Increasing Knowledge and Recognition of Delirium in Hospice:

A Quality Improvement Project

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Introduction

Problem Description

Delirium is an acute neuropsychiatric syndrome characterized by disturbances in arousal, attention and awareness (Wright et al., 2018; Watt et al., 2019). While its occurrence is common across many clinical settings, it is particularly prevalent in hospice and palliative care with rates from 42%-88% (Watt et al., 2019). Delirium poses a significant threat to patients' comfort, dignity and quality of life (Finucane et al., 2016; Mossello et al., 2019; Wright et al., 2018). Symptoms can be profoundly distressing to families, caregivers and clinicians as it disrupts relationships and compromises valuable interactions and conversation at a most critical time in a patient's life (Finucane et al., 2016; Mossello et al., 2019; Schmitt et al., 2017). Delirium is associated with increased morbidity and mortality, higher levels of care and longer hospital stays (Lawlor et al., 2019). These factors, in conjunction with prevalence, contribute to elevated healthcare costs estimated to be 2.5 times higher than patients without delirium (Bush et al., 2017; Kinchin et al., 2021; Lawlor et al., 2019).

While delirium is widely recognized as a prevalent and burdensome condition in hospice and palliative care, it is severely under-recognized in this setting (de la Cruz et al., 2015; Lawlor et al., 2019). The vast constellations of symptoms, fluctuating severity and multitude of predisposing and precipitating factors make diagnosis extraordinarily difficult (Hosker & Bennett, 2016; Grassi et al., 2015). Some cases simply go undetected, while other presentations are misdiagnosed (Bush et al., 2017; Hardy & Brown, 2015).

In the hospice and palliative care setting, nurses' proximity to patients provides a unique and strategic position to detect delirium (Lawlor & Bush, 2014; Wright et al., 2015). However, subjective cognitive assessments by registered nurses have been shown to be inaccurate

(Harrison et al., 2016). Nurses are limited by their knowledge base and lack of systematic processes to accurately and consistently identify delirium (Hardy & Brown, 2015; Harrison et al., 2016; Hosie et al., 2017; Wright et al., 2018). As a result, patients often receive suboptimal treatment (Logan, 2018). Thus, meticulous assessment and early identification with clear and precise communication is essential for quality, effective management (Bozzo, 2015; Hosie et al., 2015)

Available Knowledge

Literature Review. A database search was conducted using CINAHL, PubMed, Scopus and Google Scholar in August and September of 2020 yielding forty-five relevant articles. Findings included prior studies, systematic reviews and opinion pieces. Databases were searched for all articles spanning from the year 2014 to 2020. Key search terms used were 'hospice', 'palliative', 'end-of-life', 'end of life', 'terminal' and were combined with 'delirium', 'terminal agitation', 'terminal restlessness', 'acute confusional state' and 'acute psychosis'. A separate search was conducted to review potential implications of the COVID-19 pandemic on delirium in hospice and palliative care. Search terms included 'COVID-19', 'coronavirus', 'SARS-CoV-2', 'delirium', 'hospice' and 'palliative'. This search yielded four potentially pertinent articles, two of which were found to be applicable to this project.

Recognition and Diagnosis. A retrospective study evaluating the frequency of missed delirium diagnoses in palliative care cancer patients found that 61% of delirium diagnoses were missed by referring clinicians (de la Cruz et al., 2015). Hypoactive delirium and mixed delirium were the subtypes most commonly missed with approximately 50% of terminal delirium and 67% of reversible delirium cases also unrecognized by clinicians (de la Cruz et al., 2015). While the general complexity of the syndrome complicates diagnosis (Harris et al., 2020; Lawlor &

Bush, 2014), poor knowledge, lack of formal assessment tools and imprecise or incomplete documentation also contribute (Harris et al., 2020; Hey et al., 2015; Lawlor & Bush, 2014).

     Gaps in knowledge and practice. Many qualitative studies have been conducted in order to evaluate barriers to delirium recognition and proper management in hospice and palliative care nursing. According to qualitative research, nurses consistently report a need and desire for training to identify and manage delirium (Harris et al., 2020; Harrison et al., 2016; Hosie et al., 2014; Hosie et al., 2015; Hosie et al., 2017). These studies reveal that nurses struggle to recognize delirium, rarely utilize explicit preventative measures and inconsistently evaluate for reversible causes (Hosie et al., 2015; Harris et al., 2020; Harrison et al., 2016). According to Agar (2020), prevention of delirium and reversal are the cornerstones of treatment. Yet, when interviewed, the only reversible cause of delirium routinely identified by palliative care nurse specialists was infection. (Harris et al., 2020). This is significant considering 33-50% of cases are thought to be reversible (Agar, 2020) and in palliative care cancer patients, opioid-induced neurotoxicity has been found to be the most common prevalent precipitating, not infection (de la Cruz et al., 2015).

     It is especially difficult to detect delirium based on routine observations in patients with underlying dementia (Bush et al., 2017). Oligario et al. (2015) found that subjective nursing assessments disagreed with objective assessment of acute cognitive impairment in dementia patients approximately 40% of the time. Accurate assessment of patients with dementia is critical because these patients may be at higher risk for unnecessary management with high-risk medications such as antipsychotics or palliative sedation (Oligario et al., 2015). In fact, missed or delayed diagnosis in all patients can lead to premature, overly medicalized treatment approaches (Agar, 2020; Lawlor et al., 2019).

The most widely used assessment tool across all settings is the Confusion Assessment Method (CAM) (Lawlor & Bush, 2014). When the CAM was validated for use in palliative care settings, it was found that without formal cognitive assessment, nurses only recognized "inattention" as a sign of potential delirium 15% of the time (Ryan et al., 2009). This is concerning considering that inattention is considered to be the cardinal feature of delirium and an important distinguishing factor for dementia (Marra et al., 2018). As aforementioned, standardized clinical judgement alone is not a high yield practice for recognizing delirium. Standardized methods are of assessment are essential for consistent and accurate identification. Yet in a study by Woodhouse et al. (2020), 50% of clinicians reported using clinical judgement alone to detect delirium in their patients.

Clarity and Precision of Terminology. *Terminal restlessness* and *terminal agitation* are commonly used terms to describe delirium in the hospice setting. There is concern that these terms are too ambiguous and may create conceptual confusion and compromise quality management (Hey et al., 2015; Hosie et al., 2014; Logan, 2018). Thus, there is a need for precise assessment and standardized use of the term *delirium* to allow for a more coherent approach to recognition and management (Logan, 2018). A retrospective study by Hey et al. (2015) reported the term *delirium* was used very infrequently as a diagnostic term in all palliative care settings. The group most proficient at using the term only stated it in 8.4% of delirium cases, while another group never used the term. They also determined that when *delirium* was stated as a clear diagnosis, the management that followed was superior with less reliance on psychotropic medications (Hey et al., 2015).

Recommendations and Clinical Guidelines. A need for improved recognition of delirium has been felt throughout healthcare. In 2010, The National Institute for Health and Care

Excellence (NICE) published the first delirium guidelines. They recommended prevention techniques, routine screening and formal diagnostic assessment through use of the DSM-V criteria or the short CAM (National Institute for Health and Care Excellence, 2019). However, these guidelines excluded hospice and palliative care from their recommendations. While the reasoning to exclude this population was unclear, it is clear that an opportunity for improved, standardized care for this high risk population was missed and a paucity of consensual recommendations remains.

According to the World Health Organization (WHO), palliative care aims to improve the quality of life for patients and their families "through the prevention and relief of suffering by means of early identification and impeccable assessment and treatment of pain and other problems" (World Health Organization, 2020). Some studies show that there are clinicians who consider delirium at end of life to be normal, inevitable or even acceptable (Hosie et al., 2015; Wright et al., 2018). Not only does this undermine the goals set forth by the WHO but is suboptimal medical care. Therefore it is imperative that patients are continually treated as though they are "present and worthy of optimal care" (Hosie et al., 2016, p.472), no matter their current state or disease trajectory. This stance is in agreement with many expert opinions calling for clinician education, formal screening practices and use of assessment tools to improve management and ameliorate distress associated with delirium in hospice and palliative care (see Agar, 2020; Bozzo, 2015; Bush et al., 2018; de la Cruz et al., 2015; Hardy & Brown, 2015; Hosie et al., 2015).

COVID-19 Considerations. In light of the COVID-19 pandemic, there may be new considerations on the horizon for delirium. Lovell et al. (2020) found delirium to be one of the most prevalent symptoms in COVID-19 patients referred to inpatient palliative care. A

retrospective study in Italy evaluated delirium as a prodromal symptom for COVID-19. They found delirium to be the initial manifestation of CoV-2 infection in nearly 37% of patients (Poloni et al., 2020). Delirium in both studies was associated with high mortality (Lovell et al., 2020; Poloni et al., 2020).

Rationale

Delirium is a common problem in hospice and is associated with significant morbidity, mortality and most of all, it jeopardizes comfort and quality of life. Nurses are optimally positioned to detect delirium and efforts to improve knowledge and recognition should be targeted towards these bed-side nurses. The inaccuracy of subjective assessments, lack of standardized terminology use and poor knowledge base surrounding delirium can be addressed through the creation of systemic practices to accurately and consistently identify delirium in hospice patients. As the threat of delirium is becoming more widely recognized, palliative care experts are calling for use of assessment tools as well as clinician education to improve recognition and care. While there are no clinical guidelines specific to hospice and palliative care, NICE guidelines recommend use of formal diagnostic assessment which is consistent with the WHO's palliative care aim for early identification and impeccable assessment of problems that cause distress (NICE, 2019; World Health Organization, 2020).

Improvement Science Framework. The Knowledge to Action (KTA) Framework provided guidance for the design of this project in response to the limited knowledge surrounding delirium in hospice and palliative care. The project design complements the KTA framework by aiming to create knowledge and synthesize knowledge by providing nurse education, then tailoring knowledge into action through the use of a formal assessment tool (Graham et al., 2006).

Short Confusion Assessment Method (CAM). This project employs the use of an objective assessment tool to aide in the recognition and diagnosis of delirium. The Short CAM tool was selected for its ease of use, high sensitivity and specificity (88% and 100% respectively) and because it is one of the few assessment tools validated in the palliative care setting (Ryan et al., 2009). Also, it was created specifically for non-psychiatrically trained clinicians, takes less than five minutes to complete and requires minimal staff training (Inouye, 2014).

Specific Aims

This project has two primary aims. The first is to increase knowledge of delirium. The second is to increase the recognition of delirium in clinical practice. Secondary aims include the assessment of the value and feasibility of the Short CAM tool in this setting and to standardize terminology use, specifically to increase usage of the term, 'delirium' in documentation and care planning.

Methods

Context

This project takes place at a hospice agency that provides community-based, primarily in-home care. Attending providers and medical directors generally have limited contact with patients and thus rely on the assessment and recommendation of nurses to make many treatment decisions. These nurses also employ significant autonomy in symptom management with PRN orders for morphine, alprazolam and haloperidol available for all patients. Currently, the only routine education on delirium is during the onboarding process of nurses and the only terminology used is *terminal restlessness*. Because of this organizational structure, nurses are the optimal clinician to manage and detect delirium and thus would greatly benefit from education and an use of an objective assessment tool.

Intervention

The first intervention is a single education session provided in lecture format to all RNs, LPNs and interested Nurse Practitioners (NP). The education module is brief but comprehensive. Content was developed by the NP doctoral candidate and the hospice medical director.

The second intervention is the implementation of the CAM tool into clinical practice. Training content follows the recommended procedure described in the Short CAM Training Manual (Inouye, 2014). Unfortunately, procedures were slightly modified due to time constraints and safety restrictions related to COVID-19. No in-person sessions with nurses and trainers and no pilot interviews with patients took place. Instead, case studies were used. Interrater reliability will be tested over the following year to ensure maintained sensitivity and specificity of the tool. Because the intervention for this project is the use of an assessment tool, rather than a screening tool, nurses will be taught when to employ use of the tool and then will discern when to use it in clinical practice.

Study of the Intervention

Pre-test data was collected immediately prior to the education intervention via an electronic, web-based questionnaire to establish an understanding of baseline knowledge. The questions were formatted as multiple choice and short-answer in order to best assess knowledge development. Post-test data was collected four weeks later via the same electronic questionnaire.

Data was also collected to determine whether delirium detection by nurses increased in the four weeks following the education intervention and CAM training. Because delirium diagnoses are not easily tracked within this company's electronic health record, a chart review was not a feasible means for data collection. Instead, nurses were surveyed via a five-point Likert scale to report on their usage of the tool and identification of delirium. To address

secondary aims, a component of the survey evaluated usefulness of the CAM assessment tool as appraised by the nurses and questioning on their terminology usage both pre and post intervention.

Implementation

Education Intervention

Education was delivered to RNs, LPNs and interested NPs during their previously scheduled, monthly education meeting. Content was delivered remotely by PowerPoint presentation via Microsoft Teams. Because of the changes occurring in response to COVID-19, other subject matter was taking priority for monthly education, therefor only an hour was allotted for the education and another hour for the Short CAM training. Twenty seven people attended, the majority were RNs with several LPNs and one NP. A link to the pretest survey was sent out via email one day prior. Ten minutes were allotted for attendants to complete the pretest survey immediately prior to the education session. A QR code was pasted into the chat screen of Microsoft Teams which allowed attendants to scan the code with their phone camera which immediately directed them to the online survey. The pretest survey took on average, 4 minutes to complete. Presentation content included a description of the problem, significance, definitions, diagnostic criteria, delirium subtypes and presentations, brief overview of pathophysiology, risk factors, reversible and nonreversible causes, prevention, proper terminology use, nonpharmacologic and pharmacologic management and the nurse's role in diagnosis and management.

Short CAM Training

The CAM training was administered immediately following the education. The presentation was developed based on the recommended training material found in the Short

CAM Training Manual. The CAM recommends cognitive assessment to guide the interview that the delirium assessment is based upon. We utilized the Short Portable Mental Status Questionnaire (SPMSQ). Special considerations for patients with existing cognitive impairment were reviewed. Lastly, the four main symptoms/criteria were reviewed in detail. Those included: acute onset with or without fluctuating course, inattention, disorganized thinking and altered level of consciousness. A special exercise was done to help attendants classify behaviors. They were presented case study examples and were asked to classify the behavior as inattention, disorganized thinking or altered level of consciousness (vigilant, lethargic, stupor or coma). Following the training, attendants were provided with copies of the Short CAM worksheet as well as a printable resource for the SPMSQ and a printable pocket guide with both resources.

Four weeks after both interventions, a posttest survey link was sent via email out to those who attended the education session and CAM training. This survey contained the posttest as well as questions about delirium diagnosis, the Short CAM tool and terminology use. On average, this survey took 7 minutes to complete.

Data Collection and Analysis

Pretests and posttests were individually scored. Short answer questions were considered to be correct if one correct response was listed. Partial credit was awarded for questions with multiple answers. Inferential statistical analysis was used to evaluate knowledge change after the education intervention. A two-tailed pared T-test was carried out using SPSS statistical software to test the difference between pretest and posttest condition for significance.

Considerations. Twenty five pretest surveys were returned, one survey was incomplete. The posttest survey yielded only 12 responses. Because posttest data was missing for 13 respondents, statistics for the analysis were based on cases without missing or out-of-range data

for variables in the analysis. Likert scale data was analyzed through descriptive statistics. Caution should be taken when attempting to draw inferences through comparison of pre-intervention Likert-scale data to post-intervention data due to uneven group comparison and potential for bias.

Key Findings

Education. More than 70% of respondents reported receiving little to no education in the past on delirium with only one respondent reporting having received *a great deal* of education. 100% of respondents reported interest in receiving more delirium education. This is consistent with findings in the literature with nurses continually reporting both a need and desire for more education. Descriptive analyses are displayed in Figures 1 and 2.
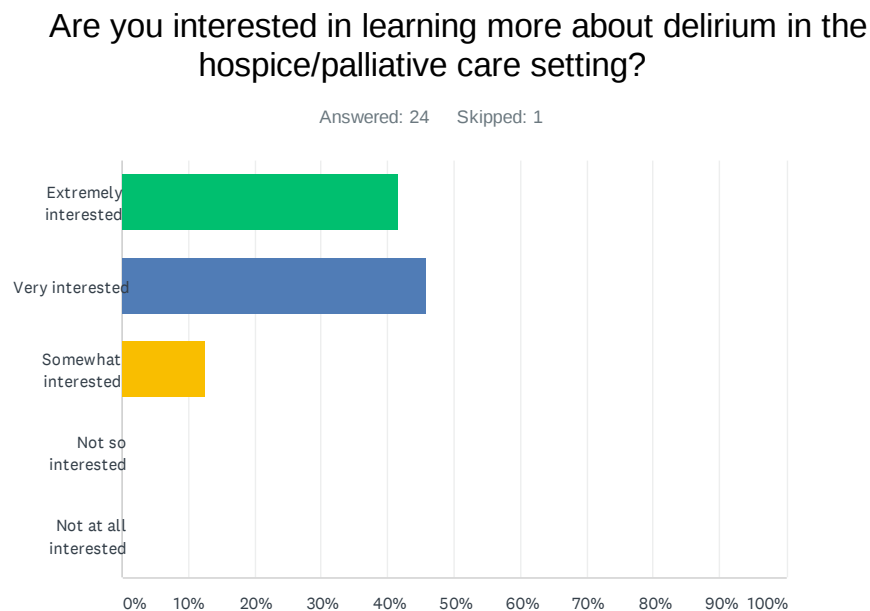
Figure 1

Past Delirium Education

Q16 How much education about delirium in the hospice/palliative care setting have you received?

Answered: 24   Skipped: 1
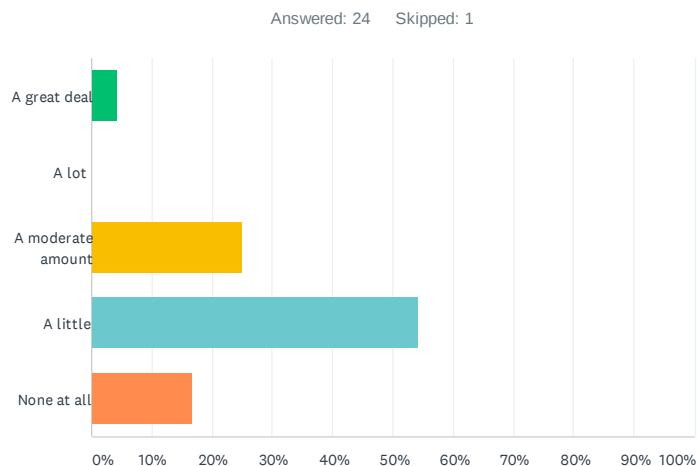
ANSWER CHOICES	RESPONSES	
A great deal (1)	4.17%	1
A lot (2)	0.00%	0
A moderate amount (3)	25.00%	6
A little (4)	54.17%	13
None at all (5)	16.67%	4
TOTAL		24

BASIC STATISTICS				
Minimum	Maximum	Median	Mean	Standard Deviation
1.00	5.00	4.00	3.79	0.87

Figure 2

Delirium Education Interest

Are you interested in learning more about delirium in the hospice/palliative care setting?

Answered: 24   Skipped: 1

ANSWER CHOICES	RESPONSES	
Extremely interested (1)	41.67%	10
Very interested (2)	45.83%	11
Somewhat interested (3)	12.50%	3
Not so interested (4)	0.00%	0
Not at all interested (5)	0.00%	0
TOTAL		24

BASIC STATISTICS				
Minimum	Maximum	Median	Mean	Standard Deviation
1.00	3.00	2.00	1.71	0.68

Knowledge. On pretest, only 12% of respondents were able to name the three subtypes of delirium (hyperactive, hypoactive and mixed type). On posttest, 83% were able to name all three subtypes. When asked to name reversible causes of delirium, 60% of respondents were able to name a reversible cause on pretest, 100% of respondents were able to name a reversible cause on posttest. This is reassuring considering reversal is the cornerstone of treatment. Like findings from Agar (2020), despite not being the most frequent cause of delirium in hospice and palliatie

care, *infection* was the most commonly mentioned reversible cause of delirium and on several surveys, it was the sole reversible cause listed by many respondents on the pretest. Posttest findings revealed greater variety of responses with *medication* being the most commonly reported reversible cause. Only 49% of respondents recognized inattention (a cardinal feature of delirium) as a symptom of delirium on pretest. This increased to 83% following the education intervention and CAM training. Pretest data also showed decreased awareness of hypoactive presentations of delirium and the associated features. Apathy, hypersomnia and lethargy were not routinely identified as symptoms of delirium on pretest but showed improvement on posttest as shown in Figure 3.

Figure 3

Symptoms Associated with Delirium
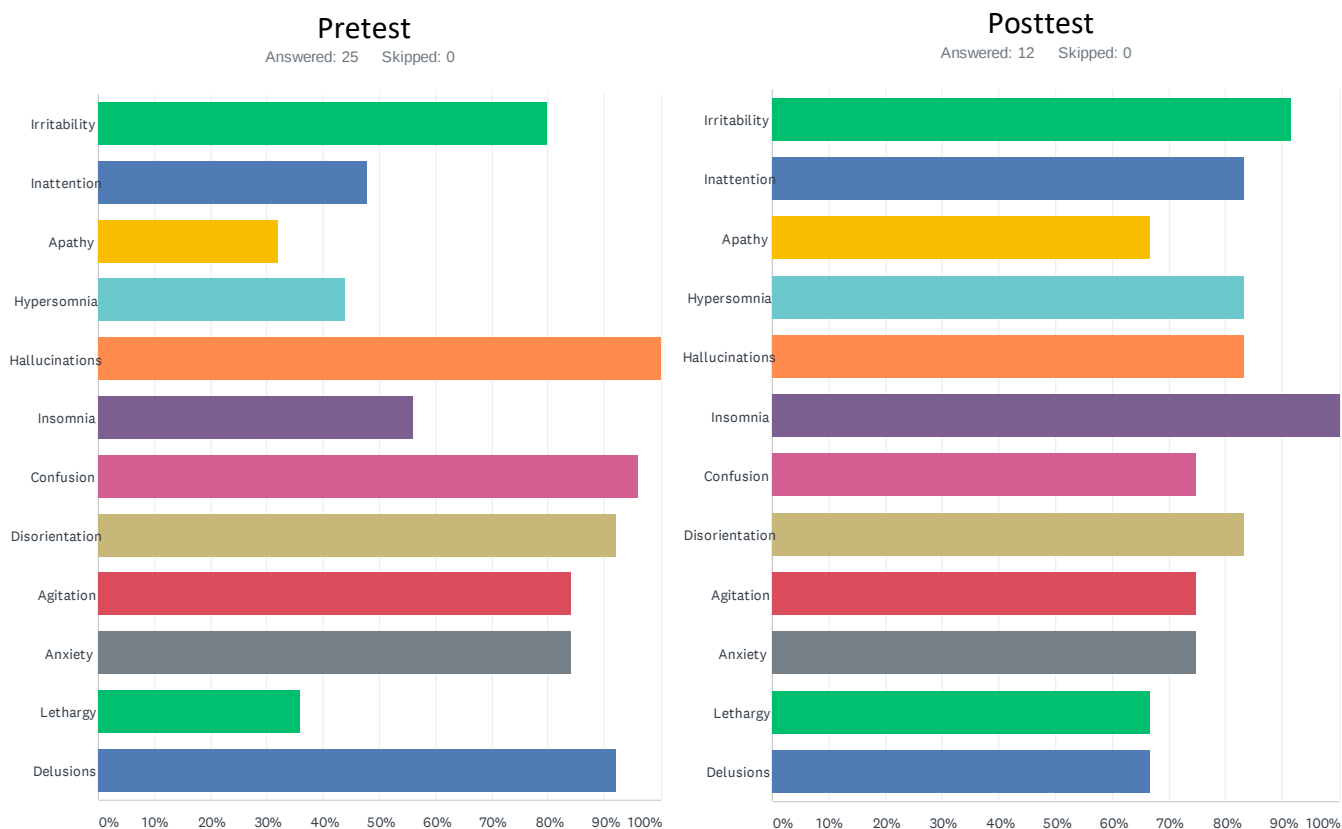
Outcomes

Nursing Knowledge of Delirium

A two-tailed paired T-test was carried out to test the difference between pretest and posttest condition for statistical significance. Scores for posttest (M=82.17, SD=15.64) were determined to be significantly higher than the pretest (M=54.83, SD=16.84) conditions; t(11) equaled -8.022 with a p-value of 0.000 (see Figure 4 for SPSS output).

Prior to the education intervention, more than 30% of respondents reported feeling *not so comfortable* or *not at all comfortable* managing delirium in their patients (see Appendix A, Figure 5a). Following the intervention, 100% reported feeling *somewhat comfortable* or *very comfortable.* While this improvement is promising, the majority of respondents reported feeling only *somewhat comfortable,* signaling a need for continued support and education related to management (see Appendix A, Figure 5b).

Figure 4

Paired Sample T-Test

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Pretest	54.83	12	16.835	4.860
	Posttest	82.17	12	15.643	4.516

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	Pretest & Posttest	12	.738	.006

Paired Samples Test

|		Paired Differences							
					95% Confidence Interval of the Difference				
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	df	Sig. (2-tailed)
Pair 1	Pretest – Posttest	-27.333	11.804	3.408	-34.833	-19.833	-8.022	11	.000

Delirium Recognition

Prior to the interventions, 50% of respondents reported *rarely* or *never* detecting or suspecting delirium in their patients. Following the interventions, this percentage dropped to 8.3% as shown in Figures 6a and 6b. Respondents' confidence in their ability to detect delirium was also measured. Following the interventions, all respondents reported at least some level of confidence in detecting delirium, in contrast to 37% who reported feeling "not at all confident" or *not so confident* on pretest. The overwhelming majority reported feeling *somewhat confident* before and after the interventions, also demonstrating room for future improvement (see Appendix A, Figures 7a and 7b).

Figure 6a

Detection of Delirium Prior to Intervention

Prior to the delirium education session and CAM training, how often did you detect or suspect delirium in your patients?

Answered: 12   Skipped: 0
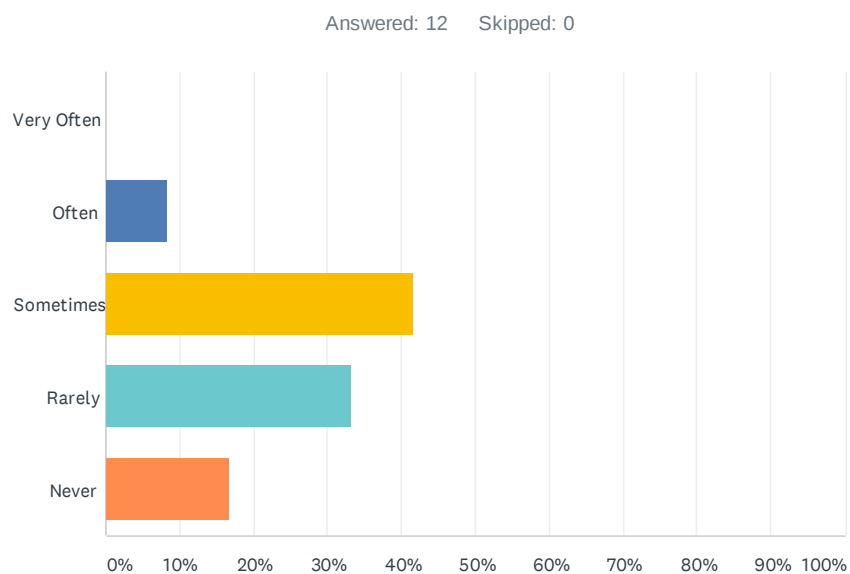
ANSWER CHOICES	RESPONSES	
Very Often (1)	0.00%	0
Often (2)	8.33%	1
Sometimes (3)	41.67%	5
Rarely (4)	33.33%	4
Never (5)	16.67%	2
TOTAL		**12**

BASIC STATISTICS				
Minimum 2.00	Maximum 5.00	Median 3.50	Mean 3.58	Standard Deviation 0.86

Figure 6b

Detection of Delirium Post Intervention

Since the delirium education session and CAM training, how often do you detect or suspect delirium in your patients?

Answered: 12   Skipped: 0
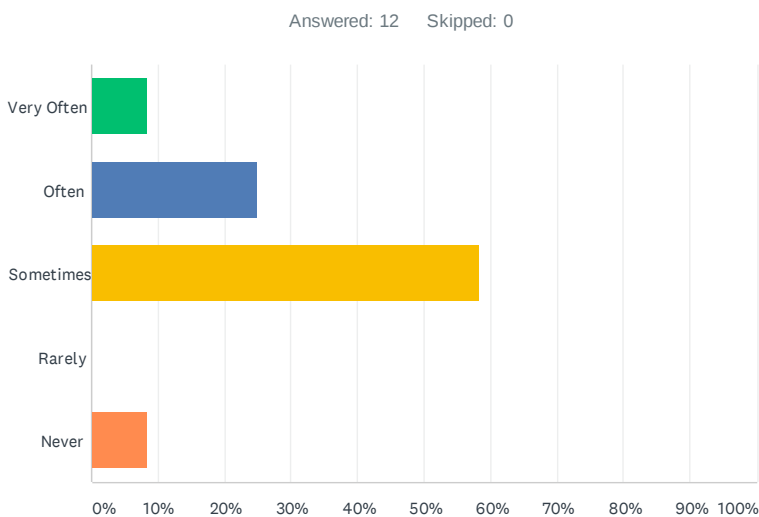
ANSWER CHOICES	RESPONSES	
Very Often (1)	8.33%	1
Often (2)	25.00%	3
Sometimes (3)	58.33%	7
Rarely (4)	0.00%	0
Never (5)	8.33%	1
TOTAL		**12**

| BASIC STATISTICS				
Minimum 1.00	Maximum 5.00	Median 3.00	Mean 2.75	Standard Deviation 0.92

Value and practicality of the Short CAM

Only 33% of respondants reported actual use of the Short CAM tool in clinical practice during the four weeks between the CAM training and the post-intervention survey. Nonetheless, 75% said they agreed or strongly agreed that the CAM tool would add value to their practice**.** Every respondent but one, agreed that the CAM tool is a practical means of assessing delirium in this clinical setting (see Figures 8 and 9).

Figure 8

Perceived Practicality of CAM Tool

The CAM tool is a practical means of assessing for delirium in this clinical setting.

Answered: 12   Skipped: 0
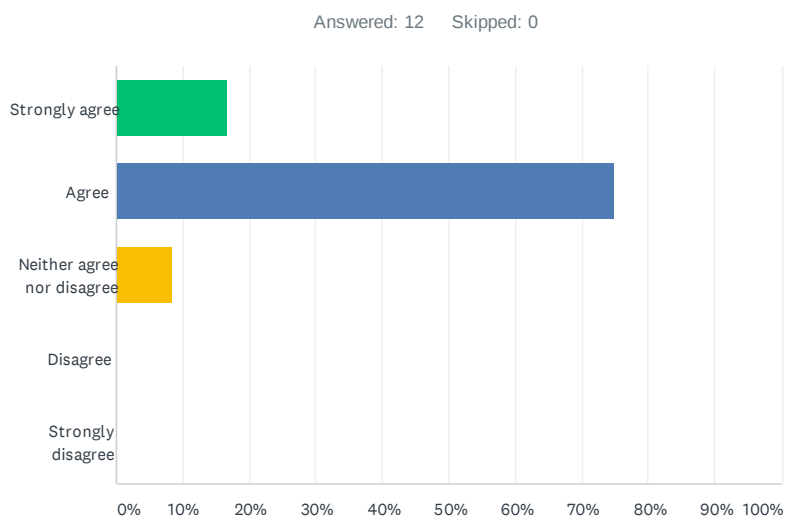
ANSWER CHOICES	RESPONSES	
Strongly agree (1)	16.67%	2
Agree (2)	75.00%	9
Neither agree nor disagree (3)	8.33%	1
Disagree (4)	0.00%	0
Strongly disagree (5)	0.00%	0
TOTAL		**12**

BASIC STATISTICS				
Minimum	Maximum	Median	Mean	Standard Deviation
1.00	3.00	2.00	1.92	0.49

Figure 9

Perceived Value of CAM Tool

The CAM tool will add value to my clinical practice.

Answered: 12   Skipped: 0
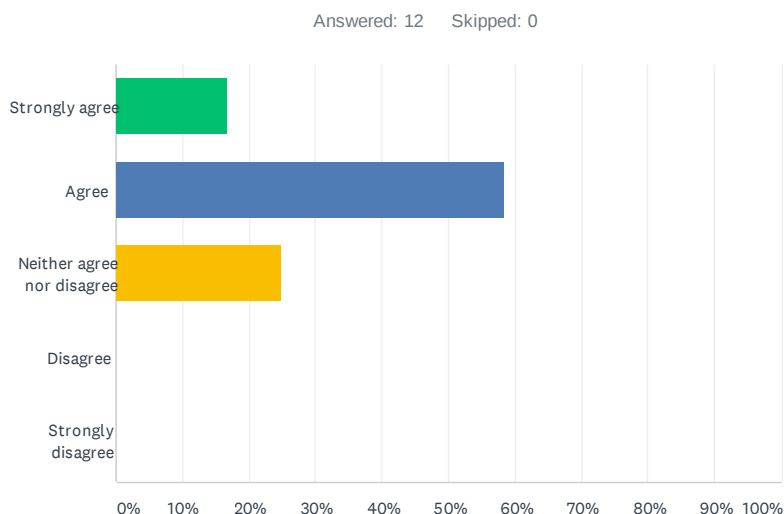
ANSWER CHOICES	RESPONSES	
Strongly agree (1)	16.67%	2
Agree (2)	58.33%	7
Neither agree nor disagree (3)	25.00%	3
Disagree (4)	0.00%	0
Strongly disagree (5)	0.00%	0
TOTAL		**12**

| BASIC STATISTICS				
Minimum 1.00	Maximum 3.00	Median 2.00	Mean 2.08	Standard Deviation 0.64

Standardization of Terminology

Figure 10 displays the terms most commonly used by the respondents to describe the syndrome of delirium. The top three terms used were delirium, terminal restlessness and terminal agitation. Despite delirium being a shared term reportedly used by 60% of clinicians (see Figure 10), when specifically asked how often the term *delirium* is stated in their documentation, 79% reported *rarely* or *never* to describe their use of the term (see Appendix A Figure 11a). Following the interventions, 67% of respondents continued to report rare or no use of the term in

their documentation (see Appendix A Figure 11b). It would be worthwhile to investigate

potential barriers to standardizing terminology in this particular setting. Because the verbiage,

"terminal restlessness" has been used almost exclusively to describe agitated delirium in this

clinical setting for many years, changing terminology exclusively to *delirium* may require a

change in culture.

Figure 10

Most Commonly Used Terms by Respondents to Describe Delirium

Answered: 23   Skipped: 2
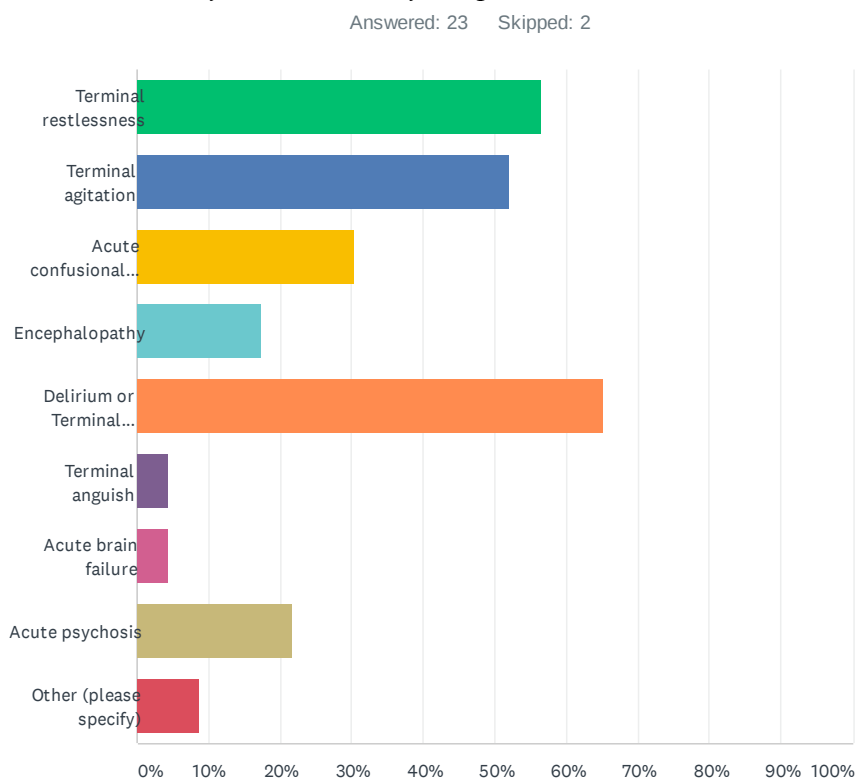
Practice-related Implications

Limitations

Power was a limitation in this study. The COVID-19 pandemic exacerbated existing

staffing issues. Therefore nurse education sessions were no longer made mandatory in order to

allow for increased time providing patient care. The education and CAM training were delivered

to less than one third of the nurses in the company. The education session and Short CAM training were recorded to allow clinicians the flexibility to watch at a convenient time. Demographic information was not obtained in order to maintain anonymity. However it would have been useful to have knowledge of the respondent's credentials and years of experience.

Attrition was another limitation, less than 50% of responses were received at posttest. This allows for the potential of attrition bias. It is possible that those who participated in the post-intervention survey were more interested or invested in the interventions, skewing the results. A single rater was used for the short answer questions on the pre and posttest, utilizing multiple rater to ascertain independence may have strengthened the validity of the data.

Recommendations

Palliative care experts and delirium guidelines recommend routine screening for delirium (NICE, 2019). The Short CAM is validated as a screening tool, therefore could be easily implemented into a screening program at this particular agency. Some agencies have moved towards screening on admission. In this agency, delirium could be added to the other quality improvement initiatives addressed on admission which include pain, shortness of breath and bowel care.

In addition to screening, it is recommended that this agency continue to work with nurses to avoid use of ambiguous terms such as *terminal restlessness* and to shift to standardized use of the term *delirium* both in documentation and conversation to avoid conceptual confusion and to ensure optimal management. This would also include changing verbiage on current educational materials and the education in the nursing onboarding education from *terminal restlessness* to *delirium.* Some studies report clinicans having different opinions on the urgency of treating delirium and may feel that it is inevitable or even acceptable. If clinical leaders within this

agency suspect this, an evaluation of the culture, opinions and attitude surrounding delirium should be evaluated. Survey data demonstrates both a need and desire for continued education for nurses and NPs, especially regarding delirium management. This education should be provided and revisited routinely and updated as new information and recommendations emerge.

Conclusion

A single education intervention resulted in statistically significant improvement on posttest in comparison to pretest suggesting increased knowledge of delirium. Respondents also reported increased recognition of the signs and symptoms of hypoactive delirium and improved confidence managing delirium. A comment from a nurse in the post-intervention survey stated, "Thank you so much for the education, I was able to recognize hypoactive delirium in a few of my patients and provide appropriate education and interventions". Between the education and Short CAM tool, confidence in detecting delirium increased. While very few respondents actually employed use of the CAM tool, the overwhelming majority felt as though it added value to their practice and was feasible for use in this setting. There was no significant evidence of increased use of the term *delirium.* This will require more investigation and education.

Summary

Delirium is incredibly prevalent in hospice and poses a significant threat to patients' comfort and dignity while compromising valuable interactions at a critical time in a patient's life (Finucane et al., 2016; Mossello et al., 2019; Wright et al., 2018). Nurses have become the "champions" of delirium as they are positioned strategically to prevent, detect and manage delirium (Hosie et al., 2017). When provided with the necessary tools and by creating systemic practices to accurately and consistently identify delirium, nurses can greatly impact patient care and comfort for patients, families and caregivers at end of life. By adhering to the highest level

guidelines to manage delirium, we are ensuring patients are continually being treated as "present and worthy of optimal care" (Hosie et al., 2016, p.472).

Next Steps

Short CAM inter-rater reliability is to be tested (per recommended procedure in the CAM manual) over the next year to achieve optimal sensitivity and specificity. In order to improve accessibility and ease of use for the Short CAM, a fillable worksheet is being added to the Electronic Health Record (EHR) with a resource for the SPMSQ to be used as a guide for the assessment interview. CAM creators request a screen shot of the tool in the EHR be submitted to them for approval prior to use. Delirium specific goals and interventions (including prevention, nonpharmacologic and pharmacologic goals and interventions) were also created and are being built into the EHR for care planning. Documentation of delirium-specific care plans also presents a way for the agency to collect objective data and track delirium recognition in the EHR for future evaluation of practices. Increasing recognition of delirium is only a first step for ensuring optimal care. The next step is to evaluate the quality of management. Ensuring that preventative practices are in place when necessary, that delirium is being routinely evaluated for reversible causes, nonpharmacologic measures are routinely employed and that benzodiazepines and psychotropic medications are being used appropriately.

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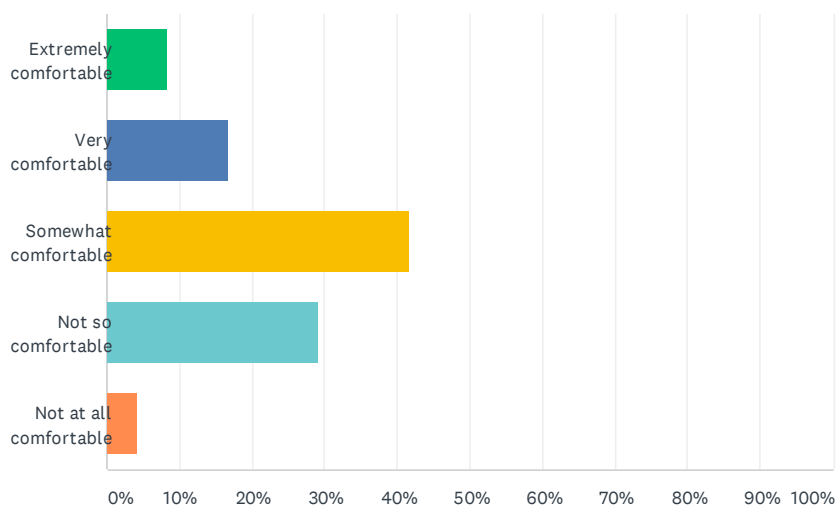   Findings from a hospice ethnography. *Nursing Inquiry, 25*(3). https://doi-

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Appendix A

Additional Descriptive Analyses

Figure 5a

Comfort Levels Managing Delirium Prior to Intervention

How comfortable are you with managing delirium in your patients?

Answered: 24   Skipped: 1

ANSWER CHOICES	RESPONSES	
Extremely comfortable (1)	8.33%	2
Very comfortable (2)	16.67%	4
Somewhat comfortable (3)	41.67%	10
Not so comfortable (4)	29.17%	7
Not at all comfortable (5)	4.17%	1
TOTAL		24

BASIC STATISTICS				
Minimum	Maximum	Median	Mean	Standard Deviation
1.00	5.00	3.00	3.04	0.98

Figure 5b

Comfort Levels Managing Delirium Post Intervention

How comfortable are you with managing delirium in your patients?

Answered: 12   Skipped: 0
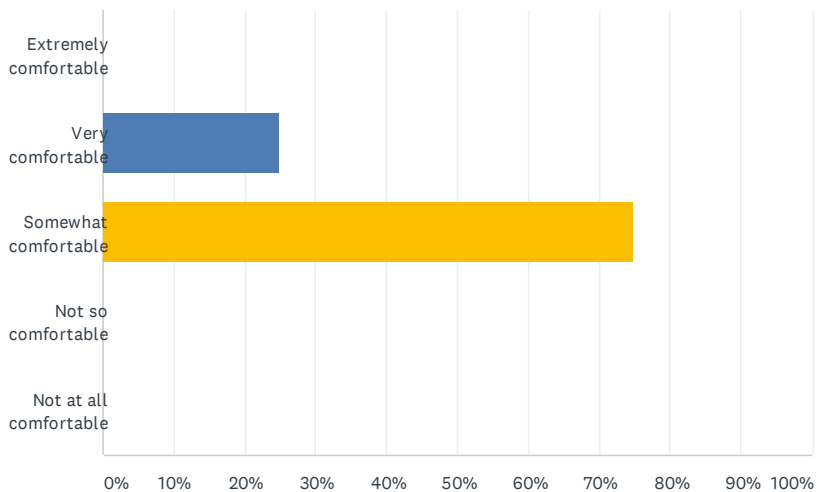
ANSWER CHOICES	RESPONSES	
Extremely comfortable (1)	0.00%	0
Very comfortable (2)	25.00%	3
Somewhat comfortable (3)	75.00%	9
Not so comfortable (4)	0.00%	0
Not at all comfortable (5)	0.00%	0
TOTAL		**12**

BASIC STATISTICS				
Minimum 2.00	Maximum 3.00	Median 3.00	Mean 2.75	Standard Deviation 0.43

Figure 7a

Confidence Detecting Delirium Prior to Intervention

How confident are you that you can detect delirium in your patients?

Answered: 24   Skipped: 1
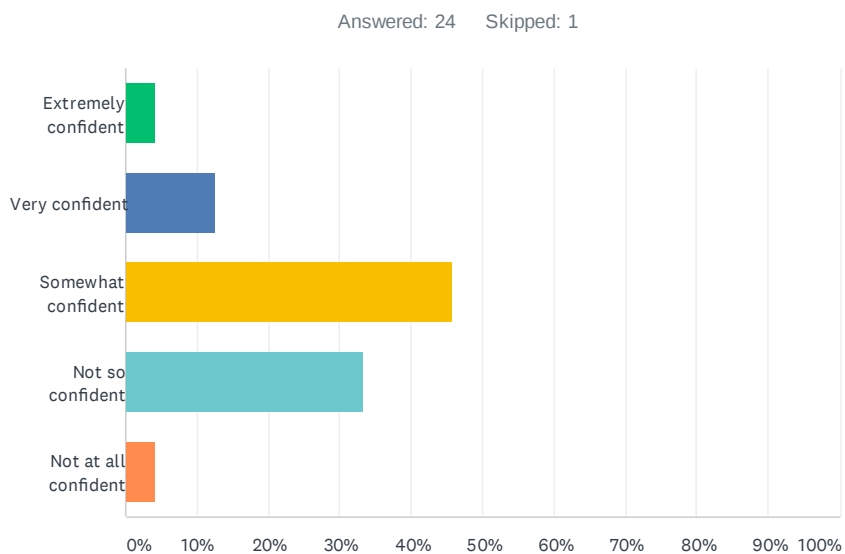
ANSWER CHOICES	RESPONSES	
Extremely confident (1)	4.17%	1
Very confident (2)	12.50%	3
Somewhat confident (3)	45.83%	11
Not so confident (4)	33.33%	8
Not at all confident (5)	4.17%	1
TOTAL		24

BASIC STATISTICS				
Minimum 1.00	Maximum 5.00	Median 3.00	Mean 3.21	Standard Deviation 0.87

Figure 7b

Confidence Detecting Delirium Post Intervention

How confident are you that you can detect delirium in your patients?

Answered: 12   Skipped: 0
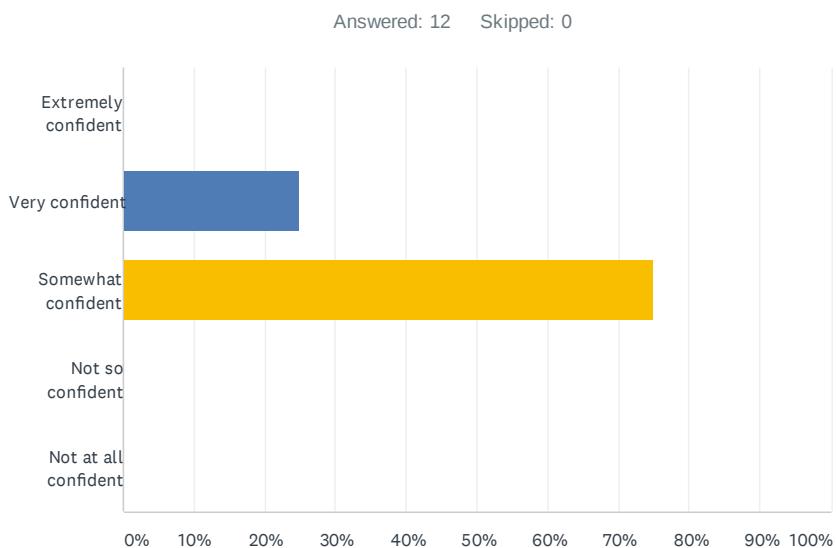
ANSWER CHOICES	RESPONSES	
Extremely confident (1)	0.00%	0
Very confident (2)	25.00%	3
Somewhat confident (3)	75.00%	9
Not so confident (4)	0.00%	0
Not at all confident (5)	0.00%	0
TOTAL		**12**

BASIC STATISTICS				
Minimum	Maximum	Median	Mean	Standard Deviation
2.00	3.00	3.00	2.75	0.43

Figure 11a

Use of the Term 'Delirium' Prior to Intervention

How often do you currently use the specific term, "delirium" in your documentation or care planning?

Answered: 24   Skipped: 1
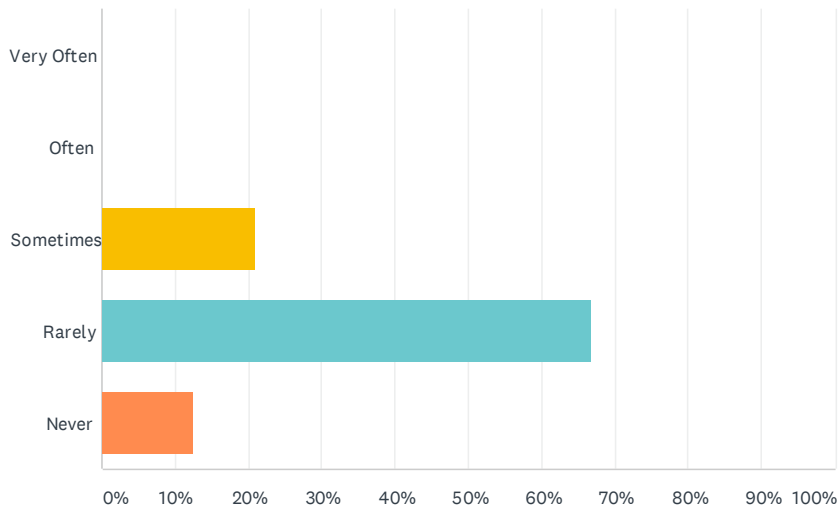
ANSWER CHOICES	RESPONSES	
Very Often (1)	0.00%	0
Often (2)	0.00%	0
Sometimes (3)	20.83%	5
Rarely (4)	66.67%	16
Never (5)	12.50%	3
TOTAL		24

BASIC STATISTICS				
Minimum	Maximum	Median	Mean	Standard Deviation
3.00	5.00	4.00	3.92	0.57

Figure 11b

Use of the Term 'Delirium' Post Intervention

Since the delirium education session, how often have you been using the specific term, "delirium" in your documentation or care planning?

Answered: 12   Skipped: 0
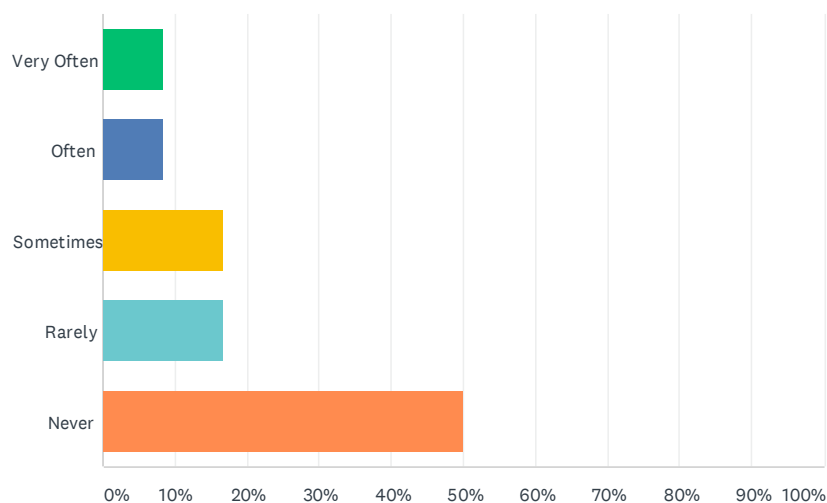
ANSWER CHOICES	RESPONSES	
Very Often (1)	8.33%	1
Often (2)	8.33%	1
Sometimes (3)	16.67%	2
Rarely (4)	16.67%	2
Never (5)	50.00%	6
TOTAL		**12**

BASIC STATISTICS				
Minimum 1.00	Maximum 5.00	Median 4.50	Mean 3.92	Standard Deviation 1.32