THESIS

NURSE ATTITUDES TOWARD CARING FOR OLDER PATIENTS WITH DELIRIUM

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ABSTRACT

NURSE ATTITUDES TOWARD CARING FOR OLDER PATIENTS WITH DELIRIUM

Delirium, which is prevalent among older hospitalized patients, is a disease that may be prevented or reversed with appropriate care. However, the consequences of not adequately treating delirium in a growing older population can be enormously costly to patients, families, nurses, and the greater healthcare system. Effective delirium care is multifactorial. An important aspect of care is nursing attention to changes in the patient and follow-through with timely treatment. The purpose of this study was to examine nursing staff attitudes in caring for older patients with delirium before and after an educational training on delirium. The study took place at a community hospital and included participants from the medical, orthopedic, and surgical units. Along with demographic questions, the survey questions and several open-ended questions asked participants about their attitudes toward: (a) general care for patients 65 years and older, (b) perceived knowledge, competence, and confidence in caring for older patients with delirium, (c) time and support in caring for older patients with delirium, (d) personal impacts in caring for older patients with delirium, and (e) personal beliefs regarding aging and health. The results of the survey showed significant positive change with two identified components of care: (a) knowledge, competence, and confidence and (b) ability to identify delirium and understand its consequences. Several personal impacts, such as feeling overwhelmed, also positively changed after the intervention. However, participants reported a continuing need for more time and support in caring for older patients. Philosophies of aging were not changed. The survey may be a beginning for further development in assessing nurse attitudes toward care for older patients with delirium and the contribution of personal impacts and beliefs to that care.

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INTRODUCTION

In 2000, there were an estimated 35 million people aged 65 years and older in the United States, or almost 13% of the total population. By 2030, it is projected that one in five people will be age 65 or older (Federal Interagency Forum on Aging-Related Statistics, 2006 in Scherer, Bruce, Montgomery & Ball, 2008). The size of the older population is expected to double over the next 30 years, growing to 71 million by 2030. As the aging population in the United States increases, the need for expanded hospital care for older adults will also grow. Further, and most important for this research project, the prevalence of delirium among this population at hospital admission ranges from 14% to 24% and the incidence of delirium developing during a hospital stay may climb to 56%, especially among post-operative patients (Dahlke & Phinney, 2008; Hare, McGowan, Wyanden, Speed & Landsborough, 2009; Inouye, 2006). Up to 87% of older patients with a pre-existing dementia may develop delirium (Patel et al., 2009).

Yet, hospital caregivers (i.e. RNs, certified nursing assistants, physicians, etc.) may not be adequately trained or experienced to identify the signs and symptoms of delirium and to effectively initiate appropriate treatment in order to reduce the deleterious effects of delirium. It is important to understand how nurse attitudes toward caring for older patients influence delirium care in the elderly population. In turn, how are nurse attitudes and care practices affected by knowledge, training, time, support, and other resources for delirium care? The purpose of this study is to understand current nurse attitudes and changes in nurses' knowledge and attitudes toward working with older adults and with those who have delirium after nurses complete an educational intervention.

Rationale for Research Study

The effects of not addressing delirium in hospital patients have been linked with several adverse outcomes including: prolonged length of hospital stay, increased morbidity and mortality, functional decline, need for nursing home placement, and increased healthcare costs (Dahlke & Phinney, 2008; Wang & Mentes, 2009). At the same time, delirium represents one of the most preventable adverse events among older adults during hospitalization. Clinical trials provide compelling evidence that 30 to 40% of delirium cases may be preventable (Inouye, 2006). If not prevented, however, delirium may be reversible if properly assessed and promptly treated (Rogers & Gibson, 2002).

Care of patients with delirium can account for more than 49% of all hospital days (Inouye, 2006). Delirium complicates hospital stays for at least 20% of patients 65 years of age or older and increases hospital costs by $2,500 per patient, so that about $6.9 billion of Medicare hospital expenditures are attributable to delirium (Inouye, 2006). Also, substantial costs accrue after hospital discharge due to the need for institutional care and rehabilitation services as well as formal and informal homecare.

The mortality rates among hospitalized patients with delirium range from 22 to 76%, as high as the rates among patients with acute myocardial infarction or sepsis. The one year mortality rate associated with cases of delirium is 35 to 40% (Moran, 2001). Consequently, due to the devastating long-term effects of delirium, recognition and effective treatment of delirium is paramount for the health of older adults and for the strength of the healthcare system.

Because nurses are front-line caregivers, their regular, systematic observation of patients' mental status gives opportunity to recognize and treat new or pre-existing cognitive impairments. Early identification and treatment interventions for delirium are best accomplished by the nurses

at the bedside, who have the most consistent contact with patients (Lacko, Bryan, Dellasega, & Salerno, 1999). Nurses are in a powerful position to recognize and manage delirium. They may be able to observe key delirium symptoms such as inattention as well as fluctuation and altered level of consciousness. Nurses are positioned to interact with family members and are often the first professionals to contact the physician to assess for causes of symptoms and to discuss a management plan (Fick, Hodo, Lawrence & Inouye, 2007).

Physicians often do not identify delirium in their hospitalized older patients. Because they typically see patients for only brief periods, they rely heavily on nurses to observe concerns such as mental status changes. However, delirium is often unrecognized by both physicians and nurses because of its fluctuating nature, its overlap with dementia, the lack of formal cognitive assessment protocols, and under-appreciation of its clinical consequences (Inouye, 2006). The inability of nurses, who have 24-hour contact with patients, to identify delirium is of great concern (Inouye, Foreman, Mion, Katz, & Cooney, 2001).

Patient behaviors are often not recognized by the nurse as delirium until the patient becomes agitated or significantly confused. Nurses frequently fail to identify the hypoactive form of delirium because these patients tend to cooperate with care (Inouye et al, 2001; Palmeteer & McCartney, 1985). Researchers have demonstrated that nurses are not knowledgeable about cognitive assessment, dementia, or delirium. In one study only 35% of nurses passed a delirium knowledge test and most did not consider cognitive testing to be a high priority (Inouye et al., 2001). Researchers have shown that nurses are not aggressive or accurate in screening for delirium with at-risk patients (Lacko et al., 1999). Fick and associates (2007) discovered that although nurses had a high level of general gerio-psychiatric nursing knowledge,

they exhibited difficulty in correctly identifying delirium superimposed on dementia (DSD). Only 21% of nurses were able to correctly identify the hypoactive form of DSD.

Consequently, although nurses are in key positions to observe patients' behaviors and cognitive changes, nurses are often unclear about the definition, causes, and courses of delirium and lack confidence in identifying delirium and setting in motion interventions to treat and manage delirium. Also, the time-consuming work of identification, treatment, and management may not be encouraged or supported by supervisory and administrative staff. As a result, older adults are at risk for further decline and failure when presenting with signs and symptoms of delirium.

Theoretical Foundation Guiding the Study

Change theory, as proposed by Lewin (1974), and the theory of situated clinical reasoning by McCarthy (2003) contributed to the theoretical framework that guided this study. The integration of these two theories provided a multidimensional approach to examining nurses' current knowledge, attitudes, and philosophy of aging and to identifying changes in these attributes after an education and training intervention.

According to change theory (Lewin, 1974), three key concepts are important to guiding change in a workplace environment. The first concept, which is unfreezing, focuses on awareness of current attitudes, beliefs, and behavior. For example, what are nurses' beliefs regarding older patients' health, what are their attitudes toward caring for older patients with delirium, and how do these attitudes affect care for delirious patients? Reorganizing is the second concept and includes: applying education, using tools, and implementing support mechanisms. Finally, refreezing addresses improved assessment and delirium care and institutional change. This can be detected by change in nurses' knowledge, competence, and confidence in care,

beliefs about the aging patient, utilization of tools for care, and recognition of increased support for carrying out effective care.

Lewin's change theory has been resurrected and modified as a framework for implementing organizational changes in the hospital setting (Barnes, 2004; Suc, 2009). The theory is used to understand human behavior as it relates to change and patterns of resistance to change. It guides in identifying factors that impede change as well as forces that promote or drive change. Buy-in and participation by nurses are essential in any change process. Insight into attitudes before and after instituting changes is a step toward understanding what supports successful participation. This survey helps with developing an awareness of the current culture regarding delirium care as well as assessing change in attitudes following a delirium intervention.

Additionally, McCarthy's (2003) qualitative study and analysis of nurse interviews regarding philosophies of aging, which was grounded in the theory of situated clinical reasoning, is applicable to this study. This theory proposes that behavior flows from philosophical perspective or beliefs about how life functions. Her hypothesis was that the wide variation in nurses' ability to identify delirium could in part be attributed to differences in philosophies on aging. For example, in her small study, McCarthy found that nurses who had a healthful perspective on aging seemed more competent and consistent in distinguishing between acute confusion and dementia in older patients than other nurses. Consequently, Lewin's theory of change and McCarthy's theory of situated clinical reasoning give a framework for considering nurses' attitudes and behavior in caring for older patients with delirium before and after an intervention.

LITERATURE REVIEW

Delirium

Delirium is a manifestation of the decreased reserve capacity of an older person's brain to adapt to acute stresses (Fretwell, 1990; Lacko et al., 1999). When vulnerable older people, who at hospital admission have factors that predispose them to failure in their body systems, are further exposed to precipitating factors, or insults such as surgery, medications, and disruption of sleep, their system is overwhelmed and delirium develops (Day, Higgins & Koch, 2008). Delirium presents itself as an acute, often fluctuating, change in mental status, plus inattention, and either disorganized thinking or an altered level of consciousness. It may last from a few hours to a few months or longer. Delirium may be the first or only presenting sign of an underlying medical problem (Hare et al., 2009).

According to DSM-V Diagnostic and Statistical Manual of Mental Disorders (2013), the signs and symptoms of delirium include: (a) disturbance of consciousness with reduced ability to focus, sustain or shift attention; (b) a change in cognition (memory, language, disorientation) or the development of a perceptual disturbance, not accounted for by a pre-existing, established or evolving dementia; (c) a disturbance that develops over a short period of time (hours to days) and tends to fluctuate during the course of the day; and (d) physical or laboratory findings that the disturbance is caused by the direct physiological consequences of a general medication condition, substance intoxication, or withdrawal or medication side effects. The manifestation of delirium may be confused with dementia or mental illness. Identification may be difficult as delirium can exhibit as one of three main variants: hyperactive, hypoactive and mixed.

The *hyperactive* variant exhibits as hyper-vigilance and is associated with agitation and hallucinations. Patients with this type of delirium are more likely to have the condition recognized and receive early intervention. However, hyperactive delirium can be more physically and emotionally challenging for nursing staff than its counterparts and can require significant time and energy resources. The *hypoactive* variant often presents as lethargy, drowsiness, and difficulty in focusing attention. Patients with this variant are often less disruptive to nurses' care schedules, and consequently, hypoactive delirium is more likely than hyperactive delirium to go unrecognized (Hare et al., 2009). In contrast to dementia, which is a chronic state of confusion, delirium is an acute state of confusion.

Recognizing Delirium in Older Hospital Patients

Besides being caused by multiple factors, delirium often involves a complex interrelationship between a vulnerable patient with predisposing factors and exposure to further challenges in the hospital setting (Inouye, 2006). Patients who are already highly vulnerable to delirium due to dementia and/or multiple coexisting conditions can develop delirium as the result of a relatively benign insult such as one dose of sleeping medication (Inouye, 2006). Patients who were not originally vulnerable may develop delirium only after exposure to multiple stressful impacts such as general anesthesia, major surgery, and psychoactive medications.

Interactions between factors within the individual and factors in the hospital environment may lead to development of delirium (Inouye & Charpentier, 1996; Rogers & Gibson, 2002). For example, Bowman (1997) found that patients who required emergency orthopedic surgery were nearly twice as likely to experience acute confusion as were patients who underwent anticipated and planned orthopedic surgery (Rogers & Gibson, 2002). On the other end of treatment, during

the post-operative recovery and rehab period, delirium may interfere with the patient's ability to cooperate with nursing interventions, such as improving mobility.

From nurses' perspectives on an orthopedic unit, delirium is a regular occurrence and is much worse in the evening and at night, a phenomenon often referred to as "sundowning." They perceived that delirium tended to develop the day following surgery. In their estimation, delirium tended to resolve in three to seven days (Rogers & Gibson, 2002). However, recent studies suggest that delirium persists much longer than previously believed, with symptoms in many patients lasting months or years (Inouye, 2006).

Because delirium may be the result of many causes and interactions between the individual and the hospital setting, multicomponent approaches to care are most effective. All contributing factors should be addressed by professional caregivers in order to resolve delirium in an older person. It is also important to recognize that untreated delirium may have long-term deleterious consequences for individuals and families, as well as for hospitals and the national healthcare system.

Despite high prevalence rates of delirium in hospitalized elders, research suggests that 32% to 72% of delirium is under- or misdiagnosed by nurses and physicians (Rockwood et al., 1994; Wang & Mentes, 2009). Nurses as front line caregivers have the most consistent contact with patients and their families (Lacko et al., 1999). And yet, the majority of cases of delirium in older patients are not recognized by nurses (Dahlke & Phinney, 2008). In the hospital setting, nurses are more likely to focus on obvious medical diagnoses and may overlook behavioral changes in older patients (Wang & Mentes, 2009).

Nursing judgment is a complicated process involving observation of patients, lab tests, data collection, and integration of different aspects of information before arriving at an overall

diagnosis or evaluation (Wang & Mentes, 2009). Clinical judgment can be affected and challenged by numerous factors. Researchers found that nurses' reliance on individual clinical judgments, rather than on use of a standardized approach, led to inaccurate conclusions about patients' mental status (Lacko et al., 1999).

In a 1985 study, Palmateer and McCartney demonstrated that nurses had difficulty recognizing and appropriately charting delirium in hospital patients. Nurses used terms such as "disoriented" and "confused" when describing mental status in hospital patients and depended on questions about orientation to assess overall cognition (Dellasega, 1992; Lacko et al., 1999). Traditionally, nurses rely heavily on *orientation* as a significant indicator of changes in mental status, though orientation is one of the least sensitive markers of confusion, and misses other vital areas of cognition such as attention and fluctuation (Rogers & Gibson, 2002). At times, patient compliance was mistakenly accepted as an indication of intact mental status (Steis & Fick, 2008).

Steis and Fick (2008) wrote a systematic literature review regarding nurse recognition of delirium, selecting 10 empirical studies for final review. They compiled and reported rates of nurse recognition of delirium, assessment, documentation, and other pertinent findings. They discovered that rarely was the term *delirium* used in nurses' documentation. They concluded that if nurses are not explicitly taught the nuances of how delirium is manifested, they cannot be expected to accurately identify delirium. In their review, they discovered low rates of nurse recognition of delirium.

In a 2009 Australian study, researchers analyzed nurses' documentation of cognition and behavioral changes in patients in acute care settings (Hare et al., 2009). A total of 1209 patient records were audited with 183 patients (15%) being identified as confused. 'Confusion' was the

most common descriptor used by nurses to describe cognitive and behavioral changes. In many cases it was the only term used. Only 48 (36%) of the patients with documented behavioral and cognitive changes consistent with delirium had a diagnosed *delirium* documented in their patient record. The authors suggested that under-identification may have occurred in part because delirium was overlooked due to the presence of an established dementia (Hare et al., 2009). In their literature review, Steis and Fick (2008) found four risk factors for under-recognition of delirium in older adults: presence of hypoactive delirium, age 80 or older, vision impairment, and dementia. If all four of these factors were present, under-recognition increased 20 fold (Steis & Fick, 2008).

To distinguish acute from chronic confusion (delirium from dementia) nurses used observations that were within their care experience and looked for a new onset of confusion or change from previous function. Rogers and Gibson (2002) found that nurses gave many examples of patient memory problems, disorientation, disturbances in the sleep-wake cycle, and inability to concentrate. Nurses relied heavily on family members to provide information about a patient's previous level of function. Sometimes a daily housekeeper was found to be a more reliable informant than a family member who visited infrequently (Rogers & Gibson, 2002). However, nurses recognized that these cues might signify other patient conditions, such as pain or emotional reactions to disease. Few stated that they would check the patient's lab data or medication records to learn about physiological risk factors (Lou & Dai, 2002).

In preparation for a study of nurses in an academic medical center, Fick et al. (2007) learned that delirium superimposed on dementia (DSD) may range from 22% to 89% in hospitalized patients with dementia. When patients with dementia do have an acute change, it may be missed by nurses and documented as dementia alone or labeled as sundowning (Fick et

al, 2007). Researchers found that 83% of the nurses were able to correctly identify dementia, but had difficulty correctly identifying delirium versus DSD, as well as identifying the hypoactive form of delirium. Although nurses had a good idea of some of the causes of delirium, i.e., metabolic derangement, medications, altered surroundings, and infection, they did not necessarily label the problem as delirium. Interestingly, 21% attributed both dementia and hypoactive DSD to normal aging (Fick et al., 2007).

In a small 2002 study, Rogers and Gibson analyzed interviews with 10 orthopedic nurses. They found that nurses identified delirium on the basis of observations of patients' behaviors, function, and orientation as well as their knowledge of factors that predispose patients to the development of delirium. No standardized assessment tool or systematic assessment format was used. Identification was made on the basis of patients' responses to questions about orientation and observation of patient behavior (Rogers & Gibson, 2002). In another, more expansive survey of 1384 ICU health care professionals in 2006 and 2007, only 33% of respondents reported screening for delirium using a specific instrument other than general clinical assessment (Patel et al., 2009).

In the absence of objective monitoring, delirium commonly goes unrecognized. This is especially true for hypoactive or "quiet" delirium, which is often the most prevalent form of delirium in ICU studies (Patel et al., 2009). In a redesign of delirium care in an Australian hospital acute care ward, collaborative discussion revealed delirium was detected only when it reached a crisis stage and identified only because the behavior of the patient demanded an acute management response (Day, Higgins & Koch, 2008).

However, these studies reveal that nurses did recognize that their patients were in distress, that they were confused, and that they were exhibiting inappropriate behavior. Without

knowledge of a framework in which to place these symptoms, nurses will not improve in delirium identification. If delirium is not appropriately or accurately identified, it is difficult to initiate effective strategies of care. It would seem that effective education and training are prerequisite to identification and follow-up.

Nurse Education

After interviews with six nurses in a 1996 case study, Eden and Foreman found no correlation between nurse recognition of delirium and the educational or experience levels of the nurses (Eden & Foreman, 1996). Later, researchers Fick and Foreman (2000) found that despite having received education about delirium, 75% of nurses reported they did not know the difference between delirium and dementia. In a 2007 study, Fick et al. discovered no relationship between overall MSHAKE scores, a general measure of gerio-psychiatric knowledge, and vignette responses or between correct vignette responses and RN years or experience or education (Fick et al., 2007).

In 2008, a Geriatric Curriculum Survey, based on 47 "Older Adult Care" competencies developed by the American Association of Colleges of Nursing, was sent to 500 randomly selected nurse practitioners in New York State (Scherer, Bruce, Montgomery, & Ball, 2008). Two hundred and twenty-one respondents returned surveys. A majority of respondents were comfortable with their assessment skill and knowledge of individuals aged 65 years and older. However, over half of the respondents were only "somewhat comfortable" with their knowledge of management of Alzheimer's disease, delirium, dementia, neurological problems, poly-pharmacy, and sleep issues. Of the 220 respondents, 48% indicated they had 10 or less hours of formal instruction in geriatrics. Most, 95%, signified they would be better prepared to care for individuals aged 65 years and older if a didactic course in geriatrics was required in their

program of study and 92% indicated they would be better prepared if they had a clinical practicum in geriatrics as part of their program of study (Scherer et al., 2008).

McCarthy (2003), in a qualitative study of nurses' philosophies of aging, found that a master's-prepared nurse working in critical care was no more likely to differentiate delirium and dementia than a nurse with an associate degree working on a general medical unit. Education and training were reported by nurses in several studies as being inadequate, thus increasing the challenges of caring for older delirious patients. Most nurses reported having little to no formal education about older adult care (Inouye et al., 2001; Scherer et al., 2008; Steis & Fick, 2008). They admitted to learning about care for older patients by watching others and through personal clinical experiences over time. Nurses expressed frustration about lacking knowledge of best practice protocols for older adults with delirium (Dahlke & Phinney, 2008).

Steis and Fick (2008) concluded their systematic analysis of 10 empirical studies of nurse recognition of delirium with recommendations beyond education to improve delirium care. Besides delirium assessment education, these included improved nurse-nurse communication, delirium position statements, use of computerized decision support, and practice protocols (Steis & Fick, 2008). In addition to stronger nurse education, other researchers suggested adopting elder-friendly atmospheres to help older adults maintain independence, early detection and intervention, support for end-of-life care, respect and care for nurses, and honesty in addressing nurses' moral distress in caring for this population (Dahlke & Phinney, 2008; Inouye, 2006; Inouye, Bogardus, Williams, Leo-Summers & Agostini, 2003; Milisen et al., 2004; Rogers & Gibson, 2002; Young & George, 2003).

It is valuable to understand the intersection between nurses' education, philosophies of aging and workplace factors (Dahlke & Phinney, 2008). Multidisciplinary approaches, with

access to a range of healthcare supports, are important for effective delirium care. However, in order to address these challenges and provide appropriate resources, it is important to understand current practices of delirium care with the older patient population.

Delirium Care

Interventions used by nurses include constant surveillance, elimination of underlying causes, reorientation strategies, and caring human interactions (Rogers & Gibson, 2002). For disruptive patients, sitters, medications and restraints are used. Shedd et al. (1995) found that in the institutional setting, the three most common interventions reported by nurses for delirium care were medications, restraints, and the use of sitters. Yet, the use of two of these, drugs and restraints, can be the beginning of a downward spiral leading to problems with immobility, skin breakdown, incontinence, decreased social interaction, depression, and subsequent delirium (Sullivan-Marx, 2001; Rogers & Gibson, 2002).

The number of medications available for treating patients with behavioral disturbances is on the rise. However, antipsychotic medication may be prescribed without recognition or treatment of the underlying cause of the behavior which may be an underlying delirium. Medicating the patient inappropriately may worsen the condition or further delay appropriate identification (Fick et al., 2007).

On postoperative units where vulnerable older patients are especially prone to delirium, pain control is challenging. The deliriogenic effect of pain is complex because it involves both unrelieved pain and pain relieved by the use of certain analgesics. Pain, especially acute postoperative pain, tends to be undertreated in older patients. Poorly controlled postoperative pain in older patients has been shown to be associated with deterioration of mental status and development of delirium (Milisen et al., 2001). On the other hand, a significant relationship has

been found between the use of medications and the development of delirium. The pharmacokinetic effects of medications such as thioridazine, haloperidol, and respiradone have been shown to exacerbate delirium (Neville, 2008). Medications with fewer side effects may be effective. When interviewing nurses on an orthopedic unit in a Canadian hospital, Rogers & Gibson (2002) discovered that the incidence of acute confusion on the unit had decreased in recent years. This was attributed to a concerted effort to give patients acetaminophen to manage post-operative pain.

Nursing interventions for delirium are aimed at maintaining patient comfort and safety; identifying, reducing or eliminating known causes; supporting patients' normal physiological functions; reducing stressors in the environment; and avoiding restraints (Foreman et al., 2001; Rogers & Gibson, 2002). Non-pharmacologic approaches to managing symptoms should be put into place for every patient. These include creating a calm, comfortable environment with the use of orienting influences such as calendars, clocks, and familiar objects from home, regular reorienting communication with staff members and family members, limiting room and staff changes, coordinating schedules for administering drugs and obtaining vital signs, protecting periods of uninterrupted sleep with low levels of noise and light, and encouraging normal sleep and awake cycles with mobility during the day (Inouye, 2006; Milisen, Steeman, & Foreman, 2004). Pharmacologic management should be reserved for patients whose delirium symptoms threaten their own safety or the safety of others or would result in the interruption of essential therapy such as ventilation or catheters (Inouye, 2006; Rogers & Gibson, 2002).

Nurse Strategies for Care

How do nurses strategize care when faced with formidable challenges and inadequate resources? Despite significant literature about delirium, little is known about what actually

occurs in the practice setting. Consequently, Dahlke and Phinney (2008) undertook a study to explore how nurses actually care for hospitalized older adults at risk for delirium and the challenges they face. For this qualitative study researchers interviewed 12 RN's working on either medical or surgical units. The interview involved open-ended questions such as: "Tell me about a situation when you cared for an older patient who later became delirious. How did you recognize the delirium? What did you do about it? What made the situation easier? What made it more difficult?"

Content analysis of the responses revealed three main strategies: take a quick look, keep an eye on them, and control the situation. Nurses assessed patients quickly due to limited available time. Although the Confusion Assessment Method (CAM) was included in a clinical flow sheet, nurses more often used subtle questioning and observed behavior to determine whether an older adult was at risk or had delirium (Dahlke & Phinney, 2008). When they identified that an older patient's cognitive status was "off" they would ask others if this was a new state for the individual, and would check the patient's chart for previous notes. Nurses learned to rely on external resources such as the patient's family or roommate for feedback (Lou & Dai, 2002). These assessments were described as occurring "on the fly," often while trying to complete other tasks (Dahlke & Phinney, 2008). Nurses emphasized the trial-and-error nature of their interventions and warned that what worked for one patient may not work for another (Rogers & Gibson, 2002).

Nursing interventions to manage behaviors of the delirious patient varied with the nurse. However, for most, safety was a primary concern (Rogers & Gibson, 2002). According to one nurse: "We spend the whole shift going back and forth to each patient, reassuring them to try and keep them from escalating and from getting too confused and out of control" (Dahlke & Phinney,

2008, p. 44). Nurses regularly moved older adults into hallways, placed patients in geriatric chairs during the day or at night moved patients' beds to the nursing station. They used "sitters" (a family member, nurse or other patient) to watch over the patient. Nurses relied on their own life wisdom, such as: Keep their hands busy so the mind is focused on something else (Dahlke & Phinney, 2008, p. 44). However, some nurses cautioned that frequent reorientation may increase patient agitation. If the patient was quiet, nurses tended to observe the patient from the periphery (Rogers & Gibson, 2002).

Nurses admitted they "bought time" from caring for older patients so they could spend it with those patients they perceived as more acutely ill (Dahlke & Phinney, 2008). In a qualitative study of nursing practice with older people and delirium in New Zealand, the researcher heard several nurses admit that if patients are young and unwell they receive the attention of the nurse with the most experience and ability, but if patients are older, they likely to get whoever is around and may not receive active treatment (Neville, 2008).

However, in these interviews nurses also recognized the value of their care. They placed strong emphasis on caring interactions and the need to be gentle, calm, hold a patient's hand, provide reassurance, and talk to the patient. "You're their lifeline." Nurses emphasized asking for help when they needed it. The one resource referred to most often was the strong sense of support from co-workers and the nurse manager which enabled nurses to cope with their workloads (Dahlke & Phinney, 2008; Lou & Dai, 2002; Rogers & Gibson, 2002).

In nurse interviews regarding strategies for care of the delirious patient, nurses described the agitated or hyperactive type of confusion, characterized by behaviors such as constantly trying to get out of bed, tearing off dressings, pulling out catheters (Dahlke & Phinney, 2008;

Rogers & Gibson, 2002). It seems that patients with the hypoactive form of delirium did not warrant the same attention.

Although a great deal of research has been conducted to identify best practices, this knowledge has not been adequately transferred into the practice arena and nurses continue to face often demoralizing challenges in caring for the older delirious patient while relying on whatever works at the moment and on their own observations and experiences. It appears that keeping the situation under control for the safety of everyone involved takes precedence over reversing or effectively managing delirium for better patient outcomes.

Challenges for Nurses in Caring For Delirious Patient

Interviews with nurses revealed that delirium has far-reaching effects on nurses, patients, roommates, and families. Caring for patients who are delirious increases nurses' workload, threatens their safety, diminishes their self-esteem, and creates mental conflicts (Rogers & Gibson, 2002). On a broader level, nurses battle a healthcare environment that does not meet the needs of older adults and a culture that holds negative beliefs and attitudes about older adults. In almost every study in which nurses were interviewed regarding the challenges they faced in caring for the older patient with delirium, most asserted that they lacked the time, knowledge, and support necessary to effectively and safely care for older delirious patients (Dahlke & Phinney, 2008; Lou & Dai, 2002; Palmateer & McCartney, 1985; Rogers & Gibson, 2002).

A qualitative study by Rogers and Gibson (2002) was one of the first studies designed to learn firsthand from nurses regarding the personal impact of caring for delirious patients. Clinical experience among 10 orthopedic nurses varied from 10 months to 30 years, with an average of 12 years. Adjectives nurses used to describe caring for older patients with delirium included: time-consuming, frustrating, challenging, and exhausting. Interviews revealed that

moral distress was salient in self-reports of nurses' decreased self-esteem and threatened personal safety when caring for patients with delirium (Rogers & Gibson, 2002).

In a later qualitative study, a thematic analysis of nurses' stories, found two key factors that prevented effective care: (a) a care environment that did not meet the needs of older adults and (b) negative beliefs and attitudes about older adults (Dahlke & Phinney, 2008). In both qualitative studies, investigators found that nurse workload grew overwhelming due to constant surveillance needs and physical care needs. Dealing with concerned families was also time-consuming and exhausting (Rogers & Gibson, 2002). Older patients required a slower pace of care, but nurses worked in a fast-paced environment with a variety of patient care circumstances competing for time and attention. Interviewees described the need to continually the switch gears of nursing care (Dahlke & Phinney, 2008). Researchers Lou and Dai (2002) in interviews with Taiwanese nurses found that nurses talked a lot about personal stress encountered in their caring for delirious patients and little about patients' behavioral changes.

Stress on the nurses was illuminated by how self-esteem was challenged in caring for delirious patients. With increased workload, nurses were not always able to finish all the work on their shift, which made them feel incompetent and slow (Rogers & Gibson, 2002). They experienced guilt when using restraints or when they became short-tempered with patients. Often the patients' survival and safety conflicted with the nurses' beliefs about the use of restraints (Lou & Dai, 2002). Another challenge to self-esteem found by a Belgium study was the interrelationship of nurse and patient. They found that the nurse may not receive an adequate response from the patient, leading to a sense of loneliness for both patient and caregiver (Milisen et al., 2004).

Managing aggressive behavior was seen as especially time-consuming and demoralizing. Nurses felt responsible and stressed about controlling the patient who was acting out, not only for themselves, but for other patients and nurses on the unit. In dealing with patients with hyperactive delirium, nurses were sometimes the object of physical and verbal aggression (Dahlke & Phinney, 2008). Caring for delirious patients created mental dilemmas in deciding which interventions might be useful (Rogers & Gibson, 2002). As a result, nurses either spent too much time strategizing what to do or became anxious and responded too quickly, leading to ineffectiveness (Dahlke & Phinney, 2008). In addition, to direct patient care challenges, nurses revealed that the care environment and supervisors were not supportive.

Diverse communication challenges were revealed by a number of studies. Researchers found that communication between nurses and physicians may be a barrier to identifying and treating delirium. Nurses experienced frustration in reporting symptoms to physicians without receiving helpful guidance in return (Eden & Foreman, 1996). Physicians at times were unsure how to proceed except by offering sedation (Lou & Dai, 2002). In a 2002 qualitative study, researchers interviewed four Taiwanese nurses who thought they did not receive support from the system. Nursing administrators paid little attention to the problem of delirium. Therefore, they discussed issues such as restraints or sharing workloads with each other (Lou & Dai, 2002). In interviews with nurses, Dahlke and Phinney (2008) uncovered a reason a nurse manager did not hear about issues in caring for delirious patients. Her nurses believed that a "good" nurse would know what to do and be able to do the job. Nurses did not want to be labeled incompetent and, therefore, did not complain about caring for delirious patients. From the patient perspective, Steis and Fick (2008) found an interesting communication challenge. Some patients were afraid to reveal any unusual thoughts or experiences for fear of being labeled "crazy." Thus,

communication difficulties at a number of levels increased stress in caring for the delirious patient.

Overall, nurses believed they were in a care context that did not acknowledge or adequately support the unique health care needs of older adults (Dahlke & Phinney, 2008). Several researchers concluded that the relationship between the greater intensity of nursing care and poorer outcomes of care might be explained by the absence of using state of the art interventions to detect, prevent, and treat delirium (Milisen et al., 2004; Young and George, 2003). Other studies suggested that shorter hospital stays contributed to increased nursing workloads (Brannstrom, 1989; Neville, 2006; Dahlke & Phinney, 2008). In a number of studies nurses commented that administrative and peer support were essential but were often lacking (Eden & Foreman, 1996; Dahlke & Phinney, 2008; Lou & Dai, 2002; Rogers & Gibson, 2002).

Young and George (2003) in a study of five British acute hospitals found that although guidelines were developed and used, many of the recommendations (e.g. use of orientation cues, avoidance of ward moves, full cognitive assessment, multidisciplinary work, correction of sensory impairments and avoidance of sedation and restraints) were difficult to implement in a constantly changing environment. They concluded that overcoming "organizational barriers" to implementation of guidelines may be more difficult than overcoming "professional barriers," which may respond to education (Young & George, 2003).

Increased workload, limited education, little moral support, minimum opportunity to spend time assessing and caring for older patients with delirium, and a lack of a protocol and guidelines, consequently, perpetuate a cycle in which delirium is not recognized or adequately treated. As a result, researchers find that delirious and confused patients receive inferior care compared to lucid patients (Brannstrom et al., 1989, Milisen et al., 2004). Reducing nurses'

strain in caring for this patient population via multicomponent clinical, technical, time, and emotional supports is important in guaranteeing that patients receive adequate care.

Implementing and Adhering to a Delirium Protocol

Much of the literature on care for the patient with delirium emphasizes the identification of delirium and the use of specific assessment tools. The tool considered the gold standard, the Confusion Assessment Method (CAM), was developed to provide a simple, reliable, and valid means to quickly identify acute confused states based on four behaviors: fluctuating cognition, attention disturbance, disorganized or incoherent thinking, and altered level of consciousness (Dahlke & Phinney, 2008; Inouye et al., 1990). However, the screening tool cannot be effective if it is not used consistently by nursing staff.

A study published by Inouye and colleagues (2003) examined the impact of adherence, and non-adherence, to a delirium intervention strategy. Subjects included 422 consecutive patients 70 years or older admitted to the medical unit of a university hospital (Inouye et al., 2003). Adherence was defined as the extent to which medical recommendations were followed and implemented. The researchers demonstrated that consistent adherence had a strong and significant effect on the incidence of delirium after controlling for a number of variables (Inouye, et al., 2003).

Factors Leading to Successful Adoption and Use of a Nursing Protocol

Education and adoption of an assessment tool and protocol have been identified as supporting an effective care environment for older adults with delirium (Riekerk et al., 2009; Steis & Ficke, 2008). However, these resources may not be enough to significantly improve care for delirious patients. Researchers in a 700 bed community hospital in Allentown, Pennsylvania, used a change-process approach in which nurses were directly involved in conducting the study

rather than simply being given a screening tool with the requirement to use it. All patients with delirium on the intervention unit were successfully detected with use of the CAM and documented. Extensive chart review revealed that the control unit did not identify the two patients on their unit who were delirious. Small and unequal sample size limited the generalizability of this study, but the study suggested that nurse involvement in the design and implementation of protocols, as well as mentor support and reinforcement, contributed to successful use of protocols and training (Lacko et al., 1999).

Milisen et al. (2001) investigated a nurse-led interdisciplinary intervention program for delirium in elderly hip fracture patients. They sought to test the program's effectiveness in delirium identification and its impact on the severity and duration of delirium, rehabilitation, mortality, and length of stay. This was a longitudinal, prospective design in an emergency room and two trauma units of an academic hospital in Belgium. Although there was no significant effect on the incidence of delirium (control vs. intervention cohort), duration of delirium was shorter ($p = .03$) and severity of delirium was less ($p = .005$) on the intervention unit. Investigators concluded that older patients admitted for hip fracture benefited from an integrated geriatric care model for delirium (Milisen et al., 2001). This multicomponent program incorporated nurses in the development of the intervention, and ongoing feedback and mentor support were given in addition to education and protocols.

Young and George in 2003 sought to develop consensual guidelines for delirium management and then to assess their effectiveness in improving the care for delirium and its outcomes. Guidelines were developed after a literature review and a formal multidisciplinary process. The results showed that only in the high intervention group was there improvement in the process and outcome of care. The researchers concluded that delirium was under-recognized

and poorly managed in older people and that guidelines alone failed to improve the process and outcomes of care. In their study, ongoing reinforcement teaching and support improved delirium care outcomes (Young & George, 2003).

In 2009, researchers in the Netherlands undertook a study of the limitations and practicalities of CAM-ICU implementation in a Dutch intensive care unit (Riekerk et al., 2009). Their study focused on the obstacles and barriers to implementing this tool into daily practice. Initially, nurses thought implementation of the CAM-ICU would be time-consuming and would not add to their ability to recognize delirium. Nurses had to be convinced that delirium identification and treatment was a significant problem and then processes had to be put in place for ease of implementation. After a training period and two months of using the bedside CAM-ICU, an evaluation found that the frequency of patient assessments had increased from 38% to 95% per nursing shift. Interestingly, before the CAM, nurses believed that they were already capable of identifying the presence of delirium in a patient (Riekerk et al., 2009).

Staff ownership of a protocol and its use are essential to its effectiveness. On a 32-bed acute care unit in a large Australian hospital, staff was involved in redesigning delirium care for hospitalized older patients. They recognized that lack of identification and inadequate care responses to delirium in older patients was a major practice problem (Day, Higgins & Koch, 2008). Collaboratively, they explored ways in which clinical practice could be improved. A delirium protocol was developed and later evaluated. Evaluation found evidence that practice had changed. As with previously described studies, their findings supported the efficacy of collaboration and staff involvement in design and practice of delirium care. Staff claimed ownership of the protocol and responded that its positive attributes were user friendliness, accessible language, clinical relevance, and little formal documentation being required (Day,

Higgins & Koch, 2008). Adherence to a protocol requires participation and support beyond education and training. These include peer, mentor and administration support; ongoing education, feedback and discussion; and staff participation in a change or implementation process.

Additionally, several studies suggested that nurse attitudes toward aging were influential in the quantity and quality of care provided. Societal attitudes and philosophies toward aging may be absorbed and evidenced in the hospital care setting. Few researchers have addressed attitudes as a resource which influences direct care-giving.

Nurse Philosophies of Aging

Nurses bring personal attitudes and beliefs about older adults to the workplace. In several studies, beliefs about older adults were reflected in the language that nurses unwittingly used and how they voiced their concerns. Dahlke and Phinney (2008) found that nurses tended to use language similar to that used to speak about children. Some nurses referred to older adults as "almost like children" and that caring for them was "like babysitting." Nurses believed the health care system was designed for younger people. Older adults were viewed as "a burden" and as an obstacle to the more important work of caring for younger adults (Dahlke & Phinney, 2008).

Nurses reflected that the current societal culture does not value older adults "As a culture we think they're disposable" (Dahlke & Phinney, 2008, p. 46). This leads to a tendency to dismiss the seriousness of the symptoms of delirium. One nurse identified how the behavior of a patient with delirium could be annoying and deter the nurse from what he perceived as the real work of caring for a patient and focusing on acute medical illness. Therefore, working with confused elders was found to be frustrating (Dahlke & Phinney, 2008). An earlier researcher of nurse attitudes when caring for elderly patients, McCarthy (2003), theorized that nurses' clinical

reasoning was affected by their philosophical beliefs about the general health and cognitive status of older adults. Nurses who believed that confusion was normal in older adults were less likely to recognize symptoms of delirium as requiring attention and intervention.

Philosophical views about aging were found to similarly affect care of delirious patients in Taiwan. Wang and Mentes (2009) sought to better understand factors affecting nurses' clinical judgments regarding detection of delirium in elderly patients in two Taiwanese hospitals. The participant pool included 559 medical nurses and 383 surgical nurses. Nurse participants were asked to complete a three-part questionnaire regarding demographic information, patient care vignettes and a Chinese value survey (Wang & Mentes, 2009).

A hierarchical regression analysis demonstrated that patient characteristics such as age, comorbid medical problems (infection and dehydration), and a hypoactive presentation of delirium explained most of the variance in nurses' ability to detect delirium. However, Confucian ethos and the interaction between Confucian ethos, characterized by respect for elders, hard work, non-competitiveness, modesty, and respect for tradition, and hypoactive delirium were significant factors in determining nurses' judgment ability. Nurses who exhibited the strongest beliefs in these values showed their respect and tolerance for elderly patients by overlooking the cognitive and behavioral changes associated with delirium. Nurses with stronger traditional Chinese values were more likely to miss the hypoactive presentation in their patients. Nurses may have tolerated these behaviors as representing part of the normal aging process (Wang & Mentes, 2009).

McCarthy's (2003) qualitative study is one of the few to analyze care-giving for older confused adults through the lens of philosophies of aging. A major aim of this study was to identify attitudes that prevented nurses from making accurate decisions. McCarthy analyzed

interviews with nurses using a grounded theory of situated clinical reasoning, and observed that the ability of nurses to identify delirium varied widely. The assertion of this study was that this variation could be attributed partly to the differences in nurses' philosophical perspectives on aging. These perspectives influenced how nurses understood aging and formed the ways in which they judged and ultimately cared for older adults in clinical situations.

For the study, nurses described and explained their care-giving world and the researcher analyzed styles and strategies nurses used for problem solving. Observations were made over a four-month period on several general medical-surgical units of a community teaching hospital. Twenty-eight nurses were interviewed for 1 to 2 hours. Nurses tended to demonstrate different approaches when caring for delirious patients. These variations in clinical approach were attributed to different perspectives and philosophies nurses held about the general health of people as they aged. Researchers found that nurses unwittingly embraced one of these distinct perspectives on health in the aged. These attitudes in turn influenced the care given to elderly delirious patients (McCarthy, 2003).

Nurses who exhibited the "decline perspective" perceived cognitive impairment among older patients as inevitable. They saw aging as a decremental process in which the general health of older people becomes steadily and inevitably limiting. As the author summarized this perspective: "If old, then confused" (McCarthy, 2003). Those with this philosophy interpreted delirium in work-related consequences, rather than patient-related ones. Delirium was problematic if it interfered with their work or disrupted the order of the unit. Nurses who held a decline perspective generally did not make distinctions between acute and chronic cognitive events. The goal of the nursing intervention was to control the effects of confused behavior (McCarthy, 2003).

A second pattern of reasoning was identified as the "vulnerable perspective." According to this perspective, aging is a challenging period, during which the threat of disease and poor health are constant. These nurses regarded cognitive decline as a regular occurrence among older adults. Because of age, the patient was at risk for the development of diseases that could result in cognitive and physical decline. They believed that although the potential for treatment and reversibility did exist, the possibility was remote. Because of their ambivalence, those with the vulnerable perspective tended to not carry through accurate interpretation and effective action. Certain conditions, however, could facilitate their identification efforts. These were manageable workloads, consistency of assignments, availability of social and technical resources, peer consensus, administrative support when confronting physicians, and physician validation of nurses impressions. When compelling evidence was not found, the default position was that the cognitive decline was chronic in nature (McCarthy, 2003).

A third pattern of reasoning was described by the author as the "healthful perspective." These nurses expressed appreciation for the normalcy of the aging process. However, they viewed older adults as essentially well, with the aging process as an extension of adult development. Nurses with this perspective regarded cognitive decline in older patients as pathological and unusual. These nurses understood the differences between acute and chronic confusion and that all confusion behavior was cause for concern. For them, confused behaviors were regarded as indicative of some toxic process and they began to seek underlying causes. McCarthy suggests that it may be useful to determine which philosophical perspectives predominate among staff in order to predict how well they will perform and to determine what measures may be taken to improve thinking and behavior (McCarthy, 2003).

Multiple factors contribute to effective nursing care for older patients with delirium. These include education and tools for assessment and care as well as support from peers, managers, physicians, and larger institutional supports which are elder friendly. Significant contributors also include nurses' acceptance and ownership of good practices as well as the attitudes and philosophies of aging that they bring to the workplace.

RESEARCH QUESTIONS

The underlying principles of prevention and management of delirium have remained consistent over time. These include screening for and identifying delirium, treating the underlying cause(s), addressing safety concerns, and providing supportive nursing care. However, key requirements for supporting a culture that effectively delivers delirium care may be missing. Nurses are often undereducated, overwhelmed, and under-supported in care for older patients with delirium. Identification and care for the delirious patient may be inconsistent and reliant on the judgment of a group of caregivers with widely varying attitudes, education, time, and capacities. Supporting nurses in understanding and identifying delirium, effectively managing delirium care, and adhering to procedures and protocols of care require changes in the care-giving context and the collaborative efforts of administration, managers, and nursing staff to create effective protocols and a favorable environment. Improved delirium care also requires ownership by nursing staff and ongoing education and mentoring support. Additionally, the quality of care may be improved by identifying, understanding, and reworking attitudes toward aging and toward the care of older patients. The literature also suggests systems-level interventions such as the implementation of specialty care units and "elder-friendly" initiatives. Consequently, for this study I developed a scale for measuring delirium-related attitudes and used this survey to evaluate changes in attitudes following an intervention that was designed to improve delirium knowledge and care. The research study was conducted with the following research questions in mind.

1. What are nurses' attitudes toward caring for older patients and for older patients with delirium or acute confusion?

2. How might an intervention of delirium education and access to a delirium assessment tool and treatment protocol change nurses' attitudes regarding perceived knowledge, comfort, competence, and support in recognizing and caring for delirious patients?
3. Are nurse demographics of age, work experience, role, and education related to attitudes and attitude change?

The hypotheses for this research project were: (a) nurses who complete the delirium intervention show significantly more positive attitudes toward caring for older patients with delirium than nurses who do not complete the intervention, and (b) nurses who complete a delirium intervention reflect a more positive philosophy of aging than nurses who do not complete the intervention. Nurse attitudes and philosophies of aging were the dependent variables. The delirium intervention was the independent variable.

METHOD

This research project was designed in collaboration with the Nurses Improving Care for Health-system (NICHE) Committee and under the guidance of the Delirium Team at Poudre Valley Hospital in Fort Collins, Colorado. The Delirium Team was comprised of a geriatrician, two clinical nurse specialists, a clinical director, healthcare researcher, two nurse managers (one of whom was a gerontologist) and a staff registered nurse (RN). Members of the Delirium Team were knowledgeable about the previously reviewed literature and recognized that a hospital stay can put an older adult at risk for functional decline and that delirium among older patients is often under-identified and under-treated leading to serious consequences for the patient, the family, nurses, and the healthcare system. As a result, a delirium intervention was designed to address recognized deficits in care. This research project was subsequently developed to assess nurse attitudes toward caring for older patients with delirium and changes in those attitudes after implementation of the intervention.

An adult health clinical nurse specialist led a team in developing a two-hour class for nurses and CNAs regarding delirium care. Class content included delirium education, assessment tools (Six-Item Screener and Confusion Assessment Method or CAM), and a hospital delirium treatment protocol. The two-hour learning module was offered on three different days and it was mandatory for all RNs and CNAs on the medical and orthopedic units to complete one class. The same instructor taught each class and covered the same content in all classes. An outline of the education program, as well as the assessment tool, care protocol, and treatment order are attached in Appendices A, B and C.

The research project included three hospital units (i.e., medical, orthopedic, and surgical units). Nurses on the surgical unit received no intervention and served as the comparison group. Nurses on the medical and orthopedic units received education regarding delirium and its consequences and training in the use of a delirium assessment tool and a protocol for care. They served as the intervention group. This researcher's contribution to the study was to administer a nurse attitude survey before and after implementation of the delirium intervention on the medical and orthopedic Units, and to the surgical unit as a comparison group.

Participants

Participants were recruited through the Medical, Orthopedic and Surgical units at Poudre Valley Hospital in Fort Collins, Colorado. At Time 1-pre-test on the intervention units, response rate was 28% of staff on the Medical Unit and 20% of staff on the Orthopedic Unit. For the comparison group there was a 28% response rate from Surgical Unit staff. The comparison group completed the survey at pre-intervention time only. At Time 2-post-test, 6 weeks after the intervention, response rate on the Medical Unit was 21% and on the Orthopedic Unit it was 18%.

Table 1

Hospital Unit Participants in Pre-Test, Comparison Group, and Post-Test

	Hospital Units			
	Medical	Orthopedic	Surgical	Total
Time 1 Pretest	20	9	0	29
Comparison	0	0	18	18
Time 2 Post-test	15	8	0	23

Participant characteristics included age, role, years experience as a hospital nurse, and education. Members of the hospital Institutional Review Board (IRB) suggested that sex and

race/ethnicity not be asked by the survey as these demographics could identify the few staff belonging to minority groups.

Table 2

Study Participant Characteristics

Characteristic	Percent
Age	
20 to 29 years old	18.3
30 to 39 years old	29.6
40 to 49 years old	23.9
50 years and older	26.8
Role	
CNA or Unit Assistant	29.6
RN	69.0
Years as Hospital Staff	
1-5 years	43.7
5-10 years	22.5
11+ years	26.8
Education	
High School	7.0
CNA, Associate Degree, LPN	39.4
Bachelors or above degree	47.9

N = 71, # Missing = Age (5), Role (1), Years as Hospital Staff (9), Education (4)

Procedures

Participants were asked to take a brief survey (approximately 10 to 15 minutes) through Survey Monkey. To recruit volunteers the researcher attended department meetings on the medical, orthopedic and surgical units to explain the study and its benefits and potential risks. Prior to the survey an e-mail reminder was sent to all potential volunteers. Voluntary participation in the survey was encouraged by nurse educators and managers on each unit, and the researcher offered a small reward of cookies for completing the survey. Nurses were informed that the confidentiality of their responses would be protected, and their names or identifying characteristics would not be attached to the completed survey or to the publication of

survey results. However, respondents were asked to create a unique identifier in order to pair responses from the pre- and post-surveys to create a within-groups design. Colorado State University and Poudre Valley Health System's IRB approved this research project before data collection was conducted.

Research Design

For this study, the researcher used a mixed methods approach with a one group pretest-posttest design and a basic content analysis of open-ended questions. The comparison unit took the survey one time at pre-intervention only. Consequently, the comparison group could not be used to compare group differences post-survey. However, their scores were used for the factor analysis pre-intervention. The independent variables were: (a) education and training in use of an assessment tool and treatment protocol as the intervention and (b) change over time. A nurse attitude survey regarding general care for patients 65 years and older and care for older patients with delirium (Appendix D) was made available on Survey Monkey before the intervention and again 6 weeks after its implementation on the medical and orthopedic units. The survey was also accessible pre-intervention on the surgical unit which did not receive the delirium intervention during the time of this study.

Following the initial nurse attitude survey, nurses on the medical and orthopedic units participated in mandatory delirium education and training in use of assessment tools and a treatment protocol. Six weeks after receiving the delirium intervention, nurses on the intervention units (i.e., Medical, Orthopedic Unit), were asked to again voluntarily take 5 to 10 minutes to complete the on-line survey regarding care for older patients with delirium.

Measures

A demographic questionnaire was used to assess the background of participants. Respondents were asked questions regarding age, hospital unit, job role on their unit, educational attainment, and number of years employed as a hospital nurse.

Nurse Attitude Survey. The Nurse Attitude Survey was developed by the researcher and included measurement of nurse attitudes in five main areas: (a) general—care for patients 65 years and older, (b) perceived knowledge, competence and confidence in caring for older patients with delirium, (c) time and support (resources) in caring for older patients with delirium, (d) personal impacts in caring for older patients with delirium, and (e) personal beliefs or philosophies regarding aging and health. Nurse attitudes were measured with a 5-point Likert scale, from 1 (*strongly disagree*) to 5 (*strongly agree*).

Several nurses including Janet Craighead, a Nurse Researcher, and Karen Dawson, a Nurse Manager on the Medical Unit, at Poudre Valley Hospital, read the survey for face validity. Eight of the questions, which are starred in the current survey, were taken directly from a survey of ICU nurses before and after implementation of the CAM-ICU in daily bedside critical care in a Dutch hospital. Though reliability and validity measures were not published for these eight questions, this survey was included in a research study (see Riekerk et al., 2009). To estimate the internal reliability of the questions for the current survey, a Cronbach's alpha was performed on the responses.

Regarding the survey components, the construct of nurse attitudes toward caring for older patients with delirium included the following scales and definitions: *(a) Knowledge* – academic knowledge about delirium and its treatment*, (b) Competence* – practical application of this knowledge*, (c) Confidence* – feeling capable and trusting oneself in caring for delirious patient*,*

(d) Comfort – sense of well-being in caring for the older patient and older patient with delirium, and *(e) Support* - availability of resources for information, communication, feedback, and emotional support. These factors were developed with input from a nurse researcher.

Nurse philosophies of aging were identified with the following three categories: *(a) Decline* – cognitive impairment among older patients is inevitable, *(b) Vulnerable* – aging is a challenging period, during which the threat of disease and poor health are constant; potential for treatment and reversing delirium does exist, but is remote, and *(c) Healthful* – aging process is a normal development and delirium is not normal (McCarthy, 2003).

Finally, a series of open-ended questions that asked about personal rewards, frustrations, and suggestions in caring for older delirious patients were asked of participants. For example, these questions included: (1) Describe your personal rewards in caring for patients over 65 years old; (2) Describe your frustrations in caring for patients over 65 years old; (3) What resources or supports would help you improve your care for older patients with delirium?; (4) Is there anything else you would like to add regarding caring for older patients, or for older patients with delirium at Poudre Valley Hospital; and for the post-survey only (5) How have the delirium education, assessment tool and protocol been helpful in caring for older patients with delirium? Not helpful?

Data Analysis

Scoring the survey tool. Attitudes were scored as an overall score for each of four factors identified by a factor analysis as well as for individual questions. Questions regarding negative attitudes were reverse scored.

Analytical tests based on hypotheses. An analysis of co-variance (ANCOVA) was performed to compare Medical and Orthopedic Units pre- and post-intervention attitude scores

and to compare intervention units with the comparison unit, Surgical Unit. An ANCOVA allowed the researcher to identify the contribution of co-variates and to assess changes in attitudes. The alpha level for significance was set at 0.05.

Open-ended questions. A basic content analysis of the open-ended questions informed the research questions for this project. Responses to open-ended questions were identified as pre- or post-intervention answers. Common themes were identified and response frequencies were ranked. Unique responses that contributed to understanding nurse attitudes were also considered. These open-ended questions did not give the researcher the ability to answer the hypotheses; however they provided further insight into delirium care knowledge and attitudes toward delirium care by the participants.

RESULTS

Factor Analysis

To find which questions tended to be related to a common component, a principal component analysis was conducted with varimax rotation for all 38 Care of Patient Nursing Attitude questions pre-intervention, which included Time 1 (pre-test) and the comparison group. This included 48 respondents for each question and excluded post-test respondents. The initial factor analysis resulted in five factors, with the fifth factor containing three items that either had largely positive endorsements or concerned knowledge of procedures that were available post-intervention only. Question #8, I am comfortable in my care of older patients, received 44/48 positive responses. Question #28 referred to a daily delirium screen and Question #36 referred to a delirium protocol, both of which were accessible only following the intervention. These three items were omitted from the second factor analysis, the result of which was a four-factor solution based on the Scree test. The first factor accounted for most of the shared variance (28.66%) and all four factors accounted for 54.56% of the variance. The factor loadings, which are reported in Table 3, suggest that attitudes toward delirium care are measured by approximately 4 factors, which were named Knowledge, Competence and Confidence (KCC), Ability to Identify Delirium and Understand Consequences (AIUC), Desire to Learn More (DTLM), and Burden of Care (BOC). Each factor was analyzed for internal consistency using Cronbach's alpha and components with a score greater than .6 were included.

Table 3

Factor Loadings of Care of Patient Nursing Attitudes

	Factor			
Attitude	F1	F2	F3	F4
Knowledge, Competence, and Confidence				
Trust myself in follow through with interventions	.791			
Comfortable in my delirium care	.767			
Confident in establishing delirium	.756			
Recognize symptoms of delirium	.753			
Intervene with specific measures	.716			
Understand what delirium is	.715			
Deal with delirium in timely manner	.675			
Don't have enough resources and skills (R)	.663			
Don't know enough to identify (R)	.637			
Caring makes me feel overwhelmed (R)	.560			
Have not received adequate training (R)	.539			
Nursing peers are helpful	.536			
Ability to Identify Delirium and Understand Consequences				
Talk with family and friends to find out if change		.762		
Familiar with risk factors		.710		
Little I can do except keep patient quiet and safe (R)		.689		
Difficult to determine whether dementia or delirium (R)		.647		
Have not received adequate training in care (R)		.568		
Recognize subtypes of delirious states		.567		
Know potential impact on morbidity		.459		
Desire to Learn More				
I would like ongoing education regarding delirium care			.810	
I am motivated to learn more about delirium			.706	
I would like ongoing mentoring regarding delirium care			.695	
When patient is confused, something else is not right			.650	
Burden of Care				
Caring for older patients can be burdensome (R)				.750
Would rather care for younger patients (R)				.687
I have time to appropriately care				.670
Manager is not receptive to my concerns (R)				.657
I spend too much time planning care (R)				.600
Cronbach's Alpha	.90	.81	.70	.63

Attitude questions that were reverse coded are followed by an (R)

Changes in Nurse Attitudes

Each of the four components was analyzed with an ANCOVA using mean average differences among scores at Time 1 pre-test, comparison group, and Time 3 post-test. An *F* score with significance was calculated for mean differences in change from Time 1 pretest to comparison group and from Time 1 pre-test to Time 3 post-test for each component (see Tables 4 and 5). The ANCOVA analyses revealed that co-variates did not significantly contribute to attitude scores or changes over time.

Table 4

Measure of Nurse Attitudes Toward Caring for Older Patients With Delirium

	Pretest		Comparison		Post-Test	
Attitude	N	*M* *(SE)*	N	*M* *(SE)*	N	*M* *(SE)*
Burden of Care (BOC)	29	3.35 (.116)	18	2.94 (.148)	23	3.34 (.148)
Desire to Learn More (DTLM)	29	3.76 (.125)	18	3.73 (.160)	23	3.78 (.159)
Ability to Identify Delirium & Understand Consequences (AIUC)	29	3.48 (.126)	18	3.24 (.160)	23	4.05 (.160)
Knowledge, Competence & Confidence (KCC)	29	3.57 (.104)	18	3.61 (.133)	23	4.30 (.130)

Note: Attitudes were measured with a 5-point Likert Scale (1=*strongly disagree* to 5=*strongly agree*)
Missing cases: BOC (7 of 355 responses), DTLM (9/284), AIUC (16/497), KCC (16/852)

The first hypothesis, that nurses on the intervention units show significant positive changes in attitudes toward caring for older patients with delirium from pre-intervention to six weeks post-intervention, was supported by data analyses. From pre-test to post-test on the intervention units, AIUC and KCC revealed significant increases in positive attitude with *F* scores that were significant ($p < .001$). Cohen's *d* was 0.81 for AIUC and 0.97 for KCC.

Table 5

Mean Differences between Pretest and Comparison Group and Changes in Nurse Attitudes from Pretest to Post-test on Medical and Ortho Units

Attitude	Comparison to Pre-test Mean Difference	*p*	Post-test to Pre-test Mean Difference	*p*	*F* (2,62)	*p*
Burden of Care	-.411	*.023	-.008	.958	3.10	.053
Desire to Learn More	-.026	.189	.019	.912	.024	.976
Ability to Identify & Understand Consequences	-.240	.210	.564	**<.001	9.09	**<.001
Knowledge, Competence & Confidence	.035	.825	.576	**<.001	9.40	**<.001

* = *p* .05 or less, ** = *p* .001 or less

These large effect sizes indicated significant change, but with a small sample size. BOC and DTLM did not present significant changes in attitude from pre- to post-test. BOC was the lowest scored component among the four factors at all three times and did not change from pre to post-test. Cohen's *d* for BOC was .015, and for DTLM it was 0.029, both insignificant effect sizes.

The second hypothesis for this research study was that nurses who complete a delirium intervention will reflect a more positive philosophy of aging than nurses who do not complete the intervention. From the literature review, three philosophies of aging were identified: decline, vulnerable, and healthful (McCarthy, 2003). Consequently, two questions were designed for each philosophy of aging based on McCarthy's (2003) work. The mean averages and changes are reflected in Table 6.

Table 6

Measure of Nurse Philosophies of Aging and Change Over Time

Philosophy	Pretest *M*	Comparison *M*	Post-test *M*	Change Pre to Post *p*
Decline				
"Confusion is normal" (R)	3.70	3.31	3.51	.508
"Little I can do" (R)	3.80	3.53	4.05	.252
Vulnerable				
"Difficult to tell if caused by hospital stay" (R)	2.41	2.39	3.03	*.020
"I don't have enough resources to help" (R)	3.38	3.47	3.85	.102
Healthful				
"I know something else is not right"	3.83	3.45	3.84	.961
"Take delirium seriously, deal with it in timely manner	4.18	4.20	4.46	.109

R = reverse coded

For the philosophy of decline, question 11, "It is normal for older patients to get confused," and question 12, "There is little I can do to help a delirious patient except keep him or her quiet and safe", both reverse coded, there was little change from pre to post-test intervention. Question 7, "It is difficult to determine if an older patient's delirium is caused by the hospital stay," was chosen to reflect the "vulnerable" belief regarding older patients, but it may have been a confusing question, as for some participants it could refer to difficulty in researching patient information rather than understanding the contribution of the hospital stay to delirium. This question reflected a significant positive increase from pre- to post-intervention. Likewise, question 9, "I don't have enough resources and skills to help an older patient recover from delirium," may have reflected lack of resources and skills more than a philosophy of there is little I can do for the older patient with delirium. There was a small, though insignificant,

improvement in this attitude from pre to post-intervention. Questions reflecting a "healthful" philosophy toward aging averaged close to the "agree" range both pre- and post-intervention. Though there were no significant changes, question 8, "I take delirium in older patients seriously and try to deal with it in a timely manner," responses reflected particularly strong agreement by most respondents.

The second hypothesis, nurses who complete a delirium intervention will reflect a more positive philosophy of aging than nurses who do not complete the intervention, was not supported with significant change from pre- to post-intervention. However, nurses did reveal stronger overall scores for the "healthful" philosophy of aging than for the "vulnerable" or "decline" philosophies of aging.

Resources and Personal Impacts

The literature review identified time, support, and mentoring as important in caring for the delirious patient and reducing the effects of delirium. Several questions related to these. Question 13, "I take delirium in older patients seriously and try to deal with it in a timely manner," at Time 1, $M = 3.94$ and at Time 2, $M = 4.50$, revealed nurses' strong desire to provide timely care. However, question 34, "I have time to appropriately care for older patients who have delirium," showed relatively low scores of Time 1, $M = 3.00$ and Time 2, $M = 2.92$. These scores did not change after the intervention and indicated an area of need. Question 30, "I feel supported by physicians when I suggest an older patient has delirium," also revealed relatively low scores that changed little from pre- to post-intervention. Time 1, $M = 3.01$and Time 2, $M = 2.86$ similarly did not change and averaged below "agree." Question 19, "My nursing peers are helpful when I have questions about a patient with delirium," responses were more positive with Time 1, $M = 3.43$and Time 2, $M = 3.70$. However, there was not significant change. Manager

support reflected in question 33, “My manager is not receptive to my concerns about my older delirious patients,” was more positive with Time 1, *M* = 3.86 and Time 2 *M* = 3.98, though there was not significant change over time.

The literature review also identified negative personal impacts on nurses who care for older patients with delirium such as stress, feelings of inadequacy and being overwhelmed. Question 3 “Caring for older patients can be burdensome,” which was the largest contributor to the Burden of Care (BOC) component scored relatively low with Time 1, *M* = 3.08 and Time 2 *M* = 3.11 and did not improve after the intervention. However, question 25 “Caring for an older patient with delirium makes me feel overwhelmed,” indicated significant change *(p* = .047) from pre- to post-intervention with Time 1, *M* = 3.06 and Time 2, *M* 3.58. Question 37 “Caring for older confused patients makes me feel inadequate as a nurse,” indicated less negative impact than the researcher expected with Time 1, *M* = 3.66 and Time 2, *M* = 3.97. Though there was some improvement in this impact, the change was not significant. All negative questions were reverse coded during analysis.

Regarding general care for older patients, Question 1, “I find it rewarding to care for older patients,” reflected average scores between agree and strongly agree. Time 1, *M* = 4.24 and Time 2, *M* = 4.28, demonstrating strong positive scores that did not change over time. A general delirium understanding question, “Disorientation is the best indicator of patient delirium,” which was reverse-coded, scored relatively low and did not change significantly over time. Time 1, *M* = 2.85 and Time 2, *M* = 3.21 scores were lower than they should have been for a substantial understanding of delirium.

Summary of Open-ended Questions

Four open-ended questions were asked pre- and post-intervention and to the comparison unit and a fifth question was asked at post-intervention only. The response rate for questions 1 and 2 ranged between 48% and 62% of all respondents. The response rate for questions 3 and 4 dropped to 30% to 60% of survey respondents. However, question 5 for post-intervention participants had a 70% response rate.

See Table 7 for frequencies of common themes in responses. Participants found caring for older patients and for older patients with delirium both rewarding and challenging. One nurse described meeting the challenge as a great reward. Education was the most frequently mentioned felt need and many added the desire for ongoing education. One comment regarding the lack of education was insightful: "I've been a nurse for 15 years and this is the first year I will have received any education about delirium."

Not having enough time to give the care desired was a common frustration. More resources and staff support were often desired but were not available. The staff support that respondents most frequently referred to was CNAs and their importance and value in providing effective care for older patients with delirium, especially with time-consuming 1-on -1 care. Concern was raised that CNA staffing was being cut and that this would have a negative impact on delirium care. Teamwork and physician support were also addressed by several as important but sometimes lacking. Several addressed the need for appropriate use of medications and the desire for better drug education. Other participants wanted tools to identify delirium vs. dementia and to help comfort and calm confused patients. Several mentioned that overuse of assessment tools throughout the day as being problematic. One desired protocols to help patients sleep at night.

Table 7

Frequencies of Common Themes in Responses to Open-Ended Questions

Theme	Number of Responses
	Total Responses = 159
Education (tools) needed	27
Enjoy older patients	23
Not enough time to care adequately	23
Not enough support (CNA support was mentioned most often followed by peer and physician support)	23
Caring for older patients is rewarding	17
Caring for older patients is challenging	16
Medication issues	4
Post-Intervention	
Education helpful	9
Not helpful	1
Frustration with tools	3

The fourth question, "Is there anything else you would like to add regarding care for older patients with delirium at PVH?" could assist in future directions of educational programming and support for the work completed at Poudre Valley Hospital. Again getting physicians on board and ongoing education were mentioned by participants. See Table 8 for characteristic and insightful responses to the open-ended questions.

Table 8

Representative Responses to Open-Ended Questions

Describe your personal rewards in caring for patients over 65.

Time 1, # Responses: 18/29
I love to hear stores. And I feel appreciated
I try to treat those patients as if they were my parent or grandparent.
I feel I can learn a lot from the elderly and their contributions shouldn't be minimized.
These patients are very appreciative of my care and assistance with ADLs.

Comparison Unit, #Responses: 10/18
I find taking care of our senior patients rewarding and challenging.
I am rewarded if I can make a disoriented elderly patient not have fears and calm them down so they can sleep.

Time 2, #Responses: 11/23
I find meeting the challenge a great reward.
They are wise and interesting. I prefer to be proactive rather than reactive.

Describe your frustrations in caring for patients over 65.

Time 1, # Responses: 17/29
Sometimes it is difficult to have enough time to give older patients all of the care they need. It takes more resources and other staff support as well.
They don't always respond well to redirection. This situation requires more 1:1 care by staff, although patient load isn't adjusted for this. There is potential for error, missing things because of this.
I wish I was taught more about delirium in nursing school. I have recognized delirium over the years, but have thought it was dementia.
Not knowing what medications to avoid. Not knowing much about delirium vs. dementia.
Sometimes they can be very demanding and rude. Sometimes they are not in official 1:1s and then we are constantly running into the room to take care of impulsive behavior.

Comparison Unit, #Responses: 10/18
What bothers me the most is when they get physically violent.
I lack patience at times. I feel like I am dealing with a child.
They can be very time-consuming, requiring much more care than other patients.
We medicate these patients to the point of creating the delirium.

Time 2, #Responses: 14/23
More than anything it is frustrating when none of your co-workers will help..
The unit is understaffed. Cutting our CNA matrix has greatly reduced our ability to give good care.
We don't have time to really know our patient needs.

What resource or support would help to improve your care for older patients with delirium?

Time 1, # Responses: 16/29
I think if there was more staff to assist CNA's with care, things may go smoother.
To be able to assist or take online classes as nurses do (an aide)
A delirium class should be helpful. Perhaps a reference book. Also a couple experts on the unit to ask questions
Need some sort of way to keep patients safe without restraint and without having to implement 1:1.

(Continued)

Table 8 (Continued)

Representative Responses to Open-Ended Questions

Comparison, #Responses: 11/18
More education about delirium and an assessment tool and interventions to deal with it.
It would be helpful to know how to work better with patients with delirium.
Tools to ID delirium vs. dementia. Tools to help comfort/calm confused patient.
Info on drugs that can commonly contribute to delirium.

Time 2, #Responses: 10/23
Geriatric CNS very helpful
Team work.
Conflicting protocols don't allow patient to sleep.
Lower nurse/patient ratio.
Lack of CNA's has affected care.
More education about delirium and physician support.

Is there anything else you would like to add regarding caring for older patients with delirium at PVH?

Time 1, # Responses: 13/29
I feel that right now here at PVH we do an amazing job caring for them, better than in the nursing homes I worked But now with more patients per workers, the quality of care is going to suffer greatly.
Getting physicians on board and receptive to changing orders if a patient has delirium would be helpful
Ongoing education is appreciated. I've been a nurse for 15 years and this is the first year I will have received any education about delirium.

Comparison, #Responses: 5/18
Specifically, how can night shift help these patients.
Guidelines would be helpful to streamline care.

Time 2, #Responses: 8/23
Older patients want to be listened to. Their dignity is very important. When we are rushing in and out because we are understaffed, they don't feel important.

Question: **How have the delirium education, assessment tool and protocol been helpful in caring for older patients with delirium? Not helpful?**

For Time 2 only, #Responses: 16/23
Yes, clear explanation of what delirium is was helpful and the order set is straightforward.
I feel I have a better understanding of the difference between delirium and dementia. I know who my resources are.
I think it was very helpful and I think people are given medications more infrequently now.
I think the delirium assessment tool is helpful to a point. But when it is obvious the patient is normal, it becomes almost a joke. I feel that doing it over and over each shift is redundant. It can be useful, but not all the time.
It has not been helpful. It catches the delirium too late when it is medication related.

DISCUSSION

The size of the older population is expected to double from 2000 to 2030, increasing to 71 million by 2030 (Federal Interagency Forum on Aging-Related Statistics, 2006 in Scherer, Bruce, Montgomery & Ball, 2008). As the aging population in the United States increases, the need for expanded hospital care for older adult patients will continue to gain momentum. Delirium can be prevalent among the aging population and the incidence of delirium developing during a hospital stay is high. Yet, hospital caregivers (i.e. RNs, certified nursing assistants, physicians, etc.) may not have adequate training, experience, support, or the guidance of a protocol to encourage consistency in identifying the signs and symptoms of delirium and in initiating appropriate and effective treatment. It is important to understand how nurse attitudes toward caring for older patients influence delirium care in the elderly population and in turn, how nurse attitudes and care practices are affected by knowledge, training, time, support and other resources for delirium care. As a result, it is valuable to understand the connection between nurses' education, attitudes toward care for older patients, and philosophies of aging, and workplace factors.

Lewin's (1974) change theory, suggests positive change in the workplace requires three steps—unfreezing, reorganizing, and refreezing. His theory addresses the essentials of understanding the social milieu and attitudes of staff in order to identify factors and forces that may impede change. Staff buy-in and participation in the change process are also critical. Awareness of these dynamics and changes in attitudes is important in assessing the effectiveness of change. The purpose of this research project was to understand participants' attitudes and

knowledge related to caring for older adults and adults with delirium prior to and after an education and training intervention.

Summary of Findings

The first research question for this study was: What are nurses' attitudes toward caring for older patients and for older patients with delirium or acute confusion? The current study found that most participants were fond of older patients and had passion for providing good care to older adults. However, even though the desire to provide care was strong, various negative personal impacts were experienced by participants. This is not surprising given that RNs are in the helping profession and oftentimes their personal well-being is related to their caring roles (Dahlke & Phinney, 2008; Lou & Dai, 2002; Millisen et al., 2004; Rogers & Gibson, 2002). Additionally, nursing staff reflected not having enough time to engage with their patients and many believed that they did not receive the support they needed from other staff and physicians. These areas did not improve over time.

Open-ended responses from participants, further reflected empathy for patients, while at the same time participants' feelings of frustration at being unable to provide the desired care because of the lack of time, resources and support. Time and CNA and physician support appear to be ongoing areas of concern that should be addressed in future research and in educational trainings among nursing staff. These resources are particularly needed when caring for patients with delirium because of delirium's fluctuating nature and the difficulty for patient recovery without ongoing and intentional treatment interventions (Dahlke & Phinney, 2008; Inouye, 2006).

The second research question for the current study was: How might an intervention of delirium education and access to a delirium assessment tool and treatment protocol change

nurses' attitudes regarding perceived knowledge, comfort and competence in recognizing and caring for delirious patients? The general knowledge, competence and confidence component improved significantly after the intervention. Some of this success may be attributed to the reality that delirium education and training had never been offered before and that the hospital addressed a need and area of frustration among nursing staff. Practical tools for assessment and follow through with care led to growth in confidence and comfort in delirium care capacity. However, improvement in knowledge, competence, confidence and the ability to identify delirium and understand it's consequences did not improve the general burden of care experienced by nurses. The component which measured nurse attitudes toward burden of care scored lower than knowledge and delirium identification factors before the intervention and did not improve post-training.

Other personal impacts, such as feeling inadequate in caring for older delirious patients, did not score as negatively as expected. This was accordant with similar positive responses to questions of confidence and trusting oneself in providing good care. However, several reviewed studies suggested that feelings of confidence did not necessarily reflect the ability to recognize delirium and provide appropriate care (Fick et al., 2007; Inouye et al., 2001; Steis & Fick, 2008). Although nurses initially believed they were confident in their care, both confidence and trust in oneself improved significantly following the intervention. Feeling overwhelmed initially scored lower than confidence, but changed significantly in a positive direction following the intervention. Education, training, an assessment tool, and a protocol to follow for care may have reduced the stress of not knowing how to proceed with effective care. However, feelings of inadequacy and burden of care did not change following the intervention.

Several qualitative studies addressed personal, negative impacts experienced by nurses in caring for older patients with delirium. Fear for safety and losing control of the situation, lack of support, not feeling heard, and not having time to provide the consistent care undermined self-esteem and feelings of adequacy (Dahlke & Phinney, 2008; Lou & Dai, 2001; Milisen et al., 2004; Rogers and Gibson, 2002). It would appear that although this intervention improved confidence and reduced feeling overwhelmed, personal impacts of time demands, lack of support, and perhaps other unidentified resources, were not addressed by education and tools for care. Further focus on development of an elder-friendly environment that provides comfort, familiarity, and consistent staff may reduce nurse burden of care and improve patient outcomes (Dahlke & Phinney, 2008; Rogers & Gibson, 2002; Young & George, 2003).

Nurses' drive to continue improving their skills with ongoing education and mentoring did not diminish following the intervention. The "desire to learn more" component included these two aspects, and it remained strong after education and training were implemented. This interest and motivation could be followed up on with different forums for learning, such as question and answer sessions, discussion regarding patient vignettes, regular check-in times with a mentor and peers, etc.

The final research question of this study was: "Are nurse demographics related to attitudes and attitude change?" Nurse demographics had surprisingly little association with differences in attitudes and change after the intervention. However, an analysis of responses to open-ended questions revealed the importance of CNA support in the care of patients with delirium. Concern was raised by about 10 respondents that their essential support was being cut.

Nurses did reveal strong overall scores for the "healthful" philosophy of aging. Attitudes that revealed a "decline" philosophy of aging (i.e., cognitive impairment among older patients is

inevitable) did not score high. These underlying beliefs about aging did not change over time with this particular intervention. However, awareness of philosophies of aging is valuable in understanding the quality of the care given and the dynamics of the workplace and should be kept in mind for future education.

Implications for Theory

In its first step toward effective change, Lewin's (1974) change theory communicates the importance of awareness, attitudes and education. Attitudes reflect realities in the workplace and are a driving force behind adopting effective changes as well as resisting change. Education and tools for care were addressed by this intervention and led to positive change in attitudes for caring for older patients with delirium. Adequate time and support by peers and physicians were viewed as important and nursing staff remained frustrated when they were lacking. A question that future researchers using this theory might ask is how can change theory be adapted to these large challenges of adequate time and peer and physician support? Through this question, researchers might be able to attend to some of the organizational and communication issues facing healthcare.

An additional theory that guided the current study was situated clinical reasoning (McCarthy, 2003). In this study, philosophies of aging did not change from pre- to post-intervention. However, nurses overall revealed a healthful perspective on aging. A healthful philosophy of aging is associated with nurses' desire to take time to find underlying causes of delirium and to follow through with care. According to McCarthy (2003) nurses with a healthful philosophy believe patient improvement is possible as opposed to the decline philosophy which leads to accepting delirium as normal with little to be done. It would be worthwhile to further understand the contribution of beliefs and philosophies of aging to attitudes and quality of care.

Implications for Future Research

The aspects of burden on nurses and time and support for giving appropriate care are areas of considerable concern in developing effective care for patients with delirium without burning out those who give the care. Further study could contribute to better understanding the workplace dynamics that lead to burden and how the resources of time and physician support might be addressed and improved in the daily practice of care. Understanding negative impacts on nurses' energy, capacity, confidence, and self-esteem when caring for challenging older patients could help with developing changes to counter the negatives that deplete resources. Several earlier studies found that nurse participation and peer communication were important in implementing effective change (Lacko et al., 1999; Riekerk et al., 2009; Young & George, 2003). Work groups that include physicians, nurses, and CNAs in designing and implementing changes may be more productive than modifications instituted by managers. Assessing the usefulness of these work teams and the outcomes on patients would be a logical next step in future research.

Also, there appear to be few, if any, tested assessment scales for nurse attitudes in caring for challenging patients. This could be an arena for fruitful study and development. One instrument for assessing nurses' strain in caring for patients with delirium was developed and evaluated for validity and internal consistency (Milisen et al., 2004). Milisen's scale lists challenging characteristics of patients with delirium and asks nurses to rate how easy or difficult care is for each behavior. It is an insightful instrument focusing specifically on burden of care. However, it does not address a fuller picture of knowledge, follow-through, personal impact and philosophy of aging. According to Lewin's theory of change, awareness, education, and reorganization depend on understanding multiple factors in the workplace including attitudes,

beliefs, and behaviors. The survey developed for this study could be a precursor to developing and testing an instrument which addresses a broad range of attitudes including general care for older patients, perceived knowledge, competence and confidence in caring for older patients with delirium, time and support, personal impacts, and personal beliefs. Questions that held together in the four components—knowledge, competence and confidence (KCC), ability to identify delirium and understand it's consequences (AIUC), desire to learn more (DTLM), and burden of care (BOC)—could be further tested for reliability and validity with a broader scope beyond a single community hospital.

Implications for Direct Practice

Ongoing education and mentoring were given solid ratings, even after the education intervention. Further education could focus on nurses' expression of needs as well as incorporation of new research. As an example, the current study found one small area that could be further developed for continuing education. The knowledge question, "Disorientation is the best indicator of patient delirium," scored low and did not change with the delirium intervention. However, inattention with an acute onset and fluctuating course are the primary indicators (Inouye, 2006). This suggests the need for a refresher course and possibly more in-depth study.

To provide the attention needed for unhurried and focused delirium care in a healthcare environment that is experiencing growing pressure to do more with less time and financial resources, creative approaches must be considered. Perhaps retired nurses and other volunteers could receive delirium education and training to complement nurses' desire to give time-consuming, effective care to older patients with delirium. They could be included on a communication team regarding input on patient needs.

Limitations of the Study

Although the current research contributes to the larger body of knowledge addressing nursing education, attitudes, and philosophies of aging when working in hospitals with individuals with delirium, the results are limited to those individuals who participated in the study. The reason for not being able to generalize to the larger population include the fact that this research was carried out at one community hospital, with a small overall sample size that is not representative of the larger healthcare environment. Furthermore, participants' characteristics were relatively similar and future research would benefit from recruiting participants from more diverse backgrounds. Also, respondent bias is a concern with a Likert scale and attitude survey, in that participants may want to appear positive. The lack of a measurement that was previously tested for validity and reliability might have further complicated the robustness of the research results. Finally, a significant shortcoming in the study was the lack of a comparison unit that took the survey at both pre-intervention and post-intervention times and that the researcher did not deliver the intervention.

CONCLUSION

Numerous factors in the work environment affect nurses and subsequently, the quality of care they are able to provide for patients with delirium. Increased workload, challenging patients, limited education, little moral support, minimum opportunity to spend time assessing and caring for patients with delirium, and a lack of a protocol and guidelines perpetuate a cycle in which delirium is not recognized and adequately treated.

This research is a beginning in understanding nurse attitudes toward caring for patients with delirium on three hospital units. Results from the current study revealed that nurses are motivated to provide quality care and that they respond positively to education, training and care protocols. However, the burden of care-giving and the lack of resources of time and peer and physician support continue to impact nurses in the daily care environment. In this study, nurses revealed significant improvement in attitudes toward knowledge, competence, confidence and ability to identify and understand the consequences of delirium six weeks following an education intervention. The intervention included education regarding the nature of delirium and training in the implementation of an assessment tool and care protocol. Desire for ongoing education and mentoring remained strong after the intervention. Addressing what appear to be deficient resources of time and support, as well as assessing burden of care in delirium care, is an important next step.

A focus on effective care for older patients is also important for the larger healthcare environment which must spread financial resources across an increasingly growing older population. Delirium care contributes to the challenge. It is a disease that requires considerable resources of time and attention, which are increasingly in short supply. If adequate attention is

not given, the long-term effects and costs of delirium on the patient, the family, and the healthcare system are enormous. Creativity and resources are needed to address this growing concern. The first step to effective change is awareness of the care environment and attitudes that reflect the realities of everyday healthcare practice. This small study contributes toward understanding the interaction of nurses' attitudes and philosophies of care, workplace factors, and the daily care process.

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APPENDIX A
Delirium Education

Delirium
A Medical Emergency

January 2011

Objectives

At the end of this class, the learner will be able to:

- Define delirium and potential outcomes of delirium
- List three types of delirium
- Distinguish between delirium, dementia, and depression and discuss coexistence of three states
- List causes/etiology of delirium
- List risk factors for delirium
- List methods to prevent delirium
- Name CNA interventions for prevention or treatment of delirium

January 2011

What is delirium?

- Delirium is derived from the Latin word *delíria*, which literally means to "be out of your furrow."
- Also known as "acute brain failure". It is a MEDICAL EMERGENCY
- Consequences of delirium include increased patient mortality and morbidity

January 2011

Definition of delirium

An acute, short-term disturbance of consciousness which may last from a few hours to as long as a few months. It is characterized by:

1) acute onset with a fluctuating course
2) inattention
3) disorganized thinking and/or
4) altered level of consciousness.

January 2011

Definition of delirium

Defined in *Diagnostic and Statistical Manual of Mental Disorders*, 4th edition as "sudden onset of impaired attention, disorganized thinking or incoherent speech, clouded consciousness, perceptual disturbances, sleep-wake cycle problems, psychomotor agitation or lethargy, and disorientation."

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Delirium - information

- Delirium is a common syndrome in hospitalized older adults and is characterized by the rapid onset and fluctuation of altered mental status
- Delirium can be prevented with recognition of high-risk patients and the implementation of a standardized protocol.

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Delirium - information

- Delirium is a common complication in hospitalized older people.
- Delirium is a sign of brain failure and is a medical emergency.

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Outcomes of Delirium - mortality

- Patients with delirium have an increased risk of death. The mortality rates range from 22 -76%
- Patients without a history of dementia who develop delirium are at very high risk of mortality or nursing home placement
- The one-year mortality rate for patients with delirium is 35 – 40%.

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Outcomes of Delirium - morbidity

- High risk of urinary incontinence, falls, & pressure sores
- At risk for long-term cognitive impairment.
- At risk for increased post-op complications
- At risk for decreased functional ability

- At risk for increased hospital length of stay from 9 – 32 days

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Outcomes of Delirium - morbidity

- Delirium is associated with an increased risk of institutionalization.
- Increased use of physical & chemical restraints
- Patients with delirium and dementia are at very high risk for poor outcomes

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Outcomes of delirium - financial

- The care of patients [with delirium] accounts for more than 49% of all hospital days
- Average costs can be more than 2 ½ times the costs of patients without delirium.
- Total cost estimates attributable to delirium ranged from $16,303 to $64,421 per patient in one study.

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Outcomes of delirium - financial

- Substantial costs can mount up after hospital discharge
- The economic impact of delirium rivals the health care costs of falls and diabetes.

Prevalence and incidence of Delirium

- Delirium prevalence (present on admit)=
10 – 15% of acute care patients
31% in ICU

- Incidence (new onset) of delirium =
10 – 40% of acute care patients
43 – 61% in patients after hip surgery
31% of patients in the ICU
83% of mechanically ventilated patients.

January 2011

Delirium is often not recognized

•Physicians do not identify delirium in 32% to 66% of patients, and nurses fail to recognize delirium in up to 70% of patients.

•The second class on delirium will teach screening tools, a nursing protocol, and orders to follow for delirium.

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Three types of Delirium
Hyperactive – Hypoactive - Mixed

•Hyperactive delirium - Patient is overly alert and is acutely responsive to his or her environment. The patient is restless, agitated and may have delusions or hallucinations.

•15 – 47% of cases of delirium are the hyperactive delirium.

January 2011

Three types of Delirium
Hyperactive – Hypoactive - Mixed

•Hypoactive delirium – patient is lethargic, drowsy, or stuporous. The hypoactive form is often unrecognized or misdiagnosed as depression.

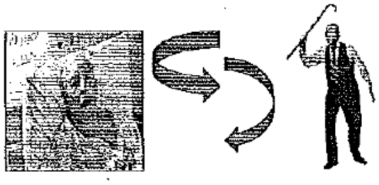
•19 – 71% of delirium cases are hypoactive

•If delirious patients do not have agitation or behavioral disturbances, nurses and physicians do not view the mental status changes as problematic and, as a result, fail to recognize the hypoactive form of delirium

January 2011

Three types of Delirium
Hyperactive – Hypoactive - Mixed

Mixed delirium accounts for up to 52% of episodes
•The patient fluctuates between the hypoactive state, the hyperactive state, and a normal level of consciousness.



January 2011

Delirium?? Dementia?? Or Depression??

The conditions of delirium, dementia, or depression, can have similar symptoms and may coexist which creates a bigger challenge for the health care provider when trying to diagnose and treat the patient.

•Delirium = an acute, short-term disturbance of consciousness which may last for a few hours to as long as a few months. It is characterized by: 1) acute onset with a fluctuating course, 2) inattention, 3) disorganized thinking, and/or 4) altered level of consciousness.

January 2011

Delirium?? Dementia?? Or Depression??

The conditions of delirium, dementia or depression can have similar symptoms and may coexist which creates a bigger challenge for the health care provider when trying to diagnose and treat the patient.

- Dementia = the general term used for a form of cognitive impairment that is chronic, progressive, and occurring over a period of months to years.

January 2011

Delirium?? Dementia?? Or Depression??

The conditions of delirium, dementia, or depression can have similar symptoms and may coexist which creates a bigger challenge for the health care provider when trying to diagnose and treat the patient.

- Depression = A common mental disorder that presents with depressed mood, loss of interest or pleasure, feelings of guilt or low self-worth, disturbed sleep or appetite, low energy, and poor concentration.

January 2011

Delirium?? Dementia?? Or Depression??

Delirium or dementia or other ??

Other conditions that can mimic delirium or dementia include vitamin B_{12} deficiency and thyroid disease. These conditions require assessment so that the appropriate diagnosis and treatment is done.

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Delirium or dementia or both??

- Psychomotor abnormalities such as restlessness, agitation, fidgetiness, anxiety, and sleep-wake cycle disturbance are common in delirium.

- These features are helpful in distinguishing delirium from dementia, in which mainly "negative" cognitive symptoms predominate and the level of consciousness is not usually altered.

January 2011

Both Delirium and Dementia can occur

Delirium superimposed on dementia is less likely to be recognized and treated and it's too often taken for granted that things simply go "downhill" mentally with aging.

Behavioral or cognitive changes in a patient with dementia are often viewed as "sun-downing" or attributed to the underlying dementia illness itself, rather than to a superimposed delirium

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"Sun-Downing" = Delirium

Sun-downing is not a symptom of dementia

It is a sign of acute change in attention and signifies delirium. It requires quick detection and treatment of the cause of the delirium.

January 2011

Both Dementia and Delirium can occur

The prevalence of delirium superimposed on dementia ranges from 22% – 89% of persons who are 65 and older.

Patients with delirium and dementia have an increased risk of long-term cognitive impairment, have increased rates of rehospitalization within 30 days, have higher odds of admission to long-term care than patients with dementia or delirium alone, and have higher mortality rates

PAY ATTENTION

January 2011

Depression or Delirium??

Depression = A common mental disorder that presents with depressed mood, loss of interest or pleasure, feelings of guilt or low self-worth, disturbed sleep or appetite, low energy, and poor concentration.

•The patient with depression will have some "spotty" memory impairment, while the patient with delirium is not aware of memory issues or an altered level of consciousness

•The depressed mood occurs before any memory loss

January 2011

Depression or Delirium??

Delirium = an acute, short-term disturbance of consciousness which may last for a few hours to as long as a few months. It is characterized by: 1) acute onset with a fluctuating course, 2) inattention, 3) disorganized thinking, and/or 4) altered level of consciousness.

To differentiate between depression and delirium, use the delirium/dementia/depression handout and confer with the provider about a psychiatric consult.

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Causes/etiology of Delirium

The leading hypothesis for the cause of delirium is a cholinergic deficiency:

•Acetylcholine is a neurotransmitter that has a major role in attention and consciousness and the cholinergic pathways are widespread throughout the brain.
•Abnormalities in the pathways or a deficit of acetylcholine are possibly connected with delirium

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Causes/etiology of Delirium

Lab tests have also demonstrated that the serum anticholinergic activity may be increased (less acetylcholine available) during states of delirium and then reduced (more acetylcholine available) when the delirium resolves.

The theory of cholinergic deficiency as a cause of delirium is weak, as studies done with the use of cholinesterase inhibitors (which increase the acetylcholine) have not demonstrated any benefit in preventing or treating delirium.

January 2011

Causes/etiology of Delirium

Indications are that acetylcholine deficiency plays a pivotal role in the incidence of delirium. Experts believe that multiple factors such as hypoxia, decreased cerebral metabolism, and the following list of factors contribute to acetylcholine deficiency and delirium.

Drugs
Elimination
Liver & other organs
Infection
Respiratory
Injury
Unfamiliar environment
Metabolic

January 2011

Causes/etiology of Delirium

These situations can cause delirium:

- Hypoglycemia, hypercalcemia, hyponatremia, hypokalemia
- Toxins
- Side effects of single or multiple interacting medications
- Infections
- Inflammatory or autoimmune disorders
- Seizures or postictal states

Each additional risk factor creates an increased possibility of delirium.

January 2011

Causes/etiology of Delirium

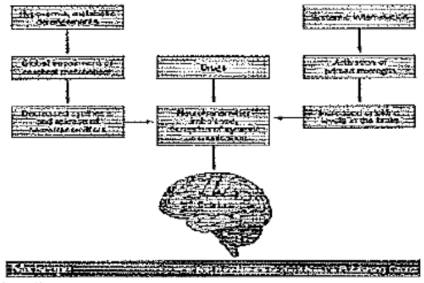
These situations can cause delirium:

- Vascular lesions
- Dehydration
- Deprivation or overload of sensory stimulation
- Changes in surroundings
- Sleep deprivation
- Withdrawal from drugs or alcohol (this is a separate type of delirium that is not treated with the protocols in this class)

Each additional risk factor creates an increased possibility of delirium

January 2011

Causes/etiology of Delirium



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Independent Risk Factors for Delirium

*Vision impairment
*Severe illness

*Cognitive impairment is most strongly associated with the development of delirium

*A high blood urea nitrogen/creatinine ratio (used to indicate dehydration)

January 2011

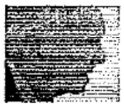
Independent Risk Factors for Delirium




January 2011

Additional Risk Factors for Developing Delirium

*pre-existing challenges with Activities of Daily Living
*increasing age
*male sex
*hearing impairment
*depression
*disability
*abnormal serum sodium
*alcohol abuse



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Additional Risk Factors for Delirium - Medications

Most common classes of medications to cause delirium:

- sedative-hypnotics
- opioids
- antihistamines (e.g., diphenhydramine)
- antipsychotics
- anticholinergics (e.g.,scopolamine, Bentyl, atropine)
- cardiovascular drugs.

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Additional Risk Factors for Delirium - Medications

The Beers List is a list of medications that should be avoided in older patients:

1) because they are ineffective, or have a unreasonably high risk, and a safer alternative medication is available or

2) they should not be given to older persons with particular medical situations

January 2011

Additional Risk Factors for Delirium - Medications

•With aging, the metabolism and excretion of many drugs decrease.
•Benzodiazepines such as Valium, Dalmane, and Librium may cause signs of toxicity that do not appear until days or weeks after therapy is started, which may present as delirium.

AVOID BENZODIAZEPINES!!

January 2011

Additional Risk Factors for Delirium - Medications

- The effects of fat-soluble drugs such as Valium are more concentrated and last longer.

- Overall hepatic metabolism of many drugs decrease with aging. Examples of cardiovascular drugs that are affected by hepatic metabolism include:
  - lidocaine
  - nifedipine
  - verapamil.

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Preventing Delirium

Delirium can be prevented!!!!

It is an important sign of a systemic or cerebral emergency that requires immediate diagnosis and treatment to reduce the risk of death and morbidity.

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Why Prevent Delirium?

•Once delirium is present, the interventions and treatment has not been found to improve long-term mortality or the need for institutional care.

•Persistence of symptoms that developed during delirium may be a sign that the original medical illness is still active or the patient condition has deteriorated.

Methods to prevent delirium

•Avoid high-risk medications (use Beer's List)
http://archinte.ama-assn.org/cgi/content/full/163/22/2716

•Prevent/treat infections

•Prevent/treat dehydration & electrolyte abnormalities.

Methods to prevent delirium

Pain control with non-pharmacological methods first:

Positioning
Heat or cold
Diversion methods such as the Care Channel
Use appropriate medications

Methods to prevent delirium

- Augment oxygen delivery with supplemental O_2 and/or give blood and blood pressure support as needed.
- Ensure patient has functioning sensory aids in place.

Methods to prevent delirium

•Regulate bowel/bladder function.

•Observe and record food & drink taken in by patient.

•Supply consistency in nursing care

Methods to prevent delirium

•Assess for and manage metabolic disturbances (hypoglycemia, hypercalcemia, hyponatremia, hypokalemia).

End of first class for RN

Bring example of patient with delirium to next class
Complete evaluation form
Obtain contact hour certificate

January 2011

CNA Interventions for Prevention and Treatment of Delirium

The CNA/UAII is an integral part of this program!

- Oxygenation status

-Monitor vital signs including SpO_2 and inform RN of a decreasing SpO_2, or an SpO_2 that is less than 90%

- Pain

-Report patient complaints of pain to the RN
-Report behaviors that may indicate pain (e.g. moaning, grimaces, restlessness, guarding) to the RN

January 2011

CNA Interventions for Prevention and Treatment of Delirium

- Maintain High Fall risk precautions

- Orientation

-Reassure & reorient patient
-Use calendars and clocks in patient room
-Introduce self
-Explain all activities and procedures simply and clearly

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CNA Interventions for Prevention and Treatment of Delirium

- Orientation

-Keep physical environment consistent

-Nursing care – maintain consistency in nursing care by providing familiar nurse or CNA each shift.

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CNA Interventions for Prevention and Treatment of Delirium

- Appropriate sensory stimulation:

-Low lighting but not total darkness
-Use a nightlight
-Ensure patient is using personal sensory aids (glasses and/or hearing aids are essential!)
-Do not allow patient to be isolated for long periods of time.

January 20

CNA Interventions for Prevention and Treatment of Delirium

- Avoid sensory overload

-Monitor number of visitors in patient room
-Avoid use of intercom

- Encourage activity as directed by the RN

-Frequent repositioning
-Patient up in chair for meals
-Ambulation or active range of motion
-Encourage self-care activities

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CNA Interventions for Prevention and Treatment of Delirium

- Prevent/treat dehydration
-Encourage frequent small sips of fluids
-Try alternative fluid sources, such as popsicles or gelatin
-Monitor and record intake & output & weight.
-Report weight change to RN

January 2011

CNA Interventions for Prevention and Treatment of Delirium

- Maintain normal elimination patterns
-0600 – 2200 toileting Q 2 hrs
-2200 – 0600 toileting Q 4 hrs
-Monitor and record all bowel movements;

- Normalize sleep
-Encourage wakefulness during day
-Maintain the patient's usual sleep/rest patterns
-Aim for uninterrupted sleep at night

January 2011

CNA Interventions for Prevention and Treatment of Delirium

- Communication
-Instructions should be short, simple and repeated
-Speak directly to the patient
-Explain to the patient what is going to be done
-Discuss familiar topics of interest

January 2011

CNA Interventions for Prevention and Treatment of Delirium

- Enhance sleep
-Offer snack or warm beverage prior to sleep
-Provide mouth care, and washcloth, or shower
-Offer massage and warm blanket
-Cluster patient care between 2200-0600
-Minimize hallway noise
-Utilize relaxation music or "white noise"

January 2011

CNA Interventions for Prevention and Treatment of Delirium

- Prevent/treat infections
-Following universal precautions and isolation precautions
-Report elevated temperature to the RN

- Adequate nutrition
-Assist with menu choices as allowed by diet order
-Assist with tray set-up and/or feeding patient as needed

January 2011

CNA Interventions for Prevention and Treatment of Delirium

-Report these patient conditions to the RN:
-agitation
-orientation changes
-memory changes
-lethargy
-hallucinations
-vital signs
-weight gain or loss of 5 pounds (2.2 kg)
-disorganized thinking
-family members' report of change in patient behavior

January 2011

PAY ATTENTION

"Delirium is a window that allows us to examine the quality of care being provided to older persons"

(Inouye, et al. 2000)

January 2011

Questions??

Please complete evaluation form!

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January 2011

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APPENDIX B
Delirium Assessment Tools

The Confusion Assessment Method (CAM)

1. Acute onset or fluctuating course This feature is usually obtained from a family member or nurse and is shown by positive responses to the following questions: o Is there evidence of an acute change in mental status from the patient's baseline? Did the (abnormal) behavior fluctuate during the day, that is, tend to come and go, or increase and decrease in severity?	Yes	No
2. Inattention This feature is shown by a positive response to the following question: o Did the patient have difficulty focusing attention, for example, being easily distractible, or having difficulty keeping track of what was being said?	Yes	No
Are both 1 and 2 above positive? ➢ **If "No", Stop. Does not suggest delirium** ➢ **If "Yes", continue.**	**Yes**	**No**
3. Disorganized thinking This feature is shown by a positive response to the following question: o Was the patient's thinking incoherent, such as rambling or irrelevant conversation, unclear or illogical flow of ideas, or unpredictable switching from subject to subject?	Yes	No
4. Altered level of consciousness This feature is shown by an answer other than "alert" to the following question:	Yes	No

o Overall, how would you rate this patient's level of consciousness? Alert = normal Vigilant = hyperalert Lethargic = drowsy, easily aroused Stupor = difficult to arouse Coma - unarousable		
In addition to 1 and 2 being positive are EITHER 3 or 4 positive? ➢ **If "No", Stop. Does not suggest delirium.** ➢ **If "Yes", Suggests delirium. If this is the first positive response, contact the physician.**		

"Adapted from: Inouye SK, vanDyck CH, Alessi CA, Balkin S, Siegal AP, Horwitz RI. Clarifying confusion: The Confusion Assessment Method. A new method for detection of delirium. Ann Intern Med. 1990; 113: 941-948. Confusion Assessment Method: Training Manual and Coding Guide, Copyright 2003, Sharon K. Inouye, M.D., M

Six–Item Screener

I would like to ask you some questions that ask you to use your memory. I am going to name three objects. Please wait until I say all three words, then repeat them. Remember what they are because I am going to ask you to name them again in a few minutes. Please repeat these words for me: APPLE – TABLE – PENNY (Interviewer may repeat names 3 times if necessary but repetition not scored.)		
Did the patient correctly repeat all three words?	Yes	No
	Incorrect	Correct
1. What year is this?	0	1
2. What month is this?	0	1
3. What is the day of the week?	0	1
What were the three objects I asked you to remember?		
4. Apple	0	1
5. Table	0	1
6. Penny	0	1

Scoring: A score of 4 or less is indicative of cognitive impairment.

Callahan, C., Unverzagt, F., Hui, S., Perkins, A., & Hendrie, H. (2002). Six-Item Screener to Identify Cognitive Impairment among Potential Subjects for Clinical Research. *Medical Care, 40* (9), 771-781

Establishing functional history prior to injury or illness:

Prior to this illness, did the patient function independently without need for any assistance in daily self-management?

If yes, what has changed?

☐ Forgetting ☐ Decision making ☐ Medication management ☐ Repeating Self ☐ Getting lost ☐ Expression of basic needs ☐ Ability to climb stairs	☐ Recent falls ☐ Basic mobility ☐ Dressing ☐ Feeding ☐ Toilet use ☐ Bladder control ☐ None of the above

If no, how did the patient function previously?

Needs help making decisions	Not at all	Sometimes	Frequently
Needs help managing medication	Not at all	Sometimes	Frequently
Repeats self	Not at all	Sometimes	Frequently
Gets lost	Not at all	Sometimes	Frequently
Forgets	Not at all	Sometimes	Frequently
Problems expressing basic needs	Not at all	Sometimes	Frequently
Difficulty climbing stairs	Not at all	Sometimes	Frequently
Has had recent falls	Not at all	Sometimes	Frequently
Needs help transferring	Not at all	Sometimes	Frequently
Needs help dressing	Not at all	Sometimes	Frequently
Needs help with feeding	Not at all	Sometimes	Frequently
Needs help toileting	Not at all	Sometimes	Frequently

APPENDIX C
Delirium Treatment Protocol

SCOPE:

Poudre Valley Hospital

PURPOSE:

To provide guidelines for screening older adult (age 65+) patients for delirium and caring for those patients experiencing delirium or suspected delirium.

GENERAL INFORMATION:

1. Delirium is a medical emergency requiring urgent intervention and management.

2. Older adults are particularly at risk for delirium post surgery, with acute medical conditions, during exacerbations of chronic medical conditions, and when dementia is present.

3. Cognitive assessment and evaluation for delirium should be performed routinely for these patients. .

4. Delirium may present in a hyperactive form with agitated behaviors or in a hypoactive form with somnolence, or may be a mixed presentation.

5. Delirium symptoms may fluctuate.

6. There are a multitude of possible causes of delirium including hypoxia, medications, CNS pathology, acute vascular events, deprivation/overload of sensory stimulation, changes in surroundings, infection, malnutrition, dehydration, metabolic and electrolyte imbalances, sleep deprivation, and alcohol and drug withdrawal.

7. When delirium is detected, and the order set is utilized, pharmacy will perform a medication review for possible precipitating cause.

8. All members of the treatment team will search for underlying causes.

9. This protocol is for not for alcohol or drug withdrawal delirium.

PROCEDURE:

Detection:

1. On admission, gather baseline information on all patients during the routine physical assessment. Call significant others or care facilities if more information is required in order to understand previous level of function and recent changes.

2. During the admission assessment, administer the Six-Item Screener as a first level cognitive screen.

3. Once every 12 hours, administer the Confusion Assessment Method (CAM). Engage the patient in conversation while listening for errors, repetitious comments, language problems, while assessing for lethargy or agitation for completion of the CAM.

4. Acute onset of any of the following behaviors requires additional CAM assessment:

- agitation or lethargy
- fluctuating or altered level of consciousness
- memory impairment or disorganized thinking
- uncooperativeness or failure to follow instructions
- change in behavior or function
- inattentiveness
- stupor

5. When CAM assessment suggests delirium, contact the primary care provider immediately, contact pharmacy for a medication review, and initiate care interventions.

6. Reassess the patient using the CAM every shift to track the patient's mental status over the course of hospitalization.

Care Management:

In a patient at risk to develop delirium, having symptoms that are suggestive of delirium such as an acute change in mental status, or having a positive diagnosis of delirium, implement the following:

1. Oxygenation – Monitor vital signs and ensure adequate oxygenation.

2. Pain - Assess for pain or assume pain and treat per orders.

3. Institute High Fall Risk precautions

4. Orientation

- Provide frequent re-orientation including the use of calendars and clocks.
- Obtain familiar possessions from home and common bedside objects

5. Sensory stimulation -

- Ensure the donning of eye glasses and hearing aides.
- Do not allow patient to be isolated for long periods of time.
- Encourage family involvement
- Educate family on what delirium is, why it occurs and how they can help
- Avoid sensory overload
-

6. Encourage mobilization as possible

- Frequent repositioning as needed
- Up in a chair for meals as able
- Ambulation twice a day as able
- Encourage self-care activities

7. Prevent dehydration

- Encourage frequent small sips of fluids
  Try alternatives, such as popsicles or gelatin

8. Strive to maintain a normal elimination pattern.

- Toileting q2h 0600 – 2200; q4h 2200 - 0600
- Monitor for bowel movement at least every two days and intervene as necessary.

9. Avoid physical restraints and Foley catheters

10. Communication

- Instructions should be clear, slow-paced, short, simple, and repeated
- Speak directly to the patient
- Explain what is going to be done before doing it.
- Discuss familiar topics or topics of interest

11. Normalize sleep

- Encourage wakefulness during the day.
- Maintain the patient's usual sleep/rest patterns
- Aim for uninterrupted sleep at night
-

12. Enhance Sleep

- Avoid use of sedative-hypnotics
- Offer snack or warm beverage prior to sleep
- Provide mouth care
- Provide washcloth for hands and face OR provide a bath
- Toilet as appropriate
- Offer back, hand or foot massage
- Offer warm blanket
- Provide low lighting
- Cluster night care between 2200 and 0600
- Minimize hallway noise

Patients with Severe Agitation

1. Try non-pharmacological approaches for agitation such as using the Care Channel, distraction, massage, or relaxation techniques.

2. Provide consistent staffing as possible.

3. Communicate carefully as suggested in #10 above.

4. Convey an attitude of warmth, calmness and kind firmness acknowledging the patient's emotions.

5. Present one stimulus at a time.

6. Assess the environment for triggers for agitation and modify the surroundings as needed.

7. Avoid confrontation and attempt distraction.

8. If unsuccessful in calming using non-pharmacologic interventions, introduce pharmacologic intervention per order set.

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POUDRE VALLEY HOSPITAL
POUDRE VALLEY HEALTH SYSTEM
Fort Collins, Colorado

Delirium Management - Inpatient Adult (Age 65+)

Nursing Orders

Assessments

- ☑ Assess vital signs every four hours until delirium resolves, then every eight hours.
- ☑ Assess intake and output every eight hours.

Interventions

- ☑ Post Void residual
- ☑ Notify Provider if Post Void residual greater than 300 mL.
- ☑ Notify provider if no BM in 2 days.
- ☑ Immediate blood glucose level if patient diabetic.

Respiratory

- ☑ Respiratory Therapy Protocol
- ☑ Oxygen administration to maintain saturation greater than 90%.

Laboratory (If not done within the last 24 hours)

Chemistry

- ☑ C-reactive protein (CRP), quantitative now
- ☑ Thyrotropin (TSH) now

Hematology

- ☑ Complete blood cell count with automated white blood cell differential now

Panels

- ☑ Basic metabolic panel now

Therapeutic Drug Levels/Toxicology

- *If patient taking the following medications, draw level*
- ☐ Cyclosporine level now
- ☐ Digoxin level now
- ☐ Phenobarbital level now
- ☐ Theophylline level now

Urine Studies

- ☑ Urinalysis (UA) with microscopy now, culture if positive (UAC)

Consults

- ☑ Consult to occupational therapy eval and treat
- ☑ Consult to physical therapy eval and treat

Patient/Caregiver Education

- *Patient and family education regarding delirium*

Medications

- *Pharmacist assessment of Medication Profile and recommendation of unnecessary and/or precipitating medications.*
- ☑ sennosides-docusate sodium 8.6 mg-50 mg tab : 2 tabs at HS daily for 3 days, hold for diarrhea.

Medications - PAIN

Non Opioid PRN Medications

lidocaine 5% (700 mg/patch) adhesive patch

- ☑ 1-2 patch transdermally every 24 hours over painful area. May use one or two patches. Patch may be cut to cover painful area. Patch/es on for 12 hours, then off for 12 hours.

acetaminophen

- ☑ 488 milligram orally every 4 hours as needed for pain (1-1/2 tabs of 325 mg)
- ☑ 15 milliliter elixir orally every 4 hours as needed for pain if unable to take tablets (32.5 mg/mL)

Medications - Antipsychotics

Antipsychotic Agents

- *May use the following agents if agitation is unresolved after utilizing non-pharmacologic approaches:*

haloperidol

- ☑ 0.5 milligram orally every 30 minutes as needed for agitation up to 2 mg
- ☑ 0.5 milligram intramuscularly every 30 minutes as needed for agitation up to 2 mg if unable to take orally

risperiDONE

- ☑ 0.5 milligram orally every 4 hours as needed for agitation

Patient Identification

Date _____ Time _____ Provider Signature _____

APPENDIX D
Nurse Attitude Survey

Demographic Questions

Anonymous identifier (*six letters--first two letters of mother's first name, first two letters of father's first name, first two letters of elementary school name*) _____

Age - Check category: 20 – 29 _____, 30 – 39 ____, 40 – 49 ___, 50 – 59 ___, 60 – 69 _____

Name of your hospital unit _____

Job position _____

Education _____ (nursing degrees and training)

Number of years employed as a hospital nurse _____

Number of years employed on your current unit _____

Survey Questions

Refer to your care of patients who are 65 years and older

	Strongly Disagree	***Disagree***	***Do not Agree or Disagree***	***Agree***	***Strongly Agree***
I find it rewarding to care for older patients.	1	2	3	4	5
I would rather care for patients who are younger than 65 years old.	1	2	3	4	5
Caring for older patients can be burdensome.	1	2	3	4	5
*I can recognize the symptoms of delirium.	1	2	3	4	5
In caring for older patients, I am frustrated with not knowing the best way to proceed with confidence.	1	2	3	4	5
When an older patient is confused, I know that something else is not right.	1	2	3	4	5
It is difficult to determine if an older patient's delirium is caused by the hospital stay.	1	2	3	4	5
I am comfortable in my care for older patients	1	2	3	4	5

	Strongly Disagree	***Disagree***	***Do not Agree or Disagree***	***Agree***	***Strongly Agree***
I don't have enough resources and skills to help an older patient recover from delirium.	1	2	3	4	5
*I am confident in establishing the presence of delirium.	1	2	3	4	5
It is normal for older patients to get confused.	1	2	3	4	5
There is little I can do to help a delirious patient, except to keep him or her quiet and safe.	1	2	3	4	5
I take delirium in older patients seriously and try to deal with it in a timely manner.	1	2	3	4	5
I trust myself in following through with appropriate interventions for an older patient with delirium.	1	2	3	4	5
*I understand what delirium is.	1	2	3	4	5
I don't know enough about delirium in older patients to make a clear identification.	1	2	3	4	5
Disorientation is the best indicator of patient delirium.	1	2	3	4	5
I have not received adequate training to care for an older patient with delirium.	1	2	3	4	5
My nursing peers are helpful when I have questions about a patient with delirium.	1	2	3	4	5
*I recognize subtypes of delirious states	1	2	3	4	5
If an older patient appears confused, I talk with family or friends to find out if there has been a recent change.	1	2	3	4	5
*I am familiar with risk factors associated with delirium.	1	2	3	4	5
I could provide better care for older patients with delirium, if I had better resources and more support on my unit.	1	2	3	4	5

	Strongly Disagree	***Disagree***	***Do not Agree or Disagree***	***Agree***	***Strongly Agree***
It is difficult for me to determine whether an older patient has dementia or delirium.	1	2	3	4	5
Caring for an older patient with delirium makes me feel overwhelmed.	1	2	3	4	5
*I know the potential impact of delirium on morbidity.	1	2	3	4	5
I would like **ongoing** education regarding care for older patients with delirium.	1	2	3	4	5
It is important to use a daily delirium screen instrument.	1	2	3	4	5
I feel I spend too much time planning care for a patient with delirium.	1	2	3	4	5
I feel supported by physicians when I suggest an older patient has delirium.	1	2	3	4	5
I am comfortable in my care for older patients who have delirium.	1	2	3	4	5
*I intervene with specific measures when a patient is delirious, eg. orientation, glasses, hearing aid, quiet approach, etc.	1	2	3	4	5
My manager is not receptive to my concerns about my older delirious patients.	1	2	3	4	5
I have time to appropriately care for older patients who have delirium.	1	2	3	4	5
I would like ongoing mentoring regarding care for older patients with delirium.	1	2	3	4	5
My unit has a protocol for identifying and treating delirium in older patients.	1	2	3	4	5
Caring for older confused patients makes me feel inadequate as a nurse.	1	2	3	4	5
Caring for older patients with delirium motivates me to learn more about how to appropriately care for them.	1	2	3	4	5

Open Ended Questions

Describe your personal rewards in caring for patients over 65 years old.

Describe your frustrations in caring for patients over 65 years old.

What resources or supports would help you to improve your care for older patients with delirium?

Is there anything else you would like to add regarding caring for older patients or for older patients with delirium at Poudre Valley Hospital?

Post Intervention Survey only:

How have the delirium education, assessment tool and protocol been helpful in caring for older patients with delirium? Not helpful?