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Evidence-Based Pain Assessment in Nonverbal Palliative Care Patients

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ABSTRACT

Background: Central to palliative care is the early assessment and treatment of pain, whether physical, psychosocial, or spiritual. Nonverbal palliative care patients are at risk for inadequate pain assessment leading to prolonged suffering.

Aims: The purpose of this project was to implement and evaluate an evidence-based pain assessment tool for nonverbal palliative care patients.

Design: The Iowa Model Revised: Evidence-Based Practice to Promote Excellence in Healthcare and the Implementation Strategies for Evidence-Based Practice Guide provided the guiding frameworks.

Settings: On a six-bed adult inpatient Palliative Care Unit (PCU).

Participants/Subjects: Nonverbal palliative care patients.

Methods: Evidence supported use of the Multidimensional Objective Pain Assessment Tool (MOPAT) for nonverbal patients receiving palliative care. During an eight-week pilot, nurses recorded pain assessments on a paper form and trended pain scores over a 24-hour period. Evaluation included knowledge, attitudes, and behaviors pre- and post-pilot and was subsequently used in a Precision Implementation Approach to promote adoption.

Results: Nurses' attitudes toward palliative care pain assessment improved in all items on the evaluation tools. Pain was assessed using MOPAT for 74% of nonverbal palliative care patients and 88% of patients had linked pain interventions to MOPAT scores.

Conclusions: MOPAT is the only valid evidence-based pain assessment tool for nonverbal patients receiving palliative care. This project led to successful adoption of the MOPAT within the PCU.

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Currently, an estimated 40 million people need palliative care each year, with 25.7 million being in the last year of life (World Health Organization [WHO], 2020). Given the aging population and increase in multiple chronic conditions, this number will continue to rise (Etkind et al., 2017; Mitchell, 2017). According to the WHO, Palliative care is defined as an approach to improve the quality of life and relieve serious health-related suffering for patients and families of all ages with life-threatening illnesses (WHO, 2020). Palliative care provides a holistic approach to care and complements therapies that are intended to prolong life. Central to palliative care is the early assessment and treatment of pain, whether physical, psychosocial, or spiritual (Hughes & Smith, 2014; WHO, 2020).

In the palliative care population, Greco et al. (2014) reported that up to 30% of cancer patients receive inadequate pain relief.

Unrelieved pain in the palliative care population results in distress for patients and their families. The International Association for the Study of Pain defines pain as “an unpleasant sensory and emotional experience associated with, or resembling that associated with, actual or potential tissue damage” (Merskey & Bogduk, 2012, pain section, para. 1). The first step to managing palliative care pain is to accurately assess pain (Coyne et al., 2018). Because of the unique sensory and emotional experience of pain, self-report is still considered the gold standard for pain assessment (Cea et al., 2016; Herr et al., 2019; Joffe et al., 2016;). Commonly considered in clinical practice to be the fifth vital sign, assessment of pain should encompass the use of a pain intensity scale, such as the Numeric Rating Scale for pain (Cea et al., 2016; Joffe et al., 2016; Scher et al., 2018; Wiegand et al., 2018).

In the palliative care population, changes in the level of consciousness, along with the effect of medications as patients near death, create challenges in assessing pain via self-report (Baillie et al., 2018; Cea et al., 2016; Herr et al., 2019). As a result, nonverbal palliative care patients are at greater risk for inad-

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equate pain relief and prolonged suffering. Nurses at the bedside are faced with the challenges of knowing when a patient can no longer self-report and needs a different approach to assess pain. When patients are unable to self-report pain, nurses are often left to use their own clinical judgment to assess and manage pain, which may result in suboptimal pain management and inconsistencies from nurse to nurse, and shift to shift (Joffe et al., 2016). Behavioral observation using a valid tool provides an appropriate and feasible alternative for pain assessment (Devlin et al., 2018; Herr et al., 2019; McGuire et al., 2016). In this highly specific population where pain assessment is crucial, using a validated pain assessment tool is imperative (Coyne et al., 2018). Using one standardized pain tool promotes consistency amongst the interprofessional team (Herr et al., 2019). However, validated scales for the palliative care population are scarce; thus, nurses may not be able to accurately assess pain and effectively match interventions that meet their needs (Coyne et al., 2018).

Local Problem/Trigger

A local visit by a regulatory body triggered the objective for this project to improve pain assessments when a palliative care patient becomes nonverbal. Regulatory bodies, such as the Joint Commission, require pain assessment documentation along with appropriate pain management (McGuire et al., 2016; The Joint Commission, 2018). Our team noticed variation in practice patterns in our palliative care unit. Pain assessment documentation was scattered among the fields within the electronic health record (EHR) for nonverbal patients and often more than one pain scale was used during a single pain assessment. This practice raised the question as to whether nurses had the knowledge to accurately assess pain in the nonverbal palliative care population. These inconsistencies, along with a commitment to provide exceptional care for the palliative patients, prompted the need for a change. Additionally, the project was deemed a priority for our organization and the primary author was accepted into the local Evidence-Based Practice (EBP) Internship Program (Cullen & Titler, 2004). The purpose of this EBP project was to implement and evaluate an evidenced-based pain assessment for nonverbal palliative care patients.

Methods

The team used the Iowa Model Revised: Evidence-Based Practice to Promote Excellence in Healthcare (Iowa Model Collaborative, 2017) to guide the EBP process and the Implementation Strategies for Evidence-Based Practice Guide (Cullen & Adams, 2012) as a framework for the implementation and sustainability steps. The steps in the Iowa Model steered this EBP work and reporting of the process used.

This EBP project was conducted at an 860-bed quaternary academic medical center in the Midwest. The palliative care unit has six beds strictly for symptom management and end of life care for adults with any clinical condition. Only nonverbal, unable to self-report, palliative care patients were used in the pilot. This core team consisted of the project leader, an EBP mentor, a clinical nurse specialist, a unit assistant nurse manager, and bedside nurses. Patients and families were engaged early to ensure their support and perspectives were included. The organization's EBP Internship program provided training, mentoring, and protected work time for the primary author.

Synthesis of the Evidence

A literature review was performed in collaboration with a medical librarian using CINAHL and Scopus as the primary biblio-

graphic databases for the literature review. Keywords used in the search included palliative, pain assess*, and nonverbal or noncommunicative. An asterisk was used with search words to broaden the search by finding one or more words with similar spelling to the search term.

Pain assessment tools found within the literature for nonverbal adult patients are described in Table 1. Four different scales were compared for this pilot: The Multidimensional Objective Pain Assessment Tool (MOPAT) (McGuire et al., 2011), Critical-Care Pain Observation Tool (CPOT) (Devlin et al., 2018; Joffe et al., 2016), Behavioral Pain Scale (BPS) (Devlin et al., 2018), and the Rotterdam Elderly Pain Observation Scale (REPOS) (Boerlage et al., 2019). The four assessment tools were compared by the team focusing on their reliability and validity for the nonverbal palliative care population and clinical utility in the practice setting. The team discussed best evidence recommendations compared to current practice to come to a consensus on a practice change to be piloted and implemented.

While the CPOT, BPS, and REPOS had supportive evidence, none specifically targeted the needs of the nonverbal palliative care population. Consequently, the MOPAT was selected for piloting and permission was obtained from the developers (D. McGuire, personal communication, August 24th, 2020). At the time of this project, the MOPAT consisted of two subscales: behavioral (restless, tense muscles, frowning/grimacing, and patient sounds or vocalizations) and physiological (heart rate, respirations, and diaphoresis) (McGuire et al., 2011; McGuire et al., 2016). The behavioral subscale was scored from 0 (normal) to 3 (severe) for a total score of 0-12 and the physiologic subscale was scored 0 (usual) to 1 (not usual) for a total score of 0-3. Subscale scores are summed separately, then added together for a total score up to 15 (McGuire et al., 2011). The authors of the MOPAT have noted weaker reliability within the physiologic dimension (Wiegand et al., 2018) which is not surprising given that this has been shown in other studies (Herr et al., 2019). Previously, the physiological subscale included blood pressure, but this was removed because of the lack of reliability and is not routinely performed in hospice patients (McGuire et al., 2016). This can improve the clinical utility of the use of the tool in this population. While physiological variables are less reliable to indicate pain, they can be used as a supplement to assist in a more in-depth pain assessment (McGuire et al., 2016). The MOPAT is the only pain assessment tool tested explicitly for palliative care patients unable to self-report pain that has evidence of reliability, validity, and clinical usefulness (Herr et al., 2019; McGuire et al., 2016). Therefore, the MOPAT is currently used as the standard of care pain assessment tool for nonverbal palliative care patients in hospice or the acute care settings (McGuire et al., 2016).

Intervention/Practice Change

Designing the practice change involved developing a localized EBP protocol which outlined the details for use of the MOPAT for nonverbal palliative care patients. A localized protocol was created to describe how palliative care nurses would record their pain assessment on a paper documentation form, due to the delay for integration of the tool within the EHR. On this paper documentation form, nurses recorded pain assessment scores for both the behavioral and physiological subscales. Pain assessments were performed every four hours, before pain interventions, after pain interventions, and as indicated by the patient condition. Below the summed pain assessment score was a graph for nurses to record and annotate interventions if performed. Pain assessments were recorded by the nurses for a 24-hour period, thus after the completion of one shift, the nurse would pass the form off to the incom-

Table 1

Select Validated Pain Assessment Tools.

Assessment Components	Scoring	Validated Patient Population	Setting	Evidence of Reliability or Validity	Considerations or Clinical Utility
MOPAT: Multidimensional Objective Pain Assessment Tool (McGuire et al., 2011)					
2 Subscales: Behavioral subscale: Restless, tense muscles, frowning/grimacing, and patient sounds/verbalization Physiologic subscale: Heart rate, respirations, diaphoresis	Behavioral: 0 to 3 each Physiological: 0 to 1 each Total: 15	Nonverbal palliative care adults	Hospice intensive care floor	Internal consistency: Cronbach's alpha was 0.85 and 0.78 for behavioral and physiological subscales, respectively Internal consistency: Cronbach's alpha before pain intervention was 0.79 and 0.84 after pain medication. Exploratory factor analysis: For two components (behavioral and physiological) with factor loading scores ranging from 0.534 to 0.944, accounting for 66% of the variance	Explicitly for palliative care Clinically useful easy to use Applicable across all settings Sensitive to change Good internal consistency
CPOT: Critical-Care Pain Observation Tool (Ross et al., 2016)					
Facial expression, body movements, muscle tension, compliance with ventilator OR vocalization	0 to 2 each Total: 8	Nonverbal and verbal adults	Intensive care	Interrater Reliability: Interclass correlation (ICC) between two raters for all assessments were greater than 0.75. Discriminate validity: CPOT scores were higher during turning compared to gentle touch ($p < 0.001$)	Incorporates scoring for intubated or vocalized patients Used across critical care and in intensive care settings.
BPS: Behavioral Pain Scale (Payen et al., 2001)					
Facial expression, upper limb movements, compliance with mechanical ventilation	1 to 4 each Total: 12	Nonverbal and verbal adults	Intensive care	Factor analysis: Large first factor accounted for 55% of the variance with coefficients of 0.789 for facial expression, 0.794 for movement in the upper extremity, and 0.632 for compliance with ventilator. Discriminant validity: BPS scores statistically significantly changed between painless and painful procedures. Interrater reliability: Correlations were 0.71 at rest and 0.50 during procedure between two groups (both $p < 0.001$)	Incorporates scoring for intubated and sedated patients. BPS used across critically ill adult populations
REPOS: Rotterdam Elderly Pain Observation Scale (Boerlage et al., 2019)					
Tense face, eyes squeezed, raising upper lip, grimace, frightened look, moving body parts, panicky, moaning/groaning, sounds of restlessness, breath holding.	Present or absent each Total: 10 behaviors present	Nonverbal adults postoperative and chronic pain	Long term care, hospitalized patients	Interrater reliability: Cohen's kappa value 0.71 and 0.84 ICC for total REPOS score was 0.89. Criterion validity: The correlation between REPOS and numeric rating scale (NRS) (observation) was 0.87 and between the REPOS and NRS (proxy) was 0.73. Sensitivity and specificity: Sensitivity of 78% and specificity of 90% was found. Positive predictive value of 73% and negative predictive value of 87%. Area under the curve was 0.88.	Dutch palliative guidelines recommend use. Used for nursing home residents.

ing shift. After 24 hours, the form was turned into a lock box and scanned into the patient's chart by team members. The interprofessional team had access to these forms for care coordination and changes to the plan of care. To prepare palliative care nurses to use the MOPAT, team members conducted up to three individual real-time, back-to-back assessments with staff nurses. Strong inter-rater reliability was found following this process prior to the start of the pilot.

Ethical Considerations

A Human Subject Research Determination form was submitted to the Institutional Review Board and the MOPAT project was deemed not to be human subjects research, but rather quality improvement. Steps taken to maintain data security included using password protected hospital computers, password protected Qualtrics (Qualtrics, 2022) software, and locked files for paper documents with limited access.

Evaluation/Analysis

A pilot allowed for a small-scale trial of the MOPAT prior to full scale adoption and sustained use. Furthermore, this piloting provided opportunities to do midstream corrections to adapt the use of the MOPAT to the local setting (Laures & Fowler, 2020). The pilot occurred over an 8-week period from January 2021 to March 2021. To evaluate the MOPAT in the palliative care unit, pre- and post-pilot process evaluation data were collected. Established EBP tools were used and adapted to fit the needs of this topic and setting (Cullen et al., 2023).

Process data consisted of a 22-item questionnaire regarding nurse knowledge and attitudes and audit data to capture pain assessment practices. The knowledge questions were formatted as a mix of multiple choice and true/false. Items specifically addressed pain assessment when palliative patients were nonverbal (Devlin et al., 2018; Herr et al., 2019; McGuire et al., 2016) and informed the anticipated plan for piloting. Nurse attitude questions about pain assessment in palliative care patients had response options on a 4-point Likert scale (i.e., strongly disagree = 1 to strongly agree = 4). The questionnaire was distributed to the entire palliative care nursing staff via an email describing the purpose of the project with a link to the questionnaire in Qualtrics (Qualtrics, 2022) survey software both pre and post implementation.

Lastly, data describing nursing practice behaviors were collected by the team via auditing documentation which was then entered into Qualtrics for ease of analysis. These data included the patient's medical record number (MRN), the pain scale(s) used, nonverbal pain indicators, and interventions performed to manage pain. Post-pilot, manual audits of the MOPAT were performed to assess the use and troubleshoot misunderstandings or incomplete documentation.

Questionnaire data and collection of paper audits were used for analysis. Descriptive statistics, such as mean, frequency, and percentages, were then calculated to compare the different pre and post implementation of nurse knowledge, perceptions, and use of the MOPAT.

Implementation

The Implementation Strategies for Evidence-Based Practice Guide (Cullen & Adams, 2012) and the Precision Implementation Approach were used to promote adoption (Cullen et al., 2019; Cullen et al., 2022; Cullen et al., 2023). The implementation strategies involve a four-phase approach: creating awareness and inter-

est; building knowledge and commitment; promoting action and adoption; and pursuing integration and sustained use (Cullen & Adams, 2012). Using a phased approach helped organize the implementation plan and better prepared palliative care nurses for the EBP change (Cullen et al., 2019). Pre-pilot data were used to identify local needs and select implementation strategies most likely to address those needs (Cullen et al., 2023), discussed below in results. All implementation strategies to promote adoption are described in Figure 1.

Results

The knowledge data demonstrated that the palliative care nurses already had a strong knowledge base about pain assessment pre-pilot. Two questions with notable knowledge increase post-pilot were related to selecting a pain assessment tool and documentation of pain trends (Table 2). Nurses' knowledge about identifying the most accurate pain scale to use for a nonverbal palliative patient increased by 20.8% (pre-pilot = 79.2% correct; post-pilot = 100% correct). Nurses' knowledge about trending a patient's pain showed an increase of 19.6% (pre-pilot = 37.5% correct; post-pilot = 57.1% correct). Implementation strategies that focused on improving these knowledge items were educationally related to the MOPAT tool itself and training for how to properly use it, including trending. One-on-one education was provided to the palliative care nurses by members of the project team. Nurses practiced using the MOPAT paper documentation tool alongside a project team member on real time patients. Change agents from each shift helped reinforce the education real-time during the pilot and each nurse received a badge buddy (practice prompt for the MOPAT attached to their badge) for quick reference.

Nurse attitudes were generally positive pre-pilot (Table 3). All items reported an increase in positive attitude related to pain assessment in the palliative care population with the MOPAT post-pilot. The largest improvement was every nurse agreed or strongly agreed that the MOPAT was easy to use and understand compared to other available pain assessment tools (mean pre-pilot = 2.58 and post-pilot = 3.59). Nurses agreed or strongly agreed that they now had a tool to accurately assess nonverbal palliative care patients' pain (mean pre-pilot = 2.58 and post-pilot = 3.3) and felt supported in their pain assessment (mean pre-pilot = 3.39 and post-pilot = 3.44). A collection of implementation strategies that was used to match local needs is listed in Table 3 (Cullen et al., 2023). For instance, multidisciplinary discussion and troubleshooting at the bedside were strategies specifically selected from pre-pilot data in efforts to increase nurses' sense of support in pain assessment. Practice prompts and change agents present during implementation facilitated understanding and ease of use of the MOPAT. These strategies provided real-time direction or cues to the palliative care nurses and reaffirmed the goal (Cullen et al., 2023).

To evaluate pain assessment documentation behaviors, chart audits were performed and compared pre- and post-pilot of the MOPAT. Pre-pilot chart audits were collected over the course of one month (n = 26 patients' EHR). Pre-pilot, 54% of nonverbal patients had pain incorrectly documented as self-report and 46% had a single pain assessment incorrectly documented under both the self-report and nonverbal pain scales. The team linked these data to the implementation strategy, demonstrate workflow, which consisted of a review of work routines and subsequent recommendations to embed the MOPAT into standard workflow. Observing practice patterns allowed insight for the team and provided work patterns to improve during the pilot. Workflow demonstration also provided an opportunity to standardize clinical practice, which led to significant improvement in post-pilot data. There were 46 nonverbal patients admitted to the palliative care unit during implementa-

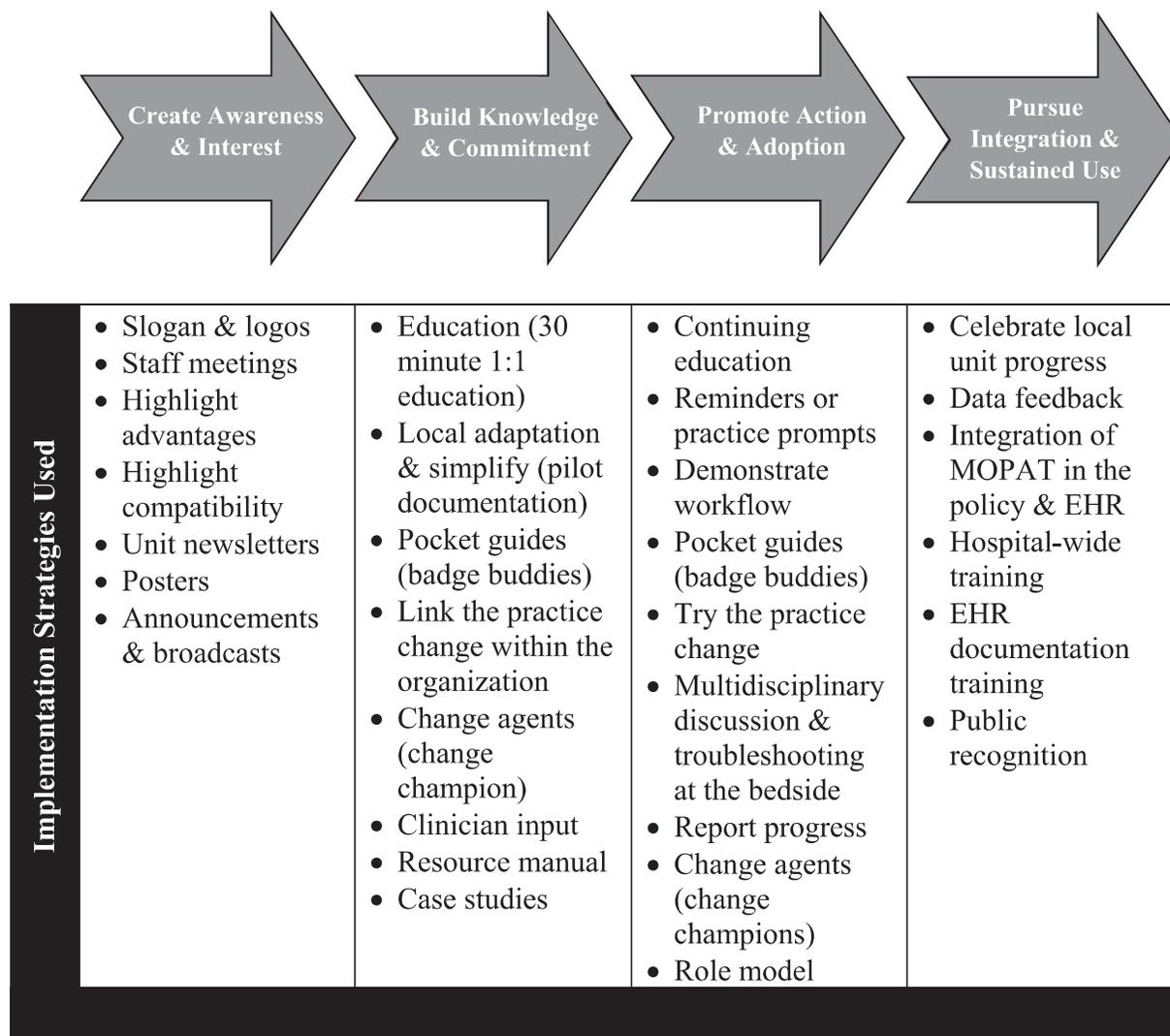


Figure 1. Implementation strategies for evidence-based practice used during this pilot

tion and 74% (n=34) had MOPAT assessments appropriately documented and trended over time. Of the 34 patients, 88% of them had linked pain interventions to MOPAT scores at one point during their hospital stay which represents a relationship between the assessment process and the pain management strategy selected for patients.

Discussion

The MOPAT is the only current pain assessment tool validated explicitly for nonverbal palliative care patients. This EBP project describes the successful implementation of the MOPAT in one inpatient palliative care unit. Implementation of the MOPAT addressed the original trigger of this EBP project to improve assessment of nonverbal palliative care patients’ pain. Moreover, adoption of the MOPAT provided even more benefits for nursing staff and, ultimately, can positively affect patients and their family.

Following the Iowa Model, evaluation of this practice change consisted of process data, knowledge, attitudes, and pain assessment documentation behaviors. While there was not a drastic change in knowledge, none was expected as the data demonstrates the palliative care nurses were already knowledgeable about pain assessment prior to the pilot. Using the Precision Implementa-

tion Approach (Cullen et al., 2019; Cullen et al., 2022) proved to be valuable and effective when implementing the MOPAT. It was deemed not necessary to focus dedicated resources on education related to general pain assessment and management for the palliative care population. Instead, implementation was focused on the team’s use of this new tool and how to use it appropriately. This was strategic and beneficial to our team, as time and resources to complete any EBP project are limited.

Regarding nurse attitudes, post-pilot data revealed nurses felt supported when completing nonverbal pain assessments using the MOPAT and the MOPAT provided a population-specific tool for accurate assessment. Most importantly, nurses reported that the MOPAT was easy to use and understand, which is essential for the ability of nurses to complete the MOPAT in their demanding workflow. The MOPAT previously demonstrated high clinical utility (Herr et al., 2019; McGuire et al., 2016), which was seen again in the palliative nursing staff. These data were critical to use for implementation as they helped understand how nursing staff perceived the MOPAT. To ensure successful adoption, implementing strategies to gain and sustain staff buy-in is essential.

The MOPAT improved pain assessment practice patterns of the palliative care nurses by having one pain assessment tool specific to their patient population and standardizing care across the

Table 2
Nurses' Knowledge Data Used for Precision Implementation Approach

Question	Correct Response Pre-pilot (N=24) n (%)	Primary implementation strategy	Correct Response Post-Pilot (N=27) n (%)
A self-report pain scale should be used if a palliative care patient (PCP) is able to report their pain in any manner.	24 (100)	n/a	25 (92.6)
Heart Rate and Pulse are physiological pain indicators for PCP.	24 (100)	n/a	23 (96.3)
The most painful experiences for PCP are turns, dressing changes, suctioning, etc. caused by medical staff.	20 (83.3)	Education via in-person 1:1 and video recordings	25 (92.6)
PCP may sleep despite severe pain.	24 (100)	Posters Reminders/Practice prompts Education via in-person 1:1 and video recordings	26 (96.3)
What behaviors indicate that your patient may be experiencing pain. (Select all that apply)	24 (100)	Posters Change agents Slogan & logos	27 (100)
Mary is an 81-year-old patient. She is currently not oriented x3 or verbal. How would you assess her pain?	19 (79.2)	n/a	27 (100)
How often should you assess and document pain assessments in PCP.	22 (91.6)	MOPAT Education via in-person 1:1 and video recordings Posters Announcements Staff meetings	26 (96.3)
I know where to document my PCP pain assessment.	20 (83.3)	Education via in-person 1:1 and video recordings Demonstrate workflow Posters Staff Meetings	23 (85.2)
We trend PCP's pain by documenting one standard pain assessment.	9 (37.5)	MOPAT Education via in-person 1:1 and video recordings Demonstrate workflow Posters Staff Meetings Unit Newsletters Local adaptation & simplify Change agents Try the practice change	16 (57.1)

Table 3
Nurses' Attitude Evaluation Data Used for Precision Implementation Approach

Question	Pre-Pilot Mean (N=24)	Primary Implementation Strategy used	Post-Pilot Mean (N=27)
Accurately assessing pain in nonverbal PCPs is important to me.	3.5	Link the practice change to the organization	3.81
I feel knowledgeable about signs/symptoms to assess for pain in nonverbal PCPs	3.25	Highlight compatibly Try the practice change Pocket guides	3.48
I have a pain assessment tool available to help me accurately document for nonverbal PCP.	2.58	Continuing education Resource manual Try the practice change	3.33
Traditional pain documentation (pre) versus the MOPAT (post) is easy to use and understand	2.67	Policy change Pocket guides (badge buddies) Clinician input	3.59
I feel supported when conducting pain assessments in nonverbal PCPs	3.39	Case studies Role Model Resource manual Reminders	3.44
Informing family about the importance of assessing pain in nonverbal PCPs is essential in the ability to conduct appropriate pain management.	3.21	Data Feedback Celebrate local unit progress Report Progress	3.48
I feel confident in my ability to inform families how I assess pain in nonverbal PCPs.	3.04	Highlight advantage Try the practice change Change agents	3.41

team. After the completion of the pilot, the MOPAT was fully integrated into the EHR, which further promoted its use by the multidisciplinary team. An unexpected benefit from the MOPAT pilot was the capability to link pain assessments with interventions and trend a nonverbal patient's pain level across shifts. With any behavioral pain assessment tool, the MOPAT was used to as-

sess pain presence or pain-relieving interventions, but one cannot assess pain intensity in a nonverbal patient. Therefore, higher MOPAT scores indicated pain behaviors, whereas low scores indicated an absence of pain indicators. The multidisciplinary team was able to view patient's pain assessment history and evaluate which interventions were most beneficial. The MOPAT alleviated

inconsistencies from nurse to nurse in pain assessment, which is ultimately the first step in pain management for this vulnerable population.

While the implementation of the MOPAT was successful, challenges still occurred. For example, roadblocks were presented with integrating the MOPAT into the EHR. Therefore, the pilot had to use a paper documentation form, which is outside of the normal workflow of the palliative care team. Integration into the EHR is critical because clinicians use the EHR as the primary information source for nursing assessments and associated pain interventions. By using a paper documentation form, evaluation was limited to usefulness of the MOPAT only and could not include integration of the MOPAT into nurses' workflow. Not having the MOPAT in the EHR required nursing staff to duplicate documentation on both the paper documentation form and the EHR, creating duplication of work in the already demanding palliative care setting. This problem could hinder the adoption and sustainability of the MOPAT because additional time and resources were required for re-implementation when the MOPAT moved from the paper form to the EHR. Moreover, this practice interferes with the ability to create a culture of positive change for all EBP practices. Nurse informatics play a critical role early and throughout the EBP process.

Another challenge the core team faced during implementation was the global pandemic. With a surge of COVID-19 cases, the hospital census was higher than average, and nurses were cross-trained with other units to provide support when short-staffed. The palliative care unit received float nurses from other units who did not receive MOPAT training, and therefore did not participate in the pilot project. Because float nurses were often assigned nonverbal palliative care patients, the team could not capture those patients in their sample size. Because of a combination of float nurses and high census with duplication of work, only 74% of nonverbal patients admitted to the palliative care unit during the implementation phase used the MOPAT assessments.

Additionally, assessing the physiological subscale data proved challenging at times. These palliative care patients were not always monitored, and it was not routine practice to collect frequent vital signs; therefore, heart rate and respirations were collected every time a MOPAT pain assessment was warranted. Moreover, the physiological section of the MOPAT has reported weaker psychometric properties (McGuire et al., 2016; Wiegand et al., 2018). Therefore, further investigation is warranted and has been undertaken (D. McGuire, personal communication, February 13th, 2023) to confirm the benefit of retaining the physiological subscale within the MOPAT. The purpose of this project was not to test the validity or reliability of the tool, but rather to implement and evaluate an evidenced-based pain assessment for nonverbal palliative care patients. As science continues to evolve, it is essential for nurses to stay current with the best evidence and ensure patients are receiving the most up-to-date care.

Nursing Implications

Palliative care patients are a unique and vulnerable population where pain management plays a critical role. To improve the pain assessment process, an EBP project was initiated. Here, the MOPAT was identified from the literature as a valid, reliable method to assess pain in this unique population (McGuire et al., 2016). Following the implementation, the pain assessment process was more standard across team members and nurses were able to link pain assessments with interventions trended over time. Critical to the success of the implementation of the MOPAT was the use of a

strong team to engage and train the remaining staff nurses. However, the EHR was a barrier, and it is needed to engage nursing informatics early in the EBP process. Lastly, while physiological variables were used as indicators for further assessment in the MOPAT, heart rate was not routinely collected in the palliative care unit. It remains critical to monitor as new evidence emerges for newer adaptations of the MOPAT. Following the adoption of the MOPAT, strategic sustainability measures were put in place, such as the integration of the MOPAT into the pain policy and the nursing education application to ensure the ability of the MOPAT to be used for palliative care patients across the organization.

Limitations

This project was an EBP project rather than a research study. Evaluation of the tool and inter-rater reliability testing was not the goal; however, psychometric evaluation data are available from the MOPAT developers. While EBP findings are not generalizable, we share our lessons learned as an effort to continue to improve pain assessment and management for these vulnerable patients.

Conclusion

This EBP project improved nurses' ability to assess pain for adult nonverbal palliative care patients, link their assessments with interventions, and coordinate patients' pain management consistently from shift to shift and nurse to nurse. The use of the Iowa Model enabled the successful adoption of the clinically useful MOPAT into all palliative care settings across our organization. The biggest strength of the MOPAT is there is no other current evidenced-based pain assessment tool for this vulnerable population, and it is easily used and understood in the clinical setting. Thus, the MOPAT has the potential to provide significant benefits for patients, nurses, and other health care professionals in the palliative care field.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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