CAM is the most appropriate delirium assessment tool to detect delirium at the bedside (Wong et al., 2011).

Little information was found in the literature on the effectiveness of nursing interventions implemented with delirious patients. An extensive literature review was conducted using CINAHL, Ovid Nursing Collection II, Ebsco, and MEDLINE (PubMed) using a variety of keywords. Most research on delirium has focused on prevention rather than intervention. This lack of information demonstrates the importance of further research on nursing interventions and their impact on medication and restraint usage. The purpose of this study is to identify most

commonly prescribed nursing interventions used with a positive CAM, and to evaluate the impact of nursing interventions on medication and restraint usage.

Methods

This quantitative study was a retrospective chart review conducted after approval by the University of Arkansas Institutional Review Board and the study hospital Quality Assurance Department. All patients over the age of 18 years admitted to Washington Regional Medical Center during the 2014 to 2015 described as confused in the nurse's notes were eligible for this study. The Health Insurance Portability and Accountability Act (HIPAA) guidelines were followed by de-identifying patient information. Patient data pertaining to the study was gathered from electronic medical record reviews. Medical record reviews occurred in the hospital setting. A random number was assigned to each medical record reviewed to maintain privacy. Information collected from the medical record included initial CAM score, follow up CAM score, nursing interventions performed, and age. Medications prescribed, frequency, dose, and indications were also recorded.

Data Analysis

Demographic data was collected, including age. All data was reported in the aggregate. Frequencies were recorded for of age range, initial CAM, follow up CAM, interventions, and medications prescribed for delirium. A chi-square was run to evaluate the association between the initial CAM score and medications prescribed. A second chi-square was run to evaluate the

association between the follow up CAM score and medications prescribed. Patients that did not receive a CAM evaluation were excluded from the chi-square tests.

Results

The baseline cohort consisted of 200 patients documented as confused. 45% (N=90) of the patients in the project population were between the ages of 70 and 79, 42% (N=85) of the patients were between ages of 80 and 89, and 12% (N=25) of the patients were 90 years of age or above. No patients in the study were below the age of 70. Upon administration of the first CAM 32% (N=64) of the patients had negative results, 3% (N=5) had a positive CAM, and 65% (N=131) did not receive a CAM assessment. 9% (N= 18) of patients in the study population had a negative CAM score for their follow up assessment, while 23% (N=45) received a positive CAM score. 68% (N=137) of the patients in the population did not receive a second CAM assessment. 64% (N=128) of the patients in the study did not receive a CAM assessment or have interventions charted. 35.5% (N=71) of the patients in the study population received a CAM assessment but had no interventions charted. 0.5% (N=1) in the study received a CAM assessment and had nurse led interventions charted. 33% (N=66) of the patients had no medications prescribed for delirium, agitation, or anxiety. 12% (N=24) were prescribed antipsychotics, 39% (N=78) were prescribed benzodiazepines, 16% (N=32) were prescribed antidepressants, 0.5% (N=1) was prescribed sedatives or hypnotics, and 0.5% (N=1) was prescribed another antianxiety agent.

A chi-square test was conducted for association between the initial CAM performed and medications prescribed to the patient. 34 cells (85%) had frequencies less than 5, making the chi-square results unreliable. A second chi-square was conducted to look for an association between the follow- up CAM and medications prescribed. 34 cells (80%) had frequencies less than 5. In conclusion, due to the small sample size and the percentage of unreliable results, no statistically significant correlation was found between CAM performance , pre or post, and medications.

Discussion

The results of the study demonstrate the need for more nursing education and research regarding delirium and the CAM. The results also demonstrate that physicians rely on prescribing antipsychotics and benzodiazepines. The target behavior for these medications was difficult to assess since they can be used for delirium, agitation, or anxiety. Since the nonpharmacological nursing interventions were not documented, it was not possible to assess the effectiveness of nursing interventions. No use of restraints was found in any of the charts included in the study. The study hospital did not have a protocol in place regarding delirium prevention, detection, or treatment. Once a patient was marked as confused in their chart, the performance of the CAM was at the nurse's discretion. The opportunity to chart delirium-specific nursing interventions was only available in the electronic chart if a positive CAM was documented. Nursing interventions were documented as either effective or ineffective. It is likely

that nurses in the study hospital performed nursing interventions to treat delirious patients even though these interventions were undocumented.

Only one patient of the 201 patients in the study had both a CAM and nursing interventions documented. This patient's initial CAM score was a six, but they never received a follow up CAM to reevaluate the effect of interventions. The patient was prescribed haloperidol 0.25 mg every two hours as needed for delirium, quetiapine 25 mg daily, and lorazepam 0.5 mg every six hours as needed for agitation or anxiety. Interventions recorded as effective included eliminating tethers, using a bed alarm, allowing family support at the bedside, and using a pain scale to treat pain accordingly. Physical therapy, occupational therapy, and speech therapy referral were also deemed effective. Ineffective interventions included frequent orientation, placing call light within reach, minimizing daytime napping, keeping curtains open during the day, turning lights off at night, providing comfort items at the bedside, promoting a quiet environment, and providing a family education brochure. Documenting effectiveness of nursing interventions would help provide seamless care to these patients by increasing communication between different nursing shifts. Increasing communication between nurses and other members of the interdisciplinary team would help healthcare professionals provide more competent care to patients diagnosed with delirium (Hosie et al., 2014).

Despite the CAM's efficient and accurate assessment, compliance issues with nurse implementation are common (Eastwood et al., 2012). Prompt identification of delirium using the CAM can reduce and prevent adverse complications of delirium (Olson, 2012). Barriers to implementation of the CAM include the time it takes to do the assessment, nurse attitude, and

nurse confidence in performing the assessment and of the CAM's reliability (Eastwood et al., 2012). It is crucial that hospitals provide adequate education about delirium and training on the use of the CAM to increase detection of delirium (Higgins, Malik, & Ghosh, 2014). In interviews with staff at the study hospital most nurses reported they did not find the time to perform a CAM. Nurses reported being busy performing interventions for delirious patients and did not report confidence in seeing better outcomes by documenting a CAM. Most of the nurses at the study hospital preferred to perform informal, personalized assessments and treat the patient with nursing interventions they associated with past success in confused patients. The interventions most frequently performed included orienting the patient, providing toys or tools to focus the patient's attention, and promoting a regular circadian rhythm. The lack of CAM use and documentation of successful nursing interventions could be due to nurses not receiving adequate instruction on using the CAM tool.

The study results suggest a need for hospitals to provide more extensive education about delirium prevention and detection. Nurses also should receive more training in how to perform the CAM. Further research on nursing knowledge and attitude towards CAM and delirium is important for increasing competent care to this population. Research utilizing focus groups to identify nurse attitudes toward the CAM and knowledge of delirium may lead to better understanding of why delirium is often overlooked or undertreated.

Conclusion

Delirium is a treatable disorder that can often be prevented. Failure to recognize delirium can lead to poor patient outcomes (Beary, 2013). In order to provide more competent care to this patient population, research is needed about delirium prevention and effective interventions. Nurses should work with policy makers and service leads to advocate for practitioner education and stronger implementation strategies (Schofield, Tolson, & Fleming, 2011). Improved delirium prevention and detection strategies, and identification of effective nursing interventions, will reduce patient suffering, prevent complications, and save millions in health care spending.

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