The Implementation of a Delirium Screening Tool on Two Medical-Surgical Units

DNP Final Project Paper

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Abstract

Background: More than 2.6 million hospitalized adults 65 years and older are affected by delirium. Delirium has major implications for patients, providers, and organizations, including an annual cost between 6.6 billion and 82.4 billion dollars in the United States. Evidence implies that delirium goes unrecognized 72% of the time. Prevention and identification utilizing an evidence-based delirium assessment tool is key. Nursing education on identification of delirium, its risk factors and prevention measures improve patient's outcomes. *Methods:* The Quality Improvement (QI) project used a mixed method design. A multidisciplinary team was lead through the process of the implementation of the 4AT screening tool on the two medical-surgical units. The 4AT delirium screening tool was incorporated into the health systems electronic health record. An education in-service on delirium and the 4AT screening tool to improve patient outcomes were implemented. A pre and post survey were given to the nurses before and after education and intervention. Data was collected for three months prior and three months during the 4AT implementation. The data included the positive and negative rates of the screening tool. Education was provided to all nurses on the pilot units. *Results:* An in-service was provided to the RN's. The pre-mean test score was 65.74% (SD=14.35) and the post-mean test score was 80% (SD=9.35) an increase in knowledge by 14.26% (p value less <.001). There was a significant difference noted. For three months (April-July) it was identified that the average positive delirium screening rates using the 4AT rate was 12.66% compared to 1.34 % (5/372) using the CAM screening tool three months prior. To evaluate the impact of the project on delirium screening and management, a confidence survey was sent out. A Mann-Whitney U was

used to analyze the data. The results indicated that there were no significant differences for any of the questions (all $p > 0.05$). The fall rates and restraint use of both units did not change during the project's implementation. Forty-one nurses who participated in the survey, 28 (68%) preferred the 4AT over the CAM, nine (22%) preferred the CAM over the 4AT, and four (10%) had no preference. *Conclusion:* This project demonstrated the effectiveness of the 4 'A's Test (4AT) delirium screening tool and delirium education for nurses in improving delirium screening, recognition, and management on two general medical-surgical units. The nurses showed a significant improvement in their knowledge and confidence on delirium screening and management after completing the education module and using the 4AT tool, as measured by pretests, posttests, and surveys. The 4AT tool was more sensitive than the Confusion Assessment Method (CAM) tool in detecting delirium among hospitalized patients, as indicated by the higher positive screening rates. Most nurses also expressed their preference for the 4AT over the CAM as a delirium screening tool, as indicated by a survey. The project did not find any significant difference in the fall rates and restraint use.

Keywords: *Delirium, 4AT, CAM, Screening Tool, Confusion Assessment Tool*

The Implementation of a Delirium Screening Tool on Two Medical-Surgical Units

Delirium is an acute state of confusion that is a debilitating form of brain dysfunction (Lee et al., 2020). Delirium is a medical emergency (American College of Medical Toxicology position Statement 2023). Anyone can be affected by delirium but those that are at most risk are hospitalized patients that are sixty-five and older, those who have cognitive disorders such as dementia, postoperative patients, or those who are in the intensive care units (ICU). Delirium is associated with poor healthcare outcomes such as falls, increase restraint use and interruptions of medical treatment (Malik et al., 2016). According to Siddiq et al., (2016), delirium can decrease patients' ability to function, increase length of stay, increase admission to long term care institutions after an acute hospital stay and increase mortality rates.

Although poor healthcare outcomes have been attributed to delirium, 24.1% of patients with delirium in the acute care setting continue to go undiagnosed (Lange et al., 2019). Routine screening with appropriate validated and reliable delirium screening tools can improve recognition of this debilitating syndrome. Delirium is often undetected and untreated on general medical-surgical units, resulting in adverse outcomes and increasing health care costs. Prevention, early recognition, and treatment of delirium is imperative for favorable healthcare outcomes.

Background/Significance

More than 2.6 million hospitalized adults 65 years and older are affected by delirium (Oh et al., 2017). A diagnosis of delirium can have negative implications for patients, healthcare providers and healthcare organizations if not treated, prevented, recognized early, or managed appropriately. According to Israni et. al., (2018), mortality rates in a twelve-month period range

from 10% to 26%. Resources such as additional staffing needs, patient care attendants and video monitoring are needed to manage patients with delirium and can further place burden on the current staffing crisis and health care costs. A study conducted by Kinchin et.al., (2021), concluded that the cost of delirium in the United States is between 6.6 billion and 82.4 billion dollars. Preventing, identifying, and treating delirium will help improve healthcare outcomes in healthcare systems in the United States. Prevention and identification are key to delivering high value care. By preventing and detecting delirium, healthcare organizations adhere to the Institutes of Medicine Quadruple Aim, which aims to enhance patient experience, lower healthcare costs, improve providers well-being, and advance population health (Bachysnsky, 2020).

Using an appropriate screening tool systematically and consistently is key to detecting delirium early and meeting goals of the Quadruple Aim. There are a variety of delirium screening tools that are available for use. A tool that is efficient and effective should be used by bedside nurses. One screening tool that is well validated is the 4 ‘A’s test or the 4AT. The 4AT is a reliable delirium tool that was developed in 2011 in the United Kingdom (UK) to first diagnose cognitive impairment (MacLullich et al., 2019) and it used internationally. The 4 AT test, for alertness, attention, abbreviated mental test-4 and acute change. The tool is designed for routine screening and is efficient and usable for all healthcare providers. Usability and time constraints are barriers that potentially prevent systematic screening for delirium. Implementing a validated tool such as the 4AT on general medical-surgical units is imperative to improving healthcare outcomes.

A major academic medical center in the Midwest is implementing various quality improvement strategies to enhance the detection and management of delirium to improve the health outcomes of hospitalized patients. At present, the academic medical center uses the brief Confusion Assessment Method (CAM) to identify delirium on the general medical-surgical units. However, the screening tool has shown poor accuracy in screening delirium on two units that participated in the pilot study. The academic research hospital delirium research team has completed phase one of its project. It was a pre-implementation diagnostic study to determine current practice patterns and potential barriers to optimizing delirium strategies. During the study it was found that 56% of nurses believed their patients had delirium, only 17% believed that positive screens were documented and 77% of the nurses agreed they needed more delirium training (Vlisides et al., 2022). In the pre-implementation phase of the study, delirium screening using the brief Confusion Assessment Method (CAM) revealed a low prevalence (<1%) of delirium among patients admitted to two general medical units at the academic medical center.

Clinical Question

In patients aged 70 years and older admitted to two general medical-surgical units at an academic research hospital, how does the introduction of a validated delirium screening tool affect the outcomes of delirium screening rates, fall rates, and restraints use compared to the current practice over a 12-week period? Additionally, are the nurses' preferences, confidence, and knowledge levels regarding the use of the screening tool affected?

Literature Review

Prevention and early detection of delirium are best practice. A review of the literature was performed to find a validated and reliable delirium screening tool for accurate and early

detection. The University of Detroit medical librarian assisted with the literature search. A search was conducted using an inclusive search strategy using the following search string: (((MH "Delirium") OR TI delirium) AND AU Inouye) NOT (ICU OR intensive care). Two relevant articles were identified by that search. The following databases were searched: Medline, EBSCO, CINAHL, and ScienceDirect. Keywords used for the search were: 4A's Test, 4AT, CAM, Confusion Method Assessment, delirium screening tool, general medicine, medical-surgical, delirium assessment, delirium prevention and early identification of delirium. There were five articles found during that search which consisted of a systematic review, meta-analysis, a comparative simulation study, two prospective studies and a diagnostic accuracy study. The literature search revealed three common themes regarding the delirium screening tools: the need for a brief (brevity), valid, and reliable (sensitivity and specificity), tool that can be easily implemented and maintained in the clinical setting (sustainability).

Brevity

The definition of brevity (Cambridge Dictionary, n.d.), the use of a small number of words or lasting briefly. A common theme in the literature was the need for a validated delirium screening tool that had brevity, which required minimal training and was practical for daily use. The 4AT appeared to be a reliable and uncomplicated tool. The 4AT delirium screening tool is a practical easy to use tool that has been validated in at least seventeen studies with over three thousand observations (Tieges et.al.,2020, www.the4AT.com). Professor Alasdair Maclullich, Dr. Tracy Ryan, and Dr. Helen Cash developed the 4AT tool in 2011 because of the numerous

challenges they encountered with the other screening tools (www.the4AT.com). The 4AT was updated in 2014.

The CAM is a screening tool often used in other institutions but is not as effective on general medical-surgical units. Kuczmarska et al., (2016) identified that the CAM-ICU is not the best screening tool for the general medical population. Four components assessed in the 4AT screening are as followed: alertness, orientation test (the abbreviated Mental Test-4, included 4 orientation questions), attention (Months Backwards test) (days backwards can be used also and it does not affect the test), and acute change or fluctuation in mental status (Tieges et al.,2020, Bellelli et al.,2014). Various medical-surgical units were included in the study such as postoperative units, stroke, oncology, palliative care, and nursing homes (Tieges et.al.,2020, Arnold et al., 2020).

Sensitivity and Specificity

When a test is developed to screen for a disease, identify a syndrome or to assess a physiological parameter such as blood pressure or delirium, it is important to evaluate how valid that test is, and does it accurately reflect what it intends to measure. There are many factors that contribute to the validity of a test: sensitivity and specificity are two examples. We usually consider sensitivity and specificity as measures of the accuracy of the test or tool. (Swift et al., 2020).

The CAM assessment is the most common screening tool seen throughout literature. In a comparative study that compared the various CAM assessments, it was found that the sensitivity and specificity rates were as high as 0.95 and 0.94 respectively (Motyl et al., 2020). The high rates did not account for medical-surgical units. However, CAM sensitivity rates have been as

low as 0.28 in a recent clinical implementation study (Tieges et al.,2020). The low sensitivity rates and false negative screenings contributed to the lack of staff training. The CAM can take up to ten minutes to complete which further increases the burden on healthcare providers (Inouye et al., 2003). In the literature the 4AT had a pool sensitivity of 0.88-0.89 and pooled specificity of 0.84-0.88. In a diagnostic accuracy study, delirium was detected in 12.3% (n=29) of the patients in one study and 24.2% (n=3702) in the systematic review study (Tieges et al.,2020, Bellelli et al.,2014), which are consistent rates throughout the literature. Both studies reviewed and supported the accuracy of using the 4AT in routine practice.

Sustainability

According to experts, sustainability is a unique construct that emerges after a specified time, during which the program, clinical intervention, and/or implementation strategies are maintained. Behavior change may modify or adjust while persisting to generate positive outcomes for individuals and systems (Penno et al.,2019). When searching the literature to develop a project, consideration for cost and sustainability are imperative. Implementation of a new project can be complex and expensive. It is essential that all stakeholders are engaged and committed from the beginning. Sustainability is an important goal of any project initiative. A multimodal approach for sustainability is one strategy to consider. In searching the literature, a quality improvement project that consisted of implementing a three-step pathway assessment for delirium showed significant improvement in identifying delirium. The multimodal approach that was used in the study was the use of the 4AT screening tool, the use of a one question delirium test also known as the SQiD and a seven-phrase mnemonic (PINCHME). Using the PINCHME mnemonic will remind bedside nurses to assess the following potential causes of delirium: pain,

infection, nutrition status, constipation, hydration, medication, and environment. This approach used in the project resulted in a 26% use of the 4AT by the multidisciplinary team (Dormandy et al., 2019). After this multimodal approach was implemented, completion of the 4AT was performed 97% of the times at least once during admission by various healthcare professionals (Dormandy et al., 2019). After evaluating the surveys, questionnaires, and interviews, the data showed a significant increase in staff confidence. The data indicated that the development of the three-stage pathway implementation strategy increased staff knowledge of delirium and use of the 4AT assessment tool (Dormandy et al., 2019). Engaging the multidisciplinary team in the implementation process also helps with sustainability. Cost effectiveness of the treatment or intervention also is key consideration with sustainability.

Organizational Assessment

An Organizational Assessment is a process that systems and organizations use to evaluate performance, determine strengths, and identify opportunities for improvement (Bartuseviciene & Sakalyte, 2013). In the winter of 2022, a need was identified to improve early recognition of delirium on general medical-surgical units in the academic research hospital. A three-year delirium project was implemented by the delirium research team. The project aims to prevent, detect, and manage delirium in the hospital setting. The project's main objective is to assess the effectiveness and cost-effectiveness of a delirium prevention program on general medical-surgical units. A key strategy was to implement and evaluate a validated delirium screening tool. The DNP student joined the delirium research team and conducted a pilot study of the delirium screening tool. The DNP student also led the quality improvement intervention as a subproject

that was consistent with the overall project goal. Funding was obtained for various delirium research initiatives by a third party.

Implementing a new delirium tool requires the collaboration and engagement of all stakeholders within a healthcare organization. The identified stakeholders include: the project leader of the primary project, a health insurance company (the project funder), staff members from the two pilot units (RN's, physicians, pharmacists, CNS (Clinical Nurse Specialist), CND, ENC, geriatricians and psychologist), DNP student, patients, and the executive leadership team of the organization. Several meetings were held with the unit-based committees and leadership teams on both units to ensure alignment and commitment from all stakeholders.

Strengths Weakness Opportunities and Threat Analysis

A Strength Weakness Opportunity and Threat (SWOT) analysis was conducted to inform the project. It is a tool used to strategically assess and analyze organizations (Newman Library, 2016). A SWOT analysis examines the internal and external elements that affect an organization. Internal elements consist of the organization's strengths and weaknesses, while external elements comprise the opportunities and threats the organization faces. The external elements emphasize the prospects of the organization (Newman Library, 2016).

The organization has several notable strengths, such as its global reputation as an accredited teaching hospital, its trustworthiness among the community, its current use of a validated evidence-based delirium screening tool (CAM), and its availability of funding for delirium research.

The organization also has several weaknesses or internal challenges that need to be addressed. These include the inconsistency of delirium screenings on the general medical-

surgical units, the lack of follow-up actions by healthcare providers when a patient tests positive for delirium, and the low perceived value of screening by nurses who feel that delirium identification does not lead to any intervention. Moreover, the organization has limited delirium prevention programs and lacks standardized delirium education and screening compared to similar healthcare organizations.

The preliminary pilot study revealed an opportunity to develop a program that would improve the screening process for delirium and enhance patient healthcare outcomes, such as decreasing falls, restraint use, and length of stay. However, the organization also encountered some threats, such as the excessive costs associated with delayed or missed delirium diagnosis, the misalignment of delirium prevention strategies with the organization's mission, and the potential confusion caused by the simultaneous use of two different delirium screening tools on the pilot units. The electronic health record currently displayed both screening tools, though nurses were instructed to use the one associated with the pilot project. Another opportunity that emerged from the preliminary pilot study was to improve patient healthcare outcomes, such as reducing falls, restraint use, and length of stay. Late identification or failure to recognize delirium can be costly for the hospital and can pose a threat to the organization. Early detection of delirium and implementation of prevention strategies that safeguard patients align with the academic research hospital's mission of serving the community and the world. Another threat at the local level was a competing project initiative. One of the medical-surgical units initiated a unit-based project on the CAM screening tool. The concurrent use of two delirium projects may create confusion and affect the results of the QI project.

Purpose Statement

The literature shows that the best practice for delirium is putting interventions in place that prevent and mitigate delirium's effects, while supporting at-risk patients recovering in the hospital. According to Volland (2020), there are significant contributory factors that may cause up to 33% of delirium cases and they are poor cognition, poor sleep hygiene, poor hydration, sensory impairments, and mobility. Introducing preventative interventions early may help to reduce delirium incidences in patients that are at risk. Strategies like using appropriate delirium screening tools for recognition of this acute confusional syndrome are helpful. Delirium screening tools vary across healthcare organizations worldwide. The most used tool is the CAM, which may not be effective on general medical-surgical units due to its length and complexity. Some studies have reported low sensitivity rates for the CAM, as low as 0.28. Recent studies have used the 4AT on medical-surgical units and found it to be valid and reliable (Dormandy et al., 2019; Tieges et al., 2020; www.the4AT.com).

This pilot project evaluates the feasibility and effectiveness of implementing the 4AT delirium screening tool for patients aged 70 years or older on general medical-surgical units. The 4AT is a brief and easy-to-use tool that has been validated and reliable in detecting delirium in various settings. The project aims to compare the 4AT with the CAM, which is the most widely used tool but has low sensitivity and specificity rates in some studies. The project objectives are to:

- Improve the accuracy and timeliness of delirium screening and recognition by using the 4AT tool.

- Reduce the incidence of falls and restraint use among delirious patients by implementing early intervention strategies.
- Enhance the staff nurses' knowledge and confidence in identifying and managing delirium by providing an educational Inservice on delirium and the 4AT tool.
- Assess the staff nurses' preference and satisfaction with the 4AT tool compared to the CAM tool.
- Determine the cost-effectiveness of adopting the 4AT tool versus the usual care (CAM) by measuring patient outcomes such as fall rates and restraint use.

Theoretical Framework

Kolcaba's Theory of Comfort

The shared objective for patients, nurses, physicians, and the healthcare system is to achieve optimal physical, mental, and psychosocial health outcomes for the patients in a timely manner. Health is defined as "a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity" (World Health Organization, 2017). Although one may appear to be improving hemodynamically, that does not encompass holistic health. According to Pinto et. al., (2017) the above definition indicated that a person is only considered healthy if they are holistically healthy and comfortable. For healing to take place, a patient must be comforted when in distress from a physical or mental illness for wellbeing. Comfort is derived from the Latin word *confortare* which means "become strong, comfort or encourage" (Pinto et. al., 2017). Comfort is a guiding principle in nursing that affects knowledge, discipline, and the profession (Pinot et. al., 2017).

Disease prevention is the ideal goal in healthcare. However, when prevention fails, early identification and management of a disease or syndrome are imperative for positive patient outcomes. To establish a consistent and cohesive process, a congruent framework is needed. The framework that informed the delirium project was Kolcaba's Comfort Theory (Figure 1), which aims to provide comfort and well-being to patients with delirium. The Comfort theory enhances health care through comfort. The Comfort Theory by Katherine Kolcaba is a high middle range nursing theory that was developed in the 1990's. It was designed for nursing practice, research, and education. It helps nurses to assess the unmet comfort needs of patients and their families. Kolcaba defines comfort as a multidimensional concept that consists of three types and four contexts. The three types of comfort are relief, ease, and transcendence. Relief occurs when a specific need of a patient is met, such as pain, anxiety, or confusion. Ease refers to a state of calmness or contentment that a patient experience. Transcendence involves the ability of a patient to rise above or cope with their health challenges. The four contexts of comfort are physical, psychospiritual, environmental, and sociocultural. Physical comfort relates to bodily sensations, homeostasis, and immune functions. Psychospiritual comfort involves self-awareness, meaning, and spirituality. Environmental comfort pertains to the sensory aspects of the surroundings. Sociocultural comfort encompasses the interpersonal, cultural, and religious aspects of life. The Comfort Theory aligns well with the implementation of the 4AT delirium screening tool. By using the 4AT, nurses can detect delirium early and provide appropriate interventions that enhance the physiological, psychospiritual, environmental, and sociocultural comfort of patients.

Figure 1Kolcaba's Comfort Theory

Kotter's Eight Step Change Model

Kotter's eight step change model (Figure 2) guided the implementation of the 4AT screening tool. Although the Kotter's model is often used in business, it was chosen because it is easy to use, adaptable to the organization structure and utilized various staff members and stakeholders' responses to drive change (Small et. al.,2016). The images of the model were simple to review and reference quickly. The 4AT implementation represented a major system change on the two medical-surgical units, and Kotter's model served as a suitable framework for guiding this project. This model also helped to guide the evaluation of nurse compliance, nurse satisfaction, and their perceptions of the process. The DNP student collaborated with various stakeholders during the implementation of the project and followed Kotter's eight steps to help create a sense of urgency, form a powerful coalition, communicate vision, empower the stakeholders, execute a plan, celebrate short-term wins, consolidate improvements, and sustain and spread change. (Small et.al.,2016).

Figure 2Kotter's 8 Step Change Model

Methodology

Project Design

The DNP project was a quality improvement design that used a mixed-methods approach. The project implemented the 4AT delirium screening tool (Appendix A) over twelve weeks. The project aimed to assess whether the 4AT, a validated delirium screening tool, would detect delirium more effectively than the existing tool (CAM). The project also examined whether early and accurate recognition of delirium would improve healthcare outcomes for patients aged 70 years or older. The quantitative outcomes included delirium screening rates (positive or negative) using a workbench report (Figure 3), delirium education test scores (Appendix D), fall rates, and restraint use (Figures 4 & 5). The qualitative outcomes consisted of the nursing staff's preference and confidence regarding delirium screening tools using a face-to-face survey (Appendix E) and a confidence survey (Appendix B), respectively, and their use of nonpharmacological interventions to manage delirium.

Figure 3CAM and 4AT Workbench Reports (Confidential)

The integration of the 4AT screening tool into the electronic medical record was achieved through a collaborative effort between a DNP student, an informatics nurse, a clinical business analyst, and various institutional experts. The process began with a health information system request submitted via the email request process. During the planning phase, four meetings were held between the DNP student, the informatics nurse, the clinical business analyst, and other institutional experts. A final meeting was held to approve the final build. This process was conducted using the interdisciplinary research method (IDR), which is a novel approach that combines information, data, techniques, tools, perspectives, concepts, or theories from multiple disciplines or specialized knowledge areas. The IDR method is particularly useful for solving problems that are beyond the scope of a single discipline area of research practice. Additionally, it can foster interprofessional collaboration and communication among different stakeholders involved in the project. The informatics nurse created a workbench report to collect 4AT data throughout the implementation phase (Zhang et al., 2018).

Setting and Sample

This project took place on two general medical-surgical units at a Midwest academic research adult hospital. The nursing staff on the two units were the target population that received delirium education and administered the 4AT delirium screening assessment during their routine nursing shift assessments. Techs, aides, and other healthcare providers other than RNs (registered nurses) were excluded from the project. Delirium screening occurred on day shift (7am-7pm) and night shift (7pm-7am). Patients that were seventy years and older admitted on the identified units were included in the project. All patients under the age of seventy were excluded from the project.

Implementation

The DNP student (project lead) met with all stakeholders (Nursing, Nurse Educator, Unit Director, Clinical Nurse Specialist, Quality Director, Delirium Committee, and the Delirium research team) to plan the start date of the project. The nursing documentation committee approved the addition of the 4AT tool to the nursing electronic flowsheet after a meeting with the DNP student. The DNP student also worked with the organization's informatics team to build and add the 4AT tool to the nurses' shift assessment flowsheet. The project was launched on April 24, 2023, and ended on July 21, 2023.

The DNP Student administered a delirium confidence survey (Appendix B) via Qualtrics (email link or QR code) and notified all nurses of the two selected units about the delirium education module (Appendix C) series two weeks before the start of the education series. The notifications were sent through various channels: emails, daily huddle board notification,

electronic bulletin boards notifications, bathroom bulletin boards notifications, and the conference room bulletin boards notifications.

The delirium education module was delivered at multiple in-services and during Unit Based Committee meetings for both units. The in-services were scheduled three times a week, twice a day (am and pm shift) and one zoom option weekly for two weeks. One weekly lunch and learn was offered during day and night shift. The DNP student gave a pre-test (Appendix D) to nurses about delirium before the education session and a post-test (Appendix D) to nurses after the session to assess knowledge gained. Included in the delirium education was the single question to identify delirium (SQiD and PINCHME mnemonic (pain, infection, nutrition, constipation, hydration, medication, and environment). These tools could be used in addition to the screening tool to help the nurses remember to assess risk factors that may cause delirium.

After the education series was completed, the DNP student activated the 4AT screening tool in the electronic health record on the two selected medical-surgical units for a 12-week period. The DNP student conducted regular rounds to encourage nurses to complete the screening and address any questions they might have. The project team also appointed two nurse champions on both units to assist with the delirium project and serve as a resource when the DNP student was absent.

Human Subject Consideration

The project received exemption from the International Review Board (IRB) of the academic research hospital and the University of Detroit Mercy. The project was a quality improvement initiative that did not involve human subjects testing.

Evaluation Methods

Outcome Measures

The project employed various measures to evaluate its effectiveness. The project measured delirium screening rates using a screening instrument. The project also tracked adverse events such as falls and restraint use which are linked to higher delirium incidence and severity (Mazur, Wilczyński, & Szewieczek, 2016; Dharmarajan et al., 2017). The DNP student assessed the nurses' knowledge gained after the delirium education module by giving pre- and post-tests. The DNP student also examined the nurses' confidence in delirium management of patients by administering pre- and post-confidence surveys before and after the project implementation. The DNP student conducted a face-to-face survey to determine the nurses' preference for the two delirium screening tools at the end of the project for a one-week period (Appendix E).

Data Collection

Baseline data collection for delirium screening rates took place in spring of 2022 in a pre-implementation study within the primary study. A workbench report that included CAM delirium screenings prior to the implementation of the 4AT's was used to collect data from the preceding three months. The DNP student reviewed the 4AT pilot workbench to measure delirium screening rates (positive or negative), fall rates, and restraint use. Delirium rate scores from the 4AT screening that were four or greater were indicative of positive delirium screen. Baseline data of fall rates and restraint use were collected at pre-implementation and then monthly for twelve weeks using the quality and safety tableau reports (Figure 5 & 6). During implementation weekly audits for delirium screenings took place using a workbench report created by the

informatics team and transferred to the bedside audit tool (Figure 6). Data was collected on days 30, 60 and 90. At the conclusion of the 4AT's project, a delirium confidence survey was sent out (Appendix B) (email link or QR code) to all nurses to complete both units. Surveys closed two weeks after the project concluded. The DNP student concluded the project with a debriefing session and planned to disseminate the final outcomes to all stakeholders in a subsequent meeting.

Figure 4Falls Tableau Report Pre & Post Implementation

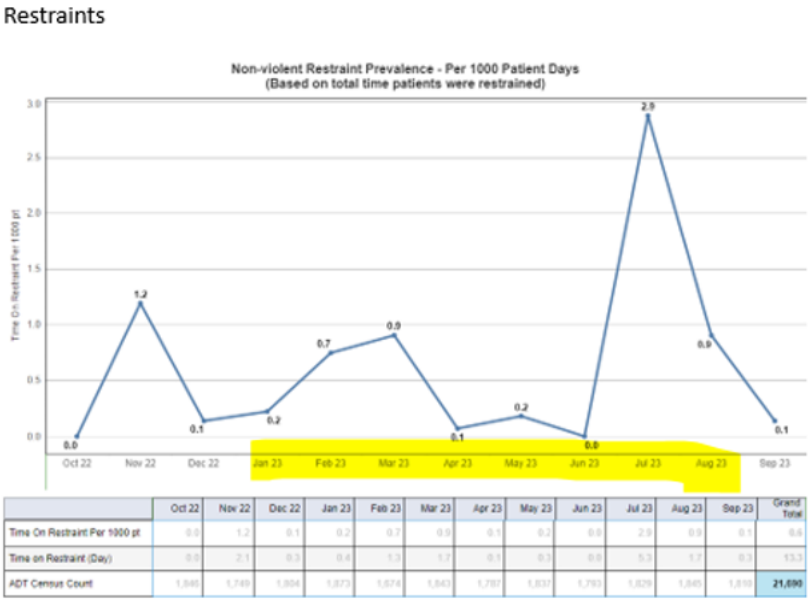


Figure 5 Restraint Tableau Report Pre & Post Implementation

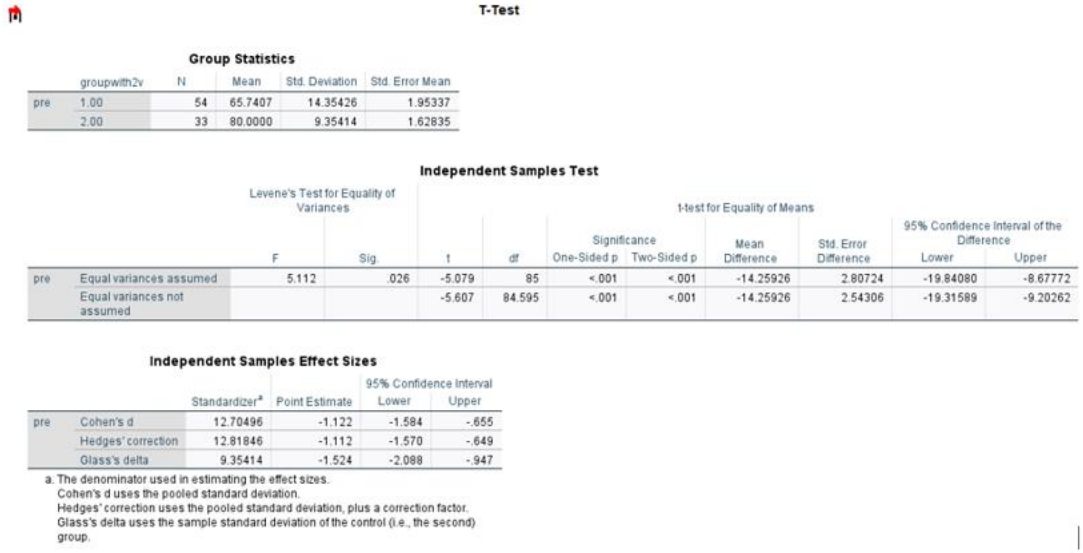
Bedside Delirium Screening

Week 1	Date of Assessment	4AT Screening Score	Comments

Figure 6 Bedside Delirium Screening

Data Analysis

The effect of delirium education on nurses' knowledge was measured by administering a pre-test and a post-test. The expected outcome after education was that the nurse's knowledge would improve after education was presented. An independent t-test (Figure 7) was performed to analyze and compare the mean scores of the pretest and posttest.



T-Test

Group Statistics

	groupwith2v	N	Mean	Std. Deviation	Std. Error Mean
pre	1.00	54	65.7407	14.35426	1.95337
	2.00	33	80.0000	9.35414	1.62835

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means							
						Significance				95% Confidence Interval of the Difference	
		F	Sig.	t	df	One-Sided p	Two-Sided p	Mean Difference	Std. Error Difference	Lower	Upper
pre	Equal variances assumed	5.112	.026	-5.079	85	<.001	<.001	-14.25926	2.80724	-19.84080	-8.67772
	Equal variances not assumed			-5.607	84.595	<.001	<.001	-14.25926	2.54306	-19.31589	-9.20262

Independent Samples Effect Sizes

				95% Confidence Interval	
		Standardizer[a]	Point Estimate	Lower	Upper
pre	Cohen's d	12.70496	-1.122	-1.584	-.655
	Hedges' correction	12.81846	-1.112	-1.570	-.649
	Glass's delta	9.35414	-1.524	-2.088	-.947

a. The denominator used in estimating the effect sizes.
Cohen's d uses the pooled standard deviation.
Hedges' correction uses the pooled standard deviation, plus a correction factor.
Glass's delta uses the sample standard deviation of the control (i.e., the second) group.

Figure 7 Delirium Education Pre-and Post-Test Average Analysis

A Statistician affiliated with the academic research hospital suggested the appropriate statistical method for the confidence survey that employed a Likert scale should be a nonparametric test. The Mann-Whitney U test was applied to compare the pre-survey and post-survey scores. One of the study's objectives was to evaluate the impact of delirium education and the introduction of the new 4AT screening tool on nurses' confidence in delirium assessment over a 12-week period.

There was no appropriate analytical test to examine and compare the two delirium screening tools. The informatics team at the academic research hospital developed a workbench to collect data on CAM screenings for three months before the project initiation and on 4AT screenings for 12 weeks during the project implementation. The delirium screening results did not meet assumptions of any standard statistical test. The results of the delirium screening rates will be discussed later in the results section. Data on fall rates and restraint use were obtained

from the hospital's Tableau reports for three months before and the twelve weeks during the project implementation. The data on fall rates and restraint use were insufficient to demonstrate a significant difference in this quality improvement project. All results of the project were analyzed using the Statistical Package for the Social Science (SPSS) by IBM if it were applicable. The data were presented in various forms of visual representation, such as tables and graphs.

Results

Pre-Post Delirium Education Test

There were 130 RNs combined from both pilot units expected to complete delirium education. Of these, 42% (54/130) completed both education and pretesting. The percentage of RN's who completed the posttest was 25% (33/130). The pretest and posttest were anonymous unpaired test. The RN (registered nurses) pre-mean test score was 65.75% (SD=14.35) and the post-mean test score was 80% (SD=9.35) an increase in knowledge by 14.25%. The p value was <.001, which was a significant difference.

Pre-Post Delirium Confidence Survey

To evaluate the impact of the project on delirium screening and management, a confidence survey was sent out to 130 nurses on two units before and after the project implementation. The survey consisted of fifteen questions divided into four categories: (a) confidence in screening for delirium, (b) confidence in identifying delirium risk factors and incorporating preventive interventions, (c) confidence in using nonpharmacological interventions to manage delirium, and (d) confidence in collaborating with the patient's care team. The response options ranged from 1 (very unconfident) to 5 (very confident). Out of the 130 nurses,

twenty completed the pre survey and sixteen completed the post survey. The results showed that the nurses' confidence levels varied across the categories and questions, with some showing an increase and some showing a decrease after the project implementation. Table 1 summarizes the percentage of nurses who reported being very confident or confident for each question in both surveys. A Mann-Whitney U nonparametric test was conducted to compare the differences in confidence scores between the pre and post surveys. The results indicated that there were no significant differences for any of the questions (all $p > 0.05$). Therefore, the project did not have a significant effect on the nurses' confidence levels regarding delirium screening and management.

Delirium Screening tools

The RNs on both units used the brief CAM as their usual tool for screening delirium before implementation of the 4AT. Proceeding the project, using the CAM the positive delirium screening rate was 1.34% (5/372). After using the 4AT, the positive screening rate increased to 14% (54/389). This means that the 4AT identified 12.66% more cases of delirium than the CAM. There was no appropriate analytical test to compare screening rates at the time of the QI project because the data collection of the delirium screening was not conducted simultaneously.

Falls and Restraints Use

This project also assessed the effect of adequate delirium screening on the fall rates and restraint use of two units that participated in the pilot project. The fall rates and restraint use of the units were compared before and after the program's implementation. The fall rates and restraint use of the units were measured before and during the 4AT implementation, using data from January 2023 to March 2023 and from May 2022 to July 2023, respectively. The results

showed that the average fall rate of the units did not change significantly after the introduction of the 4AT, remaining at around 3.5 falls per 1,000 patient days. The lack of significant difference in the fall rates may be due to the brief period of data collection or other confounding factors. The restraint use of the units also did not show any significant difference, with four episodes before and three episodes during the 4AT's implementation. The data collection of fall and restraint use did not have any exclusion criteria and included all patients on the units.

Nurses Preference Poll

The DNP student evaluated the nurses' preference of the 4AT delirium screening tool over the CAM after the completion of the pilot project. The DNP student administered a one-question survey (see Appendix E) in person to the nurses on both units during the morning huddles from Monday to Friday in the week following the project. The survey was a component of a larger qualitative study that will include more detailed interviews with the nurses in phase three of the primary delirium research project. Out of forty-one nurses who participated in the survey, 28 (68%) preferred the 4AT over the CAM, nine (22%) preferred the CAM over the 4AT, and four (10%) had no preference. It is surmised that many of the nurses found the 4AT to be a more convenient, efficient, and accurate tool for screening delirium than the CAM. However, some nurses still preferred the CAM, which may indicate a resistance to change or a lack of familiarity with the 4AT. The reasons for these preferences will be explored further in the qualitative interviews.

Discussion

The aim of this project was to implement and evaluate the 4AT delirium screening tool on two general-medical surgical units and to provide delirium education to nurses. The project sought to improve delirium screening, prevention, identification, and management, and to reduce adverse patient events associated with delirium. The project also provided an education module on delirium, its risk factors, causes, and interventions, and measured the knowledge gained, confidence, and preference of screening tools of the RNs. The education module was effective in increasing the knowledge of the RNs on delirium screening and management. The RNs had a 14.26% (p value < .001) gain in knowledge after completing the module, as measured by a pretest and a posttest. There was a significant difference between pre and posttest.

The results of this project showed that the 4 'A's Test (4AT) was more sensitive than the Confusion Assessment Method (CAM) in detecting delirium among hospitalized patients. The 4AT identified 12.66% more cases of delirium than the CAM, as measured by the positive screening rate. However, this comparison should be interpreted with caution, as the CAM and 4AT screenings were not conducted simultaneously and were done in different periods. Therefore, the difference in the detection rates may be influenced by other factors, such as the fluctuation of delirium symptoms, the variation of patient characteristics, or the bias of the raters. The agreement between the two tools was poor, indicating that the CAM may miss many cases of delirium that are detected by the 4AT. These findings are consistent with the literature, which indicates the 4AT has brevity, validity, and reliability for screening for delirium in the hospital setting. According to Teiges et al., (2020), a diagnostic study using the 4AT found that 12.3% of hospitalized patients screened positive for delirium.

The RNs' confidence in identifying, preventing, and managing delirium improved after the project. The RNs reported a 38% increase in confidence after using the 4AT and completing the education module, as measured by a survey.

The fall rates and restraint use of the units did not change significantly after the project. The average fall rate of the units remained at around 3.5 falls per 1,000 patient days, and the average restraint use of the units remained at around six episodes, before and after the project. This may be due to the short duration of data collection or other confounding factors.

Many of the RNs preferred the 4AT over the CAM as the delirium screening tool of choice. This suggests that the RNs found the 4AT to be more convenient and efficient than the CAM. Therefore, the 4AT may be a better delirium screening tool to use on general care units. More quality improvement work is needed in delirium screening on general care units.

The cost of delirium can be a significant issue for both patients and the healthcare system. A study conducted by the Institute for Healthcare Improvement (IHI) found that patients with delirium stay an additional eight days in the hospital, resulting in a daily cost of $2,798 compared to $2,225 for patients without delirium at the Hartford Healthcare System in Connecticut (IHI, 2019). This eight-day difference adds an additional $22,384 to a patient's hospital stay. The patients at the project site screened positive for delirium, which means they could fall into a longer length of stay category. Early detection and correction of confounding factors may reduce the typical eight-day additional length of stay therefore saving the healthcare system money. These results indicate that the project was successful in improving delirium screening and education on two general medical-surgical units. However, further research is

needed to examine the long-term effects of delirium screening on patient outcomes and adverse events.

Limitations

This DNP quality improvement plan project had several limitations. First, the delirium education modules and tests were not mandatory for all nurses on the units, which may have increased the chance of error or inconsistency in delirium screening and assessment. Moreover, float RNs who were not trained on delirium or the 4AT were still responsible for screening patients. The project provided just-in-time education about the 4AT pilot to float nurses upon request. The DNP student did not observe the bedside nurses' use of the 4AT tool as often, as this could have influenced the project results. However, this also limited the opportunity to provide reminders and coaching to the nurses on how to use the tool correctly and consistently.

The data collection on fall rates and restraint use was limited by the project's short duration. The pre-implementation data was only collected for three months preceding the project implementation and only three months during project implementation. This may have reduced the ability to detect significant changes in outcomes or to account for seasonal or monthly variations.

The SQiD single question to identify delirium and the PINCH ME mnemonic were not labeled or posted on the nurses' computers, badges, or around the units. This may have reduced the recall and application of these tools by the nurses during their assessments. Although these tools were included in the education modules, there were no constant reminders available.

Both the 4AT and the CAM tools were visible to the staff on patients who met the inclusion criteria. This may have caused confusion among some nurses about which tool to use. Data were

not collected on the number of CAMS completed during the 4AT implementation phase. Some nurses used both tools and only used the CAM because it was the standard tool, they were familiar with.

These limitations suggest that further research is needed to evaluate the effectiveness of the 4AT delirium screening tool and delirium education for nurses on general medical-surgical units. Future studies should consider using a longer duration, a randomized controlled design, and a mandatory participation policy for all staff involved.

Sustainability Plan

The sustainability of the 4AT delirium screening tool requires the collaboration and support of various stakeholders. The key steps to sustain the 4AT are engaging the support staff and providing them with information about the purpose and significance of the practice change. The support staff are essential for the implementation and maintenance of the 4AT, as they are responsible for screening patients, documenting results, and reporting any issues.

Obtaining the support from the unit-level and executive-level leadership. The leadership can facilitate the adoption and diffusion of the 4AT by providing resources, incentives, feedback, and recognition. The leadership can also help to align the 4AT with the organizational goals and values.

Disseminating the data and outcomes of the 4AT project to the executive leadership team and other stakeholders is necessary. The 4AT project is a secondary project of a larger research project that is funded by a research grant and the primary project is in its second phase. The data and outcomes of the 4AT project will be presented to the executive leadership team and other

stakeholders in the upcoming months to decide on an appropriate screening tool for the general medical-surgical units. If the 4AT is chosen, system-wide education on delirium and the 4AT will be mandatory for all nurses at the academic center. This partnership will also help to sustain the 4AT.

Implementing a standard tool on all general medical-surgical units and requiring timely documentation for delirium screenings is imperative for improving patient outcomes. The use of a standard tool can enhance the consistency and reliability of delirium screening across units. The following are steps that are necessary to sustain the implementation of the 4AT:

- Timely documentation can improve the communication and coordination of care among health care providers. The documentation can also provide data for quality improvement and evaluation purposes.
- Identifying unit champions who are willing to help with the work and provide feedback and suggestions for improvement.
- Planning for continuous process improvement using the PDSA cycle. It involves four steps: plan, do, study, and act. The PDSA cycle can help to measure the improvement of new interventions such as the 4AT, identify any barriers or challenges, and adjust as needed.
- Sharing the positive impact of the 4AT on patient outcomes and staff satisfaction. The positive impact can include reduced rates of falls, reduced length of stay, increased patient satisfaction, increased staff satisfaction, and increased staff confidence. Sharing these outcomes can motivate and encourage staff to continue using the 4AT and to spread it to other units or settings.

These steps can help to sustain the 4AT delirium screening tool into practice and to mitigate delirium among hospitalized patients.

Implications for Nursing Practice

Nursing practice implications are essential for ensuring that patients receive the best care possible. Implementation of the 4AT can increase early recognition and management of delirium, which can lead to better patient outcomes. Delirium is a medical emergency that can cause permanent cognitive impairments, loss of independence, and increased mortality if left untreated. By providing delirium education, nurses can also increase their knowledge and awareness of the risk factors, causes, signs, and interventions of delirium. This can help them to prevent or treat the underlying conditions that may cause delirium and to provide nonpharmacological nursing interventions to reduce the severity and duration of delirium.

Another implication to consider is staff satisfaction, this project can improve the comfort and confidence of nurses in dealing with delirium. Delirium is a challenging condition that can cause distress and frustration for both patients and nurses. By using the 4AT screening tool, nurses can reduce the time and effort required for screening delirium, as well as the risk of missing or misdiagnosing delirium. By providing delirium education, nurses can enhance their clinical reasoning and decision-making skills regarding delirium screening and management. The project also found that most nurses preferred the 4AT over the CAM as a delirium screening tool, which indicates their satisfaction with the 4AT.

For hospital finances, this project can reduce the costs and burden of care associated with delirium. Delirium is associated with increased adverse events such as falls, restraint use, length of stay, increase mortality, and institutionalization. These events can increase the health care

expenditures and resource utilization for both patients and hospitals. By improving delirium screening and management, this project can potentially reduce the incidence and impact of these adverse events, which can result in lower costs and better resource allocation.

Conclusion

This project demonstrated the effectiveness of the 4 'A's Test (4AT) delirium screening tool and delirium education for nurses in improving delirium screening, recognition, and management on two general medical-surgical units. The nurses showed a significant improvement in their knowledge and confidence on delirium screening and management after completing the education module and using the 4AT tool, as measured by pretests, posttests, and surveys. The 4AT tool was more sensitive than the Confusion Assessment Method (CAM) tool in detecting delirium among hospitalized patients, as indicated by the higher positive screening rates. Most nurses also expressed their preference for the 4AT over the CAM as a delirium screening tool, as indicated by a survey. The project did not find any significant difference in the fall rates and restraint use of the units before and after the implementation of the 4AT tool, which may be due to the short duration of data collection or other confounding factors. A continued collaborative approach between nursing and all providers that treat the patient is imperative to develop standard interventions and appropriate treatment plans when delirium screens are positive will improve patient outcomes. However, further research is needed to examine the long-term effects of delirium screening on patient outcomes and adverse events.

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Appendix A

4AT Screening Tool

4AT

Assessment test for delirium & cognitive impairment

(label)

Patient name:

Date of birth:

Patient number:

Date: **Time:**

Tester:

		CIRCLE
[1] ALERTNESS *This includes patients who may be markedly drowsy (eg. difficult to rouse and/or obviously sleepy during assessment) or agitated/hyperactive. Observe the patient. If asleep, attempt to wake with speech or gentle touch on shoulder. Ask the patient to state their name and address to assist rating.*		
	Normal (fully alert, but not agitated, throughout assessment)	**0**
	Mild sleepiness for <10 seconds after waking, then normal	**0**
	Clearly abnormal	**4**
[2] AMT4 *Age, date of birth, place (name of the hospital or building), current year.*		
	No mistakes	**0**
	1 mistake	**1**
	2 or more mistakes/untestable	**2**
[3] ATTENTION *Ask the patient: "Please tell me the months of the year in backwards order, starting at December." To assist initial understanding one prompt of "what is the month before December?" is permitted.*		
Months of the year backwards	Achieves 7 months or more correctly	**0**
	Starts but scores <7 months / refuses to start	**1**
	Untestable (cannot start because unwell, drowsy, inattentive)	**2**
[4] ACUTE CHANGE OR FLUCTUATING COURSE *Evidence of significant change or fluctuation in: alertness, cognition, other mental function (eg. paranoia, hallucinations) arising over the last 2 weeks and still evident in last 24hrs*		
	No	**0**
	Yes	**4**

4 or above: possible delirium +/- cognitive impairment
1-3: possible cognitive impairment
0: delirium or severe cognitive impairment unlikely (but delirium still possible if [4] information incomplete)

4AT SCORE ☐

GUIDANCE NOTES Version 1.2. Information and download: **www.the4AT.com**

The 4AT is a screening instrument designed for rapid initial assessment of delirium and cognitive impairment. A score of 4 or more *suggests* delirium but is not diagnostic: more detailed assessment of mental status may be required to reach a diagnosis. A score of 1-3 suggests cognitive impairment and more detailed cognitive testing and informant history-taking are required. A score of 0 does not definitively exclude delirium or cognitive impairment: more detailed testing may be required depending on the clinical context. Items 1-3 are rated *solely on observation of the patient at the time of assessment.* Item 4 requires information from one or more source(s), eg. your own knowledge of the patient, other staff who know the patient (eg. ward nurses), GP letter, case notes, carers. The tester should take account of communication difficulties (hearing impairment, dysphasia, lack of common language) when carrying out the test and interpreting the score.

Alertness: Altered level of alertness is very likely to be delirium in general hospital settings. If the patient shows significant altered alertness during the bedside assessment, score 4 for this item. **AMT4 (Abbreviated Mental Test - 4):** This score can be extracted from items in the AMT10 if the latter is done immediately before. **Acute Change or Fluctuating Course:** Fluctuation can occur without delirium in some cases of dementia, but marked fluctuation usually indicates delirium. To help elicit any hallucinations and/or paranoid thoughts ask the patient questions such as, "Are you concerned about anything going on here?"; "Do you feel frightened by anything or anyone?"; "Have you been seeing or hearing anything unusual?"

Appendix B

Delirium Screening Confidence Survey

HOW COMFORTALBE OR CONFIDENT DO YOU FEEL IN:

Screening for delirium?

1. Very comfortable or confident
2. Comfortable OR CONFIDENT
3. Somewhat comfortable or confident
4. Somewhat uncomfortable or not very comfortable
5. Very uncomfortable or not confident at all

Communicating clearly and addressing sensory impairments?

1. Very comfortable or confident
2. Comfortable OR CONFIDENT
3. Somewhat comfortable or confident
4. Somewhat uncomfortable or not very comfortable
5. Very uncomfortable or not confident at all

Educating patients and families about the causes of delirium?

1. Very comfortable or confident
2. Comfortable OR CONFIDENT
3. Somewhat comfortable or confident
4. Somewhat uncomfortable or not very comfortable
5. Very uncomfortable or not confident at all

Encouraging early mobility and incorporating regular routines?

1. Very comfortable or confident
2. Comfortable OR CONFIDENT
3. Somewhat comfortable or confident

4. Somewhat uncomfortable or not very comfortable

5. Very uncomfortable or not confident at all

Optimize nutrition, hydration, and bowel bladder hygiene?

1. Very comfortable or confident

2. Comfortable OR CONFIDENT

3. Somewhat comfortable or confident

4. Somewhat uncomfortable or not very comfortable

5. Very uncomfortable or not confident at all

Monitoring and reporting pain?

1. Very comfortable or confident

2. Comfortable OR CONFIDENT

3. Somewhat comfortable or confident

4. Somewhat uncomfortable or not very comfortable

5. Very uncomfortable or not confident at all

Recognizing delirium causing medications?

1. Very comfortable or confident

2. Comfortable OR CONFIDENT

3. Somewhat comfortable or confident

4. Somewhat uncomfortable or not very comfortable

5. Very uncomfortable or not confident at all

Recognizing early signs and symptoms of delirium

1. Very comfortable or confident

2. Comfortable OR CONFIDENT

3. Somewhat comfortable or confident

4. Somewhat uncomfortable or not very comfortable

5. Very uncomfortable or not confident at all

Reorientation and reassurance?

1. Very comfortable or confident

2. Comfortable OR CONFIDENT

3. Somewhat comfortable or confident

4. Somewhat uncomfortable or not very comfortable

5. Very uncomfortable or not confident at all

Advocating against the use of tethers?

1. Very comfortable or confident

2. Comfortable OR CONFIDENT

3. Somewhat comfortable or confident

4. Somewhat uncomfortable or not very comfortable

5. Very uncomfortable or not confident at all

Avoiding the use of restraints?

1. Very comfortable or confident

2. Comfortable OR CONFIDENT

3. Somewhat comfortable or confident

4. Somewhat uncomfortable or not very comfortable

5. Very uncomfortable or not confident at all

Advocating for the use of personal attendants and video monitoring?

1. Very comfortable or confident

2. Comfortable OR CONFIDENT

3. Somewhat comfortable or confident

4. Somewhat uncomfortable or not very comfortable

5. Very uncomfortable or not confident at all

Encouraging family and friends to be involved in patient care and to visit often?

1. Very comfortable or confident

2. Comfortable OR CONFIDENT

3. Somewhat comfortable or confident

4. Somewhat uncomfortable or not very comfortable

5. Very uncomfortable or not confident at all

Notifying the physician when patient has signs and symptoms of delirium?

1. Very comfortable or confident

2. Comfortable OR CONFIDENT

3. Somewhat comfortable or confident

4. Somewhat uncomfortable or not very comfortable

5. Very uncomfortable or not confident at all

Assisting with Interdisciplinary team-based approaches to reduce delirium by executing delirium prevention order sets?

1. Very comfortable or confident

2. Comfortable OR CONFIDENT

3. Somewhat comfortable or confident

4. Somewhat uncomfortable or not very comfortable

5. Very uncomfortable or not confident at all

Appendix C

Delirium Education Module

Presentation
de2423lb.pptx

Appendix D

Delirium Assessment Pre-test Post-test

1. Have you participated in any education pertaining to the topic of delirium? Yes/No If so,

when and type of education received

2. What is delirium?

a. Dementia

b. An acute confusional state that is temporary and treatable.

c. A chronic mental illness

d. Gradual confusional state that only can be treated with medications.

3. What are the types of delirium? Select all that apply.

a. Hyperactive delirium

b. Hypoactive delirium

c. Demented delirium

d. Mixed delirium

4. Hypoactive delirium has the lowest mortality rate and is easy to diagnose T/F

5. What measures can a nurse implement to prevent delirium from developing? Select all that apply.

a. Early mobility

b. Implement a consistent sleep wake/cycle.

c. Cluster care during sleeping hours.

d. Early detection

e. Promote a healing environment.

f. Pain management

g. Involve family.

h. Assess for sensory aides.

6. Identify common risk factors for delirium? Select all that apply.

a. Advanced age

b. Dementia

c. Alcohol use

d. Surgery

e. Tethers

f. Impaired senses

g. Sleep deprivation

h. Immobility

i. Underlying conditions such as Infection or metabolic instability

7. What adverse consequences can occur due to delirium

a. None, Delirium is normal with aging.

b. Falls, restraint use, Increase length of stay, long term facility placement after

discharge from acute care setting

c. Decrease length of stay

d. Decrease in Functional Decline

8. Which healthcare settings are patients are at risk for delirium? Select all that apply.

a. Emergency Department

b. Preop

c. Postop

d. ICU

e. Post office

f. Medical-Surgical

g. Urgent Care

h. Ambulatory Care

9. Delirium is preventable in most cases T/F

10. Reasons delirium goes undetected are (select all that apply)

a. Lack of knowledge regarding the condition

b. Staff communication

c. Delirium is confused with Dementia.

d. Incomplete medical history