

Introduction

- Unrelieved pain can lead to cardiac instability, immunosuppression, and a decline in respiratory function, all of which are risk factors for ICU patients (Devlin et al., 2018).
- While nonverbal patients are unable to verbalize pain they may or may not be experiencing, a provider cannot exclude it from happening.
- Nonverbal patients are common in the ICU.
- According to the Society of Critical Care Medicine (SCCM) in the clinical practice guidelines proposed by Devlin et al. (2018), the **Critical Care Pain Observation Tool (CPOT)** is a valid tool to assess patients who are unable to communicate in the adult ICU
- The purpose of this project was to implement the evidence-based CPOT pain assessment protocol to assess pain in the nonverbal patient.

Background and Significance

- The most common admission diagnosis for the ICU is a respiratory system diagnosis, with 20-30% of those requiring mechanical ventilation.
- The practice in an ICU in a teaching hospital in northern New Jersey found the nursing staff assessed pain in nonverbal patients using a scale that lacked supportive evidence called the **Behavioral Scale**.
- The **CPOT**, unlike the Behavioral Scale, provides a more comprehensive assessment of a patient's facial expressions, muscle rigidity, and ventilator compliance.
- A protocolized approach to pain assessments and management is associated with decreased MV days, ICU infections, LOS, cost, as well as 30-day hospital mortality (Skrobik and Chanques, 2013).
- According to Kramer, Dasta, and Kane-Gill (2017), when comparing survivors of ICU stays to non-survivors on day 2 of admission versus day 5, surviving patients receiving mechanical ventilation had a predicted cost of \$10,317 on day 2 and \$19,627 on day 5. On the other hand, survivors who did not receive mechanical ventilation had a predicted cost of \$6,709 on day 2 and \$13,816 on day 5.
- Prolonged mechanical ventilation increases the risk of ventilator-associated events (Kobayashi, Uchino, Takinami, & Uezono, 2017).

Critical-Care Pain Observation Tool

Indicator	Description	Score	
Facial expression	No muscular tension observed	Relaxed, neutral	0
	Presence of frowning, brow lowering, orbit tightening, and levator contraction	Tense	1
	All of the above facial movements plus eyelid tightly closed	Grimacing	2
Body movements	Does not move at all (does not necessarily mean absence of pain)	Absence of movements	0
	Slow, cautious movements, touching or rubbing the pain site, seeking attention through movements	Protection	1
	Pulling tube, attempting to sit up, moving limbs/thrashing, not following commands, striking at staff, trying to climb out of bed	Restlessness	2
Muscle tension Evaluation by passive flexion and extension of upper extremities	No resistance to passive movements	Relaxed	0
	Resistance to passive movements	Tense, rigid	1
	Strong resistance to passive movements, inability to complete them	Very tense or rigid	2
Compliance with the ventilator (intubated patients)	Alarms not activated, easy ventilation	Tolerating ventilator or movement	0
	Alarms stop spontaneously	Coughing but tolerating	1
	Asynchrony: blocking ventilation, alarms frequently activated	Fighting ventilator	2
OR Vocalization (extubated patients)	Talking in normal tone or no sound	Talking in normal tone or no sound	0
	Sighing, moaning	Sighing, moaning	1
	Crying out, sobbing	Crying out, sobbing	2
Total, range			0-8

Methodology

- ✧ This **quality improvement project** was the development, implementation, and evaluation of the evidence based pain assessment protocol using the CPOT and the use of a post implementation feedback survey of the nursing staff who utilized the CPOT.
- ✧ **Setting**- 13 bed MICU which is part of a 513 comprehensive stroke, liver transplant, and level 1 trauma center.
- ✧ **Sample**- Educational modules given to all Medical ICU nurses as they were the ones utilizing the scale.
- ✧ Waiver of consent.
- ✧ No risks or harms to staff.
- ✧ **Interventions**:
 - *Endorsement* through meeting with MICU leadership and IT department *development* of flowsheet.
 - *Nursing communication by NM and CPOT education modules* in Healthstream.
 - Pain assessment protocol *initiated* after nursing education.
 - Nurses use the CPOT Q1H until patient can self report, deceased, or transferred.
 - Times for Q & A.
 - *Evaluation*: After 3 month implementation, 5 point likert-type survey to nursing staff on the effectiveness of each component of the CPOT.
 - Analysis of survey data and qualitative feedback through Excel®.

Results

1. 79% found the CPOT as comprehensive in assessing pain in the nonverbal patient.
2. 86% found CPOT to be quick to use.
3. 79% found the CPOT comprehensive at identifying pain by facial expression.
4. 64% found the CPOT comprehensive at identifying pain via body movements.
5. 79% found CPOT comprehensive at identifying pain via muscle tension and resistance to PROM.
6. 71% found CPOT was comprehensive at identifying pain by assessing ventilator synchrony.
7. 93% found the educational modules helpful.

Discussion

Conclusions-

- ✧ Participants found utility in the protocol but further education is needed based on feedback.

Implication on Practice

- ✧ Accurate pain assessments and analgesic interentions

Economic Impact-

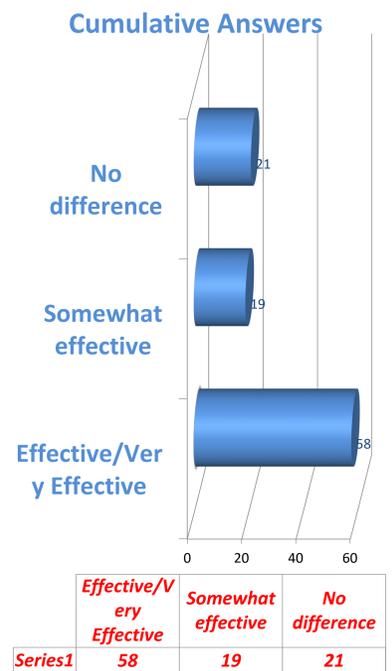
- ✧ Decreased hospital LOS, HC utilization, duration of analgesia, and MV days

Healthcare quality Impact-

- ✧ Quality HC in the ICU setting
- ✧ Imapct adverse MV events such as VAP
- ✧ Narcotic administration, increased safety practices, and lower use of sedatives.

Policy

- ✧ Endorsement of the CPOT scale
- ✧ Inclusion into hospital practice
- ✧ Further the training of RNs on the SCCM guidelines.



Nurses found positive utility in the CPOTs ability to assess pain in the nonverbal patient.

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Reference: See separate handout

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