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Practices and Perceptions of Delirium Assessment by Critical Care Nurses

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Practices and Perceptions of Delirium Assessment
by Critical Care Nurses

By

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Gardner-Webb University School of Nursing
in partial fulfillment of the requirements for the
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Abstract

Delirium has a tremendous impact on the patient, his family, and the health care system. In particular, the elderly patient in the Intensive Care Unit is the most susceptible to this condition. Delirium often results in longer hospital stays, more Intensive Care days, increased likelihood of being placed in a skilled nursing facility, and increases in mortality. For delirium to be treated properly it must first be identified. Critical care nurses are in the best position to identify these patients and initiate treatment. Past studies have shown that nurses do not identify patients that have delirium, and do not know the best way to intervene for these patients (Hare, McGowan, Wynaden, Speed, Landsborough, 2008; Inouye et al., 1999). This study examined the practices and perceptions that critical care nurses have toward delirium as compared to sedation assessment. Sedation assessment was chosen as a comparison due to its widespread acceptance and use in the critical care community.

A paper/Web based survey was distributed to critical care RN's by the "snowball" method. Twenty surveys were obtained from the Charlotte and Shelby, North Carolina areas. The results of the survey showed that no respondents ranked delirium assessment as the most important item to assess and 40% of respondents ranked it as last. Sixty percent of respondents received no education about delirium assessment. Education of sedation assessment was more common with all respondents reporting at least some form of education received. This study also found that there were many misconceptions that nurses possessed concerning delirium assessment. Sixty five percent of nurses did not agree that delirium is associated with an increase in mortality which has been shown in multiple studies.

In conclusion the study showed that nurses lacked the knowledge and tools to be able to complete delirium assessment on their patient. The purpose of this study was to identify the practices and perceptions of critical care nurses as related to delirium assessment and subsequently be able to design an educational program to meet these needs.

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Chapter I

Introduction

Delirium is a syndrome characterized by the rapid onset and fluctuation of altered mental status, primarily involving the domains of attention and cognition. The change in cognition associated with delirium may include disorientation, impaired memory, and irrelevant speech (APA, 2000). Delirium is a particular problem for the patient over sixty-five years of age, affecting fifty-six percent of older people admitted to the hospital (Day, Higgins & Koch, 2008). The impact on all hospitalized patients is significant with over thirty-eight percent of all hospital inpatients in the United States over the age of sixty-five (Steis & Fick, 2008). The prevalence of delirium on hospital admissions has been reported to be as high as fourteen to twenty-four percent (Sendelbach & Guthrie, 2009). Delirium is a particular problem in the Intensive Care Unit with up to eighty seven percent of ICU patients who receive mechanical ventilation experiencing delirium (Devlin et al., 2008). Thousands of patients are suffering from delirium in hospitals across the nation every day.

Nurses are in the best 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 knowledge and skills to assess patients accurately, 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, nursing home placement, and death (Juliebo, et al., 2009).

Delirium is under-reported and often goes undetected by all healthcare professionals with nurses being no exception (Inouye et al., 1999). Delirium

assessment is particularly difficult in the hospital setting because of the fluctuating nature of the condition. Delirium may wax and wane during the day. This can be particularly problematic for the nurse unless he or she has the knowledge and skills to be able to identify subtle changes in neurological status during his or her shift. Assessment is the first and most crucial step in the prevention and treatment of delirium in the hospitalized older patient. Without the identification of the problem there can be no intervention.

The nurses' perceptions of delirium must also be examined. Delirium may be seen as an inevitable consequence of being an elderly patient in the ICU. In a study by Devlin et al. nurses had several misconceptions related to delirium in the ICU (2008). Presence of delirium was rated as the least important condition related to other frequently assessed conditions, such as decreased level of consciousness, pain, improper placement of invasive devices, and agitation. Nurses also believed that the initiation of antipsychotic therapy should be the initial intervention for the treatment of delirium. The role of the nurse in the recognition and the prevention of delirium are greatly underestimated by the critical care community. The bedside nurse must understand the significance of delirium and be able to assess it accurately in order for proper treatment to begin in the early stages of the condition.

Background

The American Psychiatric Association describes delirium as having four components (APA, 2000):

- 1) Disturbance of consciousness with reduced ability to focus, sustain, or shift attention.

- 2) Change in cognition or development of perceptual disturbance that is not due to a preexisting dementia.
- 3) The disturbance develops over a relatively short period of time and tends to fluctuate during the course of the day.
- 4) Evidence that the disturbance is related to or caused by a medical condition.

Global Perspective

Delirium is a costly health problem for hospitalized elderly patients. It is estimated that delirium affects more than 2.3 million older hospitalized patients and accounts for more than \$4 billion annually in Medicare expenditures (Inouye, Schlesinger & Lydon, 1999). With the ageing of our population, this problem will continue to worsen unless we improve our assessment and treatment. According to the U.S. Census Bureau over the next two decades, the percentage of persons over the age of sixty-five will increase from thirteen to nineteen percent of the total population (U.S. Census Bureau, 2010). Also, the eighty-five and older population will increase from fourteen to twenty-one percent by the year 2050 (U.S. Census Bureau, 2010). With delirium affecting mostly patients over sixty-five these increases in the elderly patients will significantly worsen this problem for hospitals. Patients who experience delirium require additional hospital days and further treatment expenditures. Also, they are more likely to experience adverse medication reactions, acquire hospital infections, falls, and develop pressure ulcers (Foreman, Mion, Tryostad, & Fletcher, 1999). With the changes in Medicare payments, hospitals do not receive payment for hospital acquired conditions, so these additional costs must be absorbed by the

facility. Delirium is a costly problem for all of us. Changing health care laws in the United States has the potential to further magnify these problems.

Delirium Outcomes

Patients who suffer from delirium in the hospital often have poor outcomes compared to other patients. The mortality rate for persistent delirium is substantially higher than the one year mortality rates of acute conditions such as heart disease, influenza and pneumonia (Cole, McCusker, Ciampi, & Belzile, 2008). An estimated twenty-five percent of patients who develop delirium while hospitalized will die within six months (Cole et al., 2008). Delirium impacts patients discharged from the hospital, resulting in reduced quality of life and independence for patients. When delirium does not resolve in the hospital, these patients are often placed in skilled nursing facilities and never regain their prior level of independence and function. Delirium should be regarded as a medical emergency that significantly increases a patient's morbidity and mortality.

Delirium also impacts the length of stay in the hospital and in the Intensive Care Unit. In a multi-centered study by Lat et al. delirium was associated with increased Intensive Care Unit length of stay, increased hospital length of stay, and mechanical ventilation days in the ICU population (2009). In a previous study, Ely et al. demonstrated that the presence of delirium was an independent risk factor for mortality at six months and longer hospital length of stay (2004). Increased length of stay significantly impacts costs and stress on the patient and their family. Clearly, delirium affects the bottom line for all hospitals in this country.

Psychosocial Impact

Delirium affects the patient physically and psychologically. The experience of delirium has been compared to being in a borderland between reality and imagination, past and present, between being conscious and unconscious of external events. The patients described the unreal experiences using phrases like “crazy dreams, nightmares, and stupid fantasies, changes of perspective, illusions or dreamlike experiences”. The patients’ experiences during the delirium episode were often associated with intense fear. At this time, researchers are unsure of the long-term consequences that delirium can have on the psychological health of the patient. The question whether delirium causes Post Traumatic Stress Disorder has been studied, but the evidence is not conclusive (Duppils & Wikblad, 2006).

After recovering from the experience of delirium, patients often experienced feelings of shame, guilt, and fear of recurrence. Not all patients will remember the episode, but the lack of memory can be distressing to the patient. The most successful strategy for nurses dealing with these patients is for the nurse to try to understand the patient’s situation and to pay attention to and confirm the delirious patient (Duppils & Wikblad, 2006). This is difficult for nurses to do as they try to manage and protect a patient who is often uncooperative and disruptive. For the patient, the experience of delirium includes dramatic scenes, strong emotional feelings, and difficulties communicating (Duppils & Wikblad, 2006). Nurses with a better understanding of the patient’s perspective can better intervene for the patient’s benefit.

Delirium can also negatively impact a patient’s social standing. Western society tends to value independence; subsequently elderly patients with delirium are prone to ageist practices and beliefs. Ageism is defined as the negative and stereotypic

bias resulting in older people experiencing society's bigoted views about old age (Neville, 2008). The elderly delirious patient is totally dependent on their caregivers for the most basic of needs. Hospitals' practices tend to treat these patients as children. Adult diapers, patients being fed by others, and patients being told when to sleep and when to be awake, are all part of the experience. Delirious patients are often at the mercy of the people around them. Therefore, this group is particularly vulnerable to ageism. In our youth oriented society, older people are often regarded as worthless and child like. An older patient who is suffering from delirium is unable to function independently or contribute to the community. If nurses are able to identify delirium early then they will be able to return the patient to be a valued member of society who has worth and deserves respect.

Nursing workflow within the unit is also negatively impacted by delirium. The delirious patient can be combative and require a large percentage of the nurses' time and attention. A patient who is loud and difficult can increase the stress level of all staff in the department. Nurses are trying to keep the patient from hurting themselves, as the patient is trying to escape from their delusions and hallucinations. This can be a frustrating experience for nurses, patients, and families. Delirium can also negatively impact the nurse-patient therapeutic relationship. If nurses do not accurately interpret the communication style of the patient then they cannot intervene on the patient's behalf. Nurses need to remember that the patient is attempting to communicate their needs and feelings in the only way that they are able to through their delirium.

Nursing Assessment

The first step in any assessment is obtaining a complete history from the patient. Taking a history from a delirious and confused patient is challenging. History

taking from a delirious elderly person requires patience, skills, and corroboration from someone who knows the patient well (when possible) but should always be attempted, as it may provide vital information (Moraga & Rodriguez- Pascual, 2007). Nurses must take their time and use active listening skills to hear what a patient is saying and be able to interpret the information in the context the patient provides. Family members or significant others are essential. Only someone who knows the patient well is able to determine changes in the patient's mental status and interpret the patient's statements. It is important for nurses to support the family through the assessment process as behaviors that the patient is exhibiting may create distress in the family members as well.

There are multiple tools that have been used to assess delirium. The CAM-ICU (Confusion Assessment Method for the Intensive Care Unit) tool has undergone extensive testing in the ICU, and is recommended by international guidelines (Luetz et al., 2010). A copy of this tool is located in Appendix C of this document. The CAM-ICU requires only 20 minutes for training and uses very basic materials. To complete the CAM-ICU requires less than five minutes of the nurse's time. This assessment tool is based on the Richmond Sedation Scale and is intended for use with the non-verbal patients who are in the ICU setting. The CAM-ICU is specifically designed for use by personnel with no psychiatric training (Friedman, Qin, Berkenstadt & Katznelson, 2008). An assessment tool, such as the CAM-ICU gives the nurse a concrete and objective method to assess the patient throughout their hospital stay. This tool rates the patient's delirium on a numerical scale and enables the nurse to use this scale to communicate clearly with other health care professionals the improvement or the deterioration in the patient's cognitive abilities.

Barriers to Delirium Assessment

The obvious question remains, as to why if delirium is such a major problem for the hospital elderly then why are nurses not assessing for it properly. 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 routinely documenting cognitive and behavioral changes under the term of “confusion”. This term does not allow for qualification or quantification of significant changes in the patient’s functioning (Hare et al., 2008). If patients are labeled as confused then it is unlikely that nurses or others will look further for causes or solutions to the patient’s problems. Also, if a patient is confused then their status is gauged only by how disruptive or difficult their behaviors are. ICU psychosis is also a term that is used interchangeably with confusion, “sundowners’ syndrome”, and delirium. Too often behavioral changes in the critically ill patient are dismissed as “ICU psychosis” and are treated accordingly with antipsychotic medications. The behavioral changes often noted in the ICU setting are not usually related to an acute psychiatric disorder, but to a medical cause (Litton, 2003). By labeling delirium as a psychosis then the patient is treated with psychiatric medications and the medical team will look no further for a cause. Also, if the ICU is the cause of the behavior then the ICU itself becomes the causative factor, not the responsibility of the healthcare team. “Sundowners’ syndrome” is another term that is heard frequently in the hospital setting. This condition is so named because the changes in behavior are seen most frequently during the evening and night hours. Research shows us that, this behavior is not related to the time of day but is a result of multiple factors (Litton, 2003). Medication,

pain, sleep cycles, change in vital signs, and disease processes can all contribute to changes in mental status. Certain aspects of the care of critically ill patients are unavoidable. Patients in the ICU are subjected to multiple invasive procedures, monitoring devices, sedative medications, interrupted sleep patterns, and increased noise levels. But, the ICU environment and the nurse-patient interaction can be modified to benefit the patient (Dyson, 1999). Nurses need to change their thinking, to be able to look for better ways to deliver care to critically ill patients that minimize the impact of the critical care setting on the patient's psychological health.

Lack of education on delirium assessment is also a problem. Nurses often have had little training in how to assess these patients. Cognitive assessment is not routinely included as a key component in nursing curricula and therefore has not been translated into nursing practice (Hare et al., 2008). Nursing assessment is focused more on the physical signs and symptoms of a patient than their cognitive functions. In the study done by Devlin et al. only one third of the nurses in the study had received any training about delirium (2008). If nurses do not have the knowledge of delirium then their practice will be based on tradition not evidence. With no education, nurses will not recognize delirium when it occurs and will not understand its significance for their patients.

Communication is also noted as a barrier to complete a thorough delirium assessment. Due to the nature of delirium, patients are not able to communicate their needs to health care personnel. If family members are not involved in the patient's care then the health care team will not have a clear understanding of the patient's status and needs. Communication can also break down between health care professionals. In a study by Spronk, Riekerk, Hofhuis, and Rommes (2009) nurses

also communicated poorly between each other, and did not relate complete information concerning delirium to the oncoming shift. Communication between physicians and nurses is also problematic. Without the assistance of a tool, such as the CAM-ICU nurses are unable to relate information to other nurses or physicians in a clear and objective manner. This is especially problematic for providing care to the ICU patient. In the ICU environment, the physician relies heavily upon the nurse for information and her assessment findings due to the 24 hour/day relationship she has with the patient (Inouye, Foreman, Mion, Katz & Cooney, 2001). Nurses must go further than the label of “confusion” for their patient, to be able to provide the patient the care they require.

A precise, easy to understand method of delirium assessment is needed for the nurse to be able to identify the patients at risk and intervene early enough to prevent further complications. There appears to be a missed opportunity for nurses to put prevention strategies in place well before “the horse has bolted” (Day, Higgins & Koch, 2008). Once the patient is delirious the health care team often must resort to medications to control the patient’s behavior and prevent the patient from harming themselves. Devlin and his team showed that the use of a validated delirium assessment tool, such as the CAM-ICU improves the ability of physicians and nurses to identify delirium (Devlin et al., 2008).

Theoretical Framework

The theory chosen as the framework for this study was Hildegard Peplau. She proposed a research methodology to guide development of knowledge from observations in nursing situations (Parker, 2006). She began her studies centring on the interactions of nurses and patients with her focus in the psychiatric setting (Parker,

2006). It is through these interpersonal relations between nurses and their patients that the true essence of nursing exists. Peplau defines nursing as a significant therapeutic, interpersonal process and as a human relationship between an individual who is sick or in need of health services, and a nurse especially educated to recognize and to respond to the need for help (Dyson, 1999). It was Peplau's belief that nurses must be specifically educated to meet their patients' needs. This is particularly important in the ICU setting, as the nurse often acts as a liaison between the complex medical environment and the patient. The thoughts of Peplau are relevant to the ICU nurse today, specifically to the desire to interact with patients in a therapeutic, positive manner while considering the environmental factors that contribute to intensive care unit psychosis or delirium, with the aim of recognizing this condition and taking steps to treat or avoid it (Dyson, 1999). The patient suffering from delirium is in a particularly vulnerable state. Nurses should be able to use the therapeutic nurse patient relationship to intervene for these vulnerable patients.

Delirium assessment will rely on the overlapping phases of the relationship as defined by Peplau and her therapeutic conversation interventions (Tappen & Williams, 2009). Peplau defined the phases of a relationship as: orientation, identification, exploitation, and resolution (Parker, 2006). Table 1 provides an overview of the stages of a relationship and the therapeutic strategies that can be used in each stage (Tappen & Williams, 2009).

Nurses must utilize the stages of relationship development and specifically, the orientation phase of relationship development with the delirious patient. When nurses use the strategies developed by Peplau then they will be able to relate to the delirious patient and be able to establish a therapeutic relationship. In each step of the

relationship development nurses must treat the patient as an individual and relate to the patient in a respectful and caring manner. For the delirious patient this requires skill and practice on the part of the nurse. Even the delirious patient has worth and is deserving of respect. The hampered communication of the delirious patient requires the nurse to have the knowledge and expertise to be able to relate to and accurately assess the patient.

Peplau believed that nurses practiced parallel roles of teacher, resource, counsellor, leader, technical expert, and surrogate in order to provide patient care (Dyson, 1999). In an average shift a nurse may function in each of these roles and they often overlap during any interaction with the patient. In the Intensive Care Unit environment the nurse must act as a surrogate and interpret the unfamiliar sights and sounds for the patient and encourage familiarity, orientation, trust, and security in the patient (Dyson, 1999). The delirious patient in particular is often unable to speak for themselves and requires the nurse to function in the surrogate role. In the role of surrogate the nurse will need to relate to the patient in a way that they can understand and interpret the patient's communication so the patients' needs are met. As a surrogate the nurse also interprets the complex world of the ICU in terms that the patient and the family can understand and relate to. This study will use Peplau's framework to define the relationship between the nurse and the delirious patient. Within this framework we can identify educational needs and barriers to the establishment of a therapeutic relationship.

Table 1 *Theoretical Framework*

Peplau's Phases of a Relationship	Therapeutic Interventions
Orientation - participant gains trust and begins relationship- Nurse introduces self and explains purpose of visit.	Protect from distractions, convey interest, use caring and respectful tone, calm approach, adapt communication to patient's cognitive ability, accept some misunderstanding, focus on the present, allow time for responses, and use nonverbal gestures and verbal encouragers.
Identification - patient begins to participate in relationship.	Share self, supporting touch, verbal support, acknowledge emotions and concerns. Refrain from demonstrations of impatience or frustration, or pointing out errors. Avoid confrontational statements, asking "why".
Exploitation - patient is engaged in relationship and derives value from.	Speak as equals, give recognition, express positive regard and affection, respect patient's individuality, listen for themes, encourage the patient to talk about feelings and concerns.
Resolution - Patient and nurse discuss termination of relationship.	Encourage talk about this relationship and others. Summarize and reminisce about relationship. Facilitate the patient's relationship with others, and saying good-bye.

Purpose and Rationale

The purpose of this study was to identify the perceptions of ICU nurses regarding delirium assessment and identify practices that are common in the assessment and treatment of the delirious patient. It is believed that ICU nurses have misconceptions concerning the patient who is suffering from delirium and that nurses base their practice on myths and traditional beliefs which are not accurate. This study will define the current practice of Critical Care Registered Nurses in different types of Intensive Care Units relating to delirium assessment. The perceptions of Intensive Care Unit nurses toward delirium assessment will also be explored. In order to develop a strategy to improve the accuracy of delirium assessment, the current practices and perceptions must be examined. The first step of designing an

intervention is to assess the present state of being. The information obtained from this study can be used to design education and to further the study of delirium assessment in the nursing community.

Chapter II

Review of the Literature

A comprehensive review of the literature was conducted on research articles for the last ten years utilizing the search terms of delirium, delirium assessment, acute confusion, and ICU psychosis. Cumulative Index to Nursing and Allied Health Literature and MEDLINE databases were used to facilitate the research. Selection criteria were articles that were published in English, which reported research studies and that included data measuring nurses' assessment of delirium.

A study conducted by a group of nurses in a Western Australian tertiary hospital examined the progress notes weekly over a four week period (Hare et al., 2008). The subjects studied were patients who were identified by nursing staff as being confused. The main objective of this study was to describe nurses' documentation of cognition and behavioral changes in patients in acute care settings (Hare et al., 2008). This study surveyed the medical records of 1,209 patients, with 183 (15%) patients being identified as confused (Hare et al., 2008). The word "confusion" was the most common description recorded in the medical record by nurses in this study. Only 36% of the 132 patients with documented behavioral or cognitive changes consistent with delirium had a diagnosis of delirium in their patient record. The remaining patients had descriptions of changes suggestive of delirium but no formal diagnosis of delirium had been recorded. This may have occurred in part because of an established dementia in 58 of the patients. This study concludes that education is needed for nurses to be able to recognize delirium early and be able to differentiate delirium from other diagnoses. A limitation of this study was that the

only method of data collection was the review of medical records. This study also revealed that no screening tool was used by healthcare professionals.

Another Australian study was completed over a six-month period in the medical ward of a large hospital in New South Wales (Day, Higgins & Koch, 2008). This study used the participatory research action method to explore ways that health practitioners might redesign their practice to include prevention, early detection and management of delirium in older people. The participatory action research (PAR) group was comprised of research academics and eight clinicians from the ward. This group met thirteen times over a period of five months. During the sessions, clinicians told stories about patients with delirium and then analyzed these stories to identify constraints to best practices. The Guidelines for the Prevention, Diagnosis and Management of Delirium in Older People from the British Geriatric Society and Royal College of Physicians was used as a central resource for the study. The first constraint that the group identified was the naming of delirium. Words such as confusion, psychotic, ICU psychosis, dementia, and delirium were used interchangeably. A lack of preparation and education of nurses in delirium assessment was seen as a cause for the mislabeling of patient's behavior. The second constraint of underreporting was identified by a review of charts for the patients discharged over a twelve month period. In the group of 1,606 discharges only 19 patients (1.2%) were identified in the medical record as having delirium. This is significantly lower than the 30% of all older patients admitted to the hospital. Other constraints were also identified such as the environment, poor communication between health care professionals, and a protracted admission process. As a result of this survey several changes were made in patient care practices at this facility. First of all, a delirium alert

protocol was designed to raise staff awareness when delirium could be identified and prevented. Environmental changes were also made in the physical space that was used for the patients suffering from delirium. This study did not use a particular tool for delirium assessment, but it was a recommendation of this group that an assessment tool such as the CAM be used to assess all older patients admitted to the hospital.

In a qualitative study conducted by Devlin et al. (2008) a paper/Web-based survey was administered to 601 staff nurses working in 16 intensive care units at 5 acute care hospitals in the Boston, Massachusetts area. The goal of this study was to identify current practices and perceptions concerning delirium assessment as compared to sedation assessment. The results showed that only 3% of the respondents ranked delirium as the most important condition to evaluate. The CAM-ICU tool was used by over 70% of the respondents and 37% of the nurses had received no training in delirium assessment at all. It was interesting that 60% of the nurses stated that their unit had a protocol that specified delirium assessment, but 53% of the respondents stated that they never or rarely assessed for delirium. The perceptions of the respondents may contribute to the low rate of delirium assessment in their practice. The group of respondents who had none or minimal training in delirium assessment were less likely to believe that delirious patients were rarely agitated and that patients with delirium usually have symptoms that are consistent over the entire nursing shift. The use of an assessment tool did not change their perception of delirium. This study also noted that nurses in community hospitals have a far lower frequency of delirium assessment as compared to teaching facilities. One of the potential reasons this study noted for the low frequency of delirium assessment in all facilities was the fact that screening has not yet been mandated by Joint Commission or Medicare. In the future

this may be another requirement that JCAHO places on hospitals. Delirium occurrence in the hospital setting will be seen as a “never event”. Therefore institutions will not receive reimbursement for the treatment of delirium that occurs in a hospital. The results of this study also highlighted areas for future research into educational strategies for delirium assessment and the effect those interventions will have on patient outcomes.

A study conducted by Inouye et al., (2001) used a different methodology, by comparing the delirium assessment of trained researchers to staff nurses. This research was conducted as part of a larger epidemiological investigation of hospitalized older patients. The participants were 1,587 consecutive patients who were admitted to the medical and surgical floors over a 20 month period. Out of the potential participants, patients were excluded if their hospitalization was less than 48 hours, if they were not able to be interviewed, if their physician declined participation, or if they had been enrolled in a previous study. Patients were interviewed within 48 hours of admission to establish a baseline using the CAM, modified Blessed Dementia Rating Scale, and Mini Mental Status Exam. Then nurses were interviewed to determine their own findings with each patient. The nurses’ ratings of delirium were based on their own observations during routine care without formal cognitive testing. The assessment and findings of the staff nurse were then compared to the researcher’s ratings. The sensitivity of nurse ratings for delirium using the CAM criteria was overall 19.4% compared to that of the researchers. This data shows that nurses in this study were unable to identify delirium in the majority of patients.

Four independent risk factors were identified as contributing to the under recognition of delirium by nurses. Hypoactive delirium significantly decreased a

nurses' ability to recognize a patient as delirious. Inouye et al. also noted, that in other studies nurses tended to label patients as delirious most often if their behaviors interfered with nursing care. Patients that were exhibiting signs of hypoactive delirium such as disorganized thinking, inattention, and memory impairment were the least likely to be identified. Also, if a patient is greater than 80 years of age or has vision impairment, nurses have difficulty identifying delirium. In these groups, nurses may have difficulty assessing the patient and may also label observed delirious behaviors as normal for that population. Patients who were admitted with dementia as a preexisting condition were also difficult for staff nurses to assess, as nurses may not be able to differentiate dementia from delirium (Inouye et al., 2001).

The researchers in this study also found that different nurses ranked the same patient differently. This was attributed to how well the individual nurse knew the patient and how much experience they had working with elderly patients. Nursing turnover in this facility was noted to be relatively high at the time of the survey, and this may have contributed to the lack of experience and knowledge of the nursing staff. The results from this study showed that despite prompting by trained researchers, nurses recognized delirium in only 19% of the observations overall and in only 31% of patients who were identified by the researchers as being delirious. This study demonstrated that additional education is needed in delirium assessment for nurses.

Another study was conducted by Inouye et al., (2005) using a chart based instrument to identify delirium in 919 older hospitalized patients. The goal of this study was to validate a chart based method for identification of delirium as compared to a direct interviewer assessment using the Confusion Assessment Method (Inouye et

al., 2005). Trained nurses, who were blinded to all interview ratings, were used to abstract data from the chart of patients 70 years of age and older who were admitted to the medical service of Yale New Haven Hospital over a three year period. Patients were excluded if they were not able to participate in the interview, were hospitalized for 48 hours or less, were included in the earlier study, or refused consent. Interviews of the selected patients were conducted daily until discharge using the Mini Mental Status Exam, Digit Span Test, and CAM rating. The chart based instrument was created with the goal of having maximum sensitivity for identification of delirium. Nurses were trained to look for any term that may be related to delirium along with acute onset of behavioral changes to confirm the diagnosis of delirium. Overall, 12.5% of the patients in the study population were rated as delirious according to the CAM interview rating. Out of the 115 patients identified as being delirious by the interview, only 85 of those were determined to be delirious according to the chart audit. The following factors were associated with incorrect chart identification of delirium: age greater than 80, male, nonwhite, hearing or vision impairment, dementia, education less than 12 years, and hypoactive delirium. The most common reason for a false-negative chart rating was lack of documentation of delirium symptoms. If documentation in the medical record is a reflection of the assessment of the patient, then patients with delirium are not being adequately diagnosed in the hospital setting. This study also noted that the chart based instrument was not appropriate to be used for individual patients, but is an adequate method to identify delirium for the purpose of data collection.

In a study by Ely et al., (2004) a survey was administered to 912 healthcare professionals: 753 physicians, 113 nurses, 13 pharmacists, 12 physician assistants, 8

respiratory therapists, and 13 other health care professionals. The aim of this research was to assess the healthcare community's beliefs and practices regarding delirium in the intensive care unit. The results of this study showed that 68% of the respondents believed that 25% of mechanically ventilated patients experienced delirium, although prior studies have shown the rate as high as 87%. There was a definite disconnect in the group between beliefs and practice with the assessment of delirium. Although, 92% of the healthcare professionals thought delirium was a serious problem in the intensive care, only 40% reported routinely screening for delirium. Seventy nine percent of the respondents reported that delirium required an intervention, with antipsychotic drugs and sedatives being the most common drugs chosen. The assessment of delirium was a definite problem for the respondents. For those healthcare professionals who monitored delirium a variety of tools were used that have not been proven to be effective for this use. The CAM-ICU was the least frequently used tool. The researchers identified several limitations of their study. As a survey, the instrument was limited to self-reported information from the respondents, and since responses to each question were not required all questions were not answered. This study also has limits in its application to the nursing community as the majority of the respondents were physicians and there was not equal representation of the entire healthcare team.

A study was conducted in the Netherlands focused on a ten bed ICU which receives a mix of medical and surgical patients (Spronk, Riekerk, Hofhuis & Rommes, 2008). Only patients who were in the ICU longer than 48 hours were included. Patients were excluded who had pre-existing cognitive dysfunction, a language barrier, deafness, an active psychiatric disorder, or a severe neurological

disorder. Over a three month period ICU physicians and nurses were asked to assess patients daily between 9:00 and 10:00 am, as to whether the patients were suffering from delirium. They did not use a specific tool, but relied on their routine assessment skills to obtain their clinical impression. During this same time frame, patients were also evaluated daily by trained delirium research nurses using the CAM-ICU. The evaluation results were not disclosed to the bedside nurses. A total of 46 patients were included in the survey. Of the 425 observations completed 50% of those demonstrated that the patient was delirious according to the CAM-ICU. Only 28% of the delirious days were recognized by the physicians and 34.8% of those were identified by the nurses. The results of this study showed that even with the potential “Hawthorne effect” of delirium researchers in the unit the ICU team was not capable of identifying patients with delirium.

Chapter III

Method

Subjects, Sampling, Setting

A paper and Web based survey tool was used that was developed from a tool used by Devlin et al. when a similar survey was conducted in the Boston area (2008). The survey was distributed to RN's working in adult ICU's. Paper and web based surveys were utilized. Web based surveys were sent using the snowball method and respondents were used to recruit additional participants. A letter of explanation was also sent with the survey. Respondents were recruited using the snowball technique from registered nurses employed in the southern piedmont area of North Carolina. A copy of the survey can be found in Appendix A

Instrument

The survey was originally developed through a deliberate series of steps including item generation and construction and then pilot testing and clarification. A panel of experts with experience in delirium assessment and an intensivist generated the initial survey items. These initial survey questions were used to devise a semi-structured nursing interview to identify additional items and responses for the survey. Interviews were conducted with ten critical care nurses at Tufts Medical center and responses were incorporated into the survey instrument. This draft survey was then forwarded to U.S. experts in ICU delirium and sedation (two physicians, two nurses, and two pharmacists). These experts were asked to comment on the relevance and clarity of each survey item, the distinctiveness of response items, and the ease of completing the survey. The feedback obtained from this group was then used to refine the instrument further. The survey was then distributed to a pilot group of six ICU

nurses at Tufts Medical Center who were not involved in the initial survey. This group was asked to comment on the clarity and distinctiveness of each response item. The intrarater reliability of the survey instrument was measured by distributing the survey to a pilot group of ten nurses who had not previously been involved in the instrument validation process. These nurses completed the survey twice at an interval of at least two weeks. The resulting agreement between the answers provided during these two attempts was 86 %.

The survey was designed to compare the assessment of sedation to the assessment of delirium in different practice settings. Sedation assessment is widely recognized in the ICU setting especially for the ventilated patient. The majority of critical care nurses report routinely using a validated tool to evaluate sedation in their patients (Devlin et al., 2008). The Society of Critical Care Medicine recommends the routine assessment of sedation in all ICU patients (Devlin et al., 2008). Sedation assessment is also the first step in the assessment of delirium. The CAM-ICU tool utilizes the Richmond Agitation and Sedation Score to rate the sedation of the ICU patient. The information of this score is used to determine the patient's delirium score.

The survey instrument has not been copyrighted. Permission was obtained from John W. Devlin to use the tool developed by his group. A pilot of the survey was conducted within CMC-Mercy hospital by distributing the survey to a group of five nurses within the facility. This group included experienced critical care nurses in the facility and their feedback was used to further refine the survey.

Ethics

All responses were anonymous, no incentive or compensation was offered to survey responders. Costs associated with the survey were minimal. Consent was

understood with the return of the survey. Permission was obtained through the Institutional Review Board at Gardner-Webb University and a copy is found in Appendix D. A cover letter was included (Appendix B) with the survey.

Chapter IV

Results

Results were obtained from 20 respondents during a period of 3 weeks. The demographic data is outlined in Tables 2, 3 and 4. The majority of respondents were under 50 years of age with only 5% of the group being fifty or older. A baccalaureate degree was held by 55% of the respondents. The years of experience in the group varied from 1 to 15 years of critical care work history. The group's average years of ICU experience was 5.65 years. The Medical ICU was the most frequent type of ICU that the respondents worked in with 50% of the nurses working in this type of unit the majority of the time.

Table 2. *Educational Preparation of Participants*

Nursing Degree	%
Diploma	5%
Associate	30%
Baccalaureate	55%
Masters	10%

Table 3. *Age of Participants*

Age	%
20-29	35%
30-39	25%
40-49	35%
50 or older	5%

Table 4. *Type of Unit*

Type of ICU	%
Medical	50%
Coronary	20%
Surgical	15%
Other	15%

Almost all respondents indicated that their ICU had a sedation protocol, with only one nurse indicating that he or she was unsure if their facility had such a protocol. Out of the 19 respondents that had a sedation protocol in their facility, eight of those were unsure if the frequency of sedation assessment was specified and 4 nurses responded that the protocol did not specify a frequency. It was interesting that even though nurses ranked delirium assessment low in their priority list they also reported that they assessed delirium frequently or always 60% of the time. This was not as frequent as the reported frequency of sedation assessment which was reported as being frequently or always completed by all nurses. When the frequency of assessment of level of sedation and presence of delirium were compared it was obvious that nurses were assessing their patients for level of sedation more frequently than they were assessing for delirium. Eighty percent of nurses responded that they were assessing for sedation levels four times or more during their twelve hour shift. Only 50% of nurses assessed for delirium four times or more per shift.

Nurses were asked to rank the level of importance of different patient conditions they would routinely evaluate over the average shift. Altered level of consciousness was rated as the most important assessment to be completed in the average shift with 45% of nurses rating this as first and 50% of the respondents rating it as second in priority. The second most important assessment to be completed was the assessment for improper placement of invasive devices which was rated as top priority by 40% of the respondents and second in priority by 30%. Pain assessment was also ranked as important with 25% of nurses rating it as first or second in importance. The presence of delirium was ranked as least important to be assessed by

40% of the nurses along with the assessment for the presence of agitation which was also ranked as least important by 40% of the respondents.

Barriers to delirium assessment were ranked according to importance by nurses. The respondents were asked to rank the items on a scale of one to ten with one being the factor that most interfered with their ability to perform a delirium assessment. The top ranked barrier to delirium assessment in the group surveyed was the difficulty of interpreting the assessment in the intubated patient. This was ranked as the top barrier by 50% of the nurses. The second ranked barrier was the inability to complete the assessment in the sedated patient. This was ranked as the top concern by 40% of the respondents. These results are similar to findings in Devlin's study (2008).

Nurses were asked to report how frequently they used specific tools that are often used to evaluate delirium. Each method that was used was compared for frequency of use. Routine assessment methods such as ability to follow commands and evaluation of agitated related events were also included. Space was also allotted for nurses to write in a different method that they may use, but no respondents wrote in any additional method for assessing delirium. The most frequent method of delirium assessment that was reported was the ability of the patient to follow commands. 80% of nurses reported using this method at least four times in a shift followed by the evaluation of agitated related events which was cited by 65% of nurses as being evaluated at least four times a shift. The CAM-ICU was the most frequently used specific tool being utilized by 50% of the respondents at least once in a shift. This is encouraging in that the CAM-ICU is the most widely recognized tool for delirium assessment. The least used method of delirium assessment was the psychiatry consult which was used only rarely.

The amount of education that nurses had received in delirium assessment was compared to the education received on sedation assessment. Respondents reported the type of education they had received in sedation and delirium assessment. Sixty percent of the nurses surveyed had received no education on delirium assessment. All nurses reported receiving education at least in the nursing unit about sedation assessment. Seventy percent of respondents had received in-hospital lectures and 45% had attended an out of hospital lecture attaining CEU's on sedation assessment. Only 25% of the nurses received education on delirium assessment at the unit level, 5% received in-hospital lectures, and 20% had received education at an out of hospital education session. There is evidently a wide educational gap between education in sedation and delirium assessment.

The final item on the survey used a Likert scale to determine the nurse's perception toward delirium and delirium assessment. The statements "delirium is challenging to assess in ICU patients", "delirium is a problem that requires active interventions on the part of care givers", and "delirium is a common response to the ICU environment" were most agreed with by nurses with 85% or higher of respondents agreeing with the statements. These statements are all valid according to the evidence and nurses are correct in recognizing the significance of delirium in the ICU environment. The group surveyed for this study was divided on whether delirium is an under diagnosed problem. The survey also identified misconceptions that nurses have related to delirium. Results of this study show that 45% of the respondents agree with the statement whereas 45% are either unsure or disagree with the statement. The statement that "delirium is associated with higher mortality" also

was not recognized as true by respondents with 40% of nurses disagreeing with the statement.

Chapter V

Discussion

The results of this study differ than expected in several different ways. First, looking at the demographic data the age of nurses is younger than would be expected for this group. According to data from the Census Current Population Survey, the average age of hospital RN's has increased by 5.3 years to an average age of 41.9 years (Buerhaus, Staiger & Auerbach, 2000). The average age of the respondents of this survey was 35 years of age. With the small sample size of 20 RN's this data is not significant for the nursing population of the area. The survey should be repeated to include a larger sample to clarify the difference in expected age of respondents.

To be able to establish the perceptions of nurses toward delirium, RN's were asked to rank the level of importance of different assessments that critical care nurses complete. Altered level of consciousness (LOC) was clearly the top ranked assessment that RN's complete. This ranking is understandable since level of consciousness is the first assessment that nurses are taught to complete for their patients. Level of consciousness is also the simplest assessment to complete. Nurses can determine LOC by talking with their patient and asking them a few simple questions. Ranked second in importance, is the assessment of invasive devices. Critical care units use multiple invasive devices for the monitoring and treatment of patients. Central lines, endotracheal tubes, and feeding tubes are commonplace. If any of these devices are not placed properly, patients can suffer complications. RN's must be vigilant to make certain that patients are receiving the proper treatment and that no harm comes to them through the use of invasive equipment. Delirium assessment was

ranked as the least important assessment to complete by the respondents in this survey with 40% of nurses ranking it as the least important assessment to complete. This finding goes against all evidence that has been reported on the importance of delirium assessment to the outcomes of patients. Obviously if nurses attach a low priority to this type of assessment then they are unlikely to complete it in the busy environment of the ICU. Assessing for level of consciousness and proper placement of invasive devices are definitely important, but delirium assessment also needs to fit into the process of assessing critically ill patients.

All nurses in the survey responded that their facility had a sedation protocol, with the majority of respondents knowing how often the assessment should be completed. Delirium assessment was not completed as frequently. These findings are similar to the findings by Devlin et al., (2008) in that delirium assessment was not performed as frequently as sedation assessment. The tools that were used to assess delirium were also surveyed. As expected the most common methods were the simplest techniques of assessing the ability to perform commands or assessing for agitated related events. These methods are already a part of the critical care nurses' routine assessment. When a specific tool was used the CAM-ICU was the most common method used. This finding was expected as the CAM-ICU is the most widely recognized tool used to assess for delirium worldwide (Devlin et al., 2008).

The survey also examined education that the respondents had received concerning delirium assessment as compared to sedation assessment. Lack of education has been proposed as a limiting factor in delirium assessment. Nurses are seldom educated about delirium in their nursing program and education within hospitals has been limited (Hare et al., 2008). The majority of nurses surveyed (60%)

had received no education on delirium assessment whatsoever. With the potential impact on patient's mortality that delirium imposes nurses require at least a basic understanding of delirium. As nurse educators we will need to address this need for students of nursing as well as those nurses that are already working in the health care setting.

Nurses in this survey identified several barriers to completing delirium assessment. The inability to complete an assessment in the intubated and sedated patient were seen as the most significant barriers to completing the assessment. This is indeed difficult to complete without additional training. If a patient is unable to speak or is too sedated to follow commands then assessing their cognitive function is almost impossible. The CAM-ICU is able to address these concerns for nurses. It is specifically designed to use with patients that cannot speak and is simple enough for the nurse to complete with patients that are not completely alert.

Perceptions about delirium have a tremendous impact on the importance that nurses will attach to delirium assessment and how they will go about prioritizing their workflow in the ICU. Respondents to this survey felt that delirium was difficult to manage, required active interventions to treat, and was a common response to the ICU. This survey also revealed several misconceptions about delirium in the ICU. Respondents did not agree with the true statements about delirium that delirium was an under diagnosed problem and that delirium is associated with higher mortality. The evidence clearly shows that delirium is missed the majority of the time. Multiple studies have demonstrated that delirium is often not recognized by nurses and other health care professionals (Inouye et al., 2001). Delirium has also been clearly linked with increased mortality, longer hospital and ICU stays, and increased costs

(Cole et al., 2008). Nurses in this study did not realize the impact that delirium can have on patient outcomes.

Implications for Nursing

The results of this study clearly show that nurses need additional education on delirium to correct their misconceptions and provide accurate assessment to critically ill patients. Education will give them the tools that they need and help them base their practice on evidence not tradition. The first step to take will be the education of current nurse educators. As educators we have the responsibility to keep current with the newest evidence in nursing. Students are completely dependent on their teachers to give them the most complete and up to date information possible. An education program will need to be designed with the understanding of current misconceptions and educational needs for today's nurses. This education must also include a tool that is practical to use in the high intensity environment of the ICU. Nurses must have a tool that is easy to understand and use. The CAM-ICU has been widely used throughout the world (Devlin et al., 2008). It is certainly worthy of consideration for any facility to implement. Each facility will need to determine for themselves which is the best tool for their hospital.

With the ageing population these issues will become even more important as our patients will be older and more susceptible to cognitive issues. Delirium has been clearly shown to be a more significant problem for the patient over 65 years of age (Day et al., 2008). The impact of increasing number of older patients will have a tremendous effect on our health care system. Health care costs increase every year, and are a concern for everyone in the United States. In 2008 2.2 trillion dollars was spent in total national health care expenditures (Fisher, Bynum & Skinner, 2009).

These numbers are astounding. It is understandable that our government is working toward health care reform when 21.8% of total government expenditures are spent on health care (Fisher et al., 2009). With the ageing of the population and rising health care costs a “perfect storm” may result. If delirium is not assessed properly and interventions done in a timely fashion then the costs for these patients will be devastating. Our health care system may not recover from that type of insult. Nurses are in the best possible position to make a positive impact on these patients. It is our responsibility as health care professionals.

The topic of delirium is a serious issue for hospitalized patients and assessment is only the first step in treating this patient. Assessment was the focus of this study. Further studies are needed to look at the best ways to educate nurses and to determine how this education of nurses can impact patients. This study was limited by the small sample size.

Implications for Future Research

Delirium is a complex problem that is difficult for ICU nurses to assess properly. Nurses will require extensive education and support to be able to care for these patients properly. The results of this study highlight the need for further education on methods of delirium assessment, frequency of assessment, and overcoming barriers to completing this assessment. The data clearly shows the impact that delirium can have on the ICU patient. This information should empower the nursing community to study this topic further and to develop strategies to assist the bedside nurse to overcome barriers and develop techniques to improve outcomes for our patients.

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Appendix A

Nursing Practices and Perceptions of Delirium* in the Intensive Care Unit

*Delirium= acutely changing or fluctuating mental status, inattention, disorganized thinking, and an altered level of consciousness.

1. What is your age? _____ years
2. What is your HIGHEST nursing degree? (please check)
 - Diploma
 - Associate
 - Baccalaureate
 - Masters
3. How many years have you worked in an ICU setting? (in any facility) _____ years
4. How many hours do you work per week on average in the ICU? _____ hours
5. Which type of ICU do you primarily work in?
 - Medical
 - Coronary
 - Surgical
 - All Three

6. Of the following potential conditions that may occur in an ICU patient, please **RANK** (1-5) the order of importance in which you feel they should be evaluated by nurses over the average shift by placing a '1' beside the factor that you think is **MOST** important to evaluate and a '5' beside the factor that you think is **LEAST** important to evaluate.

	RANK
Altered level of consciousness	
Improper placement of invasive devices	
Presence of agitation	
Presence of delirium	
Presence of pain	

7. My ICU has a sedation protocol/guideline. (please circle) YES NO
NOT SURE

8. Does your ICU sedation protocol specify a frequency by which delirium should be assessed?

(please circle) YES NO NOT SURE

9. For the ICU patients whom you care for, how often do you evaluate patients for level of sedation and presence of delirium? For example if you usually evaluate for the presence of delirium frequently then place a check mark beside “presence of delirium” in the “frequently” column.

	Never	Rarely	Frequently	Always
Level of sedation				
Presence of delirium				

10. For the ICU patients for whom you **DO** evaluate level of sedation and /or the presence of delirium, please indicate the frequency per every 12- hour shift that you conduct each evaluation. For example if you usually evaluate for the presence of delirium twice per shift then place a check mark beside “x 2-3” in the “Presence of Delirium column.”

Per 12 hour shift	Level of Sedation	Presence of Delirium
X 1		
X 2-3		
X 4-6		
X > 6		

11. For the ICU patients for whom you evaluate the presence of delirium, please indicate how frequently you use each of the following in your delirium assessment. Note: Please indicate frequency per every 12-hour shift. If you do not assess for delirium in your ICU patients, please indicate “never use” or “never heard of” under each column.

Per 12-hour shift	Ability to follow commands	Agitated Related events	Confusion Assessment Method- ICU (CAM- ICU)	Intensive Care Delirium Screening Checklist	Psychiatry Consult	Other (please specify)
Never heard of						

Never Use						
Rarely						
X 1						
X 2-3						
X 4-6						
X >6						

12. From the following list of factors that might prevent you from evaluating your patient for the presence of delirium, please RANK the items from 1-10 in order of importance by placing a number “1” beside the factor that you think is MOST common or significant down to a “10” by the factor that has the least impact on your ability and willingness to perform delirium assessment.

	RANK
Delirium assessment tools are too complex to use	
Difficult to interpret in intubated patients	
Do not feel confident in my ability to use delirium assessment tools	
Do not feel that using delirium assessment tool improves outcome	
Inability to adequately document delirium assessment	
Inability to complete assessment in the sedated patient	
Not enough time to perform assessment (too time consuming)	
Nurses are not required to screen for delirium in my ICU	
Physicians already complete delirium assessments	
Physicians do not use my assessment in their decision-making	

13. I have received education regarding ICU sedation assessment and ICU delirium assessment by the following means: (Please insert check mark in all applicable boxes below)

	Sedation Assessment	Delirium Assessment
Have never received education		
Live, out-of-hospital CE lecture		
Live, in-hospital lecture of inservice delirium assessment tools		
Informal teaching in the unit		
Other: _____		

14. Please indicate your agreement with the following statements that pertain to delirium in the ICU by placing a check mark in the column that most closely aligns with your agreement.

	Strongly agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Strongly disagree
Delirium is an under diagnosed problem					
Delirium is a common response to the ICU environment					
Delirium is a problem that requires active interventions on the part of care givers					
Delirium is associated with higher patient mortality					
ICU patients with delirium are rarely calm					
Initiation of antipsychotic medication should be the initial intervention for all patients with delirium					
Delirium is challenging to assess in ICU patients					

Patients with delirium usually have symptoms that are consistent over the entire nursing shift.					
---	--	--	--	--	--

Is there anything else you would like to tell us about delirium assessment in the ICU setting?

THANK YOU FOR COMPLETING THE SURVEY!

Results of this research will be made available at the completion of this study.

Appendix B
(copy of letter sent with survey)

Jackie Meunier RN, BSN, CCRN
3225 McLendon Road
Matthews, NC, 28104

June 3, 2010

Dear Registered Nurse,

Enclosed is a survey to determine the practices and perceptions of ICU nurses at CMC-Mercy toward delirium assessment. This survey is being used as part of my graduate studies in nursing education at Gardner-Webb University.

Please answer each question to the best of your abilities and return the survey to me in the self-addressed stamped envelope provided or via email within one week.

This survey is completely anonymous. The information obtained from the survey will be aggregated so that a person's answers cannot be identified. The final results will be made available to all participants upon completion of this study.

The return of the survey will constitute your consent to participate in this survey. Thank you for your participation and your contribution to nursing research. Your prompt return of the completed survey will be greatly appreciated.

Sincerely,

Jackie Meunier RN, BSN, CCRN

Appendix C

RASS and CAM-ICU Worksheet

Step One: Sedation Assessment

The Richmond Agitation and Sedation Scale: The RASS*

Score	Term	Description	
+4	Combative	Overtly combative, violent, immediate danger to staff	
+3	Very agitated	Pulls or removes tube(s) or catheter(s); aggressive	
+2	Agitated	Frequent non-purposeful movement, fights ventilator	
+1	Restless	Anxious but movements not aggressive vigorous	
0	Alert and calm		
-1	Drowsy	Not fully alert, but has sustained awakening (eye-opening/eye contact) to <i>voice</i> (≥ 10 seconds)	} Verbal Stimulation
-2	Light sedation	Briefly awakens with eye contact to <i>voice</i> (<10 seconds)	
-3	Moderate sedation	Movement or eye opening to <i>voice</i> (but no eye contact)	
-4	Deep sedation	No response to voice, but movement or eye opening to <i>physical</i> stimulation	} Physical Stimulation
-5	Unarousable	No response to <i>voice or physical</i> stimulation	

Procedure for RASS Assessment

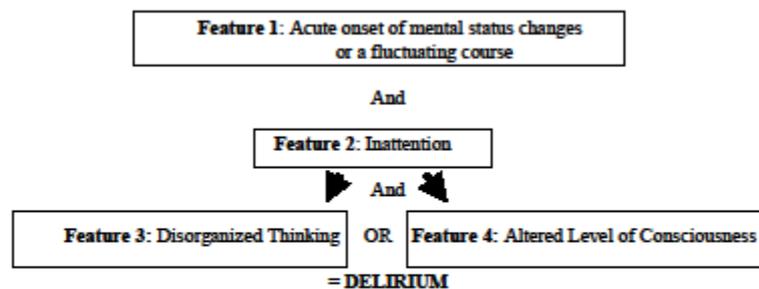
1. **Observe patient**
 - a. Patient is alert, restless, or agitated. (score 0 to +4)
2. **If not alert, state patient's name and say to open eyes and look at speaker.** (score -1)
 - a. Patient awakens with sustained eye opening and eye contact. (score -1)
 - b. Patient awakens with eye opening and eye contact, but not sustained. (score -2)
 - c. Patient has any movement in response to voice but no eye contact. (score -3)
3. **When no response to verbal stimulation, physically stimulate patient by shaking shoulder and/or rubbing sternum.**
 - a. Patient has any movement to physical stimulation. (score -4)
 - b. Patient has no response to any stimulation. (score -5)

If RASS is -4 or -5, then **Stop** and Reassess patient at later time

If RASS is above -4 (-3 through +4) then **Proceed to Step 2**

*Sessler, et al. AJRCCM 2002; 166:1338-1344. Ely, et al. JAMA 2003; 289:2983-2991.

Step Two: Delirium Assessment



Last Updated 05-23-05

1

Obtained from <http://www.icudelirium.org/>

Appendix D