2019

The Use of Behavioral Pain Assessment Tools and Pain Outcomes in Nonverbal Patients

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THE USE OF BEHAVIORAL PAIN ASSESSMENT TOOLS AND PAIN OUTCOMES IN NONVERBAL PATIENTS

by

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A thesis submitted in partial fulfillment of the requirements
for the Honors in the Major Program in Nursing
in the College of Nursing
and in The Burnett Honors College
at the University of Central Florida
Orlando, Florida

Spring Term 2019

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ABSTRACT

Acute and critical care patients experience significantly more pain than those patients on a general nursing unit. Due to the severity of their condition, acute care patients may be nonverbal and unable to self-report their pain. Behavioral pain assessment tools are a method of objectively measuring pain in patients who are unable to communicate. While the use of these tools has been shown to improve short- and long-term outcome for patients, there is a paucity of evidence as to nurses' perceptions related to their use. The purpose of this study is to investigate acute care nurses' perceptions of the relationship between the use of behavioral pain assessment tools and pain outcomes in nonverbal patients. A survey was developed to determine the perception of this relationship. A total of 23 acute and critical care nurses participated. The survey asked multiple perception-based questions related to pain assessment and management in nonverbal patients including but not limited to, the importance of pain assessment, the frequency of use of behavioral pain assessment tools, the use of pain scores in patient hand-off, and education related to behavioral pain assessment tools. Open ended questions were also posed inquiring as to participants perceptions of the effect of using behavioral pain assessment tools on pain assessment and pain outcomes. Survey results showed a majority (82.6%, n=19) of participants think the use of behavioral pain assessment tools improves pain assessment and outcomes. Participants reported they perceive the use of these tools allows for a thorough standardized assessment which allows for the objective evaluation of pain outcomes, and ultimately, effective pain relief.

DEDICATION

For my parents, from whom I learned the value of hard work. All my accomplishments have been but a product of yours

For my grandparents, who have always been so proud of me. I wish you could have all been here to see this

ACKNOWLEDGEMENTS

This thesis would not be possible without the guidance of my thesis chair, Dr. Kelly Allred. She led me every step of the way allowing this project to come to fruition. I could not have asked for a better partner in this endeavor. Thank you to Dr. Victoria Loerzel, for taking a chance on me as a Freshman and bringing me in to the world of research. Thank you also to my committee member Dr. Heather Peralta, for continued insight and direction both here and across the world.

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CHAPTER ONE: INTRODUCTION

Most patients admitted to a critical care unit experience moderate to severe pain (Chanques et al., 2007). There is a 50% higher incidence of severe pain in both medical and surgical critical care patients as compared to a general nursing care unit (Payen et al., 2007) (Chanques et al., 2007; Payen et al., 2007). Acute pain can result in increased insomnia, anxiety, delirium, and agitation. Acute pain can also be a factor in increased morbidity and mortality in critically ill patients (Reade & Finfer, 2014). The physiologic and psychologic responses to uncontrolled pain can lead to a variety of complications, such as decreased tissue perfusion, hyperglycemia, increased risk for infection, and eventual development of chronic neuropathic pain (Barr et al., 2013).

Proper assessment of pain in critical care patients is essential in providing quality nursing care. Multiple clinical scoring tools have been evaluated which can be used to quantify pain in both verbal and nonverbal patients (Al Darwish, Hamdi, & Fallatah, 2016; Gélinas et al., 2014; Payen et al., 2001; Severgnini et al., 2016). These tools rely on self-reported numerical values for verbal patients, or the assessment of objective behaviors known to be associated with pain in nonverbal patients, to identify and determine a patient's degree of pain. Physiologic manifestations, such as changes in vital signs, although objective indicators of pain, are not considered as the most reliable because they may be influenced by disease pathology or medications (Gélinas, Fillion, & Puntillo, 2009). Facial expression, body movement or posture, verbal responses, and ventilator compliance are among some of the behavioral factors observed when using these tools (Chanques et al., 2010; Li, Puntillo, & Miaskowski, 2008). Regular use of self-report or behavioral pain assessment tools has been linked to decreased duration of

mechanical ventilation, decreased incidence of nosocomial infections, decreased length of stay in the Intensive Care Unit (ICU), and diminished frequency of pain or agitation episodes (Chanques et al., 2007; Payen, Bosson, Chanques, Mantz, & Labarere, 2009). Objective assessment of pain in nonverbal patients has also been shown to improve both short and long-term outcomes for patients (Patel & Kress, 2012). Because of this, published guidelines from professional organizations recommend the frequent use of validated scoring tools for assessing pain in critically ill patients (Herr, Coyne, McCaffery, Manworren, & Merkel, 2011; Jacobi et al., 2002).

In a large-scale survey, Rose et al. (2012) sought to document perceptions and knowledge of pain management and assessment practices among critical care nurses in Canada. The study investigated nurses use of behavioral pain assessment tools, their perceived importance, and awareness of publishes guidelines. The study included 802 critical care nurses from throughout Canada. Of these participants, 94% reported that frequent assessment and documentation of pain is important in caring for patients. The researchers also reported that pain assessment and tools were the most commonly discussed topic in professional development. However, only 29% of nurses had read any published guidelines for pain assessment, and only 33% of nurses in the Canadian survey reported using behavioral pain assessment tools for patients unable to self-report pain (Rose et al., 2012). Three behavioral pain assessment tools were reported as being most commonly used for nonverbal patients. These three were the Behavioral Pain Scale (BPS; Payen et al., 2001), Adult Nonverbal Pain Scale (NVPS; Odhner, Wegman, Freeland, Steinmetz, & Ingersoll, 2003), and Critical-Care Pain Observation Tool (CPOT; Gélinas, Fillion, Puntillo, Viens, & Fortier, 2006).

Van der Woude et al. (2016) investigated attitudes and practices regarding assessment of pain among ICU patients in the Netherlands. The study population included 84 ICU nurse managers who responded to a survey on behalf of their unit. This study reports teaching hospitals found the use of pain assessment tools more important and discuss pain assessment more often during hand-off reports than non-teaching hospitals. However, only 87% of teaching hospitals reported using behavioral pain assessment tools as compared to 100% in nonteaching hospitals. Ninety-eight percent of nurses felt their pain assessment was accurate, but only 19% of nurses reported using behavioral pain assessment tools for patients unable to self-report. Since pain assessment tools are not commonly used, it is thought that pain often goes undertreated (van der Woude, Bormans, Hofhuis, & Spronk, 2016)

Pain assessment tools are only beneficial to patients if utilized by those providing direct care. Multiple factors may contribute to whether critical care nurses use behavioral pain assessment tools. Among these are degree of education regarding their use, employer influence, knowledge of published recommendations for clinical practice, critical care experience, and perceived utility (Rose et al., 2012; van der Woude et al., 2016). Upon analysis of these tools, the BPS was found to be the most valid ($\alpha = 0.95$), while the CPOT was identified as a suitable alternative ($\alpha = 0.86$; Al Darwish et al., 2016). The Adult Nonverbal Pain Scale (NVPS) is not considered an appropriate pain assessment tool due to inconsistencies in its validity, feasibility and interrater reliability (Al Darwish et al., 2016). The BPS (91.7%) is more specific than the CPOT (70.8%), whereas the CPOT (76.5%) is a more sensitive pain assessment tool than the BPS (62.7%). Using a combination of scales when assessing pain may result in improved pain

measurement accuracy (Severgnini et al., 2016). There is still some debate over the accuracy of these tools used to assess pain, so they must be used on a case by case basis (Herr et al., 2011).

Regarding nurse's perceptions of the utility of these tools, they are reported as a feasible means to document pain, quick to use, and easy to understand. Specifically, they are shown to be a helpful tool to communicate pain assessment information to fellow nurses and other medical personnel (Gélinas et al., 2014; Manworren & Hynan, 2003). Within the literature, behavioral pain assessment tools have been discussed as important and correlated with positive patient outcomes (Patel & Kress, 2012). While there is some evidence to support the use of behavioral tools for pain assessment in nonverbal patients, additional research would be helpful. This research seeks to add to the existing body of knowledge by investigating acute care nurses' perceptions of the relationship between the use of behavioral pain assessment tools and pain outcomes in nonverbal patients.

CHAPTER TWO: METHODS

Design and Instrument

A descriptive exploratory design was used to complete this research. An electronic survey was developed by the investigator based on similar surveys used by Rose et al. (2012) and Van der Woude et al. (2016). The survey underwent several phases of review before the study began. The survey asked several questions about pain assessment and other data, including:

- Demographic information
- Professional and work setting information
- Frequency of use of behavioral pain assessment tools (BPATs)
- Perceived importance of assessing pain and use of BPATs
- Use of pain assessment information in nursing practice
- Education related to BPATs
- Open ended questions related to the use of BPATs and pain assessment

A copy of the survey can be found in Appendix A

Human Subjects

Approval was obtained from the Institutional Review Board (IRB) at the University of Central Florida (Appendix B) and a letter of support obtained from the executive board of the Metropolitan Orlando Chapter of the American Association of Critical Care Nurses (MOC-AACN) to whom the survey was distributed (Appendix C). The survey did not ask for any

identifying information. Participants were able to withdraw from the study at any time without penalty. There were no risks associated with the study.

Sample and Setting

A convenience sample was used for this study and included acute care nurses who were members of the MOC-AACN. A total of 23 nurses responded to the survey. The survey was available for registered nurses (RN) who were members of the MOC-AACN and on their email list.

Procedures

Prior to IRB approval, permission was obtained from the executive board of the MOC-AACN to speak at one of their meetings regarding this research and to distribute the electronic survey via their email list. The survey was developed using Qualtrics electronic software with a sharable link with which participants were able to access the survey. Once IRB approval was obtained, a brief presentation was given at the MOC-AACN meeting describing the background, the aims of the study, and how participants would be contributing. Following the meeting, the executive board of the MOC-AACN distributed the link to the survey through a singular email to their full email list. The survey link was kept live for two weeks. Following these two weeks, it was determined that the sample size was insufficient to draw conclusions. Approval was obtained from the MOC-AACN to send a second email, including the link to the survey, to their full email list. The survey was made live again for one week. All participants were fluent in the English language, so all written information was provided in English.

Measurements

The measures used in this study consisted of demographic information, Likert scale questions, and free-text responses to several questions. All data were collected using an electronic survey.

CHAPTER THREE: RESULTS

Demographic Data

A total of 23 nurses from the MOC-AACON participated in the study. This included 20 women and 3 men. The mean age among participants was 39.3 years and ranged from 25 to 63 years. The sample included White (n=16) and Hispanic (n=7) participants. The mean number of years in acute or critical care experience was 12.4, with a range of 1 to 31 years. The highest degree earned by the majority or participants at was a Bachelors (n=13; 57%), followed by 39% with a Masters (n=9), and 4% Doctorate (n=1). The year of graduation with their highest degree ranged from 1981-2015. As for employment status, 91% of participants (n=21) worked full-time while 9% (n=2) worked part-time. Most participants worked day-shift (95.6%; n=22) while only one worked nights (4.4%). Participants reported a variety of positions of employment including cardiac ICU (n=7), general ICU (n=5), multisystem ICU (n=2), surgical ICU (n=2), cardiac PCU (n=2), general PCU (n=2), pediatrics (n=1), float nurse (n=1), leadership (n=1), and education (n=1).

Quantitative Data

In the survey, participants were asked about the frequency of their use of BPATs using a Likert scale in which 1 was never, 2 was seldom, 3 indicated sometimes, 4 was often, and 5 indicated routinely (Appendix D). When asked about the specific frequency of assessing and assigning pain scores for a stable patient unable to communicate, 56.5% (n=13) of participants reported assigning scores once every 1-4 hours, 39.1% (n=9) reported once per hour, and 4.4% (n=1) reported doing so once every 4-8 hours.

Participants were also asked about the importance of BPATs using a different Likert scale. In this Likert scale, 1 was not important, 2 was minimally important, 3 indicated moderately important, 4 was very important, and 5 indicated extremely important. No participants reported BPATs were either not important, minimally important, or moderately important in guiding pain assessment in nonverbal patients. All participants reported the use of BPATs was either very important (n=11) or extremely important (n=12) in guiding pain assessment in nonverbal patients. No participants identified frequent pain assessment and reassessment as not important, minimally important, or moderately important for patients that are unable to communicate. In contrast, all participants reported frequent pain assessment and reassessment was either very important (n=11) or extremely important (n=12) for patients that are unable to communicate.

Almost all participants reported receiving at least some education on BPATs in nursing school (n=21; 91%), and many participants reported receiving education on BPATs during professional development or continuing education (n=17; 74%). Almost half of the participants reported being aware of published guidelines related to BPATs (n=11; 48%), with 8 of these specific participants reporting actually having read the guidelines (35%). Of the eight participants who had read published guidelines on BPATs, 100% of them reported using the tools routinely (n=6) or often (n=2) with nonverbal patients and all eight of these participants also reported they thought the use of these tools improved their pain assessment, and 7 reported they thought the use of the tools improved pain outcomes.

Participants were given a list of published BPATs and asked which ones they had used. They were also given the option to state another type they had used if it did not appear on the

list. The most commonly used BPAT was the Critical-Care Pain Observation Tool (CPOT) (65.2%; n=15), followed by the Face Legs Activity Consolability Cry (FLACC) Tool (30%; n=7), the Adult Nonverbal Pain Scale (NVPS) (26.0%; n=6), and Pain Behavior Assessment Tool (21.7; n=5). Other pain assessment tools reportedly used by the participants included the FACES scale (4.4%; n=1) and the PAINAD Scale (4.4%; n=1). The Behavioral Pain Scale (BPS) was not reported to be used by any participants. Most participants reported using one type of BPAT (44%, n=10), some reported using two types (30%; n=7), and fewer reported using either three (9%; n=2) or four (8%; n=2). One participant reported never using a specific tool but reported the documentation system used included the ability to add behaviors within the pain assessment documentation, and one participant did not provide an answer.

When participants were asked if they thought the use of BPATs helps their pain assessment in nonverbal patients, 82.6% (n=19) of participants reported yes, 13% (n=3) reported yes but only as long as it is not the only tool used, and 4.4% (n=1) reported sometimes. When asked if they thought the use of behavioral pain assessment tools improves pain outcomes for their patients, 82.6% (n=19) explicitly stated yes, 4.4% (n=1) stated sometimes, 4.4% (n=1) stated unsure, 4.4% (n=1) stated that if used alone it would under recognize pain, and 4.4% (n=1) did not provide an answer. When asked if the use of BPATs improved pain outcomes, 82.6% (n=19) reported their use does improves pain outcomes.

Qualitative Data

There were several open-ended questions as part of the survey. The first of these asked participants their opinion on the consequences of untreated pain. Seven participants reported increased suffering and patient unhappiness, 6 reported increased length of ICU stay, 5 reported

inability to participate in plan of care, and 4 reported unstable vital signs. Other common responses were poor patient outcomes, lack of trust to caregiver, anxiety/stress, and delirium; all of which were reported 3 times. One participant reported some consequences of untreated pain included “feelings of helplessness, loss of hope for recovery, regret for seeking invasive treatment, unwillingness to participate actively in recovery [such as] early mobility, PT, [and] use of incentive spirometer, and low levels of satisfaction with care.”

Another question posed was whether participants believed that BPATs helped their pain assessment. The most common response, touched on by 5 participants, was the fact that BPATs need improvement because they are not appropriate for every patient and must still be used in conjunction with a head to toe assessment. The next most common response was that BPATs provide a mechanism for assessing pain, or as one participant put it, BPATSs, “standardize pain levels to somewhat objective numbers and keeps their pain part of the conversation and an issue to be treated”. Three participants reported that BPATs help them notice pain that may not be obvious, and 2 participants stated in some cases BPATs are the only option to assess pain.

The final question posed was if participants thought the use of BPATs improved pain outcomes for their nonverbal patients. Four participants stated that the use of BPATs improved pain outcomes by allowing for better communication about pain. Three participants reported skepticism about BPATs effects on pain outcomes. Three participants reported that the use of BPATs helped them identify signs and symptoms of pain that may not be obvious. Two participants reported that the use of BPATs improves pain management interventions, of which one stated, “it enables me to implement the adequate pain management measure depending on the result of the assessment.”

CHAPTER FOUR: DISCUSSION

Overall, it is perceived that the use of BPATs in nonverbal patients provides benefits to the acute care nurse and patient. They allow for a more thorough standardized assessment, maintain pain management as a priority in the plan of care, and allow for an objective evaluation of pain management interventions. Acute care nurses find them to increase confidence in their nursing care and improve pain outcomes in their nonverbal patients. The consequences of untreated pain were well understood by all participants and BPATs appear to be accepted as a mechanism to prevent pain.

As compared to Rose et al. (2012) in which 94% of participants reported the use of BPATs as important for patients unable to communicate, 100% of participants in this study reported that the use of BPATs for nonverbal patients was very important (n=11) or extremely important (n=12). Surprisingly, despite having similar ratings for the importance of BPATs, only 33% of participants in the Rose et al. (2012) study reported using BPATs whereas 87% of participants in this study reported using BPATs often (n=4) or routinely (n=16) in patients unable to communicate. Only 19% of participants in the study done by van der Woude et al. (2016) reported using BPATs in nonverbal patients (2016).

It is possible that although participants in this study are using BPATs they may not be using them correctly. When asked if they used BPATs for patients able to communicate, 26% (n=6) of participants reported using BPATs often (n=3) or routinely (n=3). If the patient can communicate, there is no reason to use a BPAT as the verbal self-report is considered the standard for pain assessment in that circumstance. These concerning findings indicate that education regarding the use of BPATs may be insufficient in this sample.

Although the use of BPATs was widely accepted by participants, many still voiced concerns that BPATs are not appropriate for every patient and may not always be accurate; thus supporting the position presented by Herr et al. (2011) who states the use of these tools should be used depending on the patient's specific situation and circumstance. These tools have excellent utility and potential to improve pain outcomes, but it is important to consider their limitations.

Participants who received more education, read published guidelines, and discussed scores from behavioral assessment tools more frequently during patient hand-off, appear to use them more often in nonverbal patients, and think they improve pain assessment and pain outcomes for nonverbal patients in a higher proportion. Familiarity with these tools increases confidence in an acute care nurse's ability to use them, thus they may perceive a greater benefit from their use.

Limitations

The results of this study cannot be generalized to all acute and critical care nurses due to the small number of participants and all participants were practicing in a similar geographic area. Also, it is possible that only those nurses who were familiar with BPATs and regularly use them responded to the survey, thus it may be unreflective of all acute care nurses. This survey's results are reflective of this individual local chapter of the AACN but may not be cohesive with the perception of nurses from other locations. A larger sample size that targeted acute care nurses at a national level would yield more conclusive results.

Recommendations for Education and Practice

This survey established that acute care nurses do receive education regarding the use of BPATs but that it may be insufficient to provide the necessary confidence to implement them

into practice. It would be advisable to increase the hours spent educating nurses on the use of these tools so when they practice, they routinely use them when needed. It may also be advisable for facilities to implement a policy that behavioral pain assessment scores are an expected part of patient care for the nonverbal patient and included in patient hand-off communication. This would allow for a more objective evaluation of pain in nonverbal patients.

Recommendations for Future Research

Future research should look at whether the use of BPATs impacts pain outcomes in nonverbal patients; looking beyond nurse's perceptions. Further studies could also investigate nurse's perceptions as to what type of pain management interventions are most effective for nonverbal patients. It could also be investigated if hospitals with policies related to the use of BPATs score higher on patient satisfaction surveys.

APPENDIX A: DATA COLLECTION INSTRUMENT

Question	Response				
1. By clicking yes you give consent to participate in the survey	Yes				
2. How many years of acute or critical care nursing experience do you have?					
3. What is the highest qualification you possess?	Diploma	Bachelors	Masters	Doctorate	
4. What year did you graduate with your highest degree in nursing?					
5. What is your employment status?	Full-time	Part-time	Casual (as-needed)		
6. What type of shift do you work?	Days only	Nights only	Rotating		
7. What type of nursing unit do you work on?					
8. What is your age?					
9. What is your Gender?	Male	Female	Other		
10. What is your ethnicity/Race	White	African American	Hispanic	Asian American	Other
11. How often do you use behavioral pain assessment tools for patients **able** to communicate?	Never	Seldom	Sometimes	Often	Routinely
12. How often do you use behavioral pain assessment tools for patients **unable** to communicate?	Never	Seldom	Sometimes	Often	Routinely
13. If you do not use a behavioral pain assessment tool, please explain your method of assessing pain.					
14. How important is the use of behavioral pain assessment tools to guide pain assessment in nonverbal patients?	Not	Minimally	Moderately	Very	Extremely
15. How often do you assess and assign pain scores for a stable patient unable to communicate?	Once an hour	Once every 1-4 hours	Once every 4-8 hours	Once every 12 hours	Never

16. How important is frequent pain assessment and registration for patients that are unable to communicate?	Not	Minimally	Moderately	Very	Extremely
17. In your opinion, what are the consequences of untreated pain?					
18. How often do you use behavioral pain assessment tools to guide the treatment plan related to pain?	Never	Seldom	Sometimes	Often	Routinely
19. Click on behavioral pain assessment tools that you have used	Critical-care pain observation tool (CPOT)	Behavioral Pain Scale (BPS)	The Adult Nonverbal Pain Scale (NVPS)	Pain Behavior Assessment Tool	Face Legs Activity Consolability Cry (FLACC) Tool
	Others				
20. How often is pain management discussed during patient hand-off?	Never	Seldom	Sometimes	Often	Routinely
21. How often are scores from behavioral pain assessment tools discussed in patient handoff?	Never	Seldom	Sometimes	Often	Routinely
22. How often did you receive education regarding behavioral pain assessment tools in nursing school?	Never	Seldom	Sometimes	Often	Routinely
23. Have you received education regarding behavioral pain assessment tools during professional development or continuing education?	Yes	No			
24. Are you aware of any published guidelines of behavioral pain assessment tools?	Yes	No			
25. If yes, have you read any published guidelines on the use of behavioral pain assessment tools?	Yes	No			

26. If yes, how often have you read published guidelines regarding the use of behavioral pain assessment tools?	Never	Seldom	Sometimes	Often	Routinely
27. Do you think the use of behavioral pain assessment tools helps your pain assessment? Explain.					
28. Do you think the use of behavioral pain assessment tools improves pain outcomes for your patients? Explain					

APPENDIX B: IRB APPROVAL LETTER

University of Central Florida Institutional Review Board
Office of Research & Commercialization
12201 Research Parkway, Suite 501
Orlando, Florida 32826-3246
Telephone: 407-823-2901 or 407-882-2276
www.research.ucf.edu/compliance/irb.html

Determination of Exempt Human Research

From: **UCF Institutional Review Board #1**
FWA00000351, IRB00001138

To: **Kelly D Allred** and Co-PI **Patrick Healy**

Date: **July 30, 2018**

Dear Researcher:

On 07/30/2018, the IRB reviewed the following activity as human participant research that is exempt from regulation:

Type of Review:	Exempt Determination, Category 2
Project Title:	Acute Care Nurses' Perceptions of the Relationship between the Use of Behavioral Pain Assessment Tools and Pain Outcomes in Nonverbal Patients
Investigator:	Kelly D Allred
IRB Number:	SBE-18-14199
Funding Agency:	
Grant Title:	
Research ID:	N/A

This determination applies only to the activities described in the IRB submission and does not apply should any changes be made. If changes are made and there are questions about whether these changes affect the exempt status of the human research, please contact the IRB. When you have completed your research, please submit a Study Closure request in iRIS so that IRB records will be accurate.

In the conduct of this research, you are responsible to follow the requirements of the Investigator Manual.

This letter is signed by:

Signature applied by Renea C Carver on 07/30/2018 02:38:43 PM EDT

Designated Reviewer

APPENDIX C: EMAIL FROM MOC-AACN

From: “Mahramus, Tara L.” <tara.mahramus@orlandohealth.com>
Date: June 15, 2018 at 9:08AM
To: “Kelly Allred” <kelly.allred@ucf.edu> ; “Patrick Healy” <patrickhealy@knights.ucf.edu> ; “Suzanne Tubbs” <suzanne.tubbs@flhosp.org>
Subject: RE: Possibly Attend your Meeting?

Our board agreed to have you present your study and email the link to our members through our website. July and August months serve as our transition period. Would you prefer to present to the board only or wait to present in front of a group of chapter members in September? Our meetings are always the second Tuesday of each month
starting at 6pm for the board meeting and our educational meeting for our chapter members starts at 7:30 pm.

Once presented we could work with you on an announcement to post to our website, with the link to your survey attached.

Tara Mahramus, MSN, CNS, CCRN, CCNS

Clinical Nurse Specialist

CCU and MSICU

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APPENDIX D: RESULTS

Table 1: Likert Scale Responses

Survey Question	Never **n(%)**	Seldom **n(%)**	**Response** Sometimes **n(%)**	Often **n(%)**	Routinely **n(%)**
How often do you use behavioral pain assessment tools for patients *able* to communicate?	3(13%)	9(39%)	5(22%)	3(13%)	3(13%)
How often do you use behavioral pain assessment tools for patients *unable* to communicate?	1(4%)	0(0%)	2(9%)	4(17%)	16(70%)
How often do you use behavioral pain assessment tools to guide the treatment plan related to pain?	2(9%)	7(30%)	5(22%)	2(9%)	7(30%)
How often is pain management discussed during patient hand-off?	0(0%)	0(0%)	2(9%)	4(17%)	17(74%)
How often are scores from behavioral pain assessment tools discussed in patient handoff?	3(13%)	3(13%)	6(26%)	5(22%)	6(26%)
How often did you receive education regarding behavioral pain assessment tools in nursing school?	1(4%)	8(35%)	8(35%)	3(13%)	3(13%)

Likert Scale: Never = 1; Seldom = 2 ; Sometimes = 3 ; Often = 4 ; Routinely = 5

REFERERENCES

Al Darwish, Z. Q., Hamdi, R., & Fallatah, S. (2016). Evaluation of pain assessment tools in patients receiving mechanical ventilation. *AACN Advanced Critical Care, 27*(2), 162-172. doi:10.4037/aacnacc2016287

Barr, J., Fraser, G. L., Puntillo, K., Ely, E. W., Gélinas, C., Dasta, J. F., . . . Skrobik, Y. (2013). Clinical practice guidelines for the management of pain, agitation, and delirium in adult patients in the intensive care unit. *Critical Care Medicine, 41*(1), 263-306. doi: 10.1097/CCM.0b013e3182783b72

Chanques, G., Sebbane, M., Barbotte, E., Viel, E., Eledham, J., & Jaber, S. (2007). A prospective study of pain at rest: Incidence and characteristics of an unrecognized symptom in surgical and trauma versus medical intensive care unit patients. *Anesthesiology, 107*(5), 858-860.

Chanques, G., Viel, E., Constantin, J. M., Jung, B., Lattre, S., Carr, J., . . . Jaber, S. (2010). The measurement of pain in intensive care unit: Comparison of 5 self-report intensity scales. *Pain (03043959), 151*(3), 711-721. doi:10.1016/j.pain.2010.08.039

Gélinas, C., Fillion, L., & Puntillo, K. A. (2009). Item selection and content validity of the Critical-Care Pain Observation Tool for non-verbal adults. *Journal of Advanced Nursing, 65*(1), 203-216. doi:10.1111/j.1365-2648.2008.04847.x

Gélinas, C., Fillion, L., Puntillo, K. A., Viens, C., & Fortier, M. (2006). Validation of the critical-care pain observation tool in adult patients. *American Journal of Critical Care, 15*(4), 420-427.

Gélinas, C., Ross, M., Boitor, M., Desjardins, S., Vaillant, F., & Michaud, C. (2014). Nurses' evaluations of the CPOT use at 12-month post-implementation in the intensive care unit. *Nursing in Critical Care, 19*(6), 272-280. doi:10.1111/nicc.12084

Herr, K., Coyne, P. J., McCaffery, M., Manworren, R., & Merkel, S. (2011). Pain assessment in the patient unable to self-report: Position statement with clinical practice recommendations. *Pain Management Nursing, 12*(4), 230-250. doi:10.1016/j.pmn.2011.10.002

Jacobi, J., Fraser, G. L., Coursin, D. B., Riker, R. R., Fontaine, D., Wittbrodt, E. T., . . . Lumb, P. D. (2002). Clinical practice guidelines for the sustained use of sedatives and analgesics in the critically ill adult. *Critical Care Medicine, 30*(1), 119-141.

Li, D., Puntillo, K., & Miaskowski, C. (2008). A review of objective pain measures for use with critical care adult patients unable to self-report. *Journal of Pain, 9*(1), 2-10.

Manworren, R. C. B., & Hynan, L. S. (2003). Practice applications of research. Clinical validation of FLACC: Preverbal patient pain scale. *Pediatric Nursing, 29*(2), 140-146.

Odhner, M., Wegman, D., Freeland, N., Steinmetz, A., & Ingersoll, G. L. (2003). Assessing pain control in nonverbal critically ill adults. *Dimensions of Critical Care Nursing, 22*(6), 260-267.

Patel, S. B., & Kress, J. P. (2012). Sedation and analgesia in the mechanically ventilated patient. *American Journal of Respiratory & Critical Care Medicine, 185*(5), 486-497.

Payen, J., Bru, O., Bosson, J., Lagrasta, A., Novel, E., Deschaux, I., . . . Jacquot, C. (2001). Assessing pain in critically ill sedated patients by using a behavioral pain scale. *Critical Care Medicine, 29*(12), 2258-2263.

Payen, J. F., Bosson, J. L., Chanques, G., Mantz, J., & Labarere, J. (2009). Pain assessment is associated with decreased duration of mechanical ventilation in the intensive care unit: A post hoc analysis of the DOLOREA study. *Anesthesiology, 111*(6), 1308-1316. doi:10.1097/ALN.0b013e3181c0d4f0

Payen, J.-F., Chanques, G., Mantz, J., Hercule, C., Auriant, I., Leguillou, J.-L., . . . Bosson, J.-L. (2007). Current practices in sedation and analgesia for mechanically ventilated critically ill patients: A prospective multicenter patient-based study. *Anesthesiology, 106*(4), 687-695.

Reade, M. C., & Finfer, S. (2014). Sedation and delirium in the intensive care unit. *New England Journal of Medicine, 370*(5), 444-454. doi:10.1056/NEJMra1208705

Rose, L., Smith, O., GÃ©linas, C. l., Haslam, L., Dale, C., Luk, E., . . . Watt-Watson, J. (2012). Critical care nurses' pain assessment and management practices: A survey in Canada. *American Journal of Critical Care, 21*(4), 251-259. doi:10.4037/ajcc2012611

Severgnini, P., Pelosi, P., Contino, E., Serafinelli, E., Novario, R., & Chiaranda, M. (2016). Accuracy of Critical Care Pain Observation Tool and Behavioral Pain Scale to assess pain in critically ill conscious and unconscious patients: prospective, observational study. *Journal of Intensive Care, 4*, 68-68.

van der Woude, M. C. E., Bormans, L., Hofhuis, J. G. M., & Spronk, P. E. (2016). Current use of pain scores in Dutch intensive care units: A postal survey in the Netherlands. *Anesthesia and Analgesia, 122*(2), 456-461. doi:10.1213/ANE.0000000000000972