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Original Article

Family Members' Experiences with Observing Pain Behaviors Using the Critical-Care Pain Observation Tool

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ABSTRACT

Background: Current guidelines support family members' participation in care, but little is known regarding their potential contribution to pain assessment using validated behavioral pain scales.**Aims:** This study aimed to describe family members' observations of pain behaviors with the Critical-Care Pain Observation Tool and their evaluation of the tool and its use, and to understand their experience and perceptions of their potential role in pain management in the intensive care unit.**Design:** A mixed methods cross-sectional explanatory design was used.**Setting:** A medical-surgical intensive care unit in Canada.**Participants/Subjects:** Family members were eligible if they had a loved one admitted in the intensive care unit who was unable to self-report.**Methods:** Family members identified pain behaviors using the Critical-Care Pain Observation Tool after a brief training, completed a self-administered questionnaire, and participated in a follow-up individual interview regarding their experience and perceived potential role in pain management when their loved one is unable to self-report.**Results:** Ten family members participated. A 15-minute training appeared sufficient for family members to be comfortable with observing pain behaviors included in the Critical-Care Pain Observation Tool. The tool allowed them to confirm their observations of pain behaviors, to focus more on the patient, and to advocate for better pain management.**Conclusions:** Future research is needed to explore the views of more family members and to compare their Critical-Care Pain Observation Tool scores to the ones of nurses' for interrater reliability testing.

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Adequately determining the presence of pain in patients unable to self-report poses a real challenge to clinicians. The inability to self-report makes nonverbal patients particularly vulnerable because their pain may remain unrecognized and untreated (Herr, Coyne, McCaffery, Manworren, & Merkel, 2011). Unmanaged pain is associated with adverse events such as imbalances in vital signs, anxiety, depression, posttraumatic stress disorder, increased

duration of mechanical ventilation and duration of stay, and increased risk for developing chronic pain (De Jong et al., 2013; Georgiou, Hadjibalassi, Lambrinou, Andreou & Papatthanassoglou, 2015; Myhren, Ekebeg, Toien, Karlsson, & Stokland, 2010; Payen et al., 2009; Puntillo & Naidu, 2016). Behavioral pain scales such as the Critical-Care Pain Observation Tool (CPOT; Gélinas, Fillion, Puntillo, Viens, & Fortier, 2006) have been developed to help assess pain in these vulnerable intensive care unit (ICU) patients unable to self-report and have been recommended by clinical practice guidelines for use with the non-verbal critically ill adults (Devlin et al., 2018).

Given the unique point of view of family members and their familiarity with the patient, the American Society of Pain Management Nursing and the Society of Critical Care Medicine recommend that family members be consulted in the pain assessment of

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patients unable to self-report (Devlin et al., 2018; Herr et al., 2011). This recommendation is consistent with the family-centered approach in the ICU, which supports the participation of families in care and their partnership with staff (Davidson et al., 2017; Garrouste-Orgeas et al., 2008). In one study conducted in the ICU, family members were found to rate patients' pain intensity more accurately than either nurses or physicians, thereby highlighting the valuable role family members can have in pain assessment (Puntillo et al., 2012). However, this study involved the use of a 1–3 pain intensity rating scale (1 = mild; 2 = moderate; 3 = severe) and included only patients able to self-report. Family members are able to detect subtle behavioral responses to pain given their intimate knowledge of the patient (Richard-Lalonde, Boitor, Mohand-Saïd, & Gélinas, 2018; Vanderbyl & Gélinas, 2017), but little is known regarding their potential contribution to pain assessment using validated behavioral pain scales and their views of their potential role in the pain management of the nonverbal critically ill adults.

Methods

Research Objectives

This study aimed to (a) describe family members' observations of pain behaviors in their nonverbal loved one using the CPOT; (b) describe their evaluation of the CPOT items' relevance, CPOT training and use, and their perception of their role in ICU pain management; and (c) understand their experience and their perception of the potential role of family members in ICU pain management. The following research questions were explored:

1. What pain behaviors did family members identify in their loved one with the CPOT at the ICU bedside?
2. What was the family members' evaluation of CPOT items' relevance, training, and use, and their perceptions regarding their role in ICU pain management?
3. How did family members describe their experience in the observation of pain behaviors with the CPOT and their perception on their potential role in ICU pain management?
4. How do the qualitative data from the family members' follow-up interviews support the results from their self-administered evaluation questionnaire?

Research Design

A mixed methods cross-sectional explanatory design was selected for this study because it involved the collection of quantitative data via a survey of the different aspects of their experience using the CPOT (i.e., relevance of CPOT items, training and use of CPOT, and perceived role in the pain management process), followed by an in-person qualitative interview to explain and elaborate further on the results obtained using the quantitative questionnaire (Creswell & Plano Clark, 2018).

Setting and Sample

This study was conducted in a medical-surgical university-based ICU in Canada. We defined a family member as someone living with the patient, an individual that the patient saw regularly, or someone who played a significant role in the patient's life for at least 1 year (Lefebvre, Cloutier, & Josee Levert, 2008). This definition is also in alignment with the one provided in the family-centered care ICU guidelines in which *family* refers to individuals who provide support and with whom the patient has a significant relationship (Davidson et al., 2017). Family members were included

if they were 18 years or older, English/French speaking, had a nonverbal loved one in the ICU for 3 or more days, and were present at the patient's bedside at least three times during the current ICU stay. To enable the identification of pain behaviors using the CPOT, family members were excluded if their loved one was investigated for brain death, suffered from quadriplegia, or received neuromuscular blocking agents, because these interfere with the expression of behaviors. To reach data saturation, we aimed to recruit a total of 10 family members (Guest, Bunce, & Johnson, 2006) using convenience sampling.

Procedures

Ethical approval was obtained from the Research Ethics Board of the study hospital. A social worker assigned to the study ICU was available to support family members during and after participation in the study. In the context of this study, no family member needed referral to the social worker. First, the patient's eligibility criteria were screened by the research staff with the help of ICU nurses. If eligible, the inclusion criteria for family members was verified with the help of ICU nurses who inquired about their interest to participate in the study. Those willing to participate were met in person by the research staff, who explained the aim of the study, the role of the research staff and the study procedures, and obtained their written consent. The research staff was composed of a female medical student and a female doctoral trainee in nursing, both with previous research training. They were trained on the use of the CPOT by the principal investigator using a standardized 60-minute training including the description of each CPOT item and score and practiced scoring with the CPOT using patient videos (Gélinas, Arbour, Michaud, Vaillant, & Desjardins, 2011). They were not working in the study ICU before or during the conduct of the study and met family members for the first time in the context of this study.

The research staff provided family members with a short 10- to 15-minute one-on-one training on pain assessment using the CPOT including standardized written instructions in English or French (Appendix 1). The structure of the training was standardized; however, the amount of explanations and guidance given was adapted according to each family members' learning needs. The training was stopped as soon as family members reported receiving sufficient information. The training was done at the bedside or in a private hospital room as per family members' preference. The research staff explained the meaning and scoring of each CPOT item and addressed their questions.

Data Collection

Data collection was conducted in three consecutive phases: (1) observing pain behaviors using the CPOT at the patient's ICU bedside, (2) completing a self-administered evaluation questionnaire, and (3) participating in a follow-up interview.

After training, family members were asked to select a time when they believed their loved one was in pain to observe their behaviors and provide a score for each CPOT item (Appendix 1). Once completed, family members were asked to leave their results in an identified box in the ICU. A single CPOT assessment was performed by each family member. Then, family members were invited to complete a brief quantitative self-administered questionnaire in which they evaluated the relevance of CPOT items in identifying their loved one's pain behaviors, the training they received, their comfort and stress in using the CPOT, and their appreciation of their role in ICU pain management.

Lastly, family members were asked to participate in a short 10- to 15-minute follow-up individual interview in a private room of the ICU. The interviews were conducted by the same research staff

who recruited and trained family members. Only one family member at a time participated in the interview without the presence of other persons (i.e., clinicians). The follow-up interview guide (Table 1) comprised exploratory questions and targeted answers provided in the quantitative self-administered evaluation questionnaire. Field notes were taken after the interviews and all interviews were audio recorded for subsequent verbatim transcription.

Instruments

The Critical-Care Pain Observation Tool

The CPOT was selected for this study because it was found to be one of the most reliable and valid scale for use in adult ICU patient unable to self-report (Gélinas, Puntillo, Joffe, & Barr, 2013), and it is currently used in the study ICU. The CPOT has four main items (i.e., facial expression, body movement, muscle tension, and ventilator compliance or vocalization based on the patient's condition), and each is scored from 0–2 for a total score of 8 (Gélinas et al., 2006). Interrater reliability of CPOT scores between raters (i.e., research staff and ICU nurses) was identified with moderate to high agreement coefficients (i.e., κ or intraclass correlation coefficients ≥ 0.60). The CPOT could also discriminate between painful and nonpainful procedures ($p < .001$), and a cutoff CPOT score >2 could adequately classify more than 80% of patients with or without pain (Echegaray-Benites, Kapoustina, & Gélinas, 2014; Gélinas, Harel, Fillion, Puntillo, & Johnston, 2009).

The Self-administered Evaluation Questionnaire

The evaluation questionnaire was adapted from the questionnaire used in a previous study (Gélinas et al., 2014) in which nurses were asked to evaluate the use of the CPOT for pain assessment in the adult ICU. The present questionnaire includes three sections: (a) relevance of CPOT items, (b) training and use of the CPOT, and (c) perceived role of family members in ICU pain management. Some questions were modified to describe the family members' comfort and stress with the use of the CPOT, and questions in the third section were newly developed to explore family members' perceptions of their role in ICU pain management. The questionnaire comprised 10 questions answered using a 5-point descriptive scale for item relevance (1 = not relevant to 5 = very relevant), and a 5-point Likert scale for other questions (1 = strongly disagree to 5 = strongly agree). The questionnaire was developed in both English and French, and similarity in the meaning was checked by a native English speaker (not in the field of health) and a native French speaker (in the field of health).

Table 1
The Follow-up Interview Guide

Overall experience	Q1. How was your experience using the CPOT to identify your loved one's pain at the bedside overall?
Feasibility	Q2. Did any particular struggles or challenges arise during the CPOT assessments? Probes: - Was seeing your loved one in pain hard? - Did you like or dislike assessing their pain? Did this exercise make you more aware of your loved one's pain? Probes: Depending on the answers on questionnaire, ask why a particular CPOT item was ranked as relevant or not.
Recommendation/ Feedback	Q3. Did you share your results with other members of the health care team? If yes, can you tell me how your feedback was received? Q4. Should family members play a more concretely involved in the pain assessment of their loved one? Why?

CPOT = Critical-Care Pain Observation Tool.

The Follow-up Interview Guide

The follow-up interview aimed to explore family members' overall experience regarding their observations of pain behaviors using the CPOT in the ICU, including the challenges encountered and their recommendations regarding the involvement of families in pain management (Table 1). Family members were prompted to elaborate further on their perceptions based on their individual responses to the quantitative self-administered evaluation questionnaire.

Data Analysis

Quantitative data analysis was performed using the SPSS Software Version 23.0 (IBM Corp., Armonk, NY, USA) for sociodemographic information, CPOT scores, and evaluation questionnaire data. Frequencies and percentages were calculated for nominal variables, and medians and ranges for non-normally distributed continuous data. The interview verbatim was analyzed with a content analysis approach (Graneheim & Lundman, 2004) and was used to build on the results obtained using the quantitative questionnaire to gather a general understanding of the views shared by family members. Two members of the research team coded independently the interview verbatim and derived themes from the data. Then they met with the principal investigator to discuss codes and to reach consensus. QDA Miner Software (Version 4.0) was used to manage the qualitative data.

Results

Sample

A total of 17 eligible family members were approached to participate between July–September 2016 and January–May 2017. Five family members refused to participate (three for being overwhelmed/tired, one for not being available, and one for having a poor recall of the patient while verbal) and two did not proceed with data collection after providing informed consent. Ten family members participated. Data collection was stopped after reaching 10 family members given that recurring themes were emerging and that the sample was representative of the family members visiting in the study ICU. Family members were the spouse (40%) or child (60%) of the ICU patient with whom they had an average relationship of 49.5 years. Before hospitalization, half of family members were living with the patient. During data collection patients were unable to self-report, 60% were women, 40% were mechanically ventilated, and they had a median age of 76.50 years (range 71–87). Patients were admitted in the ICU after respiratory distress and pneumonia ($n = 5$), surgery ($n = 2$), stroke ($n = 1$), jaundice ($n = 1$), and generalized weakness ($n = 1$).

Observation of Pain Behaviors Using the CPOT—Family Members' CPOT Scores

Table 2 presents the CPOT scores assigned by family members during their observation of pain behaviors in their respective loved one. Overall, family members reported total CPOT scores ranging from 2 to 6 during an event in which they believed their loved one was in pain. Higher scores were reported for facial expression and body movement. Four family members used the CPOT while their loved one was undergoing a procedure, and five when their loved one was at rest. One family member did not indicate whether pain assessment was done at rest or during a procedure.

Table 2
The Critical-Care Pain Observation Tool (CPOT) Scores Assigned by Family Members When They Believed Their Loved One Was in Pain

CPOT Item Score				
Given Score	0	1	2	Median (Range)
Facial Expression	1 (10.0%)	4 (40.0%)	5 (50.0%)	1.50
Body Movements	1 (10.0%)	4 (40.0%)	5 (50.0%)	1.50
Compliance with ventilation/Vocalization	5 (50.0%)	4 (40.0%)	1 (10.0%)	0.50
Muscle Tension	5 (55.6%)	3 (33.3%)	1 (11.1%)	0.00
CPOT Total Score				3.50 (2–6)

Self-Administered Evaluation Questionnaire—Relevance of CPOT Items, CPOT Training and Use, and Perceived Role in ICU Pain Management

After being trained on CPOT use and observing pain once with the CPOT, 90% of the family members agreed that facial expression and body movement, as presented in the CPOT, was either relevant or very relevant (Table 3). The second highest rating of relevance was for muscle tension, which was rated as relevant or very relevant by seven out of nine (78%) family members, followed by vocalization (60%) and ventilator compliance (43%). One family member did not evaluate muscle tension and chose not to answer

this question, and three family members did not rate ventilator compliance because they had not seen the patient with a ventilator.

The training and the instructions on the use of the CPOT were well perceived by all family members (100% ratings of “agree” or “strongly agree”; Table 3) who felt comfortable in observing pain behaviors using the CPOT. For some family members (n = 3, 30%), observing pain behaviors was stressful given the discomfort they felt while seeing their loved one in pain. Nonetheless, all family members self-reported that they would like to be more involved in pain management given the valuable input they can offer.

Table 3
Family Members' Evaluation of the Relevance of the Critical-Care Pain Observation Tool (CPOT) Items, of Training and Use of the Scale, and of their Perceived Role in Pain Management in the Intensive Care Unit

Evaluation of Relevance of CPOT Items	1	2	3	4	5	Median	Qualitative Findings
	Not Relevant	Somewhat Relevant	Neither	Relevant	Very Relevant		
Q1. How relevant was the <i>Facial expression</i> item for the assessment of pain in your loved one?	0 (0.0%)	1 (10.0%)	0 (0.0%)	3 (30.0%)	6 (60.0%)	5.00	The CPOT items are valid. The CPOT confirmed family members' observations. The CPOT allowed family members to differentiate pain from other symptoms. The CPOT helped family members focus more on the patient.
Q2. How relevant was the <i>Body movement</i> item for the assessment of pain in your loved one?	0 (0.0%)	1 (10.0%)	0 (0.0%)	4 (40.0%)	5 (50.0%)	4.50	
Q3. How relevant was the <i>Compliance with ventilator</i> item for the assessment of pain in your loved one?	1 (14.3%)	1 (14.3%)	2 (28.6%)	1 (14.3%)	2 (28.6%)	3.00	
Q4. How relevant was the <i>Vocalization</i> item for the assessment of pain in your loved one?	1 (10.0%)	2 (20.0%)	1 (10.0%)	1 (10.0%)	5 (50.0%)	4.50	
Q5. How relevant was the <i>Muscle tension</i> item for the assessment of pain in your loved one?	0 (0.0%)	1 (11.1%)	1 (11.1%)	2 (22.2%)	5 (55.6%)	5.00	
Concerning the Training and Use of the CPOT	Strongly Disagree	Disagree	Uncertain	Agree	Strongly Agree	Median	
Q6. The time allocated to my training in the use of the CPOT scale was sufficient.	0 (0.0%)	0 (0.0%)	0 (0.0%)	4 (40.0%)	6 (60.0%)	5.00	The CPOT gave confidence in family members' observations to approach nurses and report their findings.
Q7. The instructions on how to use the CPOT scale were clear.	0 (0.0%)	0 (0.0%)	0 (0.0%)	4 (40.0%)	6 (60.0%)	5.00	
Q8. I think I can contribute to my loved one's care by using the CPOT scale.	0 (0.0%)	0 (0.0%)	0 (0.0%)	5 (50.0%)	5 (50.0%)	4.50	
Q9. I felt comfortable assessing my loved one's pain with the CPOT scale.	0 (0.0%)	0 (0.0%)	0 (0.0%)	4 (40.0%)	6 (60.0%)	5.00	
Q10. It was stressful for me to use the CPOT scale.	4 (40.0%)	3 (30.0%)	0 (0.0%)	1 (10.0%)	2 (20.0%)	2.00	
Perceptions of Your Role in ICU Pain Management							
Q11. I would like to be more involved in my loved one's pain management.	0 (0.0%)	0 (0.0%)	0 (0.0%)	3 (30.0%)	7 (70.0%)	5.00	Willingness to participate in pain management despite potential discomfort.
Q12. Health care professionals have asked for my input when my loved one's pain is concerned.	4 (40.0%)	2 (20.0%)	0 (0.0%)	4 (40.0%)	0 (0.0%)	2.00	
Q13. Family members such as myself have valuable input to offer when their loved one's pain management is concerned.	0 (0.0%)	0 (0.0%)	0 (0.0%)	4 (40.0%)	6 (60.0%)	5.00	Family members can alert the nurse to the presence of pain.
Q14. Family members such as myself should be more involved in the pain management of their loved one in an ICU setting.	0 (0.0%)	0 (0.0%)	2 (20.0%)	2 (20.0%)	6 (60.0%)	5.00	Family members can help clinicians by providing a comprehensive assessment. Trust in clinicians to assess and manage pain.

Follow-Up Interview—Experience with the CPOT Use and Recommendations

Family Members' Willingness to Use the CPOT

Despite the discomfort reported from seeing their loved one in pain, family members were willing to participate in pain assessment (Table 3, Q11) if that may result in better pain management:

"I'm putting aside whatever discomfort that I may have in seeing him in pain for the benefit of actually being able to do something about his pain" (Family member no. 3).

Family members appreciated having access to a behavioral pain scale such as the CPOT because it confirmed their observations and gave them sufficient confidence to approach nurses and report their findings:

"It is valid because once I had noticed that a lot of these indicators but didn't have confidence in my observation. I thought well, ...who am I? ... I don't have a science background. So it was very validating to ... realize that I am picking up the signs That's important because you just don't know what's going on It gives you the confidence to feel like you have the right to get the nurse... or to talk to the authority...because what you're observing is valid" (Family member no. 3).

"It allowed me to understand the difference between agitation and pain. I had an understanding but when you have a confirmation on papers of a different way of looking at things. I say, okay, it wasn't in my head, I was on the ball understanding his pain" (Family member no. 5).

The use of the CPOT also allowed them to focus more on the patient and on relevant behaviors:

"It helped me to determine her level of pain and maybe to notice more accurately her reactions... instead of looking at the monitor, focusing on her reactions as opposed to reading the signs on machines. I was more focused on the patient than just the numbers" (Family member no. 4).

Family Members' Perception of Their Role in Pain Assessment in the ICU

Most family members were convinced of their important role in pain assessment in the ICU ($n = 8$, 80%, Table 3, Q13) and highlighted their unique contribution in this aspect of care:

"[Should family members be more involved in pain assessment?] Yes. First of all, to give support to the loved one. To let him know I understand what is happening and I want to help—to keep the empathic emotional connection—reducing isolation and powerlessness of the loved one. And of course, seeing if there is anything concrete that can be done to reduce the pain—alerting the nurse asking the loved one 'what he feels?' would help...the family can observe the loved one while the nurse is busy, and alert—important observations can be gathered because family is taking the time and is also aware of those micro expressions and looking for that connection" (Family member no. 3).

"We definitely should play a bigger role in the pain assessment. In general, when the doctor or the nurse comes they speak within themselves of what went on the night before and what went in the morning. But if they actually speak to a family member and say... the family says this is what she has a history of and that is how she is and that's what she's known for. This is our observation throughout the last 3–4 years it's not... doctors and nurses only get an assessment of what the nurse saw, herself, between the 6 hours. And she herself only knows what happened in the last 6 hours—so they don't get the complete picture" (Family member no. 4).

Two family members expressed uncertainty regarding their involvement in pain assessment in the ICU, one of whom expressed trust in clinicians to assess and manage pain:

"I'm satisfied with the treatment I've observed...one can monitor a patient 24/7—but I trust that the staff here... are well

trained and ethical and compassionate. So I have faith in the system.... I think the staff they by themselves are quite conscientious of making sure that their patients are comfortable and I believe...I witnessed them interacting with the patients directly enquiring as to any pain popping up" (Family member no. 2).

Discussion

To our knowledge, this is the first study to involve family members in observing pain behaviors using a behavioral pain scale in the ICU. Family members have already been solicited as proxy reporters of their loved one's pain (Puntillo et al., 2012); however, little is known regarding their experience in observing pain behaviors using a behavioral pain scale, such as the CPOT, and their perceived role in pain assessment in the ICU. This study indicates that a short training seemed sufficient to prepare them for observing pain behaviors using the CPOT, and that they appear to want more involvement in pain assessment given their unique input and intimate knowledge of the patient, which is consistent with current recommendations to involve families in the pain assessment of the nonverbal patients (Devlin et al., 2018; Herr et al., 2011).

This study suggests that a brief 15-minute one-on-one CPOT training session with written instructions was sufficient to enable family members to observe pain behaviors using the CPOT and feel comfortable in using this tool. Although the amount of instructions and guidance were not standardized across family members and without any a priori guidelines for the length of the training session, all of them were satisfied with the explanations provided within a short time frame without exceeding 15 minutes. The duration of their training session was considerably shorter than what was used to train nurses in an implementation study of the CPOT in the ICU (Gélinas et al., 2011). In this implementation study, nurses received a 60-minute standardized training during which they were taught how to use the CPOT and practiced its scoring with videos of ICU patients at rest and during turning, and guide their clinical decision process for pain management and reassessment of treatment effectiveness. Family members might have benefited from the one-on-one session to have their questions promptly clarified, although their close connection to the patient and observing a single person might have also facilitated the detection of behavioral indicators of pain by knowing what to focus on. Moreover, families were not trained in the clinical decision-making process surrounding the use of the CPOT as nurses did.

Family members scored the CPOT at rest or during procedures when they believed their loved one was in pain. Overall, the median CPOT score of 3.5 for the 10 ICU patients is above the established cutoff score for pain in the adult critically ill (i.e., >2 ; Gélinas et al., 2009) and comes in support for the ability of family members to recognize the presence of pain in their nonverbal loved ones. Half of family members observed pain behaviors using the CPOT while patients were at rest and recorded CPOT scores ≥ 2 , which are higher than what was reported in previous validation studies in which trained research staff or nurses assessed pain using the CPOT (Boitor, Fiola, & Gélinas, 2016; Echegaray-Benites et al., 2014; Joffe, McNulty, Boitor, Marsh, & Gélinas, 2016; Ross, Boitor, & Gélinas, 2016). Based on studies with adult ICU patients able to self-report, pain is present when patients are at rest (Chanques et al., 2010), and family members appeared to be able to detect its presence in the present study.

Of note, three family members reported their experience to be stressful because it involved observing their loved one in pain. High levels of stress in family members of ICU patients is common, especially in a prolonged ICU stay given the risk of loss of a loved one (Hickman, Daly, Douglas, & Clochesy, 2010; McAdam, Dracup,

White, Fontaine, & Puntillo, 2010; Petrinc & Daly, 2016; Pielmaier, Walder, Rebetz, & Maercker, 2011). Therefore family members' willingness to participate in the ICU pain management process should be sought before involving them in this potentially distressing aspect of patient care to avoid additional stress and burden. The need for education about pain management and recognition from clinicians about their role in pain management have been highlighted for family caregivers of adult cancer patients (Meeker, Finnell, & Othman, 2011) and could be further studied in the context of critical illness.

Providing family members with the CPOT allowed them to confirm their observations of pain behaviors, focus more on the patient, gain confidence in their ability to detect pain, and advocate for their loved one. Subsequently, all of them indicated the desire to be more involved in pain assessment because they provide a unique and valuable input based on their intimate knowledge of the patient and his or her behaviors, which is consistent with current recommendations to involve the family in pain assessment of the nonverbal patient (Devlin et al., 2018; Herr et al., 2011).

In the context of family-centered care in which families are active participants in the care provided to the patient (Garrouste-Orgeas et al., 2008), providing training on the CPOT use could help increase their active involvement in patient care by contributing to pain assessment of the nonverbal patient (Franck et al., 2011). ICU physicians and nurses have been found to be supportive of family participation in care; however, families tend to have low spontaneous participation in care unless clinicians encourage their involvement (Garrouste-Orgeas et al., 2010). In this study, more than half of family members (60%) mentioned that their input was not sought from clinicians regarding their loved one's pain, suggesting that families are not routinely asked to be proxy-reporters of pain. ICU nurses could partner with family members who are willing to participate in pain assessment to ensure that pain is detected in nonverbal patients. Family members could observe pain behaviors (e.g., from the CPOT) while at bedside and report to nurses so that appropriate assessments and timely interventions are initiated. Until then, future research is awaited to explore barriers and facilitators to such a nurse-family partnership and patient and family outcomes.

Implications for Nursing Education, Practice, and Research

This study suggests that family members are able to use the CPOT for observing pain behaviors in the nonverbal patient after receiving in-person training and written instructions, which gives insight into the potential that families harbor to ensure that pain is recognized in the ICU both at rest and during procedures. Educational strategies related to ICU pain assessment and management that are tailored to family members' learning needs could be further developed. Nurses should be aware of the potential stress related to pain assessment as family members witness their loved one in pain and should solicit their interest before requesting their participation in pain assessment. More research is needed to explore the interrater reliability of CPOT scores between nurses and family members and the nurses' perceptions of the use of the CPOT by family members.

Limitations

Given the voluntary participation in this study, there is the possibility of self-selection bias. The interview guide was not pilot tested, and because of time constraints, family members were not consulted for feedback after analyzing the interviews. Family members' literacy was not assessed, but participants had to be able to provide an informed written consent to take part in this study. A

larger study with more culturally diverse participants from multiple settings would have provided a broader insight into family members' views of their role in the ICU pain management process. Family members' scoring with the CPOT was not compared with other trained raters' scores to verify agreement and could be further explored. Future studies should equally seek to include family members other than the spouse or child of the patient to explore the perspectives of other family members such as siblings or cousins.

Conclusions

This is the first study to train family members on the CPOT use and involve them in observing pain behaviors of their nonverbal loved one. A short training appeared sufficient for family members to be comfortable in using the CPOT and to desire more involvement in pain assessment in the ICU. Having access to the CPOT allowed them to confirm their observations, focus more on the patient, and advocate for better pain management. Future research is needed to explore the views of more family members and to compare their CPOT scores to the ones obtained by nurses to check for interrater reliability.

Supplementary Data

Supplementary data related to this article can be found online at <https://doi.org/10.1016/j.pmn.2018.11.001>.

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