Post-Operative Pain Assessment of Cognitively Impaired Geriatric Surgical Intensive Care Unit Patients

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Background

- Cognitively impaired geriatric patients in the ICU often provide unreliable numerical pain responses due to decline in visceral pain perception, impaired physiologic reactivity to painful stimuli, and diminished ability to report pain[1,2,3]
- Poor pain assessment and management increases the patient overall risk for delirium, readmission, mortality, psychological trauma, and long-term chronic pain[4]
- Studies found that providers and nurses have low levels of knowledge, inadequate training, and poor attitudes related to pain assessment and management [2,5,6,7,8,9,10]
- Best evidence suggests:
  o Pain is more accurately assessed with behavioral indicators
  o Nurse education including visuals and interactive activities were effective
  o Nurse workflow and practices were modifiable after education

Purpose & Aims

The purpose of this quality improvement project is to analyze pain assessment practices and evaluate the effects of a behavioral pain scale (BPS) educational module on pain practices in post-operative geriatric patients with cognitive impairment in the surgical ICU.

Aims:

1 To improve pain assessment and decrease the proportion of post-operative delirium in the cognitively impaired, geriatric surgical ICU patient through an educational module of the Behavioral Pain Scale assessment tool for nurses in 12 weeks.

2 By the end of 12 weeks, to evaluate the utilization of the Behavioral Pain Scale assessment tool post implementation of the educational module compared to pre-implementation.

3 By the end of 12 weeks, to evaluate nurse satisfaction rate of the Behavioral Pain Scale assessment tool post educational module.

Methods

Design and Setting: Pre-/Post-educational intervention Quality Improvement Project at a Surgical ICU in a Mid-Atlantic Academic Medical Center

Sample: Charts of post-operative cognitively impaired geriatric patients--65 years old and over; Nurse assessment practices of staff and travel nurses

Intervention: An evidence-based educational module and in-service encompassing the components and utilization of the Behavioral Pain Scale.

Measures: Pre-/post-intervention chart audits to assess BPS utilization and delirium incidents. Anonymous post-intervention nurse Qualtrics survey was distributed through through hyperlink or QR code.

Analysis: Descriptive statistics

Table 1. Patient Demographics

Pre-implementation Demographic characteristics	(N = 28)
Age, mean (SD)	76.61 (9.2)
Sex, n (%)	
Male	9 (32.1)
Female	19 (67.9)
Race, n (%)	
African American/Black	5 (17.9)
Caucasian/White	22 (78.6)
Asian	0 (0%)
Hispanic/Latino	1 (3.6%)
Other	0 (0%)
Length of ICU Stay in days, mean (SD)	3.96 (4.95)
Outlier omitted, N=27	3.22 (3.04)
SD=standard deviation	
Post-implementation Demographic characteristics	**(N = 11)**
Age, mean (SD)	77.27 (8.05)
Sex, n (%)	
Male	4 (36.4)
Female	7 (63.6)
Race, n (%)	
African American/Black	2 (18.2)
Caucasian/White	8 (72.7)
Asian	0 (0)
Hispanic/Latino	1 (9.1)
Other	0 (0%)
Length of ICU Stay in days, mean (SD)	8.36 (6.75)

Results

Aim #1: The proportion of delirium incidents decreased with a pre-implementation rate of 50% compared with a post-implementation rate of 36.4%

Aim #2: The utilization of the Behavioral Pain Scale increased from 53.6% in the pre-implementation audits to 81.8% in the post-implementation audits.

Aim #3: 80% of respondents agree that they feel more confident in identifying situations of when to use the BPS vs the Numerical Pain scale

	Strongly Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Strongly Agree
Practice Change		2 (40%)	1 (20%)		2 (40%)
Confidence Rate			1 (20%)	2 (40%)	2 (40%)
Module Effectiveness		1 (20%)	2 (40%)		2 (40%)

Strengths & Limitations

Strengths
- BPS is familiar and already utilized in current facility
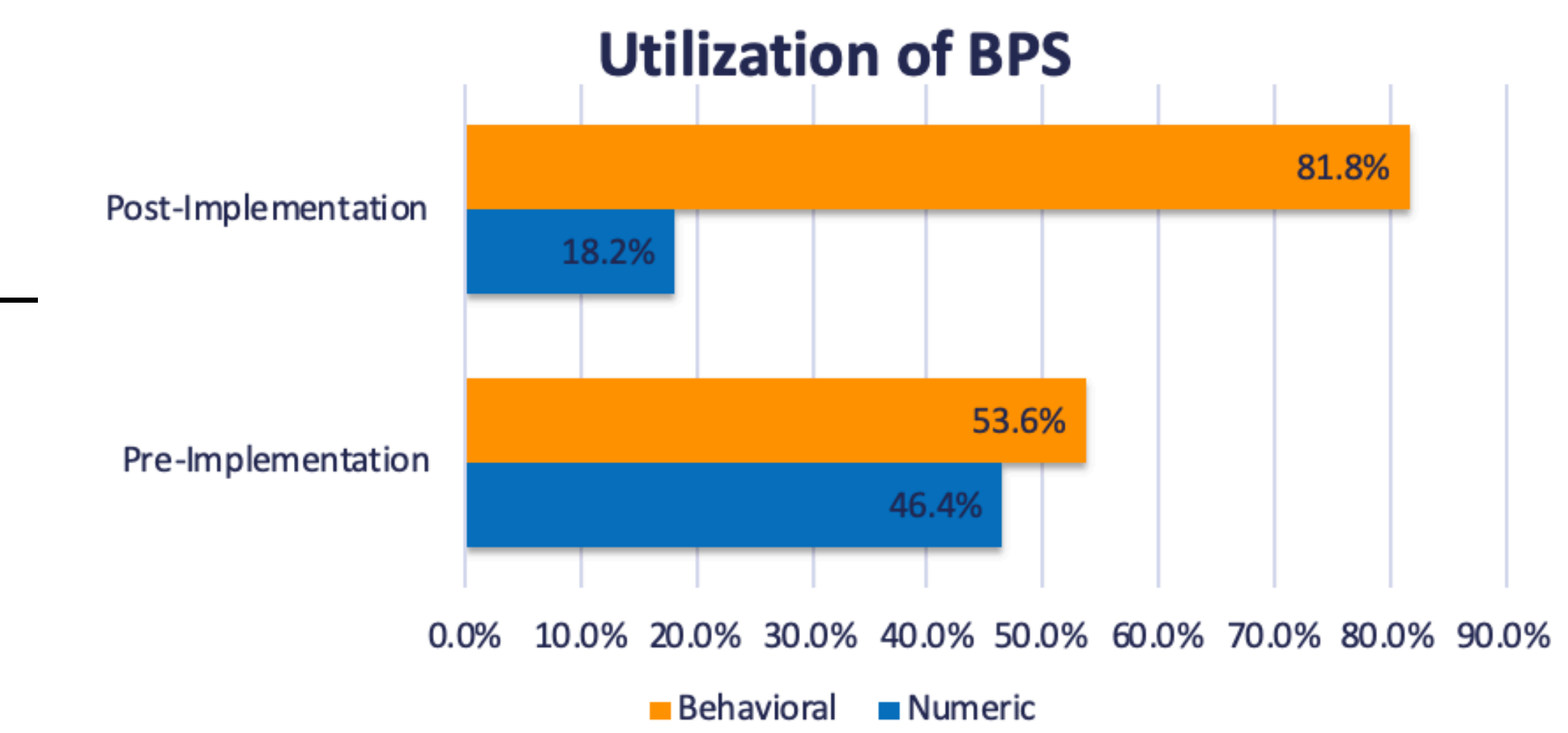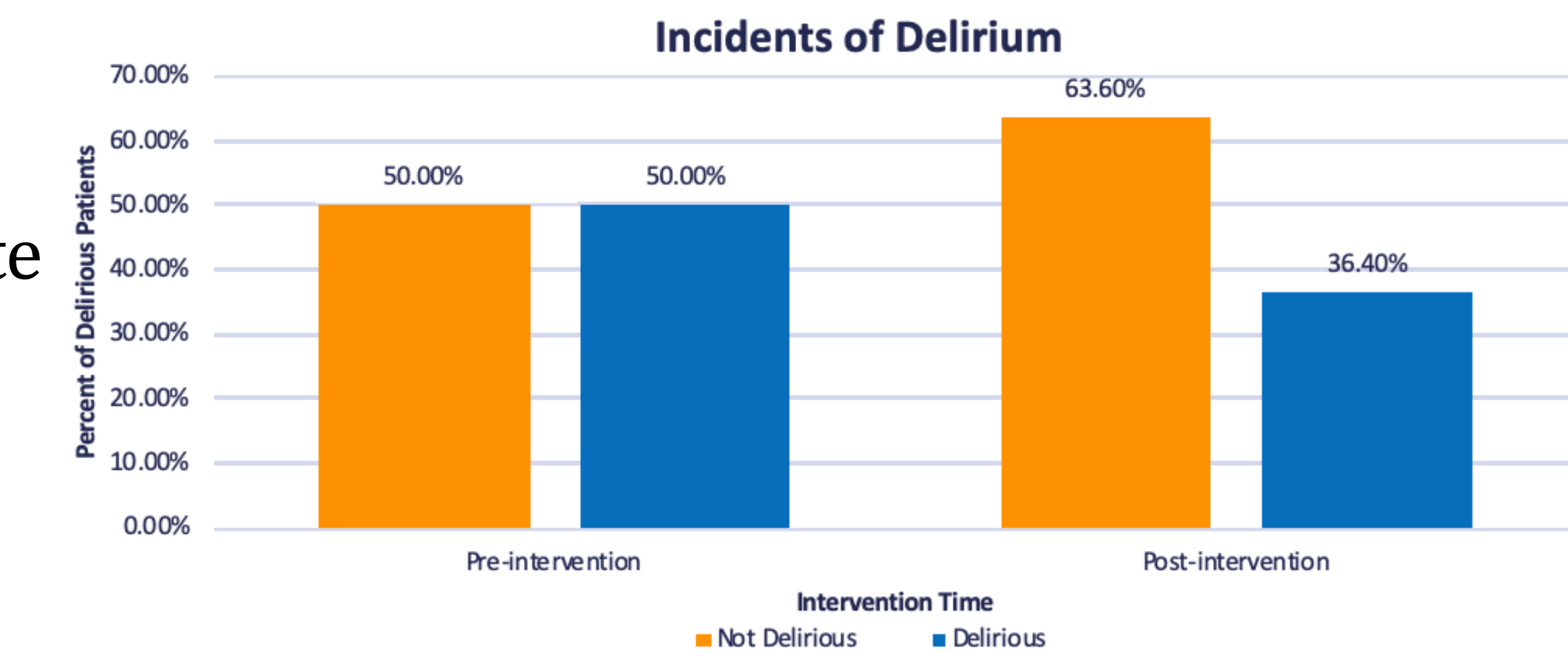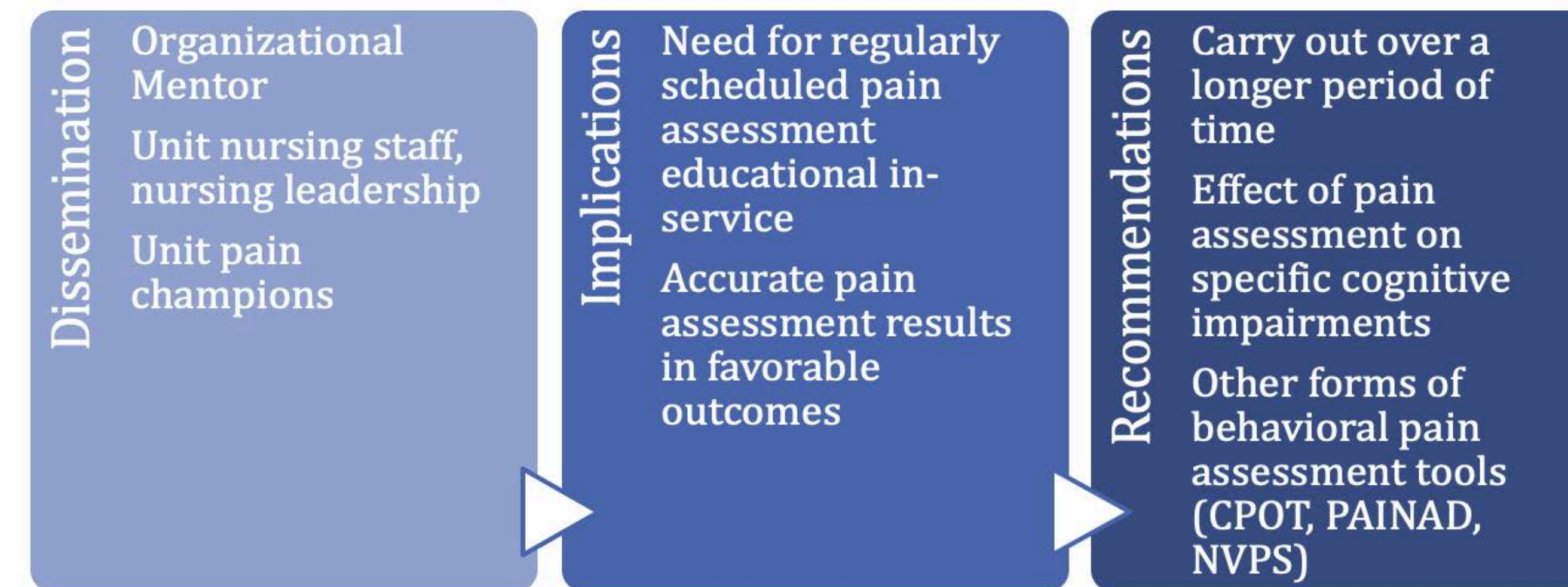- Auditing does not interfere with nurse workflow

Limitations
- Pandemic staff shortages, increased number of travel nurses, overflow patients
- Small sample size for both groups
- Elective surgeries ceased due to pandemic volumes

Conclusion

Conclusion: Findings suggest an educational module intervention to improve pain assessment may have a clinically significant impact on pain assessment practices and positive patient outcomes.

Translation into Practice:

Dissemination
- Organizational Mentor
- Unit nursing staff, nursing leadership
- Unit pain champions

Implications
- Need for regularly scheduled pain assessment educational in-service
- Accurate pain assessment results in favorable outcomes

Recommendations
- Carry out over a longer period of time
- Effect of pain assessment on specific cognitive impairments
- Other forms of behavioral pain assessment tools (CPOT, PAINAD, NVPS)

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