IMPROVING THE CARE MANAGEMENT OF DELIRIUM IN HOSPITALIZED OLDER ADULTS: IMPACT OF EDUCATION ON HOSPITAL AIDES IN THE ROLE AS A SITTER

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Abstract

Delirium commonly occurs in hospitalized older adults (Hshieh, Yang, Gartaganis, Yue, & Inouye, 2018) and is associated with negative physical and emotional patient outcomes. As one of several hospital team members involved in the management of care for an older adult with delirium, a hospital aide (HA) is often relied upon to provide direct patient care in the role as a sitter (Collela, et al., 2017). Yet, many hospital aides have not received training about delirium, its associated symptoms, or appropriate interventions (Carr, 2013; Solimine et al., 2018). This Doctor of Nursing Practice improvement project sought to determine if an educational session, based on the theoretical framework of Albert Bandura's Social Learning Theory (Bandura, 1969), increased HA knowledge and delirium behavior(s) recognition, as well as accurate performance in the delivery of care to patients with delirium.

There were several positive results from the education session on delirium. First, there was an improvement in HA knowledge of delirium as noted by an increase in mean scores from the pre-test compared to the post-test. Secondly, HAs demonstrated retention and reproduction of their gained knowledge at the bedside by accurately performing care of patients with delirium at the bedside as scored by the Observation Rubric and in detection of delirium symptoms on the Sour Seven Detection Tool. Themes from the qualitative data were consistent with the reproduction of knowledge in the role of the role of the sitter at the bedside. The education session also contributed to increased confidence in carrying out important responsibilities as a sitter such as observation and communication. In carrying out these responsibilities, the HAs had less apprehension in caring for patients with delirium and could apply skills, knowledge, and techniques in helping and caring for older adults. There was also a clearer definition of how the HAs were valued as important contributors to the interdisciplinary team (IDT).

By using an interactive and engaging educational framework such as social learning theory (SLT), HAs can demonstrate accuracy of knowledge immediately after an educational session on delirium as well as reproduce and apply knowledge in practice at the bedside in the role as a sitter. Previous to this project, the role of the HA as a sitter was underutilized, however this project illuminated the valuable contribution of HAs augmenting the IDT.

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Approved 08/30/2019

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Chapter 1: Introduction

1.1 Problem

Delirium is an acute confusional state that commonly affects hospitalized older adults. The occurrence of delirium ranges anywhere from 29% – 64% (Hsheih, et al., 2015) in this population and has multiple consequences including risks of increased morbidity, mortality, falls, functional decline, institutionalization, and emotional distress for patients and families (Dharmarajan, Swami, Gou, Jones, & Inouye, 2017). Delirium also has estimated costs of $164 billion in health care costs arising from prolonged hospitalization, treatment of complications or requiring placement into a long-term care facility (Hsheih, et al., 2015; Martinez, Tobar, Beddings, Vallejo, & Fuetes, 2012). Prompt detection of delirium symptoms and accurate interventions are therefore crucially important to the provision of safe and quality care of hospitalized older adults as well as to reduce health care costs.

Due to the fluctuating course of delirium symptoms that can occur from minutes to hours, or with a clinical presentation ranging from lethargy to psychomotor hyperactivity, the assessment and treatment of delirium is challenging. Hospital staff often find the care management of patients with delirium very difficult because the interventions that may have worked on a previous shift may be ineffective during another shift for the same patient. This great variance in symptomology and presentation requires a team approach to the care of older adults experiencing delirium and one which utilizes all members of the healthcare team.

Although registered nurses (RNs) are responsible for the assessment of delirium, the Hospital Aides (HAs) are the personnel who are most often delegated with the task of providing direct bedside care to patients with delirium, and in many instances as a one to one caregiver in the role of a sitter (Collela et al., 2017). In this role, the HA provides continuous observation and

care to the patient. Yet, many HAs have not received adequate training about delirium or interventions appropriate for delirium patients and their associated symptoms of agitation, confusion, impulsivity, disorientation, and aggression. The HA may not know what symptoms to report to the nurse, and/or what activities would be appropriate to perform when a patient is delirious, leading to concerns about safety for both the patient and HA. This lack of HA education also results in underutilization of the HA as a contributing member of the healthcare team. With increased knowledge about delirium, the HA could better contribute to interdisciplinary team (IDT) efforts toward early identification of symptoms and care of older adults experiencing delirium.

1.2 Significance

Given the magnitude of patients who are affected by delirium in the acute care setting, the necessity of a team approach to address the complexity of delirium assessment and care, and the frequent use of HAs as one to one caregivers of older adults with delirium, a quality improvement project aimed at educating HAs is a significant need. If an established process for care provided by the HA can be developed, there could potentially be improved throughput for patients to be discharged home or for a short stay in a long-term care facility. Delirium may resolve, and patients may have improved functional and cognitive abilities. Also importantly, with training, the HA may feel more empowered and internally motivated to apply their newly acquired knowledge about delirium as a contributing member of the healthcare team.

1.3 Background

Sitter usage has become a common practice in the management of delirium for older adults due to priorities for patient safety, in the prevention of unintentional injury from agitation, as an alternative to physical restraints, or in fall prevention intervention (Adams & Kaplow,

2013; Colella et al., 2017; Schoenfisch et al., 2015). However, the HA who is at the bedside for an 8-hour shift, often feels challenged by their lack of knowledge in providing care to a patient with delirium. During my hospital rounds as a Geriatric Clinical Nurse Specialist (GCNS), HAs often mention feeling inadequately prepared on what is needed to effectively and safely provide care for patients with delirium. This input from HAs in my clinical practice area aligns with the findings of others investigating the HA role in the care of patients with delirium (Solimine et al., 2018; Morandi et al., 2015; Schoenfisch et al., 2015; Carr, 2013). It is also substantiated by my own observations at the bedside of inconsistency in the interventions and routines being done for patients with delirium by HAs. For example, some HAs have been observed appropriately interacting and engaging in conversation with patients, yet in other instances, patients have been allowed to sleep throughout the morning without any type of interaction. The discrepancy in evidence-based care of patients with delirium requires correction through enhanced education and training of HAs.

1.3.1 Lack of HA educational training in delirium care. A gap in the educational training of HAs, is noted in the literature and has multiple implications. For example, Schoenfisch et al. (2015) conducted a qualitative study using surveys and focus group interviews with HAs to explore their perspective of occupational safety in their role as sitters. The HAs described a need for additional training and education, specifically the need for more information on personal safety, de-escalation and methods to communicate patient/visitor behaviors. Morandi and colleagues (2015) quantitively and qualitatively assessed the experience of informal caregivers and staff (staff nurses, nurse aides, physical therapists) caring for patients with delirium superimposed on dementia (DSD). Findings demonstrated a significant correlation between health care staff feelings of distress and deficits in their assessment and appropriate

treatment of patients with DSD. Based on these findings, Morandi and team (2015) strongly recommended additional education, training, and support for formal and informal caregivers of patients with DSD. In a systemic review of the role of sitters in delirium, Carr (2013) similarly determined that although current evidence supports the role of the sitter as part of the management of patients with delirium the specific type of training required for the sitter role is not clear and more consistency in education and training is needed. Long-term recommendations suggested by Carr (2013) include creating national guidelines to provide safeguards in the industry to ensure safe and effective patient care, in addition to creating a national reporting scheme for sitter usage.

1.3.2 Addressing gaps in education. As noted by these researchers and my own observations, there are gaps in the specific content needed in the educational training for HAs. The current role of a HA focuses on the functional aspects of patient care which include activities of daily living (ADL), such as assisting with meals, ambulation, assisting with toileting, bathing, and grooming. Potential training with HAs will need to include how each of the ADL is important in the overall functionality of hospitalized older adults and that a sudden change in a patient's abilities in performing ADL is considered important information to report to the healthcare team.

An example of an evidenced-based program used in the acute care setting with areas that could be part of the standardization of managing care for patients with delirium is the Hospital Elder Life Program (HELP) (Hshieh et al., 2015; Rubin, Bellon, Bilderback, Urda, & Inouye, 2018). The HELP uses an IDT approach which includes trained volunteers to implement practical interventions at the bedside including reorientation, early mobilization; therapeutic activities, hydration, nutrition, sleep protocol, and hearing or vision impairment equipment

(Hshieh et al., 2015). Components of the HELP protocols would be a good fit for inclusion in the training of HAs as well, substituting the role of volunteers with HA sitters. In addition, a tool for detection of delirium symptoms, originally created for use by family caregivers called The Sour Seven Questionnaire (Shulman, Kalra, & Jiang, 2016), would also be appropriate for use by HAs as it is based on observations of functional disruption in the ADL.

Also important, and as noted in the HELP protocols, an IDT approach to delirium care is recommended and a study conducted by Mudge, Maussen, Duncan, and Denaro (2012) lends support to the potential effectiveness of an appropriately educated HA as a contributor to this team approach. In this study, Mudge and colleagues investigated the quality of delirium care with an established interdisciplinary care team which included nursing assistants. These teams had a low incidence of new delirium reflecting that an established interdisciplinary care environment can be helpful for delirium care (Mudge et al., 2012).

As such, it is evident that the appropriately educated HA could be considered a valuable contributor to the IDT care of patients experiencing delirium by using their functional one-to-one sitter role and ability to provide direct observation of acute changes in a patient's functional abilities to effect early attention, assessment and intervention by the hospital team. In addition, once delirium is detected, the HA with appropriate education and training could help initiate evidence-based interventions in the management of delirium. Through the collaboration of HAs, RNs, physicians, and other members of the IDT, the complex multifactorial causes of delirium may be intervened upon immediately to prevent further complications.

1.4 Purpose of the Project

The purpose of this project was to determine if an educational intervention provided to HAs who serve as a sitter for older adult patients experiencing delirium in an acute care setting

increases their knowledge regarding care for these patients and skill in the detection of delirium symptoms. The aim of this project was effective utilization of appropriately trained HAs as members of the healthcare team in an effort to provide patients with delirium improved safety and quality of care.

1.5 Clinical Questions

1) Does the delivery of a 3-hour long educational session about delirium given to HAs increase their knowledge scores on a post-test about caring for older adults with delirium in an acute care setting compared to a pre-intervention knowledge test?
2) Subsequent to the educational session, does the HA demonstrate accuracy in detection of a patient's delirium symptoms as measured by the Sour Seven Questionnaire in comparison to assessment by a clinical expert?
3) Subsequent to the educational session, does the HA demonstrate accuracy in delivery of care to patients with delirium as validated by observation by a clinical expert?
4) Subsequent to the educational session, what is the HA's level of confidence and self-perception of their contributions to interdisciplinary care of the patient with delirium?

1.6 Nature of the Project

The project involved delivery of a 3-hour educational session on care of the patient with delirium to HAs. Knowledge acquisition was measured using a pre-post assessment. Accuracy in the delivery of care and detection of symptoms was measured by my direct observation of HAs in the delivery of care to patients with delirium.

The theoretical framework used to guide the educational intervention for HAs was the Social Learning Theory (SLT), developed by Albert Bandura (Bandura, 1969). Bandura proposes a four-step, mainly internal process that drives social learning and has applicability to staff development training (Bahn, 2001). The first phase of the four phases is, attentional, with the observation of a role model. Second, the retention phase involving the storage and retrieval of what is observed. Third, is the reproduction phase, when the learner copies the observed behavior. The fourth and last phase is motivational, which indicates the learner's level of motivation to perform a certain type of behavior (Bandura, 1969).

1.7 Definition of Terms

The following terms were used throughout the project and operationally defined as follows:

1.7.1 Delirium. An acute change in attention, awareness, and cognition from a patient's baseline that tends to fluctuate during the course of the day (American Psychiatric Association, 2013). Delirium may be difficult to identify due to its transient nature and diverse presentation often affecting older adults. There are three subtypes of delirium: hyperactive, hypoactive and a fluctuating mixture of both hyperactive and hypoactive. The hypoactive form is more common among older adults and often goes unrecognized because a patient may appear to be sleepy or lethargic, and not exhibiting any problematic behaviors (Oh, Fong, Hshieh, & Inouye, 2017). Delirium often occurs after acute illness, surgery, or hospitalization, and its development initiates a cascade of events contributing to the loss of independence, increased morbidity and mortality, institutionalization and high health costs (Oh et al., 2017).

1.7.2 Hospital Aides. Also referred to as, certified nurse aides, nurse aides, nursing assistants unlicensed assistive personnel who play a vital role in patient care. HAs provide direct

care to patients related to personal hygiene, vital signs, feeding, ambulation, toileting, and cognition. HA work under the supervision of a RN (Glynn, Saint-Aine, Gosselin, Quan, & Chute, 2017).

1.7.3 Sitter. A HA who provides one on one observation as a method to protect patients from harm (Wray & Rajab-Ali, 2014). Sitters also are referred to as constant care aides at the project site.

1.8 Summary

The magnitude of delirium incidence in older adults in the hospital setting, negative impact of delirium on patient outcomes and potential iatrogenic effects delirium may have on staff or family members warrants additional attention to team approaches to management of care. Although the HA as a member of the health care team, is relied upon to provide direct patient care and often in a one to one sitter role, they lack sufficient knowledge to do so effectively. A cogent argument can be made that with adequate training and education, HAs might contribute in a significant way to the safety and quality of care for hospitalized older adults with delirium. This project, which provided such education and training, has potential benefits of supplying HAs with increased knowledge and skill in the delivery of evidence-based care of patients with delirium to support healthcare's overarching goal of continuous quality improvement.

Chapter 2: Review of Literature

A literature review was undertaken to discover existing research and/or evidence-based practice guidelines as the groundwork for this project. The literature review used the search terms: delirium, older adults, hospitalized elderly, nurse aides, nursing assistants, unlicensed assistive personnel, sitters, interdisciplinary team, registered nurse role, knowledge tools, informal caregivers, models of care, and assessment tools in various Boolean combinations. Literature sources included peer-reviewed journal articles, as well as case studies, and dissertations extracted from databases such as CINAHL, MEDLINE, Pubmed, Cochrane Library, Google Scholar. In addition, bibliographic searching methods were employed. Studies that met inclusion criteria were those exploring the role of HAs in the care of older adults; HAs on IDTs; HAs role as a sitter; and delirium interventions appropriate for HAs. Exclusion criteria included studies conducted in areas such as the emergency room, psychiatric settings and critical care areas due to highly specialized interventions for patients with delirium in these settings and specially trained staff in these areas. The time frame used during the literature search was 2013 – 2018. The initial search resulted in 224 articles. Additional exclusion criteria were then applied, with a final result of 24 articles used in the literature review. Additional exclusion criteria included: interventions for, or assessments of, delirium involving RNs; delirium documentation in electronic medical records; delirium education with RNs; medications used for intervention of delirium; and treatment of delirium from alcohol withdrawal. The Johns Hopkins Nursing Evidence-Based Practice Rating Scale was used to evaluate the quality and strength of the evidence in the literature review and is presented in Table 1. The strength of the evidence was assessed and ranged from Levels 1-V with the quality of evidence for each article either high or good.

Table 1

Levels of Strength and Quality Literature of Evidence

Strength of Evidence	Quality of the Evidence	Number of Articles in Literature Review
Level I	A (High)	4
Level I	B (Good)	2
Level II	A (High)	0
Level II	B (Good)	3
Level III	A (High)	4
Level III	B (Good)	2
Level IV	A (High)	1
Level IV	B (Good)	0
Level V	A (High)	5
Level V	B (Good)	3

[1] Johns Hopkins Nursing Evidence-based Practice Rating Scale

Three major themes were revealed from the literature review: 1) Confusion and ambiguity in identifying the role of HA; 2) A gap in HAs contribution to interdisciplinary team (IDT) care of patients with delirium, and 3) A need for educating HAs in delirium care and observations.

2.1 Confusion and Ambiguity in Identifying the Role of Hospital Aides

Most HAs are considered unlicensed assistive personnel UAP and this term along with others such as nursing assistant, patient care technician, and orderly are often used interchangeably. They play a vital role in patient care providing direct care to patients related to personal hygiene, vital signs, feeding, ambulation, toileting and monitor patients' blood glucose. HAs also monitor cognition and are trained to reorient and redirect patients in need of cognitive impairment care (Glynn et al., 2017). The role of HAs encompasses the supportive care services

[1] Newhouse R., Dearholt, S, Poe, S., Pugh LC, White, K. (2005). The Johns Hopkins Nursing Evidence-based Practice Rating Scale. Baltimore, MD: The Johns Hopkins Hospital, Johns Hopkins University School of Nursing.

and personal assistance to disabled, elderly and/or ill (acute or chronic) requiring either short-term aid or long-term support in a variety of care settings (Hewko et al., 2015). Hewko and colleagues (2015) were able to categorize five areas of tasks assigned to HAs: physical tasks, patient contact tasks, nonpatient contact tasks, clerical tasks/administrative and tasks similar to RNs. Patient contact tasks such as bathing and feeding were most frequently reported. However, other responsibilities ranged from oral care, shaving to venipuncture and catheterization. This wide range of possible HA duties can lead to some role confusion and perhaps underutilization by the interdisciplinary healthcare team.

Hewko and colleagues (2015) also noted the difficulty in defining the role of HAs due to heterogeneity in duties, level of autonomy, and the setting of work with diverse groups of patients. In addition, there was a continued undervaluation of HAs which could adversely impact care providers, the facilities they work in and those who depend on their care. These challenges made describing the role of HAs nearly impossible.

Despite reported ambiguity in HA roles, the importance of the HA role in the care older adults was described in an exploratory mixed methods research by Cline et al. (2014) that focused on how the work environment influences RN perceived quality of geriatric care in rural hospitals using qualitative data from in-depth, semi-structured interviews combined with quantitative data from questionnaires measuring the RN work environment. The importance of nurse aides was highlighted by RNs who described the nurse aide as critical to staffing needs for providing quality geriatric care and assistance with activities of daily living (ADL). The RNs also recognized the presence of a nurse aide as instrumental for maintaining patient safety. The RNs perceived the nurse aides as important team members who enhanced the work environment by facilitating the RN's ability to perform other nursing tasks specific to their role. The RNs also

reported that nurse aides' attention to the functional aspects of care was equally important in the overall quality of care for the older adult.

Role confusion, multiple titles to the role, and lack of understanding of appropriate tasks for the role of HAs (Hewko et al., 2015) can be applied to the similar challenges seen with minimizing the current role of HAs functioning as a sitter in providing care for patients with delirium. In contrast, the contributions of the HAs in upholding the quality of care to older adults was highly regarded by RNs (Cline et al., 2014). The inconsistencies with providing appropriate care to older adults with delirium can be related to the current evidence of role ambiguity for HAs. Yet, when there is clear understanding of the HA role related to the functional and cognitive care of older adults (Cline, 2014; Glynn, et al., 2017) both RN and HA can work synergistically in achieving high-quality care to older adults.

2.1.1 Hospital aides as sitters. Another part of the role of HAs is as a sitter at the bedside. The most common reason a patient may need a sitter is due to the onset of delirium. In an acute onset of delirium, patients experience a sudden change in mental status, resulting in confusion. For patients who are in a hyperactive delirium, the main priority of nursing care is for the safety of the patient who could accidentally dislodge medical devices or forget instruction related to fall prevention, a sitter provides one to one observational care to hospitalized older adults suffering from delirium and as noted in the study by Cline and colleagues (2014), can greatly contribute to quality care by helping to maintain patient safety. In fact, sitters have become the mainstay and standard practice across healthcare for the management of patients with delirium and other associated safety risk behaviors (Colella et al., 2017). Increased awareness must be provided to address sitter wellbeing and the need for training and education

especially in the areas of personal safety, de-escalation and methods to communicate patient/visitor behaviors (Schoenfisch et al., 2015).

In a systemic review, Carr (2013) provided an overview of the role of sitters for the purposes of delirium management in the hospitalized patient. Concluding that the use of sitters in the management of delirious patients may benefit the patient both in terms of delirium control and application of consistent, frequent re-orientation therapy as well as possible reduction or prevention of the use of pharmacological agents and/or restrictive devices (Carr, 2013).

Another study by Solimine and colleagues (2018) reviewed the characteristics of patients for whom sitters were utilized in a major medical center. The top reasons for sitters included suicide risk, agitation, fall risk, interfering with medical devices and confusional disorientation. The researchers also noted delirium was the most common reason for sitters among elderly patients. Among elderly patients, the most effective measure to prevent delirium postoperatively was a multinterventional approach similar to the HELP.

Current evidence suggests the implementation of sitters at the bedside for patients who are delirious as common practice in the management of delirium (Carr, 2013; Solimine et al., 2018). The reasons for implementing the HA in the role as a sitter are due to the experiences they have in maintaining functional care with ADL (Cline et al, 2014) and extended need for patient safety (Schoenfisch et al., 2015).

2.2 A Gap in HAs Contribution to IDT Care of Patients with Delirium

The complexity of delirium requires collaboration among an array of staff in the hospital. Members that commonly comprise the IDT are nurses, physicians and other licensed professionals. Rarely, has the HA been included as a fully functional member of the IDT, despite the HAs having real-time knowledge via continuous observations of a patient for an 8-hour shift.

The observation and experiences of the HA could bring additional insight to assist the IDT in the overall clinical management of delirium.

The literature supports this notion that an IDT approach to delirium care that includes input from HAs can be effective. A study by Mudge, Maussen, Duncan, and Denaro (2012) of a general medicine unit using a multidisciplinary team approach to reduce incidence and duration of delirium and improve outcomes in delirious patients, revealed a low incidence of new delirium and in the patients who were delirious on admission, significantly fewer were discharged with persistent delirium.

Sockalingam et al. (2014) conducted a systematic review to determine the effect of interprofessional education (IPE) interventions on delirium care. The most frequently represented healthcare professionals in the reviewed studies were staff nurses (n = 9) and physicians (n=9) and only one study (Mudge et al., 2012) included nursing assistants. Yet, importantly, Sockalingam and colleagues concluded that the evidence supported the notion that IPE programs for delirium care and interprofessional practice interventions can potentially impact delirious patient outcomes, mainly by reducing rates of delirium post-intervention. In addition, the review provided new evidence that IPE interventions in delirium prevention and management can also improve team performance and collaborative competency in managing delirious patients, outcomes that have not been previously reported in delirium education reviews (Sockalingam et al., 2014).

Yet, in other studies it was evident that HAs were underutilized. In a qualitative study, Lai et al. (2018) explored hospice aides' perspectives on their work, their relationships with patients, families and IDT members, and their contributions to end of life care. Hospice aides described themselves as frontline providers based on the close relationship they formed with

patients and family members yet felt under-recognized by members of the hospice team. Instead of being partners in care, hospice aides were often viewed as skilled labor, which contributed to a sense of role invisibility. The researchers concluded that validating and integrating hospice aides as an IDT member (whether they physically attend the IDT meetings or not) and an agency's core service culture are likely to improve the quality of patient and family care, job satisfaction and retention among aides (Lai, et al., 2018).

In a phenomenological study, Lancaster, Kolakowsky-Hayner, Kovacich, and Greer-Williams (2015) examined the potential of hospital-based interdisciplinary care provided by physicians, nurses and unlicensed assistive personnel (UAP) based on qualitative semi-structured interviews. They found that most of the time, physicians, nurses and UAP operated as separate healthcare providers who barely spoke to one another. Findings also indicated a hierarchical, subservient relationship among nurses and UAP. Physicians and nurses tended to work together and consult each other at times, but UAP were rarely included in any type of meaningful patient discussion. Lancaster and colleagues (2015) posited that when healthcare providers do not communicate with each other, gaps of valuable patient information could be missed. The findings of hierarchical relationships by Lancaster and colleagues (2015) correlate in my own practice while interacting with RNs and HAs. IDT members will benefit from education on the valuable contributions of HAs.

These studies provide evidence that HAs are needed as members of IDTs, yet are not consistently included in IDT rounds, meetings, or education (Mudge et al., 2012; Sockalingam et al., 2014). The role of HAs on IDTs is important as a contributing member in the overall clinical management of delirium and other complex clinical conditions such as hospice care (Lai et al., 2018). Communication about the role responsibilities of HAs will need to be reviewed with

other members of the IDT to prevent role invisibility (Lai et al., 2018) or hierarchical relationships with nurses (Lancaster et al., 2015).

2.3 A Need for Educating HAs in Delirium Care and Observations

HAs are frequently marginalized when it comes to professional education activities, commonly held in acute care settings (Wholihan & Anderson, 2013). Providing education with the HA as the target audience could be a new approach and change from traditional approaches to professional development offerings that often are centered education only for RNs (Wholihan & Anderson, 2013). Acknowledging educational needs for HAs contributes to building confidence and commitment to their professional development.

In their work, Hewko and colleagues (2015) noted that most HAs in the US rated their training as excellent, yet, when more specific questions about topic areas were surveyed, two areas were identified by HAs as in need of additional training: working with abusive patients and dementia care. Hewko and team (2015) also noted inconsistency in the education and training of HAs in the role as sitters (Hewko, 2015). Although HAs were already in the role as a sitter for patient safety needs, they did not receive training specific to delirium (Carr, 2013; Morandi et al., 2015). Therefore, HAs need education about delirium which is the main indication for their presence in the role of a sitter (Carr, 2013; Solimine et al., 2018).

Despite receiving information from an RN, the HA often lacks a full understanding of what delirium means from the standpoint of their role, therefore feeling unprepared for what occurs when a patient experiences delirium. In reviewing hospital throughput for patients with delirium, emphasis was placed on having all staff members who are in contact with patients experiencing delirium to receive education on delirium at a level appropriate for their role (Holle & Rudolph, 2018).

A continuing education project was conducted by Ward, Stewart, Ford, Mullen, and Makic (2014) to improve knowledge and role satisfaction for certified nurse aides (CNAs) in acute care by implementing a multifaceted educational program including a 1-hour simulation platform with a skills lab. Included in the simulation training was delirium management among other areas such as code response, aspiration precautions and fall prevention (Ward et al., 2014). Feedback from the CNAs indicated an appreciation of the change in skills lab from a static equipment return demonstration to a more interactive and engaging learning format provided by simulation (Ward et al., 2014). Therefore, this type of learning modality could be considered an educational approach for delirium education with HAs.

Support for the feasibility of an educational program to train unlicensed personnel such as HAs can be found in the literature that demonstrates success in training other unlicensed persons such as volunteers and family members. In an original study of the HELP, Inouye et al. (1999) evaluated the effectiveness of a multicomponent strategy for the prevention of delirium. The intervention consisted of standardized protocols for the management of six risk factors for delirium: cognitive impairment, sleep deprivation, immobility, visual impairment, hearing impairment, and dehydration. These factors were selected on the basis of evidence of their association with the risk of delirium and because they were amenable to intervention strategies considered feasible in the context of hospital practice (Inouye et al., 1999). The intervention strategy was implemented by a trained IDT consisting of a geriatric nurse-specialist, two specially trained Elder Life Specialists, a certified therapeutic recreation specialist, a physical therapy consultant, a geriatrician, and also by trained volunteers (Inouye et al., 1999). The performance of each staff member including volunteers, were evaluated quarterly, with the completion of checklists to ensure competency and consistency, as well as

adherence to all intervention protocols. The results showed delirium developed in 9.9% of the intervention group, as compared with 15% of the usual care group (Inouye et al., 1999). The risk factor intervention strategy resulted in significant reductions in the number and duration of episodes of delirium in hospitalized older adults (Inouye et al., 1999). Similar to how volunteers were utilized on the IDT in this study, trained HAs could also function on the IDT.

Nearly twenty years after the original HELP study (Inouye et al., 1999), Hshieh, Yang, Gartaganis, Yue, and Inouye (2018) conducted a systematic review and meta-analysis to summarize the current state of the evidence regarding HELP and to highlight its effectiveness and cost savings. Adherence to HELP interventions was examined in 13 studies, adaptations were examined in 12 studies, the role of volunteers was examined in 6 studies, successes and barriers to implementation were examined in 6 studies and sustainability was examined in 10 studies (Hshieh et al., 2018). The systematic review demonstrated HELP to be effective in reducing the incidence of delirium and rate of falls, with a trend toward decreasing length of stay and preventing institutionalization (Hshieh et al., 2018). Although HELP has not yet been used to specifically guide delirium education of HAs in the role of a sitter. Yet the evidence regarding the benefits and effectiveness of HELP with volunteers provides a framework for inclusion in the development of an educational session about delirium for HAs.

Gorski and colleagues (2017) examined the effectiveness of providing training to volunteers (medical and psychology students) targeted at delirium risk factors in geriatric inpatients, on a medical hospital unit in Poland. The training included content on: theoretical knowledge and practical skills necessary to provide delirium interventions. Other content included: definition, diagnosis, etiology, risk factors, treatment, and prevention. Similar in scope and findings to the 1999 Inouye and team study of HELP interventions for delirium, this

training in delirium risk factors was significantly linked to reduced length of hospitalization in elderly patients on an internal medicine ward (Gorski et al., 2017).

Similarly, Martinez, Tobar, Beddings, Vallejo, & Fuetes (2012) designed a study to provide training to family members on prophylactic environmental management of in-hospital delirium (PEMID) patients. Their aim was to reduce the incidence of delirium, as they compared family member PEMID with standard management of elderly inpatients at intermediate or high risk of developing delirium during the course of hospitalization. Education of family members consisted of six elements: 1) information about clinical features and prognostic implications of delirium; 2) provision of a clock; 3) avoidance of sensory deprivation by having glasses, denture, and hearing aids available; 4) the presence of familiar objects in the room (photographs, cushions, or radio); 5) reorientation of patient; 5) extended visitation times (5 hours daily). Findings revealed benefits in the prevention of delirium using family members when compared with standard management of patients at risk of developing delirium (Martinez et al., 2012). The study supports research conducted by Inouye in 1999 which also demonstrated a multicomponent intervention reduces the development of delirium. The most important outcome was a delayed onset of delirium related to the multicomponent interventions (Martinez et al., 2012).

This evidence of feasibility in providing education and training to volunteers (Inouye et al., 1999) and family members (Martinez et al., 2012) in the care of patients with delirium can logically support similar feasibility in the education of HAs. By filling the gap in the education and training of the HA in the area of delirium they can be more effective in its early detection and minimization of potential complications (Hsheih et al, 2018). The education and training of HAs can further address their feelings of unpreparedness in the role of a sitter (Carr, 2013;

Morandi et al., 2015) and serve as a starting point to build the professional development of the HA (Holle & Rudolph, 2018; Ward et al., 2014).

2.4 Theoretical Framework

The theoretical framework that was used to guide the educational intervention for HAs will be the Social Learning Theory (SLT), developed by Albert Bandura (1969) and applicable to nursing education in a hospital setting (Bahn, 2001). The basic concept of SLT is that people learn through observing others' behavior, attitudes, and outcomes of those behaviors. Learning involves an information-processing activity in which information about the structure of behavior and about environmental events is transformed into symbolic representations that serve as guides for action.

Bandura (1969) explains that observational learning involves four component process or phases. The first phase is, attentional, necessary for any learning to occur. Role models with high status and competence are likely to be observed, although the learner's own characteristics (needs, self-esteem, competency) may be the determining factor (Bandura, 1969). Attentional processes regulate exploration and perception of modeled activities (Bandura 1986).

Second, the retention phase involves the storage and retrieval of what is observed (Bandura, 1969). Transitory experiences are converted for memory representation into symbolic conceptions that serve as internal models for response production and standards for response correction (Bandura, 1986). People expecting to perform an observed task will retain the input by imaginal and verbal systems. These are further reinforced by rehearsal and repeated exposure (Bandura 1986).

Third, is the reproduction phase, when the learner copies the observed behavior (Bandura, 1969). This stage is closely linked to the individual's performance skill so that guided

practice is required if complex behaviors are to be created (Bandura, 1986). Mental rehearsal, role modeling, immediate enactment, and corrective feedback strengthen the chances the behavior will be repeated.

The fourth and last phase is motivational, which indicates the learner's level of motivation to perform a certain type of behavior (Bandura, 1969). The incentive to perform is provided by three sources: external, vicarious, and self-produced (Bandura, 1986). External incentives include reward when modeled behaviors met with valued outcomes, but negative feedback will inhibit performance. Vicarious reinforcement is the result of learning by observing others successes and failures (Bandura, 1986). Self-produced refers to how people respond to their own actions by self-reward or self-punishment (Bandura, 1986). Motivational processes determine whether or not observationally acquired competencies will be put to use (Bandura, 1986). The application of SLT to staff education has also been demonstrated in studies of healthcare workers and students.

Bahn (2001) described the advantage of using SLT to guide nursing education given its focus on the social aspect of learning as well as the complexity of the environment and the person. Bahn noted the connection of SLT the needed collaborative approach to healthcare learning through the use of peers and expert practitioners as role models and source of feedback. Several other researchers have successfully implemented healthcare training programs based on an SLT framework as well (Goller, Steffen, & Harteis, 2018) and Shojaei, Tavafian, Jamshidi, and Wagner (2017), used SLT as a framework for educational training of HAs.

Interestingly, Goller et al. (2018) in their investigation of how novice nurse aides working in nursing homes learned and developed the knowledge and skills for their work, found that the nurse aides almost exclusively learned through observation and imitation as well as from

explanations of more experienced nurses (Goller et al., 2018). These methods of learning are inextricably linked to concepts of the SLT (Bandura, 1986).

Similarly, Robles, Esperanza, Pi-Figueras, Riera, and Miralles (2017) utilized an SLT-rooted teaching-learning modality of simulation providing both active learning (learning by doing), as well as passive learning (observing) which connects to the SLT concept of vicarious learning (Bandura, 1986). Before and after a simulation by live actors, physiotherapy and medical students were given questions to test their delirium knowledge. The higher scores on the post-test were statistically significant (Robles et al., 2017)

Also in connection to the application of SLT to healthcare learning the impact of role models on learning was further emphasized by Gibbs and Kulig (2017) who explored clinical nursing instructors' and nursing students' attitudes towards older adults. They conducted semi-structured interviews with six clinical instructors and thirteen nursing students. The findings revealed that nursing instructors are seen as strong role models for their students and their level of influence can be used in three areas: demonstration, expectations, and support, to create a positive shift in their students' attitudes.

For this project, the educational training on delirium for HAs included elements that directly linked to Bandura's SLT. At the start of the training session, HAs first received an empowering introductory message from the investigator-trainer about the value of HA participation in the IDT approach to delirium care. Impactful statistics were supplied to garner attention and anticipation of important content. Didactic content on delirium was presented and a geriatrician, GCNS, and volunteers served as actors to role play healthcare worker interactions with a patient experiencing delirium as well as other IDT members. These learning activities

reflected the first or attentional phase of SLT (Bandura, 1986) with the use of attentional motivators and observation of respected role models.

Then, the HAs had the opportunity to engage in an interaction with a simulated patient experiencing delirium and perform a return demonstration on accurate use of the Sour Seven observational tool for delirium as well as answering post knowledge assessment questions. This part of the educational training was framed by the SLT retention phase, which required storage and retrieval of knowledge as well as a rehearsal of a previously observed task.

After the educational session, the investigator (GCNS) followed-up on each HA attendee to observe accurate detection of delirium while the HA is a sitter at the bedside and observe the performance of appropriate interventions for delirium. These activities represented the reproduction phase of SLT (Bandura, 1986) where the HA was observed at the bedside by the GCNS for accuracy in the Sour Seven tool and performance as a sitter at the bedside.

While doing the above follow-up with HAs, the GCNS also queried the HA about confidence in their role and perception as a member of the IDT. These activities represented the final motivational phase in SLT (Bandura, 1986).

SLT can be applied as a template for guiding the education about delirium to HAs in an acute care setting. Using health professionals (GCNS, geriatrician) to be role models (Gibbs and Kulig, 2017; Robles et al., 2017) in the delirium scenarios, helped depict the simulated scene as an accurate reproduction of actual clinical presentation. Providing the opportunity for HAs to learn by observing role models and performing return demonstrations by imitation of the appropriate roles served as a meaningful, effective method for educating HAs (Gibbs and Kulig, 2017; Goller et al., 2018; Robles et al., 2017).

2.5 Summary

Many older adults are affected by delirium in the hospital. Current evidence suggests using sitters at the bedside for delirium among older adults has become common practice mainly for concerns of patient safety. Although HAs in the role as sitters can play a vital role in the management of delirium, they are often underutilized due to role ambiguity, inconsistencies in task responsibilities and lack of education. Although the literature supports the use of an IDT approach to the management of delirium, HAs are not effectively being utilized as part of the IDT, even during the critical time as a sitter for an older adult with delirium.

The challenges to the safety and quality care patient outcomes could be improved by providing opportunities for HA education about delirium and enhancing the HA value to the IDT. Using a framework of SLT, an educational session can be offered, using methods that would optimize learning for HAs. These methods include observing role models, engaging in return demonstrations, performing simulation patient scenarios and participating in an observational activity at the bedside. With the added knowledge about delirium, the HAs can be better prepared and feel more confident in caring for patients with delirium and be included as a key contributor to the IDT.

Chapter 3: Methodology

This chapter outlines the methods and procedures that were employed in this practice change project aimed at improving the care of hospitalized older adults with delirium by providing education and training to hospital aides and addressed the following clinical questions: 1) Does the delivery of a 3-hour long educational session about delirium given to hospital aides increase their knowledge scores on a post-test about caring for older adults with delirium in an acute care setting compared to a pre-intervention knowledge test? 2) Subsequent to the educational session, does the HA demonstrate accuracy in detection of a patient's delirium symptoms as measured by the Sour Seven Questionnaire in comparison to assessment by a clinical expert? 3) Subsequent to the educational session, does the HA demonstrate accuracy in delivery of care to patients with delirium as validated by observation by a clinical expert? and 4) Subsequent to the educational session, what is the HA's level of confidence and self-perception of their contributions to interdisciplinary care of the patient with delirium?

3.1 Project Design

The project used a longitudinal and mixed methods design. Quantitative data were obtained by pre-post testing that measured knowledge before and after delivery of a 3-hour educational session to HAs about delirium. Additional quantitative data were obtained later when the investigator returned to observe whether the HAs performed the appropriate delivery of care to an older adult with delirium in the role of a sitter, and whether their demonstration of using a delirium detection tool was accurate when results were compared with a clinical expert. Qualitative data were obtained from HAs in a short open ended interview conducted by the investigator to determine participant confidence in their role as a sitter and self-perception as a contributor to the IDT. This QUAL + QUAN (Morse, 1991) triangulation design was selected to

address the mix of project research questions which investigated both causal effects of an intervention as well as participant perceptions. It was also appropriate for collection of data applicable to the project's underlying theoretical framework: SLT (Bandura, 1969) which notably describes learning as occurring through a combination of processes that manifest in a triad of knowledge (attention and retention), skill (reproduction) and attitude (motivation). The SLT concepts of *attention* and *retention* were measured by knowledge acquisition pre-post tests on delirium and the SLT concept of *reproduction* measured by bedside observation of the HA providing care to patients with delirium and performing delirium detection. Qualitative data collected via open-ended mini-interviews with the HAs assisted with measurement of the final SLT concept of *motivation*. The combination of data types collected via this mixed methods approach helped to enhance the validity and inference quality of the project findings.

3.2 Setting and Sample

The project was conducted in a 250-bed acute care medical center in urban Honolulu. Within this medical center, there are (4) medical-surgical (MS) units with a total 126-bed capacity and (2) telemetry units with another 60-bed capacity that will be involved in the project. According to unit nurse managers, the percentage of older adults (patients over the age of 65 years old) on these medical surgical and telemetry units' ranges from 40% – 60% and the incidence of delirium ranges from 25% - 40%. In the medical-surgical areas, the nurse to patient ratio is one RN to five patients on the day, evening, and night shifts. On the telemetry units, the nurse to patient ratio of one RN to four patients for the day, and night shifts. During the day shift for all medical-surgical and telemetry units, there is one RN charge nurse who serves as a leader and clinical resource for patient care but does not have a panel of patients. For the evening and night shifts, a charge nurse is assigned a panel of patients and one nurse manager oversees the

entire clinical operations of the unit. The charge nurses decide which HAs will be assigned as a sitter and which HAs will remain on the unit to provide care for an assigned maximum of 10 patients per HA. When units have several patients who require sitters, HAs from the float pool help to provide staffing for units that may need more HAs due to having several patients who require a sitter.

Participants for this project were recruited from the pool of 120 HAs employed at the hospital among full-time, part-time or call-in status positions and who are part of the staff assigned as sitters on the above mentioned medical-surgical and telemetry units.

Recruitment of participants was done by posting of a flyer (Appendix A) on the nursing units and by verbal announcement during unit huddles by the investigator. Potential volunteers for the project were informed that participation was voluntary and that whether they chose to participate or did not, would not affect their employment status and/or employee reviews. Informed consent (Appendix B) was obtained on the day of the educational session prior to the start. The project was approved by the Institutional Review Board (IRB) of Hawaii Pacific University (Appendix C) as well as the medical center in which the project was carried out (Appendix D).

3.3 Instrumentation

A combination of quantitative and qualitative measurements was used to carry out this project. The tools included an evidence-based instrument for detection of delirium as well as an investigator developed demographics questionnaire, pre-post knowledge test, and observational rubric. In addition, open ended interview questions were used to collect qualitative data.

3.3.1 Demographic questionnaire for hospital aides. A 6-item questionnaire (Appendix E) was used to obtain information on participant gender, age, ethnicity, educational

background, employment status and years of experience as a HA prior to the start of the educational session.

3.3.2 Pre-post knowledge of delirium test. A pre-post knowledge of delirium test (Appendix F) developed by the investigator, was used to focus on determining knowledge acquisition from the 3-hour educational session. The test included 10 multiple choice questions on delirium, observation of delirium behaviors, and evidence-based delirium care protocols.

3.3.3 The Sour Seven: Delirium detection questionnaire for caregivers (Appendix G**).** Currently, there are no validated tools specifically developed for use by HAs to detect delirium among HAs. Instead, the Sour Seven: Delirium Detection Questionnaire for Caregivers (Shulman et al., 2016) was used by the HA participants to measure their skill in delirium detection before and after the educational session. This tool has been successfully used with family caregivers to detect delirium behaviors and was specifically developed so that untrained caregivers could be of assistance in screening for delirium in hospitalized older adults. It provides a simple means for identifying delirium that does not require extensive training, prior knowledge of a patient and is based on seven simple observations of the patient during caregiving (Shulman et al., 2016) and was therefore suitable for HAs use.

The Sour Seven is a 7-item weighted questionnaire with a maximum score of 18 that evaluates features of delirium, including altered awareness and attention, fluctuation, disordered thinking and behavior, impaired eating or drinking and difficulty with mobility (Rosgen et al., 2018). The Sour Seven tool was validated in comparison to a psychiatric interview conducted by a geriatric psychiatrist using DSM-IV criteria and demonstrated a positive predictive value of 100% and negative predictive value of 74.1% with a score of 9 as representing delirium (Rosgen et al., 2018). A comparison between the assessments of RNs and informal caregivers was done

for each question on the Sour Seven tool using the Fisher's exact test (Shulman et al., 2016). There were no significant differences in delirium ratings on questionnaires completed by RNs and caregivers (Shulman et al., 2016).

3.3.4 Hospital aide as a sitter observational rubric. An 8-item rubric (Appendix H) developed by the investigator was used to evaluate HAs performance and reproduction of evidence based delirium care behaviors that were role modeled during the education session. The rubric represents the optimal behaviors to be performed by HAs in the role as a sitter for a patient experiencing delirium. The investigator was outside of the patient's room for observation of a HA and checked off behaviors that were observed. A total number of check marks that were greater than or equal to 5, denoted reproduction of learning by observation and that the application of knowledge in care of patients with delirium at the bedside was achieved. For check marks that were less than or equal to 4, reinforcement of educational content was provided to the learner.

3.3.5 Open-ended interview questions. A final qualitative measurement was collected during mini interviews conducted by the investigator with HA participants. The investigator asked the HA the following questions: 1) Since attending the class on delirium, how confident are you as a HA in your role as a sitter caring for older adults with delirium? and 2) As a HA in the role of a sitter, how do you see yourself as a member of the interdisciplinary team? The HAs' responses were documented by handwritten notes taken by the investigator.

3.4 Procedures

There were initially two dates offered for the education sessions to accommodate work schedules of HAs. An additional two education sessions were offered to help with recruitment of volunteers who missed the initial classes due to work schedules. The education sessions

occurred at the site of the project where the HAs were employed.

3.4.1 Prior to the educational session. Three weeks prior to the first planned educational session, a flyer (Appendix I) about the project and educational session was distributed to the MS and telemetry units. Information about registration, brief description of the class, need for informed consent and contact information for the investigator was included. Two weeks prior to the session, preparation of materials for the sessions included: printing of handouts, consent forms, and registration lists. One week prior to the educational session, the investigator met with student volunteers with the geriatrics team and other volunteers who assisted with role playng of patients wth delirium and/or family members of patients with delirium to provide a briefing of their roles and explanations of the schedule for the educational sessions.

3.4.2 The educational session. Upon arrival at the education session, all participants were supplied with an informed consent form and opportunity to ask the investigator questions. Once consent forms were signed and collected, participants were asked to complete the demographic questionnaire and then administered the Pre-Test: Knowledge of Delirium to determine their baseline knowledge about delirium. After the pre-tests were completed and collected, the investigator conducted the educational session on delirium. Content of the educational session is provided in Appendix I. The investigator reviewed the use of the Sour Seven tool with HAs during the educational session on delirium. The HAs had an opportunity to practice using the tool during simulation of a patient with delirium at the education session. The education session, including consent and pre-post testing was three hours in length. Once the educational session was concluded, the participants completed the Post-Test: Knowledge of Delirium and received a certificate of attendance.

3.4.3 After the educational session. Post educational session follow-ups with the HAs began 48 hours after the educational session. The investigator checked with the medical center facility staffing clerk to obtain information on which HAs were scheduled as sitters and on what units and which patient rooms. The investigator then performed clinical rounds to observe HAs in their care of patients with delirium, using the HA as a Sitter Observational Rubric and Sour Seven Questionnaire (Shulman et al, 2016). The investigator completed the HA as a Sitter Observational Rubric from the doorway of the room. After completing the HA as Sitter Observational Rubric, the investigator entered the room and observed the HA do the Sour Seven Questionnaire. During this time, the Sour Seven Questionnaire was completed by both the HA and investigator. The HA's result with the Sour Seven Questionnaire was compared with the results of the investigator for accuracy. After completion of the Sour Seven Questionnaire, the investigator then asked the HA open-ended interview questions about their confidence level as a sitter and perception of their contribution to the IDT. Responses were collected via notes taken by the investigator.

3.5 Data Analysis

Data analysis involved an integration of quantitative and qualitative data to arrive at meta-inferences about the feasibility of training HA in evidence based delirium care and the concurrent impact it may have on their self-confidence and perception of contribution to the IDT care of patients with delirium. IBM SPSS was used to analyze quantitative data. Appropriate descriptive statistics were provided to summarize participant characteristics and indicators of central tendency and variability. To test the difference in mean scores on the Knowledge of Delirium pre-tests and posttests, a paired T-test will be calculated. Confidence intervals (*CI*s) were constructed around differences in means. Measures of central tendencies were reviewed and

correlation coefficients calculated to analyze test-retest reliability of the Knowledge of Delirium instrument. Subsequently, a Cochran Q test was used to analyze the effect of the educational session on HAs accuracy of delirium knowledge across the three measurement tools: Knowledge of Delirium test, Sour Seven Delirium Detection, and Observational Rubric. Each measurement tool was coded as either 1 = knowledge accuracy or 0 = lack of knowledge accuracy and the differences in the proportions of each measurement was analyzed for significance. With an alpha of 0.05, power of 0.80, and medium effect size (*Cohen's d*) of .50, the target sample size for the quantitative components of this project was originally for 64 participants (Polit, 2010).

The analysis of qualitative data gained from interviews with HAs included coding of data into categories in an effort to understand and describe patterns and themes. This was accomplished using a constant comparison technique (Creswell, 2009) in which the investigator reviewed notes repeatedly and continually coded, analyzed, and refined concepts. Member checking with the HA participants was also employed by the investigator to ensure accuracy in the interpretation of data meanings.

3.6 Project Timeline

Component	Projected Completion Date
Project Proposal Defense	January 2019
Institutional Review Board Approval	January-February 2019
Recruitment	March-April 2019
Delivery of Educational Sessions	March-April 2019
Participant Observations and Interviews	March-May 2019
Data Analysis	May 2019
Write-up of results and discussions	May-August 2019

Project Presentation/Defense	August 2019

3.7 Resources Needed and Budgetary Needs

The only cost incurred during the project was for lamination of pocket cards (total cost: $60.00) which the investigator provided to project participants. These cards served as reference cards regarding delirium, the Sour Seven tool and evidence based care for patients with delirium. If the facility decides to implement the project as a sustained process, the additional costs to consider will be for educational time for HAs. Given the current wage/hour for a HA of $21.00/hour, a 3-hour educational session would cost the facility approximately $63.00 per HA. Another potential cost for the facility would be for actors needed for the role-playing component of the educational sessions. The cost for actors is estimated to be between $15.00 - $20.00/ hour.

3.8 Measures to protect privacy

The investigator maintained the confidentiality of all subjects enrolled in the study by adhering to standards of confidentiality. All informed consents, instruments, and notes from interviews were kept in a locked file in the investigator's office. Results from the study were made in a summary format to keep identities of subjects confidential. At the conclusion of the project, all documents were destroyed.

3.9 Summary

The structured approach of a mixed methods design for this project facilitated the discovery of information in addressing the gaps in delirium education and underutilization of HAs as part of the IDT in the care of older adults experiencing delirium. Clinical questions were addressed using a combination of quantitative and qualitative instruments and processes. An

interpretative integration approach to data analysis was used to synthesize QUAN/QUAL mixed methods design of this project.

Chapter 4: Results

The project was conducted over an 8-week time period beginning with recruitment of participants on 3/10/19. A total of four educational sessions on delirium were held on 3/10/19, 3/26/19, 4/7/19, and 4/28/19 and follow-up visits for assessment of knowledge retention and application concluded on 5/12/19. Of the 17 hospital aides who agreed to participate, all completed the study. Quantitative data analysis of the four outcome measures of delirium knowledge was conducted using IBM SPSS Version 26. Exploratory qualitative analysis of interview transcripts was conducted by two reviewers using an open-coding approach to identify categories and themes. Results were examined to determine if an educational intervention provided to HAs in the role of a sitter increased their knowledge about caring for older adults with delirium and whether or not gained knowledge was accurately transferred to their delivery of care and their ability to detect delirium symptoms. Additionally, the HAs degree of self-confidence in caring for patients with delirium and contribution to interdisciplinary care of the patient with delirium was explored.

4.1 Hospital Aide Demographics

A convenience sample of 17 HAs participated as volunteers in this project. The majority of participants were female (94.1%), of Asian ethnicity (82%), in the age range of 35-54 years (65%) and had an educational background of some college up to a bachelor's degree (76.5%). Most were employed as part-time or call-in status (76.4%). Work experience was varied with 29.4% having 3 years or less experience, 23.5% 4-11 years' experience, 23.5% 12-19 years and 23.5% over 20 years' experience.

4.2 Findings: Pre-test Post-test Knowledge of Delirium Score Differences

After confirming assumptions of normality, a paired samples t-test was used to analyze differences of scores on pre/post knowledge of delirium tests. A pre-test mean score = 57 (SD 17.94) and post-test mean score = 80 (SD=16.95) resulted in a mean increase in scores following the educational intervention of 22.94 (SD=4.18). This difference in scores was normally distributed as confirmed by a non-significant Wilks $p > .05$. The *t*-test revealed a statistically significant difference in scores for pre-test versus post-test, with knowledge improving for the post-test $t\ (16) = 5.49$, $p = .000$ (95% CI = -31.8 - 14.1). This difference was representative of a large effect size with Cohen's $d = 1.33$.

Reliability analysis was used for the pre-post knowledge of delirium test items. The Cronbach's Alpha of the pre-test was 0.46 and the post-test was 0.29.

4.3 Findings: Accuracy of Delirium Knowledge across Three Measurements

A Cochran's Q test was used to analyze HA accuracy of delirium knowledge after the educational session as measured across time by the Knowledge of Delirium Test, the Sour Seven Delirium Detection Tool and an Observational Rubric. Participants were assessed immediately before the 3-hour educational session using the Knowledge of Delirium pre-test which served as a baseline measurement of knowledge accuracy. A Knowledge of Delirium post-test was completed by participants immediately after the educational session. Subsequently, each participant was assessed for accuracy in detection of delirium symptoms on the Sour Seven Detection Tool and accuracy in delivery of care to patients with delirium measured by an Observational Rubric. The mean number of days between HA attendance at the 3-hour long educational session and these subsequent measurements was 19 (SD=16.82) with a range = 4-64 days. Accuracy on the Knowledge of Delirium test was assumed for post-test scores of 80 or

higher. Accuracy of a participant's Sour Seven assessment was determined by comparison to a geriatric specialist's assessment. A score of 5 out of 9 points or greater on the Observational Rubric represented accurate HA reproduction of learning.

As noted in Table 4.3, accuracy of delirium knowledge increased on all three post-intervention measures in comparison to pre-intervention knowledge accuracy on HA pre-tests. This change was significant as reflected by Cochran's Q = 26.4 (3), p=.000 and confirmed in a pairwise McNemar post hoc test with a Bonferonni significant alpha adjustment of p = .016.

Table 4.3

Accuracy of HA Delirium Knowledge n=17

Measurement	**Count (#) Accuracy of HA Delirium Knowledge**		Mean Percent (SD) Accuracy of HA Delirium Knowledge	Significance of Change (p)* Post-Intervention Accuracy of HA Delirium Knowledge
	Yes	**No**		
Pre Test	3	14	18 (.393)	-
Post Test	10	7	59 (.507)	.016*
Observation	17	0	100 (.000)	.000*
Sour Seven	14	3	82 (.393)	.003*

* Pairwise McNemar with Bonferroni adjusted alpha p = .016

There were no significant correlations between sample demographics and the pre/post Knowledge of Delirium tests and Observational Rubric. There was a significant correlation between participant's age and ethnicity with the Sour Seven Delirium Detection. As age of participants increased, accuracy on the Sour Seven decreased. In addition, lower Sour Seven scores were associated with non-Asian ethnicity.

4.4 Findings: Qualitative Themes

Two questions were posed to participants during a mini-interview following the completion of the above quantitative measures:

1) Since attending the class on delirium, how confident are you as a HA in your role as a sitter caring for older adults with delirium?
2) As a HA in the role of a sitter, how do you see yourself as a member of the Interdisciplinary Team?

Using a constant comparison technique, two reviewers independently analyzed the transcript notes from participant interviews using the following process to promote inter-coder reliability and reduce bias. Transcripts were first read through in their entirety by each reviewer to promote immersion into the data and to gain general understanding of the key concepts and context. Then, each reviewer re-read the transcripts to identify segments belonging to particular categories. When this process of noting general categories from the transcripts was completed by each reviewer, they then met to discuss their analyses. After reaching consensus on the categories, these were then jointly refined into themes and subthemes. The transcripts were then re-examined to ensure they supported the themes. The following themes and subthemes were then finalized:

Theme 1: Increased confidence
    Subtheme 1a: More comfortable
    Subtheme 1b: Acquired knowledge
Theme 2: Relationship with the IDT
    Subtheme 2a: Perceived value and importance
    Subtheme 2b: Observer and communicator to the IDT

4.4.1 Theme 1: Increased confidence. After attending the education session on delirium, all of the HAs expressed more confidence in their role as a sitter, with several expressing a large perceived increase in their confidence level and commenting: “I feel very confident”. Many connected their increased confidence to their attendance at the educational

session on delirium, stating: “I’m more confident after the class” and “I feel good, the class helped with my confidence even with my many years of working”.

4.4.1.1 Subtheme 1a: More comfortable. Closely related to increased confidence was the HA’s feelings of being more comfortable, sometimes articulated as being less afraid of assisting with care for a patient with delirium. The interplay between confidence and decreased anxiety was particularly notable in the following quote: “I was scared before to take care of patients with delirium, in case I interfered with their care. I’m more comfortable now and can handle patients better.”

4.4.1.2 Subtheme 1b: Acquired knowledge. Almost every participant expressed a specific connection between the knowledge gained from the educational session and their increased confidence and level of comfort in caring for patients with delirium. In so doing, they mentioned specific components of the educational material they found useful such as enhanced awareness of delirium and greater detail in the types of delirium a patient might be experiencing as well as learning “techniques to redirect patients”, “to see signs and symptoms”, and “to give good report to the nurse.” This link between increased knowledge and HA confidence and comfort was well-exampled in the following participant quotes: “I became more confident and braver in taking care of patients with delirium. Before, when a patient is getting up from bed; pulling lines, I would be scared. Now, I know how to redirect and distract a patient.” “We have knowledge from the class, now we can do things, we don’t feel afraid to help the patient who has delirium.”

Of additional note was the HA perception of role-playing as an effective method for learning. The HAs shared how they valued observing and interacting in different scenarios that were role played by the instructors and volunteers acting in the role of patients. “I feel more comfortable with what to look for, what to say or not to say because of the role-playing you folks

did at the class. It helped to watch how you folks would talk to a patient, so the delirium doesn't get worse. I know what I can say to help redirect the patient, so the patient feels more comfortable too."

4.4.2 Theme 2: Relationship with the IDT. The HAs felt more included and associated with the IDT after attending the education session, expressed in comments such as "Whatever ideas I share with the IDT, I feel they interact with me. I feel part of the IDT." Feeling included and associated to the IDT led to HAs taking the initiative in sharing information with the IDT described as "I can help the IDT to share the behavior of the patient, tell what is aggravating the patient to help the team know the patient better". It was also clear that the increased confidence and acquired knowledge from the education session provided the foundation to building the HA relationship to the IDT in comments such as "I can contribute from what we learn in the class to tell the nurse or the doctor. We can tell them things that will help the patient to manage their behaviors."

4.4.2.1 Subtheme 2a: Perceived value and importance. The HAs verbalized a clearer definition of their value and importance to the IDT in comments such as: "HAs is part of the IDT, feel I am same with others, not at the bottom" and "I have an important job reporting behaviors of the patient to the team members to help the patient while in the hospital." The HAs perception of being valued was further reinforced by feeling recognized for the details provided to the IDT as a result of the time spent as a sitter "As a sitter, I am representing patients eyes and ears for the nurse and doctor who are not here with patient for very long. Because I am here, I can watch for the entire shift". The HAs also reflected on their perceived value and importance as a result of acquired knowledge specific to delirium "Before the training, we have hard time to

take care of patient with delirium, patient is hard to handle. After training, we can render care better and calm our patient down easier. We are important as part of the team…".

4.4.2.2 Subtheme 2b: Observer and communicator to the IDT. The HA participants further articulated their relationship and value to the IDT by verbalizing specific contributions they could now make to the IDT in their role as a sitter for patients experiencing delirium. An example of how the HAs perceived their contribution as an observer and communicator to the IDT was expressed by one participant as "…we can tell the doctor or nurse if there is a difference in how the patient is acting and if they are better" Another commented "I tell the charge nurse and doctor who comes to visit about how the patient is doing; tell them our observation of what their behaviors are".

4.5 Summary

There were several positive results from the education session on delirium. First, there was an improvement in HA knowledge of delirium as noted by an increase in mean scores from the pre-test compared to the post-test. Secondly, HAs demonstrated retention and reproduction of their gained knowledge at the bedside by accurately performing care of patients with delirium at the bedside as scored by the Observation Rubric and in detection of delirium symptoms on the Sour Seven Detection Tool. Themes from the qualitative data were consistent with the reproduction of knowledge in the role of the role of the sitter at the bedside. The education session also contributed to increased confidence in carrying out important responsibilities as a sitter such as observation and communication. In carrying out these responsibilities, the HAs had less apprehension in caring for patients with delirium and could apply skills, knowledge, and techniques in helping and caring for older adults. There was also a clearer definition of how the HAs were valued as important contributors to the IDT.

Chapter 5: Discussion

By using the theoretical framework of Bandura's SLT (Bandura, 1969) as a method of delivery for a 3-hour educational session about delirium, HAs at an acute care medical center in urban Honolulu achieved improved accuracy in their knowledge of delirium and increased confidence as a sitter. They also demonstrated accuracy in the detection of delirium behaviors and delivery of care at the bedside. Prior to this project, HAs at this site lacked these competencies, despite being assigned as a sitter to a patient with signs of delirium. The notable improvements manifested by these HA sitters will be further explored in this chapter.

5.1 Implication of Findings

The quantitative and qualitative findings from this project provide insight into SLT as an effective method of delivering education and training about delirium to HAs to optimize their role as contributors to the IDT in providing safe, quality care to hospitalized older adults. The participants in this project progressed through the four SLT phases of learning: *attention*, *retention*, *imitation*, and *motivation*, with successful final outcomes

5.1.1 SLT application to HA education. Given the complexity of delirium, an appropriate method of delivery of education was important to use with the target audience of HAs. Prior to implementation of this project, the GCNS had received input from several HAs employed as sitters for patients with delirium about how they learned their role as a sitter and how to provide care for a patient with delirium. Given that they had received no formalized training during orientation, they relied upon observation of more experienced HAs as a role model for the appropriate qualities of a sitter. Several HAs reported they learned by watching and doing what the more experienced HAs did. This anecdotal feedback led the GCNS to select the SLT as a framework for implementing the educational content on delirium.

5.1.1.1 Attention, retention, and reproduction. In the application of SLT's first phase of *attention* to the educational session provided in this project, a GCNS and an MD Geriatrician, both with clinical expertise in delirium in older adults, served as instructors and role models. They provided didactic content and learning activities which involved interacting with trained volunteers who portrayed patients experiencing delirium based on actual scenarios from their clinical experience. HA participants were attentive and engaged in these learning sessions. In the second SLT phase of *retention*, the HAs were able to observe and interact with the role models and receive feedback on their performance during practice application and rehearsal in performing the Sour Seven Delirium Detection Tool. The HAs demonstrated increased knowledge about delirium reflected by statistically significant increases on their post-test scores. The third phase of SLT, *reproduction*, occurs when the learner copies or imitates the observed behaviors of role models. In this project, evaluation of this phase of learning was accomplished at the bedside with the GCNS observing the hospital aide for the performance of appropriate interventions and safety behaviors. On both the Sour Seven Delirium Detection Tool for the detection of delirium symptoms and the Observation Rubric for the delivery of care to patients with delirium HAs achieved statistically significant accuracy in their application of delirium knowledge.

These results are consistent with a similar study of delirium education to medical and physiotherapy students (Robles et al., 2017) using concepts of SLT. In this study, researchers used live actors to carefully portray patients experiencing delirium while students observed and then interacted. This design with origins based on SLT concepts of active learning (learning by doing) and passive learning (observing), produced statistically significant results on a knowledge of delirium post-test. Other studies further the notion that SLT concepts of attention,

observation, and reproduction are important to the educational process. O'Regan, Molloy, Watterson, and Nestel (2016) conducted a systematic review of studies that included either direct comparison of learning outcomes of observers with those of active participants or identified factors important for the engagement of observers in simulation. Results indicated that learning outcomes and role satisfaction for observers is improved through learner engagement and use of observer tools. Concepts from Bandura's SLT were highlighted by proposing that virtually all learning acquired experientially could be acquired on a "vicarious basis" through observation of other people's behavior and its consequences for them. Through observation, learners can build behaviors without trial and error, experience emotions by watching others, and resolve fears through other's experiences. O'Regan and colleagues recommended the use of an observer's tool to help with goal orientation for observer roles. Similarly, in this project, HA learners were actively engaged in the educational session and the use of the Sour Seven Delirium Detection Tool helped guide the HAs when observing the role playing simulation of different types of delirium.

5.1.1.2 Motivation. The fourth and final phase of learning according to SLT is *motivation* to continue learned behaviors. In this project, motivation was indirectly assessed from mini-interviews during follow-up with the HAs. Perspectives of the HAs were explored in terms of feeling confident in their role as a sitter in caring for older adults with delirium and as a member of the IDT. Affective changes in HA perceptions were notable, with almost all expressing increased confidence and level of comfort in caring for patients with delirium which they attributed to their attendance and participation in the educational session. The education session on delirium addressed the feelings of unpreparedness in the role of the sitter noted in previous

studies (Carr, 2013; Morandi et al., 2015; Solimine et al., 2018) and served as a starting point for building motivation to retain and continue the learned behaviors.

Also notable in this project was the increase in HA perceived value to the IDT and their ability to express their important contributions to the care of patients with delirium. As noted by Bahn (2001), if success is attributed to one's own ability and effort, it results in a great sense of pride. For the HAs involved in this project, this sense of pride served as an internal motivator, which was reflected by verbal responses to the mini-interview questions such as: "*Since going to the class, when the doctor or RN talks to me as a 1:1(sitter), at least now I am confident in my role as sitter*" and *"I feel the (sic) Hospital Aide is part of the interdisciplinary team; I feel I am now the (sic) same with others, not at the bottom".* This sense of pride in their role as a sitter, likely helped to motivate the HAs to reproduce what was learned about delirium during the education session. The motivation was further driven by being rewarded with recognition, which they received as important IDT members from the instructors of the education session on delirium whom they respected as clinical experts.

Given this project's positive outcomes and those of other studies, the use of SLT might be considered a primary educational method for use when implementing content for HAs. Each phase of SLT of the delivery of delirium education provided a positive impression that enhanced learning. Learning evolved from basic concepts about delirium to increased confidence in the role as a sitter and greater sense of pride in being viewed as a member of the IDT.

5.1.2 Importance of HA education and training to IDT care. This project contributes to a new awareness of the importance in providing HAs the opportunity for education to increase their knowledge about delirium, confidence in the role of a sitter, and as a key contributor to the IDT care of patients with delirium. Given the successful outcomes of this project, the SLT

phases of attention, retention, and reproduction should be considered in the development of educational activities to enhance learning for HAs. Implementing systematic changes in the orientation and training of new HAs and development of professional education for current HAs will need to be maintained to continue the momentum of acquiring knowledge. Ongoing work to leverage the SLT phase of motivation to help sustain HA confidence in their role and recognition as a contributor to the IDT will also be needed.

Prior to this project, HAs were rarely considered a part of the IDT and were often underutilized in their sitter role at the hospital project site. This underuse of HA input on health care teams is a common finding in other studies as well (Mudge et al., 2012; Sockalingam et al., 2014). After the educational session, the HAs felt more included and associated with the IDT and could easily provide clearer definitions of their role, value and importance to the IDT. Previous studies have noted that when there is a clear understanding of the HA role related to the functional and cognitive care of older adults (Cline, 2014; Glynn et al., 2017), both RN and HA can work synergistically together in achieving high quality care to older adults. Further communication and education about the role responsibilities of HAs will need to be reviewed with other members of the IDT to alleviate role invisibility (Lai, et al., 2018) or hierarchical relationships with nurses (Lancaster et al., 2015).

5.2 Limitations

Some limitations were noted during the implementation of this project which should be considered when interpreting results. Firstly, recruitment of HA volunteers was challenging due to HAs at the project site being accustomed to attending education sessions during work hours. This resulted in a smaller than desired sample size, limiting the generalizability of findings.

Another factor limiting the generalizability of the findings is the demographic data of the participants with the majority being of female gender and of Asian ethnicity.

There was also some unavoidable variance in the amount of time between HA's participation in the educational session and subsequent bedside visit by the investigator for evaluation of and follow-up. The bedside observation needed to occur when the HA was in the role of a sitter and unfortunately, several HAs were not assigned as a sitter for a long period after attending the class. A range from 4-64 days for bedside evaluation had potential to affect validity of results. Yet, it should be noted that even those HAs who experienced a large gap of time between the educational session and their bedside evaluation, demonstrated accuracy in delivery of care.

Other possible limitations to consider are the potential impact of a Hawthorne effect and/or some test-retest bias entering into participant's performance on Knowledge of Delirium posttests. Also, the Knowledge of Delirium test questions were developed by the investigator because evidence based knowledge questions about delirium specifically for hospital aides was not available. Further work will be needed to review the Knowledge of Delirium test items.
In addition, some selection bias may have existed with the possibility that HA attendees of the educational sessions may have represented a select group of highly motivated HAs who enthusiastically volunteered and saw the education as an opportunity for professional development. An inflation of positive outcomes may have been manifested by these factors.

5.3 Recommendations for Implementation

In consideration of future ongoing implementation of this project throughout the project's organizational site, concepts from the Iowa Model of Evidence Based Practice (Iowa Model Collaborative [IMC], 2017) were selected as a framework. Briefly, the Iowa Model serves as a

guide to clinicians in evaluating and infusing research findings into patient care (IMC, 2017). Within the section of the Iowa Model referred to as *integrate and sustain the practice change,* there are four areas of consideration for sustainability: 1) identify and engage key personnel; 2) hardwire change into the system; 3) monitor key indicators through quality improvement; and 4) reinfuse as needed.

5.3.1 Identify and engage key personnel. The key action with this step involves integration throughout the organization that may require developing new teams and identifying new change champions (IMC, 2017). Discussions with key stakeholders who are involved in overseeing the role of HAs and developing educational programs will be initiated. Examples of key stakeholders that would be in involved in the decision making process of education conducive to the professional development of HAs would be the: Chief Nurse Executive, Director of Nursing Education, leaders representing HAs, and a nurse manager representative. The Chief Nurse Executive has accountability over all nursing personnel across specialties throughout the hospital and has oversight to ensure consistency in processes and workflows that can contribute to sustaining professional education programs for HAs. The Director of Nursing Education can help maintain consistency in the development and delivery of educational programs such as delirium as well as integration of content into the orientation of new HAs. The leaders representing HAs would include union leadership for the HAs and maintaining communication on how the delirium education might be structured during work hours and advocate for program development to meet the needs of HAs. Finally, a nurse manager representative can address how HAs' work schedules can be adjusted to allow for HAs to be able to attend the education on an ongoing basis and influence other managers in supporting delirium education programs for HAs.

5.3.2 Hardwire change into the system. This step will involve embedding the new practice as a standardized process within the organization (IMC, 2017). A plan to add content to standard HA orientation curriculum is being initiated. In addition, a proposal to obtain an educational grant is being developed to provide ongoing classes for HAs replicating the content used in this project to educate HAs about delirium and role as a sitter. The provisions of the grant will include coverage of costs for the HAs to attend the education session during their normal work hours. In addition, the volunteers and faculty for the education sessions may have competing activities, therefore to establish consistency in the content of scenarios and role playing, the use of a video is being considered as an alternate plan in the event the original faculty and volunteers from this project are unable to participate in teaching all the classes and/or reprising their roles. The costs of producing the video will also be included in the grant proposal.

Prior to the implementation of the project, there was not a formalized, consistent process for HAs to receive information or training about the symptoms of delirium or the safety components in the role of a sitter. By building new processes and proposals into the current system, there is greater likelihood of the process being adapted as part of a routine. The same approach of using concepts of SLT in delivering the educational content with specific patient care scenarios related to delirium can be replicated with different staff serving as faculty during orientation of new employees or classes specifically developed for the HAs. These are examples of how hardwiring can be the default process with using EBP concepts to ensure the process can be done automatically within the workflow (IMC, 2017).

5.3.3 Monitor key indicators through quality improvement. A key to sustaining evidence based practice (EBP) is the ongoing monitoring of key indicators. The instruments

used in this project could serve as monitoring measures in the quality improvement process. Various outcome indicators could be measured including outcomes, processes, structure, and balancing measures. An outcome measure is defined as the health state of a patient resulting from health care (Sadeghi, Shabot, Barzi, & Mikhail, 2013). Process measures assess a healthcare service provided to, or on behalf of, a patient such as knowledge, attitudes and practices (IMC, 2017; Sadeghi, 2013). A structure indicator is defined as the organizational design, or an organizational chart of functions, reporting relationships, and responsibility such as staffing, as well as available equipment (IMC, 2017; Sadeghi et al., 2013). A balancing measure is defined as unintended consequences of changes to a system (Institute for Healthcare Improvement [IHI], 2019).

As an outcome indicator, the Sour Seven Delirium Detection Tool may be used by HAs to help the IDT identify the presence of symptoms of delirium. For process indicators, the Knowledge of Delirium pre-post tests could continue to be used in measuring knowledge from delirium education sessions and the Observation Rubric can help in tracking HA performance of their role as a sitter in daily practice. Additionally, the Observation Rubric could also serve as a structure indicator for maintaining sitter safety at the bedside. An example of a balancing measure might involve tracking reasons HAs were unable to attend the education session when the classes are offered on a routine basis.

5.3.4 Reinfuse as needed. The intent with this step of the Iowa Model is the continual reassessment of indicators combined with actively promoting sustainment beyond the pilot periods which may be vital to successful implementation (IMC, 2017). The organization will need a subject matter expert and/or champion to re-evaluate the monitoring tools over time and track the results of ongoing quality improvement monitoring. A DNP prepared leader with the

ability to synthesize organizational needs and analyze results of quality improvement monitoring can help determine ongoing initiatives to sustain the project's success.

5.4 Recommendations for Future Practice, Education, Policy and/or Research

The DNP nurse leader will determine the appropriate methods of disseminating new knowledge and findings from this improvement project on the vital role of the HA as a sitter in providing care for older adults experiencing delirium. In the area of practice, the DNP nurse leader can raise awareness of the IDT about the prominent role the HA as sitter at the bedside in assisting with care of patients with delirium. For delirium education, the professional development of the HA needs to occur in a more systematized, consistent approach. Consideration for policy development using content from the Observation Rubric could be used for competency assessment for HAs. Further research can explore reproduction of delirium knowledge over time, instruments for assessing delirium knowledge specific to HAs. These areas of practice, education, policy and research will be addressed in the following section.

5.4.1 Practice. With delirium occurrence ranging from 29% - 64% in hospital settings (Hshieh, 2015) and its potential negative consequences, prompt detection of delirium symptoms is needed. Given the common practice of using a HA sitter to provide continuous one-to-one care to older adults experiencing delirium, the contributions of the HA must be considered by the IDT. The contributions of HAs in the care of older adults has been recognized by RNs in previous studies (Cline et al., 2014; Glynn, et al., 2017), but contributions as a fully functional member of the IDT is new. Consideration will need to be made on how to best engage and utilize the HA on IDTs. An opportune starting point would be to involve the HA sitter in any care conferences or IDT conferences for older adults with delirium. This addition of the HA to

the IDT, may expand the capabilities of the IDT to provide safe, quality care for older adults experiencing delirium.

5.4.2 Education. This project tested the feasibility of using a theoretical framework of SLT in the delivery of education to HAs and found this method of delivery to be an effective approach to learning about delirium for HAs. Additional educational development opportunities on other topics could be developed and augmented by SLT with role modeling and role playing specifically targeted to HAs.

Decisions about using selected content of the educational session on delirium will need to be made on how best to disseminate the information. An ideal format to disseminate the information may be during orientation of newly hired HAs. Currently, at the project site, there is no specific time dedicated during the formal new hire orientation for information about the HA role as a sitter. As noted by several responses from HA participants in this project, there is a need for consistency of training in delirium and the sitter role. The integration of such content as a standardized part of the orientation curriculum will help provide for such consistency.

Many HA participants described the education session as unique, given that it was developed specifically for HAs and many expressed an appreciation for addressing the educational needs of HAs. Continuing education to sustain delirium knowledge and skills of the HA is in the planning stages at the project facility and the addition of other HA-specific continuing education opportunities is being considered. Also of note, is the inclusion of delirium education as part of an upcoming continuing education offering at the project site. An abbreviated version of content on delirium will be presented to HAs during a mandatory skills review day planned in September and October 2019. The skills review day will include educational content vital to the daily practice of HAs. The project site's Chief Nurse Executive

recommended the inclusion of delirium as one of the stations at the skills review day upon hearing positive feedback about the delirium class implemented in this project.

5.4.3 Policy. Competency development or an evaluation tool for HAs may be replicated from the investigator-developed Observation Rubric and possibly instituted as policy at the project site and other institutions. The fact that all HAs from the project demonstrated 100% performance in their reproduction of knowledge pertaining to delirium care and safety interventions while in the role as a sitter at the bedside, provides beginning confidence in the Observation Rubric tool for this purpose. Further investigation of the tool's reliability and validity will need to be performed. Once this is completed, specific role expectations as a sitter while caring for older adults with delirium might also be considered for inclusion on job descriptions, annual evaluations or organizational policies

From a national standpoint, The Joint Commission (TJC) accrediting organization for ensuring high standards in quality of care might be queried to consider establishing a new standard which would promote HA contributions to the interdisciplinary care of patients and consider them a routine member on IDTs. By having the HA included in the IDT as a TJC standard, there might be a major transformation of the HA role in the acute care setting, recognizing their value to the IDT and vital contributions to the overall quality of patient care.

5.4.4 Research. Further to the promotion of HA contributions to IDTs, additional research is needed to explore the perceptions of other IDT members such as physicians and nurses about the HA role as a contributing team member in the care of older adults with delirium. Another area for additional investigation is the tracking of retention and reproduction of accuracy of delirium knowledge in the use of the Sour Seven Delirium Detection Tool and on observations of HA sitters care at the bedside over a longer period of time. In addition, another

research opportunity might be the development of a delirium knowledge questionnaire specific to HAs. At the time of this project no instruments on delirium knowledge for HAs were available, prompting the need for an investigator-developed Knowledge of Delirium pre/post-tests. This measurement tool will require further testing and refinement.

5.5 Summary

In this project, the delivery of a HA educational session based on SLT successfully enhanced knowledge, skill, level of confidence, and potential contribution of HAs to the IDT care of older adults experiencing delirium in acute care settings. In addition, HAs also revealed increased confidence in the sitter role and an enhanced relationship with the IDT. By using an interactive and engaging educational framework such as SLT, HAs can demonstrate accuracy of knowledge immediately after an educational session on delirium as well as reproduce and apply knowledge in practice at the bedside in the role as a sitter. Previous to this project, the role of the HA as a sitter was underutilized, however this project illuminated the valuable contribution of HAs augmenting the IDT. This new alliance of RN, MD, and HA on the IDT will collaboratively enhance and improve the quality of care of older adults experiencing delirium.

The DNP nurse leader is in the ideal position to be a champion in leading organizational initiatives that will enhance the quality of care for older adults experiencing delirium. This DNP project and its correlations to the AACN DNP essentials can be found in Appendix J, and illuminates the DNP role in health care leadership and translational science. Dissemination of findings from this project were presented at the Sigma Theta Tau International Nursing Congress in Calgary, Canada on July 27, 2019 and may contribute to the overall goal of organizational excellence in patient care.

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Footnote

1

JHNEBP EVIDENCE RATING SCALES

STRENGTH of the Evidence	
Level I	Experimental study/randomized controlled trial (RCT) or meta analysis of RCT
Level II	Quasi-experimental study
Level III	Non-experimental study, qualitative study, or meta-synthesis.
Level IV	Opinion of nationally recognized experts based on research evidence or expert consensus panel (systematic review, clinical practice guidelines)
Level V	Opinion of individual expert based on non-research evidence. (Includes case studies; literature review; organizational experience e.g., quality improvement and financial data; clinical expertise, or personal experience)

QUALITY of the Evidence		
A High	Research	consistent results with sufficient sample size, adequate control, and definitive conclusions; consistent recommendations based on extensive literature review that includes thoughtful reference to scientific evidence.
	Summative reviews	well-defined, reproducible search strategies; consistent results with sufficient numbers of well defined studies; criteria-based evaluation of overall scientific strength and quality of included studies; definitive conclusions.
	Organizational	well-defined methods using a rigorous approach; consistent results with sufficient sample size; use of reliable **and** valid measures
	Expert Opinion	expertise is clearly evident
B Good	Research	reasonably consistent results, sufficient sample size, some control, with fairly definitive conclusions; reasonably consistent recommendations based on fairly comprehensive literature review that includes some reference to scientific evidence
	Summative reviews	reasonably thorough and appropriate search; reasonably consistent results with sufficient numbers of well defined studies; evaluation of strengths and limitations of included studies; fairly definitive conclusions.
	Organizational	Well-defined methods; reasonably consistent results with sufficient numbers; use of **reliable and valid** measures; reasonably consistent recommendations
	Expert Opinion	expertise appears to be credible.
C Low quality or major flaws	Research	little evidence with inconsistent results, insufficient sample size, conclusions cannot be drawn
	Summative reviews	undefined, poorly defined, or limited search strategies; insufficient evidence with inconsistent results; conclusions cannot be drawn
	Organizational	Undefined, **or** poorly defined methods; insufficient sample size; inconsistent results; undefined, poorly defined or measures that lack adequate reliability or validity
	Expert Opinion	expertise is not discernable or is dubious.

**A study rated an A would be of high quality, whereas, a study rated a C would have major flaws that raise serious questions about the believability of the findings and should be automatically eliminated from consideration.*

Newhouse R, Dearholt S, Poe S, Pugh LC, White K. The Johns Hopkins Nursing Evidence-based Practice Rating Scale. 2005. Baltimore, MD, The Johns Hopkins Hospital; Johns Hopkins University School of Nursing.

Appendix A

Informational Flyer for Volunteers

Hospital Aide Volunteers Needed for Research Study

Volunteers needed for research study: Improving the Care Management of Delirium in Hospitalized Older Adults: Impact of Education on Hospital Aides in the Role as a Sitter

Purpose of the study: To determine if an educational session provided to hospital aides increases knowledge about the care of patients with delirium and their observation of delirium behaviors.

Aim of this project: Effective use of appropriately training hospital aides as members of the healthcare team in an effort to provide patients experiencing delirium with improved safety and quality of care.

What will be involved in the research?

- The research project will be conducted from February 2019 – May 2019. Your
- A one-time attendance at a 3-hour educational session
- A one-time 15-minute follow-up for a mini-interview during your scheduled shift while in the role as a sitter.

Who can participate?

- Hospital Aides employed full time, part-time or on-call and serve as a sitter on medical/surgical or telemetry units

To participate:

- Contact Sandy Kakiuchi at 432-8703
- Choose (1) education session to attend: Saturday February 23 **OR** Sunday March 4

  Education sessions will be held in the Auditorium from 0900-1200
- Sign an informed consent on the day of the education session, before the start of the education session

Faculty for the education session: Sandy Kakiuchi, APRN and Serena Lo, MD

Participation in this study is entirely voluntary. At the end of the education session, you will receive a certificate of attendance

The research has been reviewed and approved by the Hawaii Pacific University and Kaiser Permanente Hawaii Region Institutional Review Boards

Appendix B

INFORMED CONSENT

Project Title: IMPROVING CARE OF PATIENTS WITH DELIRIUM

Investigator(s): Sandra Kakiuchi, APRN, MS, GCNS-BC
Faculty Advisor: Kathleen G. Burger, PhD, RN, CNE

PURPOSE

This project involves research. The purpose of this project is to determine if an educational session provided to Hospital Aides (HAs) increases their knowledge about the care of patients with delirium and their skill in the observation of delirium behaviors. The aim of this project is effective utilization of appropriately training HAs as members of the healthcare team in an effort to provide patients with delirium improved safety and quality of care.

We are inviting people to participate in this research because they: 1. Are Hospital Aides. 2. Are assigned at times to the role of a sitter in the care of older adults with delirium. We anticipate that this study will have about 60 participants.

The research project will be conducted from approximately February 2019 – May 2019. Your participation will include a one-time attendance at a 3-hour educational session plus a one-time 15-minute follow-up for a mini-interview during your scheduled shift while in the role as a sitter.

PROCEDURES

Those agreeing to participate can expect the following to occur:
1) At today's education session, you will first fill out a demographic questionnaire and complete an assessment of your current delirium care knowledge.
2) You will then be provided an education session on the care of patients with delirium.
3) At the conclusion of the education session, you will complete another assessment of your delirium care knowledge.
4) The investigator will do a follow-up visit with you during a scheduled shift in which you are assigned as a sitter for a patient with delirium. During this visit, the investigator will observe your application of knowledge learned during the education session and to conduct a mini-interview.

RISKS

There are no foreseeable risks to participating in this project.

BENEFITS
There may be personal benefit to you from participating in this study in the form of increased knowledge about the care of patients with delirium. This benefit may also result in improved quality and care for patients with delirium.

COSTS AND COMPENSATION

Approved Date: February 25, 2019
Kaiser Permanente - Hawaii Region IRB

There will not be any costs to the subject for participating in this research project.
Subjects will not be compensated for their time and inconvenience for participating in this research project.

CONFIDENTIALITY

Records of participation in this research project will be maintained and kept confidential to the extent permitted by law. However, federal government regulatory agencies and the Hawai'i Pacific University IRB may inspect and copy a subject's records pertaining to the research, and these records may contain personal identifiers. In the event of any report or publication from this study, the identity of subjects will not be disclosed. Results will be reported in a summarized manner in such a way that subjects cannot be identified.

All records from this project will be kept in a secure location accessible only to the investigator.

VOLUNTARY PARTICIPATION

All participation is voluntary. Whether you choose to participate or do not, it will not affect your employment status and/or employee reviews. There is no penalty to anyone who decides not to participate. Nor will anyone be penalized if he or she decides to stop participation at any time during the research project.

QUESTIONS

Questions are encouraged. Questions about this research project and questions about the rights of research subjects or research related injury may be addressed to the IRB Chair (Dr. Trish Ellerson at 566-2467 or irbchair@hpu.edu)

Subject's name (printed): _____

_____ _____
(Signature of Subject) (Date)

INVESTIGATOR STATEMENT

I have discussed the above points with the subject or the legally authorized representative, using a translator when necessary. It is my opinion that the subject understands the risks, benefits, and obligations involved in participation in this project.

_____ _____
(Signature of Investigator) (Date)

Appendix C

Hawai'i Pacific University
Institutional Review Board
Project Application

Please complete and submit the form to the IRB chair via email: to irbchair@hpu.edu

Study title: IMPROVING THE CARE MANAGEMENT OF DELIRIUM IN HOSPITALIZED OLDER ADULTS: IMPACT OF EDUCATION ON HOSPITAL AIDES IN THE ROLE AS A SITTER.

Investigator:

Name: SANDRA KAKIUCHI, APRN, MS, GCNS-BC
(Please check one)
· **Faculty** X STUDENT · **Outside Investigator**

Phone: (808) 542-4486 (mobile)

Email: skakiuch@my.hpu.edu

Sponsoring HPU Faculty Member: KATHLEEN G. BURGER, PHD, RN, CNE

Category for Review:

Check one level of review (Exempt, Expedited, Full) for which you believe the project qualifies, and each criterion that your project meets.

____ Exempt from review (nil or minimal risk study, or already reviewed by an IRB)

____ Research involves ONLY investigation into or comparison of normal instructional strategies.

____ Tests, interviews, and surveys are unlikely to elicit emotion or place subjects at risk of civil/criminal liability or damage to their reputation, financial standing, employability, etc. AND information will not be recorded in such a way that subjects can be identified.

____ Research involves only the study or analysis of existing data, documents, records, or specimens that are publicly available or recorded in such a way that subjects cannot be identified.

____ If study involves ingestion of food: only wholesome food without additives in excess of USDA recommended levels is consumed.

____ Brief informed consent will be done (except in the case of existing data, etc.).

____ No use of vulnerable subjects (children, prisoners, pregnant women, mentally ill, etc.).

____ Has already been approved by IRB at _____.
(Include copy of signed IRB approval form.)

X **Expedited review (minor risk study)**

X Research and data collection methods are unlikely to elicit strong emotion and deception is not involved.

____ Research involves only noninvasive, painless, and non-disfiguring collection of physical samples, such as hair, sweat, excreta.

X No use of vulnerable subjects (children, prisoners, pregnant women, mentally ill, disabled, etc.).

____ Data are recorded using noninvasive, painless, and non-disfiguring sensors or equipment, such as EKG, weighing scales, voice/video recording.

____ Research involves only moderate levels of exercise in healthy volunteers.

X Research does not involve ingestion of drugs or use of hazardous devices.

X If existing data, documents, records, or specimens with identifiers are used, procedures are in place to ensure confidentiality.

X Informed consent process will be done (attach copy of informed consent form).

X Data will be kept confidential and not reported in identifiable fashion.

____ **Full review required (more than minor risk)**
Attach a statement that describes the use of vulnerable subjects or the study procedures and conditions that place subjects at risk. Describe the precautions that will be taken to minimize these risks. Attach a copy of the informed consent form that will be used.

Certification by Principal Investigator: The above represents a fair estimate of risks to human subjects.

_Sandra Kakiuchi /Student Investigator / 01/28/19
Name/ Title/ Date

- -

FOR IRB USE ONLY

Certification by IRB Chair: I have read this application and believe this research qualifies as:
____ Exempt from IRB review
___X_ Appropriate for expedited review, and
__X__ approved #560419029
____ disapproved
____ Appropriate for review by the full IRB

__________________________ 1/31/19_______________
IRB Chair Date

Appendix D

Kaiser Permanente Hawaii
Institutional Review Board
FWA# 00002344 **IRB#** 00000402

711 Kapiolani Blvd, Suite 110
Honolulu, HI 96813
(808) 432-5411
KPHI-IRB@kp.org

DATE:	February 26, 2019
TO:	Sandra Kakiuchi, APRN, MS, GCNS-BC
FROM:	Kaiser Permanente - Hawaii Region IRB
PROJECT TITLE:	[1394916-1] Improving the Care Management of Delirium in Hospitalized Older Adults: Impact of Education on Hospital Aides in the Role as a Sitter
REFERENCE #:	
SUBMISSION TYPE:	New Project
ACTION:	APPROVED
APPROVAL DATE:	February 25, 2019
EXPIRATION DATE:	N/A
NEXT REPORT DATE:	February 24, 2021
REVIEW TYPE:	Exempt with Limited IRB Review
PROJECT RISK:	MINIMAL RISK
REVIEW CATEGORY:	Exempt review category 3: Benign behavioral interventions

Thank you for submitting the New Project materials for this project:

- Consent Form - Informed Consent Form.docx (UPDATED: 02/14/2019)
- Kaiser Permanente - IRB Core Data Form - Kaiser Permanente - IRB Core Data Form (UPDATED: 02/14/2019)
- Kaiser Permanente - Study Team Form - Kaiser Permanente - Study Team Form (UPDATED: 02/9/2019)
- Other - Kakiuchi S.#560419029_All-Approved HPU IRB.docx (UPDATED: 02/14/2019)
- Other - References.docx (UPDATED: 02/14/2019)
- Protocol - Research Protocol Template.docx (UPDATED: 02/14/2019)
- Questionnaire/Survey - Research Protocol Appendices.docx (UPDATED: 02/14/2019)

The Kaiser Permanente - Hawaii Region IRB has APPROVED your submission. This approval is based on an appropriate risk/benefit ratio and a project design wherein the risks have been minimized and privacy and confidentiality protections incorporated. All research must be conducted in accordance with this approved submission.

CONSENT DETERMINATION:

The IRB approved version of the consent form is now available in the eIRB system for use with subjects. Any revision to the consent form must be approved by the IRB prior to use.

PRIVACY RULE AUTHORIZATION:

Privacy Rule Authorization does not apply as no protected health information (PHI) will be created or used in this project.

REPORTING REQUIREMENTS:

The IRB has determined that a continuing review of this project is not required. Modifications to the protocol that could change the status of this project must be submitted for review prior to initiation. For documentation and tracking purposes, you must submit a project update before the next report due date of February 24, 2021.

If the study activities are completed before the next report due date, please submit a closure report in order accurately establish the data retention period.

ADDITIONAL REQUIREMENTS:

All UNANTICIPATED PROBLEMS involving risks to subjects or others (UPIRSOs) and SERIOUS and UNEXPECTED adverse events must be reported promptly to this office. Please use the appropriate reporting forms for this procedure.

All SERIOUS NON-COMPLIANCE issues or SUBJECT COMPLAINTS regarding this project must be reported promptly to this office.

Please note that all research records must be retained for a minimum of six years after the completion of the project.

Provide this approval letter to the Physician in Charge (PIC), Area Manager, and/or Chief of Service, to determine whether additional approvals are needed.

Please use this notification of approval should the funding agency require documentation of IRB approval.

If you have any questions, please contact Kaiser Permanente - Hawaii Region IRB at KPHI-IRB@kp.org. Please include your project title and reference number in all correspondence with this committee.

Sincerely,

Kaiser Permanente - Hawaii Region IRB

Appendix E

Demographic Questionnaire for Hospital Aides

Attendee Number: _____ Date: _____

Instructions: Please check the box that best describes you.

1. Which gender do you most identify with?
   - ☐ Male
   - ☐ Female

2. What is your age?
   - ☐ 18 - 24 years old
   - ☐ 25- 34 years old
   - ☐ 35 - 44 years old
   - ☐ 45 - 54 years old
   - ☐ 55 - 64 years old
   - ☐ Above 65 years old

3. Which ethnic group would best describe you?
   - ☐ Hispanic or Latino
   - ☐ American Indian or Alaska Native
   - ☐ Asian
   - ☐ Black or African American
   - ☐ Native Hawaiian or Other Pacific Islander
   - ☐ Caucasian or White
   - ☐ Other

4. What is your highest level of education?
   - ☐ High school
   - ☐ Some college
   - ☐ Trade/vocation/technical
   - ☐ Associates degree
   - ☐ Bachelor's degree
   - ☐ Master's degree
   - ☐ Doctorate degree

5. What is your employment status?
   - ☐ Full-time status
   - ☐ Part-time status
   - ☐ Call-in status

6. How many years of experience do you have as a hospital aide?
   - ☐ 0 - 3 years
   - ☐ 4 - 7 years
   - ☐ 8 - 11 years
   - ☐ 12 -15 years
   - ☐ 16 - 19 years
   - ☐ 20 - 23 years
   - ☐ Over 24 years

Thank you for completing this survey!

Appendix F

Pre-Post Tests: Knowledge of Delirium

ANSWER KEY

Attendee Number: _____ Date: _____

Instructions: Circle the letter that represents the best answer

1. The most common type of delirium in the hospital is:
   a. Hyperactive
   b. Hypoactive
   c. Mixed
   d. None of the above

2. When delirium is undetected, patients are at higher risk for the all the following EXCEPT:
   a. Medical complications
   b. Death
   c. Depression
   d. Falls

3. All of the following therapeutic activities can be effective to carry out with patients with delirium EXCEPT:
   a. Talking to a patient about their former line of work
   b. Drawing or coloring a picture together
   c. Having a patient sleep through the day
   d. Using questions to learn more about a patient

4. All of the following are part of the orientation protocol EXCEPT:
   a. Reading out loud the date on the care board
   b. Reinforcing the time of day
   c. Repeating the name of the place
   d. Restating the menu

5. Mr. S is in the hospital for pneumonia and has a history of Alzheimer's dementia. His wife says that he gets so confused when he's in the hospital. This information is important because:
   a. He needs to have the exact same nurse that took care of him previously
   b. He is at higher risk for delirium due to his history of dementia
   c. He has a history of delirium by his wife's report
   d. Both b and c

Pre-Test: Knowledge of Delirium—continued on next page

6. When caring for a patient with delirium, it is important to notice any changes in the patient's ability to perform which of the following activities of daily living:
   a. Feeding and mobility
   b. Feeding and toileting
   c. Mobility and bathing
   d. Mobility and toileting

7. Delirium is defined as:
   a. Another name for dementia
   b. A sudden change in mental status from a patient's baseline function
   c. A progressive change in mental status over several months
   d. Another type of stroke

8. You are assigned as a sitter for Mr. M and he asks you nearly every 15 minutes about when his wife is coming to the hospital. Which of the following choices are appropriate for the Hospital Aide to do?
   a. Tell him to use the phone on his own, to keep him independent
   b. Ask the nurse to give him his sleep medication early
   c. Redirect him to talk about where he grew up
   d. Have him listen to your favorite music on your phone

9. The main area of difficulty with mental status in a patient with delirium is:
   a. Recalling childhood memories
   b. Repeatedly asking the same questions
   c. Having memory problems over a period of 1 year
   d. Keeping focused on conversation

10. Which of the following might be observed during your interaction if a patient has delirium?
    a. Altered level of awareness to the environment
    b. Reduced or fluctuating attentiveness
    c. Purposeless, under-responsive or over responsive to requests
    d. All of the above

Post-Test: Knowledge of Delirium

ANSWER KEY

Attendee Number: _____ Date_____

Instructions: Circle the letter that represents the best answer

1. Delirium is defined as:
   a. Another name for dementia
   b. A sudden change in mental status from a patient's baseline function
   c. A progressive change in mental status over several months
   d. Another type of stroke

2. The main area of difficulty with mental status in a patient with delirium is:
   a. Recalling childhood memories
   b. Repeatedly asking the same questions
   c. Having memory problems over a period of 1 year
   d. Keeping focused on conversation

3. All of the following are part of the orientation protocol EXCEPT:
   a. Reading out loud the date on the care board
   b. Reinforcing the time of day
   c. Repeating the name of the place
   d. Restating the menu

4. When delirium is undetected, patients are at higher risk for the all the following EXCEPT:
   a. medical complications
   b. death
   c. depression
   d. falls

5. When caring for a patient with delirium, it is important to notice any changes in the patient's ability to perform which of the following activities of daily living:
   a. Feeding and mobility
   b. Feeding and toileting
   c. Mobility and bathing
   d. Mobility and toileting

6. You are assigned as a sitter for Mr. M and he asks you nearly every 15 minutes about when his wife is coming to the hospital. Which of the following choices are appropriate for the Hospital Aide to do?
   a. Tell him to use the phone on his own, to keep him independent
   b. Ask the nurse to give him his sleep medication early
   c. Redirect him to talk about where he grew up
   d. Have him listen to your favorite music on your phone

7. The most common type of delirium in the hospital is:
   a. Hyperactive
   b. Hypoactive
   c. Mixed
   d. None of the above

8. Which of the following might be observed during your interaction if a patient has delirium?
    a. Altered level of awareness to the environment
    b. Reduced or fluctuating attentiveness
    c. Purposeless, under-responsive or over responsive to requests
    d. All of the above

9. Mr. S is in the hospital for pneumonia and has a history of Alzheimer's dementia. His wife says that he gets so confused when he's in the hospital. This information is important because:
    a. He needs to have the exact same nurse that took care of him previously
    b. He is at higher risk for delirium due to his history of dementia
    c. He has a history of delirium by his wife's report
    d. Both b and c

10. All of the following therapeutic activities can be effective to carry out with patients with delirium EXCEPT:
    a. Talking to a patient about their former line of work
    b. Drawing or coloring a picture together
    c. Having a patient sleep through the day
    d. Using questions to learn more about a patient

The Sour Seven: Delirium Detection Questionnaire for Caregivers

The Sour Seven: A questionnaire designed for caregivers to screen for delirium (acute confusion) in seniors, including those with dementia (chronic confusion), that requires no training, no prior knowledge of the person, no questions posed to the person, is independent of language, based on seven simple observations of the person during caregiving.

During your interaction with the person today, have you observed any of the following? Circle the corresponding value in the answer boxes.	**YES**	**NO**
1. Altered level of awareness to the environment in any way different than being normally awake.	**3**	0
2. Reduced attentiveness; inability to focus on you during the interaction.	**4**	0
3. Fluctuation in awareness and attentiveness, such as drifting in and out during an interaction or through the day.	**3**	0
4. Disordered thinking; the response (whether verbal or action) is unrelated to the question or request.	**3**	0
5. Disorganized behaviour; purposeless, irrational, under-responsive or over-responsive to requests.	**2**	0
6. Unexplained impaired eating or drinking (excluding appetite); unable to perform the actions to feed oneself.	**2**	0
7. Unexplained difficulty with mobility or movement.	**1**	0
Score		

Score	**Predictive Value**	**Description**
4	89%	**possible delirium**: evaluate potential medical causes, meds/substances
9	100%	**delirium**: immediate medical evaluation required

Appendix H

Hospital Aide as a Sitter Observation Rubric

Hospital Aide Observed: _____ Date: _____ Time: _____

Instructions for observation: The investigator will be outside of the room for observation of a hospital aide as a sitter and check off behaviors that were observed. Shaded areas represent categories and do not need to be marked.

A Hospital Aide in the role as a sitter will be observed for the following behaviors at the bedside:	
Patient Engagement	
Talks with patient	
Assists with activities of daily living	
Assists with reorientation	
Assists with therapeutic activities	
Patient & HA Safety	
Positions self to sit facing a patient to have full visualization	
In a private room: Maintains a distance of eye's view and arm's length to patient OR *In a semi private room:* Positions self to be in the middle of patients.	
Keeps area surrounding patient free of lines, cords or clutter	
Environment	
Day shift: Keeps room well lit with lights on and/or window shades open OR *Night shift:* Keeps room dimmed with appropriate lighting for toileting needs and/or window shades closed	
TOTAL NUMBER OF CHECK MARKS	

Greater than or equal to 5 points denotes: Reproduction of learning content from educational session achieved

Less than or equal to 4 points denotes: Reinforcement of learning content provided to the learner

Appendix I

Teaching Plan For Delirium Education for Hospital Aides

Goal	Objectives	Content	Methods	Allotted Time	Resources	Evaluation
		Pre-Test: Knowledge of Delirium	10-item multiple choice questions	10”	Paper, pen	Baseline knowledge of delirium
Upon completion of a 3-hour education session on delirium, the HA in the role as a sitter will: 1. Demonstrate knowledge and skill in caring for older adults with delirium 2. Develop confidence in the role as a sitter and contributor to the interdisciplinary team	1.After the first hour of an overview of delirium, the HA will describe at least 3 examples of how delirium affects older adults	1. Attentional motivator: display giant “40” with first PowerPoint slide in white with black background. The number 40 represents the % of older adults on one of our hospital units at one time recently with delirium 2. Discuss delirium scenario with using a case study of a patient admitted recently 3. Define delirium: A sudden change in mental status from a patient’s baseline function; sudden “acute” confusion a. Early detection is key b. Considered a medical emergency 4. Impact of how delirium affects older adults in the hospital a. Increased mortality	PowerPoint, case study discussion	50”	Actors role playing patient with delirium; props—gurney, IV pole, front wheel walker Handouts to follow PowerPoint, extra copies of the Sour Seven Tool for practice with simulated patients with delirium	Verbal review questions posed to hospital aides

Goal	Objectives	Content	Methods	Allotted Time	Resources	Evaluation
		b. Increased risk for falls c. Post-op complications d. Longer hospital stay e. Functional decline f. New nursing home placement g. Long-term cognitive deficits (history of dementia) h. Rehospitalization i. Increased healthcare costs j. Distress for family, patient, and hospital staff 5. Components of delirium (Use of Sour Seven Tool) a. Altered level of awareness to the environment in any way different that being normally awake (example: vary from constantly fidgeting with gown to falling asleep while being spoken to) b. Reduced attentiveness: inability to focus on you during the interaction (example: looking all around room to hall while being spoken to) c. Fluctuation in awareness and attentiveness, such as	GCNS to be role model as HA in performing the Sour Seven tool with an actor (geriatrician) simulating a patient with delirium			

Goal	Objectives	Content	Methods	Allotted Time	Resources	Evaluation
		drifting in and out during an interaction or through the day (example: may occur in minutes to hours; oriented appropriately in the morning but disoriented to place a few hours later) d. Disordered thinking: the response (whether verbal or action) is unrelated to the question or request (example: hallucinating—seeing or hearing objects that are not actually present) e. Disorganized behavior: purposeless, irrational, under-responsive or over responsive to requests (example: Misinterpreting or misperceiving a situation; the police came to kidnap me last night) f. Unexplained impaired eating or drinking (excluding appetite); unable to perform actions to feed oneself. (fumbling with using utensils;				

Goal	Objectives	Content	Methods	Allotted Time	Resources	Evaluation
		uncoordinated movements in being able to feed self) g. Unexplained difficulty with mobility or movement (unaware of need for assistive device, increased assistance needed with mobility compared to activity level on care board)				
		Break		10”		
	2.After the second hour of observing role models using the Sour Seven tool, the HA will demonstrate using the Seven Tool with in simulated patient with delirium with 100% accuracy	1. Type of delirium a. Hyperactive: most easily recognized due to restlessness, risk of dislodging devices b. Hypoactive: most common in the hospital, but often missed due to patient not exhibiting problematic behaviors c. Mixed: fluctuation between both hyperactive and hypoactive delirium 2. Other contributing factors to delirium a. Side effects from combinations of medications b. Malnutrition	Practice using the Sour Seven Tool with live actors simulating patients with delirium. GCNS and geriatrician will be stationed at each group for validation with HA on their accuracy of using the Sour Seven Tool	30”		Direct feedback to the HA during the simulation and on follow-up with the HA at the bedside to compare their results of the Sour Seven tool with the investigator several days after the educational session.

Goal	Objectives	Content	Methods	Allotted Time	Resources	Evaluation
		c. Physical restraints d. Bladder catheter e. Fecal Impaction f. Infection g. Untreated pain h. Changes in environment (transfer to multiple different rooms or units) i. Irregular sleep patterns 2. Form 2-3 smaller groups (dependent on number of attendees) and have HA rotate to each group each with an actor simulating different types of delirium. 3. The HA will view the scenario then use the Sour Seven Tool to detect delirium				
	After the third hour of observing role models demonstrate nonpharmacologic interventions for delirium, the HA will perform a return demonstration of techniques for reorientation, therapeutic	1. Communicate to help with reorientation a. Orientation: A patient being aware of where they are, what the date is, who family members are. b. Update care board with accurate information: names of nurse, doctors, aide; day of week, month, date, year c. Repeat several times during the shift	GCNS to role play HA in scenario to demonstrate techniques or reorientation and therapeutic activities with actor simulating a patient	20”		Verbal feedback on return demonstration by HA

Goal	Objectives	Content	Methods	Allotted Time	Resources	Evaluation
	activities, and safety with a simulated patient with delirium	2. Apply sensory aides-clean and in working order: glasses, hearing aide, dentures 3. Reduce noise level in room by turning off the TV when talking with a patient and face them so they may see your lips, speak slowly and clearly; lower pitch of voice 4. Orient to the environment a. Daytime: Keep room well- lit with lights on and shades open b. Nighttime: Keep room dimmed with appropriate lighting for toileting needs and/or window shades closed c. Ensure access to sensory aides d. Post cards, drawings from family members e. Make sure a clock is visible f. Arrange personal items brought by family in patient's line of sight which might include: religious objects, family photos, favorite clothing/blanket; flowers	experiencing delirium			

Goal	Objectives	Content	Methods	Allotted Time	Resources	Evaluation
		5. HA to perform return demonstration of reorientation or therapeutic activities 1. Therapeutic activities: helps to boost self esteem a. Questions about a patient's background or interests: examples: where were you born; where did you attend school; what did do for a living; what hobbies do you have; what is your favorite color; what is your favorite holiday b. Use questions that do not require "yes" or "no" as an answer to encourage more conversation c. Use personal items at the bedside for conversation: flowers arrangement at the bedside—You have beautiful flowers, could I help read to you who it's from?; Do you have any favorite flowers, plants or trees? 1. Patient and Hospital Aide Safety				

Goal	Objectives	Content	Methods	Allotted Time	Resources	Evaluation
		a. Position when a sitter in semi-private room: middle of room, facing a patient to have full visualization; call for assist when providing care to one of the patients which would prevent being able to visualize the other patient b. Position when a sitter in a private room: maintains distance of eye's view and arm's length to patient c. Clear patient care area, such as area immediately surrounding a patient's bed to be free of clutter, cords d. Notify the RN if for changes in patient's behaviors e. Follow hospital protocol for notifying security at the bedside. 2. Performs reorientation and therapeutic activities that assist in a patient's recovery from delirium	HA to perform return demonstration of reorientation and therapeutic orientation	30"		
	After the third hour of observing	1. Role of Hospital Aide as a Sitter and contributor to the	Scenario will be role played	20"		

Goal	Objectives	Content	Methods	Allotted Time	Resources	Evaluation
	role models demonstrate the contributions of the HA in the role of sitter as an interdisciplinary team member, the HA will identify 3 examples of their role in contributing to interdisciplinary care	interdisciplinary team in the care of patients with delirium a. Contributes as a member of the interdisciplinary team in providing patients with care to assist with their activities of daily living b. Provides expertise in knowing how patients are progressing with their functional status or activities of daily living: feeding, mobility, toileting, bathing, grooming c. Observes patient's patterns and frequency of behaviors d. Describes appropriate non-pharmacologic e. interventions that were performed with a patient experiencing delirium	by GCNS, Geriatrician, RN, HA rounding at bedside with emphasis on contributions of the HA as a sitter in providing care to a patient with delirium			
		Post Test: Knowledge of Delirium	10-item multiple choice questions	10"	Paper, Pen	Knowledge acquisition compared with Pre-Test

Appendix J

American Association of Colleges of Nursing (AACN) DNP Essentials

Essential Number	Description of AACN DNP Essential	Relationship to DNP Project
I	Scientific Underpinnings for Practice	• Knowledge of nursing science and gerontologic care of patients was used to identify a practice-approach problem • Scientific studies were used to enhance understanding of the problem and its significance to health care outcomes. • A new practice approach based on scientific theory and concepts was developed and piloted to include HA Sitters in the IDT care of older adults experiencing delirium.
II	Organizational & Systems Leadership for QI & Economics	• Collaborate with key stakeholders such as nursing, education and finance in developing educational grant proposal to promote continuing education opportunities for HAs. The educational grant will cover the HAs work time to attend the class Replication of the education session with facilitators with geriatric expertise may not always be possible, therefore as an alternate plan, propose to have a video to capture the scenarios of interacting with an older adult experiencing delirium. The use of the hospital's student volunteers who portrayed patients experiencing delirium was realistic, however, due to the availability of volunteers, provisions for hiring actors will need to be considered. • Develop a quality improvement monitoring plan to sustain the HA's knowledge of delirium and performance of appropriate interventions at the bedside in the role as a sitter. • Offer consultative service to the hospital ethics committee for cases involving older adults
III	EBP/Translational Science	• The Johns Hopkins Nursing Evidence-Based Practice Rating Scale was used for this project to evaluate the quality and strength of the evidence in the literature review. Refer to Table 1 on page 17 • The Iowa Model of EBP will help to drive the implementation of the findings

		• Provide guidance to EBP teams in the hospital such as the teams for delirium and falls
IV	Information Systems/Technology	• Use of information systems to help with tracking pre/post testing for the Knowledge of delirium. The pre-test could be done in advance of attending the class. • As more continuing education classes are developed the DNP leader will collaborate with the Director of Education for posting HA attendance to educational offerings on Healthstream • Leverage the Electronic Medical Record (EMR) in tracking patients with delirium throughout the hospital
V	Health Care Policy & Ethics	• Initiate contact with TJC for developing a standard that will include HAs as a permanent member of the IDT • Establish sitter guidelines, role description among statewide acute care hospitals • Become a member of Network for Investigation of Delirium: Unifying Scientists (NIDUS) for networking and communication on a national level about research in delirium
VI	Inter-professional Collaboration	• Become a role model in facilitating inter-professional and interdisciplinary collaboration within the organization by partnering with geriatricians for continual work on projects such as delirium education for all levels of nursing personnel (HAs, RNs, APRNs) and interdisciplinary team (physicians, physical therapy, social work, discharge coordinators, and volunteers)
VII	Prevention & Population Health	• Collaborate with geriatricians on initiatives for the prevention and management of delirium • Gather data on which patients develop a hospital acquired delirium • Network with other GCNS colleagues interregionally in sharing work on delirium during the community of interest in delirium conference calls that occur each quarter
VIII	Advanced Nursing Practice & Education	• Continue mentoring graduate nursing students in the next generation for succession planning for the organization. Currently serving as a

		preceptor to Master's nursing students and providing opportunities to assist in teaching delirium class for RNs and future classes for HAs • Continue role as mentor to RN staff on EBP teams for delirium and falls • Disseminated results from the project during a poster session at the Sigma Theta Tau 30th International Research Congress on July 27, 2019 in Calgary, Canada