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Implementation of a Functional Pain Scale in an Adult Cancer Center

Kristine Pantchenko BSN, RN

A DNP project submitted in partial fulfillment of the requirements for the degree of Doctor of
Nursing Practice

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Sacred Heart University Davis & Henley College of Nursing

March 2022

This is to certify that the DNP Project Final Report by

Kristine Pantchenko

has been approved by the DNP Project Team on

April 16, 2023

for the Doctor of Nursing Practice degree

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Abstract

Background

Best practices include assessing functional status in addition to pain intensity in patients with cancer experiencing pain. The Defense and Veterans Pain Rating Scale (DVPRS) is an effective tool for assessing pain intensity and functional status in patients with cancer.

Objective

To improve pain assessment among outpatient oncology patients in an adult cancer center by implementing the DVPRS and evaluating patient and nurse satisfaction with this tool.

Methods

The Model for Healthcare Improvement was followed for the planning, implementation, and evaluation of this project. Nurses completed an online education module and self-assessment quiz before an in-person simulation checkoff demonstrated their correct use and documentation in the EHR of the DVPRS. Weekly audits of the electronic health record (EHR) for DVPRS use and documentation were done. Patient satisfaction was measured after each use of the DVPRS. Nurse satisfaction with the DVPRS was measured at the end of the 5-week pilot.

Results

Ten of 12 (83%) nurses completed the DVPRS education and simulation check-off. The pilot was from February 13, 2023, to March 17, 2023. Documentation of DVPRS use was zero in the first two weeks. A midcycle assessment resulted in giving the nurses real-time reminders to use the DVPRS, and where and how to document its use in the EHR. Weeks three through five showed a steady increase in DVPRS use with 3 (15%), 5 (20%), and 8 (40%), respectively. Patient satisfaction was recorded by five patients in week 4 only with a mean score of 6.6

indicating a positive experience. In week five, nurse satisfaction was recorded by 7 (70%) nurses with a mean score of 3.62 indicating neutral/agreement with the DVPRS use.

Conclusions

Adoption of the DVPRS to assess pain and functional status in this outpatient adult oncology center was limited. When the DVPRS was used, patients were satisfied. For the next cycle of change nurse buy-in should be evaluated and having APRNs and MDs assess patients' pain using the DVPRS should be part of the process improvements.

Keywords: Defense and Veterans Pain Rating Scale, functional pain assessment, oncology, cancer, pain assessment, pain rating scale

Problem Identification

Background and Significance of the Practice Problem

Pain is one of the most common symptoms that cancer patients report. At least half of patients regardless of cancer stage experience pain (Fink & Gallagher, 2019). It is estimated that up to 80% of cancer patients with advanced disease suffer from severe pain that negatively impacts their activities of daily living, mood, sleep, relationships, and social functioning (Cluxton, 2019). Untreated pain can hinder recovery and develop into chronic pain syndromes.

The assessment of cancer-related pain is challenging because of its subjective nature. Cancer patients reporting pain should have a comprehensive pain assessment that includes the PQRST or OLD CART method of pain assessment and the impact of the pain on functional status (Fink & Gallagher, 2019). A correct comprehensive pain assessment is the precursor to satisfactory pain management. However, there are barriers to the comprehensive pain assessment of cancer patients in health systems. These barriers include health care professionals' inadequate knowledge of pain assessment and failure to use reliable and valid pain assessment tools, and lack of health system infrastructure to support global assessment and documentation of pain in the electronic health record (Fink & Gallagher, 2019).

National Description

There are various methods currently used to assess pain in the United States, however the self-reporting of pain remains the gold standard (Cluxton, 2019). Focused pain assessments typically include a history and etiology of the pain, pain characteristics, pain intensity, and the duration of pain in response to provoking activities and analgesic treatments (Portenoy & Dhingra, 2022). Mnemonics such as OLDCART, PQRST, and WILDA are used to effectively perform a comprehensive pain assessment that elicits information about the intensity, location,

type, quality, temporality, history, and radiation of pain (Fink & Gallagher, 2019). Pain intensity scales are commonly used in healthcare settings to facilitate communication between the patient and provider and trend treatment response and aggravating factors that exacerbate the pain (Fink & Gallagher, 2019). Pain intensity scales, which include the numeric rating scale (NRS), verbal descriptor scale (VDS), Wong-Baker FACES pain scale, and Faces Pain Scale-Revised (FPS-R), use a numeric scale, categorical scale, or picture scale to illicit information about how patients are currently feeling and their goals of pain control (Cluxton, 2019; Fink & Gallagher, 2019).

Some healthcare settings are combining the NRS with verbal rating scales, such as the VDS, to improve patients' comprehension of the numbers as they relate to the degree of pain (Portenoy & Dhingra, 2022). The modified version of the two existing tools would associate mild pain with a numeric rating of one to five, moderate pain with a rating of six, and severe pain with a rating of seven to ten (Portenoy & Dhingra, 2022). The association of numbers to meaningful word descriptors is an effective way of measuring pain intensity, however neither tool will encourage a discussion about the interference pain has on activities of daily living (Portenoy & Dhingra, 2022). The distress thermometer, brief pain inventory, McGill Pain questionnaire, Memorial Pain questionnaire, and Edmonton symptom assessment scale are used to measure the location and severity of pain in addition to the level of impairment due to pain (Cluxton, 2019; Portenoy & Dhingra, 2022). These novel tools are effective in identifying symptom clusters while addressing the psychological, physical, and spiritual aspects of pain (Cluxton, 2019). The brief pain inventory is a patient self-rating scale that discusses pain intensity and its effect on functional status (Portenoy & Dhingra, 2022). The McGill Pain questionnaire assesses the sensory, affective, and evaluative components of pain (Portenoy & Dhingra, 2022). The Memorial Pain questionnaire measures pain intensity, pain relief, and mood

using visual analogue and verbal scales (Portenoy & Dhingra, 2022). The Alberta Breakthrough Pain Assessment tool is used to measure breakthrough pain, which is an ongoing issue in cancer patients and can present as incident pain, idiopathic pain, and end-of-dose failure pain (Fink & Gallagher, 2019).

In current practice, nursing staff uses the pain intensity rating scales to assess pain (Portenoy & Dhingra, 2022). Pain intensity scales fall short on key aspects of a thorough pain assessment by neglecting to discuss the impact pain has on quality of life. Furthermore, pain assessment tools that illicit additional information about functional aspects of pain are not consistently used, which makes it difficult to track pain over time and judge the patient's response to therapeutic interventions (Portenoy & Dhingra, 2022).

According to the National Comprehensive Cancer Network (NCCN) guidelines, quality of life and survival are improved in patients who receive early and effective palliative care and pain management (Swarm et al., 2019). The numerical rating scale (NRS) is the recommended pain scale for the assessment of adult cancer-related pain, which distinguishes three levels of pain intensity based on a numerical rating scale (Swarm et al., 2019). In some instances, the NRS may be combined with pictographic or colored scales to improve the patient's understanding of the meaning of the numbers as they relate to the intensity of pain (Portenoy & Dhingra, 2022). The NRS rates pain as mild, numbers one to three, moderate, numbers four through seven, and severe, numbers eight through ten, and adjusts treatment interventions based on the degree of pain (Swarm et al., 2019). Providers are encouraged to assess pain using the NRS algorithm and to individualize pain management based on goals that are specific to the patient. The Five A's, also known as the five goals of pain management, consist of analgesia, activities, adverse events, aberrant drug taking, and affect and aim to optimize pain relief and psychosocial functioning,

minimize adverse events, avoid addiction related outcomes, and develop accurate associations between pain level and mood (Swarm et al., 2019). Per NCCN guidelines, it is recommended for providers to offer psychological support at the initiation of the first pain assessment and to reevaluate the patient's behavior and mood at each visit (Swarm et al., 2019). Patients should be offered physical, cognitive, and spiritual modalities in conjunction with pharmaceuticals to holistically treat the patient and decrease adverse effects, which is not consistently done in practice (Swarm et al., 2019). By introducing a reliable tool that measures pain and its biopsychosocial impact on functional status, patients are more likely to receive adjuvant therapies that better manage the pain and decrease the overuse of analgesic medications (Swarm et al., 2019). The NCCN guidelines also encourage providers to trend pain over time and adjust the treatment if pain is severe, not improved, or increased from baseline (Swarm et al., 2019). As a result of the insufficient trending of pain, in part due to a lack of standard pain assessment documentation for comparison, it is difficult to monitor pain across the care continuum (Swarm et al., 2019). Poor trending of pain can lead to over and under prescribing of analgesic medications, unmanaged pain, and decreased quality of life and poor patient outcomes (Swarm et al., 2019).

Local Description

The adult cancer center (ACC) encourages nurses to perform a pain assessment on all patients seen in clinic. In May 2021, a revised hospital pain screening assessment and reassessment policy was issued in an effort to achieve clinical standardization and regulatory compliance. The implementation of a revised plan supports the Joint Commission (JC) standards, which requires ambulatory care centers to establish a pain assessment and management model for accreditation. ACC utilizes the temperature scale (TS) and NRS to quantify pain, and

although compliance in assessing and documenting pain is mandatory, the biopsychosocial aspects of pain are not being measured. The TS and NRS are valid and reliable pain rating tools, however, they do not capture the functional limitations associated with pain. To address the functional aspects of acute and chronic pain, a biopsychosocial scale should be used to measure the effect pain has on mood and behavior (Polomano et al., 2016). The assessment and management of pain in the ambulatory oncology setting is an ongoing challenge and leads to the over-and-under prescribing of analgesics, situational prescribing without comparison to prior data, and a decline in the appropriate referrals to pain management based on chronicity and the complexity of care (Personal communication ACC nurse educators, February 07, 2022). The ability for nurses to objectively measure pain based on functional status and quality of life would illicit valuable information that can be used to guide the treatment plan and patient response.

Development of Clinical Question

A literature search was conducted for evidence to answer the clinical question in PICO format; in adult oncology patients (P) how does a combined pain intensity and functional assessment tool (I) compared to usual assessment (C) affect pain assessment (O)?

Evidence Review

Systematic Search for Evidence: Process

The search was conducted using CINAHL Complete, MEDLINE full text, and Cochrane Database of Systemic reviews libraries to answer the PICO question, in adult oncology patients (P) how does a combined pain intensity and functional assessment tool (I) compared to usual assessment (C) affect pain assessment (O)? The initial search strategy involved typing in keywords into each database with the limit of publishing year between 2011 and 2021. The search was further limited after obtaining the number of hits by narrowing the search to adult

patients and English language. MeSH terminology was applied to the keywords used to search MEDLINE full text and Cochrane Database of Systemic Reviews, and full text subject headings were used for CINAHL Complete with full text. Keywords used in the search included ‘pain,’ ‘pain assessment,’ ‘Defense and Veterans Pain Rating Scale’ or ‘DVPRS,’ ‘pain rating,’ ‘adult patients,’ ‘nursing documentation,’ ‘pain perception,’ and ‘electronic health record*’. The keywords were combined using Boolean connectors of ‘and,’ ‘or,’ and an asterisk. Adding the keywords ‘Defense and Veterans Pain Rating Scale or DVPRS,’ ‘nursing documentation,’ ‘pain perception,’ and ‘pain assessment’ significantly reduced the amount of hits received. Inclusion criteria for article selection were pain scales, pain documentation or measurement, pain assessment, or pain rating, and Defense and Veterans Pain Rating Scale or DVPRS. CINAHL and MEDLINE yielded a substantial number of hits but many of the results were duplicates. Cochrane yielded few hits relevant to my selection criteria and often presented the same results despite the keywords entered. When keywords were combined with Defense and Veterans Pain Rating Scale or DVPRS the results were limited, but the articles found were pertinent to the project topic and deemed as keepers based on the title, abstract, and content of the articles. Search terms and results for CINAHL, MEDLINE, and Cochrane Libraries and the final figure of keepers are displayed (Appendix A).

Systematic Search for Evidence: Results

The DVPRS and DoD/VA pain supplemental questions (DVPRS) are recent tools that combine pain intensity and functional questions for pain assessment that were established in 2013, and the existing studies have small sample sizes and focus on piloting the tool in different settings and populations. All studies pertaining to the DVPRS were considered for use to contribute to the body of evidence on the topic. One article was excluded from the selection

because although it included the DVPRS in the title, the article did not discuss the assessment of pain in the abstract. A comprehensive evidence search was performed using CINAHL, MEDLINE, and Cochrane Library databases, of which 198,919 articles about pain were in CINAHL, 642,369 articles from MEDLINE, and 415 articles from Cochrane (Appendix B). Search terms were narrowed to include the ‘DVPRS’ as a keyword, which yielded 27 results from CINAHL, 37 results from MEDLINE, and none from Cochrane Library, with a total of four duplicate articles from CINAHL and 13 articles from MEDLINE, which was reduced to four articles from CINAHL and five articles from MEDLINE, including duplicates, selected for GAO/RCA evaluation, of which all but one article were deemed keepers. One article was rejected as a keeper because it discussed neuropathic pain and did not give inference to the reliability and validity of the DVPRS and DoD/VA tools on pain assessment. The final yield from all databases was a total of four articles (Appendix C).

Critical Appraisal of Evidence

Rapid Critical Appraisal

All four keeper articles were critically appraised using Melnyk and Fineout-Overholt rapid critical appraisal tools (Melnyk & Fineout-Overholt, 2019). The first article was a randomized clinical trial with a LOE II that showed that the DVPRS was superior to other pain scales (Polomano et al., 2016). The second article was a prospective cohort design with a LOE II that showed acceptable reliability and validity and has implications for standardizing pain assessment practices throughout the military and veteran health care settings, improving screening practices, and providing a minimum set of patient-reported outcomes for improved communication and documentation across all transitions of care (Buckenmaier et al., 2013). The

third article was a quality improvement project with a LOE IV with results that showed the DVPRS to be preferred by patients and nurses than the NRS (Blackburn et al., 2018).

The fourth article was a pilot study with a LOE VI with results that showed ICU patients preferred the DVPRS to the NRS for assessing pain, and that the DVPRS was as effective as the NRS at promoting pain relief in ICU patients (Banks et al., 2021).

Evaluation and Synthesis

Appendix C displays the Evaluation Summary Table with the pertinent details for each article. Appendix D has the summary of the LOE for the four articles that ranged from level II to level VI. There were no randomized control trials evaluating the effectiveness of the DVPRS compared to other pain assessment scales. Appendix E is the outcome synthesis table and provides pertinent findings from each of the four studies. The DVPRS was easy to use, heightened patients' understanding of the pain scale, increased patient satisfaction, clarified pain rating, improved nursing satisfaction, enhanced pain medication administration, and contributed to providers' improved understanding of the pain levels.

Recommendation

According to the evidence (Appendix C, D, E) the DVPRS is regarded as superior to existing and previously mentioned pain scales for improving patient satisfaction, ease of use, and interpretability of the pain scale (Blackburn et al., 2018; Buckenmaier et al., 2013; Banks et al., 2021; Polomano et al., 2016). Higher LOE articles were not generalizable to my clinical practice area, however, newer pilot studies showed favorable results supporting the use of the DVPRS in acute care and oncology settings (Banks et al., 2021; Blackburn et al., 2018). The quality of evidence is good for all articles, and the findings support this practice change in my clinical setting. The implementation of the DVPRS did not present with any risks to the patients, such as

a change or withdrawal from treatment, making this a safe study to perform in my clinical setting. The recommendation is to pilot the DVPRS on the outpatient oncology unit (OOU) at the ACC.

Project Plan

Project Goals

1. To improve pain assessment in OOU patients by using DVPRS in 50% of patients by week 1 and increase by 10% each week until reaching the goal of 90% as measured by chart audits.
2. Evaluate nurse satisfaction with DVPRS pain assessment as measured by nurse satisfaction survey.
3. Maintain patient satisfaction in DVPRS pain assessment with scores of 6 or greater as measured by one-question survey.

Project Team and Roles

Table 1. displays the project team members and their role in the project.

Table 1.

Project Team and Roles

| Team Member | Role |
|--------------------------------------|-----------------------------------|
| DNP student | Project Manager |
| Manager of Outpatient Oncology Unit | Practice Mentor |
| Director of Ambulatory Cancer Center | QI projects in oncology expertise |
| DNP professor | Project Faculty Advisor |

EBP/QI Model/Implementation Model

The Institute for Healthcare Improvement (IHI) Model for Improvement (MFI) and the ADKAR Change Model (AKDAR CM) are selected as the models to guide this project

implementation (Appendix F). The MFI asks three fundamental questions that can be applied to this DNP project in the following ways: The goal of this project is to improve the interpretability of the pain scale; The DVPRS will be piloted on the OOU because the evidence supports its use in improving the interpretability of the pain scale compared to the NRS; Assessing if the change is an improvement will be done by measuring the project metrics of nursing confidence in pain assessments, nursing adherence to standardized documentation, and patient satisfaction in pain assessments (AHRQ, 2013; Armstrong & Sable-Baus, 2020). The other components to the MFI (forming a team, setting aims, establishing measures, selecting changes, testing changes, and spreading changes) will be addressed in other sections of the project plan. The tool for assessing readiness for change from the ADKAR CM model was used to assess the organization and is described in the section on Organizational Assessment.

Organizational Assessment

An assessment of the organization was performed to determine the readiness for change of the OOU. Table 2 displays the answers to the five essential change ideas from the ADKAR CM that must be addressed before the QI project can be implemented. Based on this assessment, areas of concern are that this project will not be easy to implement and the intervention may not enhance patient satisfaction with pain assessments. Strategies to facilitate the implementation are addressed in the sections on Key Stakeholders and Barriers. An organizational assessment of the OOU was performed to address their readiness for change (Appendix G).

Table 2.*Readiness for Change Idea Supported by ADKAR Change Model*

| Change Idea | Awareness: Evidence to Support | Desire: Available Resources | Knowledge: Easy to Implement | Ability: New Innovation | Reinforcement: Advantage Over Current Process | Total |
|---------------------------------------------------------|---------------------------------------------------|--------------------------------------------|---------------------------------------------|----------------------------------------|----------------------------------------------------------------------|--------------|
| Increase nursing confidence in pain assessments | Yes | Yes | No | Yes | Yes | 4 |
| Improve nursing adherence to standardized documentation | Yes | Yes | No | Yes | Yes | 4 |
| Enhance patient satisfaction in pain assessments | Yes | Unsure | No | Yes | Yes | 3 |

Context/Description of the Setting

The QI project will be piloted on an OOU at the ACC. The OOU is a Multiple Myeloma ambulatory oncology clinic that has 15 clinic rooms which will be utilized to perform the pain assessments. Approximately 100 patients are seen per day and five days a week at the Multiple Myeloma clinic at the OOU. The model of care that is followed is interdisciplinary and includes medical assistants taking vital signs, drawing labs, and performing NRS based pain assessments; nurses performing a NRS based pain assessment, general review of systems, medication reconciliation, and review of allergies; nurse practitioners or physician's assistants performing a focused review of systems and physical assessment, in addition to a comprehensive pain

assessment using the OLDCART or PQRST mnemonics. This project will focus on the nurses using the DVPRS to assess pain.

Description of the Population

The population of interest is outpatient oncology patients who are seen on the OOU at the ACC.

Description of Practice Change

The practice change for this project is to implement the DVPRS on the OOU at the ACC to improve the interpretability of pain assessment. As previously described, the MFI is the model supporting the planning, implementation, and evaluation of this project. In this section, the first PDSA cycle is described.

Plan: How will this be tested? The key stakeholders and staff for this project are identified in Table 4 along with buy-in strategies. The local problem, project team, goals, context, and organizational assessment are described in prior sections. Prior to implementing the DVPRS the DNP student will seek the approval and exemption from the practice setting Institutional Review Board. Initial approval to do the project was obtained from the Director of the ACC. On the recommendation of the Director of the ACC to the DNP student, project buy-in was obtained from the nursing education department and IRB.

Table 4.

Key Stakeholders, Staff, and Buy-in Strategies

| Key Stakeholder or Staff | Buy-in Strategy |
|--------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Nurses in OOU | <ul style="list-style-type: none"> • Identify the nurses who are early adopters of the DVPRS and leverage their support to encourage the other nurses. • Give a presentation on the unit to provide an overview of the QI project, goals of the project, and evidence supporting the use of the DVPRS tool. • The project manager will be present on the unit for questions or concerns twice per week for four weeks. |

| | |
|----------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Patients in OOU | <ul style="list-style-type: none"> • Inform nurses that their commitment to the QI project will be rewarded with a catered lunch following the pilot. • Print out 10% more DVPRS tools than the average number of patients seen in one week. This will require reviewing clinic schedules one week in advance. • Make the surveys easy to read and comprehend. • Have the survey drop box easily visible to patients in the waiting room. • Ensure that nurses are proficient in performing pain assessments using the DVPRS before having them use the tool on patients. |
| Members of pain committee | <ul style="list-style-type: none"> • Provide literature to support the use of the DVPRS to the pain committee. • Introduce the concept of the functional pain questions and provide literature to support its benefit in assessing and managing pain. • Provide a copy of the resource binder for the pain committee. • Explain that contact information to initiate referrals to the supportive oncology clinic will be included in the nurses' resource binder. |
| Nursing Research Council at practice setting | <ul style="list-style-type: none"> • Share the project proposal with members who are interested in improving pain assessment and documentation |

Table 5. displays the potential barriers and mitigation plan for this project.

Table 5.

Barriers and Mitigation Plan

| Barriers | Facilitators/Mitigation Plan |
|-----------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Lack of stakeholder buy-in | Share evidence on use of a pain intensity and functional assessment tool to improve interpretability of pain assessment in this patient population |
| Lack of readiness to change Limited time for staff education | Identify change agent/nurse champions on all shifts Online educational sessions and simulation checkoffs across all shifts that are shared with nurses and staff several weeks in advance. |
| Inconsistent use of DVPRS tool | Resource binder on unit Laminated cards with DVPRS on one side and functional questions on the other side. Providing incentives for consistent use of the DVPRS tool |

Nurse attrition from the pilot

Performing frequent rounds to stimulate sustained interest in the project

Do: What is the Intervention? The practice change will begin by using the hospital intranet to email the information on how to access the online education module. The DNP student has access to the nurses' emails which are stored under one hashtag in the intranet's address repository. The teaching plan, including a description of the module and timeline appears in Appendix H. The DVPRS tool appears in Appendix I.

Nurses will be expected to complete the online education module (Appendix H) and self-assessment quiz (Appendix J) within two weeks of its date of release in October 2022. The nurses will have multiple attempts to achieve a quiz score of 100%. Upon completion of the educational module and self-assessment quiz, the nurses will sign up for a simulation skills activity where they will assess a patient using the DVPRS and document their findings. Nurses will be given time to practice using the DVPRS and documenting their findings. Nurses will be checked as competent after demonstrating the proper use and documentation of the DVPRS under the review of system section of the clinic note in the EHR. The goal is to have 85% of nurses complete the online education and simulation checkoff before the go live date.

On the go live date, nurses will perform the DVPRS on all patients they see in clinic for the next one month. Clinic days were determined by 10 doctors' schedules and occurred one to two times per week based on a 5-day work week. Doctors' schedules ranged from 12 to 24 patients per day, 14 clinics per week, with nurses documenting on approximately half the scheduled patients each clinic day. Weekly chart audits evaluating DVPRS use, and documentation will be done by the DNP student. The DNP student will audit the review of systems section of the clinic notes of all patients, looking for 1) DVPRS' (pain intensity scores)

completed, and 2) Supplemental questions asked and what questions. This data will be collected using Excel software. No patient information will be extracted from the chart. A sample of the data collection tool is displayed in Appendix K. The goal will be to have 50% of patients with completed DVPRS and questions by week 1 and increase by 10% each week until reaching goal of 90%.

After completing their pain assessment using the DVPRS, the nurses will give the patients a paper with a one question survey and an area to write additional comments. The patient survey is in Appendix L. The patients will complete the survey prior to leaving clinic and place it in a drop box located in the waiting room next to the reception desk. The goal will be 85% of patients reporting a 6 or higher.

Nurse satisfaction in the use of the DVPRS will be assessed at the end of the 1-month pilot using an online survey sent via the hospital intranet email system or a QR code in the resource binder. The survey has three questions about nurses' satisfaction with using the DVPRS and a free text section where nurses can give additional feedback (Appendix M). The goal is for 85% of nurses to complete the pre and post survey and for satisfaction scores to increase by 15%.

The DNP student will also provide a resource binder of the DVPRS and DVPRS questions, which will be left in a designated area in the nursing office. The resource binder will contain a printed copy of the online educational module, contact information of the project manager (e.g., DNP student) and practice mentor for questions, an email address to initiate referrals to the supportive oncology clinic, and a QR code to take the post-implementation survey.

Study: What are the results? Goal #1 will be evaluated by weekly chart audits. Goal #2 will be evaluated by having nurses complete a satisfaction survey. Goal # 3 will be evaluated by

having patients complete a satisfaction survey. The descriptions and processes for chart audits (Goal #1) and the surveys (Goals #2 and 3) are described in the previous section (Do: What is the Intervention?).

Act: What should be done to cause the change? The project team will reflect on the goals and outcomes from the first PDSA. Findings from the first PDSA cycle will be shared with key stakeholders via an executive summary. An abstract and poster will be created and shared with SHU and the Davis and Henley College of Nursing faculty and students. If the practice change is an improvement the plan is to extend the implementation of the DVPRS to other units.

Timeline and Project Table

Table 6. displays the projected timeline for the QI project with confirmed and anticipated dates of completion (Appendix H).

Estimated Project Resources and Budget

Table 7. identified the estimated project resources and budget.

Table 7.

Estimated Project Resources and Budget

| Expenses | |
|---------------------------------------------------------------------------|-------------|
| Project Manager | \$10,800 |
| 10% of average annual salary \$108,000 | |
| Celebratory lunch for competing pilot | \$200 |
| Staples color printed gloss adhesive poster 12x18" x 5 (\$13.49/sheet) | \$67.45 |
| Staples custom cards 4x6" color front and back x 100 | \$37.99 |
| Total Estimated Cost | \$11,105.44 |

Ethical Review

This project will require ACC Institutional Review Board exemption because it is a QI project. This project will require Sacred Heart University Institutional Review Board exemption because it is a quality improvement project. In the interim my project advisor, Dr. Kerry Milner, has provided me with approval to pursue my QI project (Appendix N). The approval to implement the project is pending on the decisions of the ACC Institutional Review Board, the Pain Committee, and the Chief Medical Officer. Approval to perform the project has been granted by the Nursing Director of Outpatient Oncology, the Nursing Manager of the OOU, and the Nursing Education Department at the ACC. A verbal approval to perform the project was provided by nursing education and the Nursing Director of Outpatient Oncology. A written letter of approval was provided by the Nursing Manager of the OOU (Appendix O). A written letter of approval was provided by the Sacred Heart University IRB (Appendix P). A written letter of approval was provided by the Center for Nursing Research and Innovation (Appendix Q).

Project Implementation

Description of Project Implementation

Before the implementation began the project manager was informed that a meeting with all the OOU nurses would not be possible and there was no physical space available to educate several nurses. Thus, the project description and practice change had to be communicated by email, and education and checkoffs were done individually or in small groups over 2 weeks. Emails included pilot information, an educational module, instructions for the nursing workflow, screenshots of DVPRS documentation in the EHR, and written instructions for using the tool in practice. Prior to the go-live date (February 13, 2023), 100% (n=10) of nurses from the OOU completed education on the DVPRS tool and demonstrated successful use of the tool during

simulation training. The project roll-out was reinforced by the project lead during a morning meeting prior to the start of the clinic. Nurses were provided with a pamphlet of the DVPRS educational module and a bag of candy to get them excited and engaged in the practice change.

The original pilot plan was for 4 weeks (February 13, 2023, to March 10, 2023) however week one, as shown in the next section was unsuccessful because nurses were not prepared to use the tool in practice. Therefore, an additional week was added for a total of 5 weeks (February 13, 2023, to March 17, 2023).

Week One Pilot

A total of 266 charts over the 14 clinics from week 1 were retrospectively audited and no nursing notes (n=127) contained the DVPRS tool. Due to the time required to review the chart of each patient seen that week, it was recommended by the practice mentor to review charts in subsequent weeks until 20 nursing notes were identified. Because the clinic is fast paced, often the APRN or MD may room the patient and write the note rather than the nurse. It was decided that charts would be reviewed weekly until the project lead obtained a total of 20 nursing notes per week.

Another deviation from the original plan pertained to chart selection. To equally pull notes from each of the 14 clinics computerized randomization software was used to identify 20 unique numbers. A list of all patients seen in these 14 clinics was obtained and matched with the 20 unique numbers and those charts were reviewed for the presence of nurses' notes and if present it was further reviewed for DVPRS presence. In cases where the 20 charts were reviewed and not all had nursing notes, additional numbers were obtained from the computerized randomization software and matched with a list of clinic patients, and those additional records were reviewed. There were no patient satisfaction surveys completed during week 1.

Week Two Pilot

A total of 47 charts were reviewed, yielding a total of 20 nursing notes. The DVPRS tool was not documented in any of these nursing notes. Due to poor results during the first 2 weeks of the pilot, a mid-cycle assessment was conducted. Nurses were asked to indicate reasons for the inconsistent use of the DVPRS in practice and for suggestions to improve its use (Table 8). Using the information in Table 8, changes were made to increase the use of the DVPRS tool in practice. Additional reminders about using the tool were disseminated via email. A second education session focused on entering the DVPRS tool into the nursing note was provided to nurses during a rounding session by the project lead.

Table 8.

Nurses Responses for Inconsistent Use of the DVPRS and Suggestions for Improving Use

| Reasons | Suggestions |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> • Patients having pain • Patient declined to quantify pain intensity • A review of system could not be performed • A note was written without seeing the patient • The pain assessment was copied from a prior note | <ul style="list-style-type: none"> • Provide more in-person reminders • Remind nurses during clinic to use the tool • Demonstrate how to enter the DVPRS tool into the clinic note |

Week Three Pilot

A total of 78 charts were reviewed, yielding 20 nursing notes. There was evidence of nurses beginning to use the DVPRS tool with three (15%) nurses' notes having documentation of its use. A nursing champion was elected in week 3 which improved DVPRS use on the unit. The nursing champion should have been obtained during the first week of the pilot to increase nurse buy-in. These nurses did not assess the patient's satisfaction with the DVPRS. Nurses reported that they did not offer patients the satisfaction survey because the additional step was difficult to

include while seeing multiple patients in clinic. Nurses reported anecdotally that patients responded positively when asked about the functional aspects of pain (e.g., a patient expressed appreciation for being asked additional questions about her pain). To promote administering the patient satisfaction survey going forward, the project manager affixed surveys to a clipboard inside the nursing office as a visual reminder and easy access to survey copies.

Week Four Pilot

A total of 56 charts were reviewed, yielding 20 nursing notes. Nurses continued to demonstrate increased use of the DVPRS in practice with five (20%) nursing notes having documentation of its use. The patient satisfaction survey was administered to five patients (25%).

Week Five Pilot

A total of 55 charts were reviewed, yielding a total of 20 nursing notes. Nurses continued to demonstrate increased use of the DVPRS in practice with eight (40%) nursing notes having documentation of its use. No patient satisfaction surveys were administered. The Patient Satisfaction Survey was removed from the nursing office after week 4 due to construction on the unit, which made it difficult for nurses to access the survey and provide it to patients. The week 3 change in plan to keep project related information (e.g., patient survey) in the nursing office could not be done due to limited space after an additional practice began sharing the room. Project information was provided in electronic format, through email, except for the patient survey, which nurses were asked to keep until it was collected weekly by the project lead. A total of seven (70%) nurses completed the satisfaction with the DVPRS survey.

Evaluation/Results

The DVPRS was piloted with outpatient oncology patients in an adult cancer center from February 13, 2023, to March 17, 2023. Ten (100%) nurses on the unit completed the DVPRS

education and simulation training (process measure). Table 9 displays the weekly EHR audits for presence of the DVPRS. For example, in week 1 a total of 266 charts were reviewed and found to have 127 nurses' notes, and within these notes use of the DVPRS was not present (outcome).

Table 9.

Weekly Summary of the Charts and Notes Reviewed and Presence of DVPRS

| Week | Charts Reviewed | Nurses Notes Reviewed | DVPRS present f(%) |
|-------------|------------------------|------------------------------|-------------------------------|
| 1 | 266 | 127 | 0(0) |
| 2 | 47 | 20 | 0(0) |
| 3 | 78 | 20 | 3(15) |
| 4 | 56 | 20 | 5(20) |
| 5 | 55 | 20 | 8(40) |

Goal #1 was not met because nurses did not document the DVPRS assessment (outcome) in 50% of patients during week one or increase their use of the DVPRS by 10% each week. DVPRS use did increase from week 3 to week 5 by 25% however weekly overall use was low. The time dedicated to reviewing charts for the presence of a nursing note and DVPRS documentation was approximately 35 hours.

Goal #2 to evaluate nurse satisfaction with the DVPRS (process measure) was met with 7 (70%) of the nurses completing the satisfaction survey in week 5. The mean score was $3.62 \pm .62$ indicating neutral/agree satisfaction with DVPRS (Appendix S).

Goal #3 to evaluate patient satisfaction with the DVPRS (process measure) was partially met. A total of 5 (31.35%) patients completed the satisfaction survey after using the DVPRS. The mean patient satisfaction score was $6.6 \pm .55$ indicating that the patients were satisfied with the DVPRS (Appendix T), and this score was above the benchmark of 6.0.

Return on investment (ROI)

Final project expenses amount to over \$11,000 annually, including project materials and time dedicated to implementation, data collection, analysis, and evaluation. A total of 45 hours was spent by the project manager collecting and reviewing data over a 5-week period. The time for data analysis over a projected 12-month period was estimated as 468 hours at \$57 hourly rate, or 24.7% for a mean nurse salary of \$108,000 annually. Additional costs incurred included weekly snack incentives (approximately \$15 weekly for 5 weeks). Final project costs are displayed in Table 10.

Table 10.

Final Project Costs

| Item | Cost |
|----------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| Project manager time | \$10,800 |
| 10% of average annual salary \$108,000 | |
| Nursing Education Snack Incentives and celebratory lunch | \$155 |
| \$15/week for 5 weeks | |
| \$20/pie x 4 pies | |
| Printed DVPRS education packet, DVPRS tool, Nursing Survey, and Patient Survey | \$48 |
| <ul style="list-style-type: none"> ▪ 8.5x11 inch printer paper x 500 sheets \$8 ▪ HP black/tricolor ink pack x 2 cartridges \$40 | |
| Commuter costs for onsite training off work hours \$16.50 per ride | \$165 |
| Total Cost | \$11,168 |

Key Lessons Learned, Reflection, and Suggested Action for Future

The following is a list of the key lessons learned by the project manager.

- There was a lack of leadership support for this project. Specific examples are described in the implementation section. Strong leadership support must be garnered for the DVPRS to stick.
- In-person support by the project lead was needed on a more frequent basis to increase nurse buy-in in the DVPRS. This project manager saw the direct correlation between being present and the increased use of the DVPRS.
- Communication by email failed to foster nursing interest in the project. The project manager noted that nurses would report not seeing emails or not having a chance to read the emails. This could be avoided by providing project updates in person.
- There were workflow issues with interruptions from providers affecting the nurses time to complete the DVPRS. Extending the DVPRS to non-clinic nurses, phone triage, would increase nurses' ability to utilize the DVPRS without interruptions. Nurses reported that the DVPRS was more likely to be used when nurses were performing an independent assessment over phone triage. Nurses reported having more time on a triage call to ask about pain intensity and the functional aspects of pain.
- Nurses were not consistently working on the unit for the entire duration of the pilot due to vacations or they had to float to another unit that was understaffed. Extending the pilot from 5 weeks to 12 weeks would allow nurses more time to utilize the DVPRS.
- Nurses reported that the DVPRS was more likely to be used when nurses were performing an independent assessment over phone triage. Nurses reported having more time on triage call to ask about pain intensity and the functional aspects of pain.
- Patients had difficulty describing their pain numerically, and the numeric rating scale (NRS) was often omitted from nursing notes. Having nurses use a written copy of the DVPRS tool when asking questions would illicit more information about patients' pain, increase patients'

understanding of the pain intensity rating scale, and provide additional scales (faces and temperature scales) to improve patients' understanding of the NRS.

- Patients with chronic pain would sometimes state that their pain had not changed, which contributed to nurses not asking additional questions about the pain. This indicates that more education with the nurses needs to be done to promote the assessment of functional status, especially for patients with chronic pain because pain intensity usually does not change.
- Buy-in was not obtained from MDs or APRNs because an interdisciplinary meeting could not be scheduled, and the project manager was unable to provide them with information on the tool. The project manager should ensure buy-in from nursing leadership is maintained when pursuing unit-based practice changes. Although the project manager established buy-in from nursing leadership, this was difficult to maintain as leadership was often away from the unit and unavailable to meet with the project manager. One method to resolve this issue would be to obtain buy-in from nursing leadership outside of the unit to offer support when the unit manager is away.
- Some nurses expressed that they were more likely to use the DVPRS after using the tool previously with a patient. Nurses expressed increased interest in the DVPRS after witnessing positive responses from patients. For the next test of change, these nurses should be used as champions and asked to share their experiences with the tool with others.
- Some nurses were comfortable using the DVPRS tool, but not comfortable documenting the tool in the EHR. Future education should focus on inputting the DVPRS into the clinic note.
- Some nurses felt rushed to use the tool, suggesting that there should be a delay between nursing education and project implementation. For future pilots the project manager would

allow a week between education and implementation to allow nurses time to ask questions and practice the DVPRS prior to the go-live date.

- The project lead should have delegated team members to assist with the review of charts to increase the number of charts that were reviewed and the speed at which charts were evaluated. A report could not be run on the smart phrase created by the project lead without entering each patient's chart. By providing the project manager with an additional 6 months to involve information technology then it is possible a report could be automated for review.
- The project lead was unable to obtain buy-in from major stakeholders in the practice setting. Future pilots should focus on identifying the existing organizational culture and tailoring the project to align with the goals of the institution.
- Nurse engagement was not achieved, and the project was not sustainable on the unit. Constant reinforcements that the practice change reflects best practice must be provided to nurses to maintain interest in the project.
- The DVPRS was not consistently used because the intended benefit of the tool was not provided to all members of the OOU team. The efficacy of the practice change should be communicated to all stakeholders in the practice setting to obtain and sustain buy-in.
- There was a decrease in the utilization of the Patient Satisfaction Survey during week 5, and only a modest increase in the number of DVPRS tools completed over a 5-week duration. The project lead needs to identify change agents who understand the perceived benefit of the tool and who can provide encouragement on the use of the tool to nurses.
- The practice change was not successful on the unit. For the practice change to be successful the project lead must form a team of members who understand policies and procedures of the

institution and how to obtain interest from major institutional players to encourage a microlevel change with the potential to spread system wide.

- There was low utilization of the DVPRS by nurses despite a modest increase in its use over time. The utilization of the DVPRS will increase if MDs and APRNs are provided education in why the tool is considered best practice and how it can improve patient care. MDs and APRNs should have the option to use the tool in practice, and the education and training should be extended to them to foster engagement from all team members.
- There was low buy-in from nursing leadership. The project lead must identify which members are involved in the decision-making process and indicate to them how the practice change has positive implications for the organization, aligns with best practice, and supports the Joint Commission's aim to improve quality of life in patients with cancer.
- The DVPRS was not consistently documented in the EHR. The project lead should include members of the organization in information technology, billing, and policy revisions when implementing a practice change through the EHR.

Sustainability

The use of the DVPRS in the practice setting where it was piloted was not sustainable because the pilot was not successful. Future PDSA cycles must address the issues identified in the lessons learned section before sustainability is possible.

Dissemination

Traditional Method of Dissemination

Project results will be shared with the practice setting in the form of an executive summary (Appendix U). As part of the DNP program requirements, a poster presentation will be given to faculty and students of the Dr. Susan L. Davis, RN, & Richard J. Henley College of

Nursing at Sacred Heart University (SHU). A power-point presentation will be shared by the DNP student with SHU and hospital organizational leadership, students, and staff. The Center for Nursing Research and Innovation previously expressed interest in supporting the dissemination of project findings. The DNP student will work with research chairs to identify journals and conferences to disseminate findings and submit abstracts.

References

- AHRQ. (2013). *Module 4: Approaches to quality improvement*. Retrieved February 12, 2022, from <https://www.ahrq.gov/ncepcr/tools/pf-handbook/mod4.html>
- AHRQ. (2020). *Integrated pain management programs*. Retrieved February 13, 2022, from <https://effectivehealthcare.ahrq.gov/products/integrated-pain-management/protocol>
- Armstrong, G., & Sable-Baus, S. (2020). *Leadership and systems improvement for the DNP*. Springer Publishing Company.
- Banks, M., Yesantharao, P., Smith, L., Werthman, E., Cox, C., Javia, V., & Caffrey, J. (2021). 586 patient satisfaction for the use of DVPRS in the assessment of pain in the burn and surgical ICU. *Journal of Burn Care & Research*, *42*(1), 144–145.
<https://doi.org/10.1093/jbcr/irab032.236>
- Blackburn, L.M., Burns, K., DiGiannantoni, E., Meade, K., O’Leary, C., Stiles, R. (2018). Pain assessment: Use of the defense and veterans pain rating scale in patients with cancer. *Clinical Journal of Oncology Nursing*, *22*(6), 643-648. <https://doi.org/10.1188/18>
- Buckenmaier, C. C., Galloway, K. T., Polomano, R. C., McDuffie, M., Kwon, N., & Gallagher, R. M. (2013). Preliminary validation of the defense and veterans pain rating scale (DVPRS) in a military population. *Pain Medicine*, *14*(1), 110–123.
<https://doi.org/10.1111/j.1526-4637.2012.01516.x>
- Cluxton, C. (2019). The challenge of cancer pain. *Ulster Med J*, *88*(1), 43-46.
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6342038/>
- Crable, J., Farrar Highfield, M., & Patmon, F. (2021). Evidence-based practice knowledge, attitudes, practices, and barriers. *Nursing*, *51*(9), 58–65.
<https://doi.org/10.1097/01.NURSE.0000754000.05371.65>

- Cullen, L., Hanrahan, K., Farrington, M., DeBerg, J., Tucker, S., & Kleiber, C. (2018). *Evidence-based practice in action: Comprehensive strategies, tools, and tips from the university of Iowa hospitals and clinics*. Sigma Theta Tau International.
- DeNisco, S. (2021). *Advanced practice nursing: Essential knowledge for the profession* (4th ed.). Jones & Bartlett Learning.
- Fink, R. & Gallagher, E. (2019). Cancer pain assessment and measurement. *Seminars in Oncology Nursing*, 35(3), 229-234. <https://doi.org/10.1016/j.soncn.2019.04.003>
- Greenberg, M. E. (2009). A comprehensive model of the process of telephone nursing. *JAN*, 65(12), 2621–2629. <https://doi.org/10.1111/j.1365-2648.2009.05132.x>
- Kachian, A., Elyasi, S., & Haghani, H. (2018). ADKAR model and nurses' readiness for change. *Client-Centered Nursing Care* 4(4), 203-212. <https://doi.org/10.32598/jccnc.4.4.203>
- Ludwig, H., Bailey, A. L., Marongiu, A., Khela, K., Milligan, G., Carlson, K. B., Rider, A., & Seesaghur, A. (2022). Patient-reported pain severity and health-related quality of life in patients with multiple myeloma in real world clinical practice. *Cancer Reports*, 2022(5). <https://doi.org/10.1002/cnr2.1429>
- Melnyk, B. M. & Fineout-Overholt, E. F. (2019). *Evidence-based practice in nursing and healthcare: A guide to practice* (4th ed.). Wolters Kluwer. Philadelphia, PA.
- Polomano, R. C., Galloway, K., Kent, M., Brandon-Edwards, H., Kwon, K., Morales, C., & Buckenmaier, C. (2016). Psychometric testing of the defense and veterans pain rating scale (DVPRS): A new pain scale for military population. *Pain Medicine*, 17(8), 1505–1519. <https://doi.org/10.1093/pm/pnw105>
- Portenoy, R. & Dhingra, L. (2022). Assessment of cancer pain. *UpToDate*. Retrieved on April 02, 2022 from, <https://www-uptodate-com.sacredheart.idm.oclc.org/contents/assessment->

of-cancer-

pain?search=pain%20assessment%20tools&source=search_result&selectedTitle=6~150

&usage_type=default&display_rank=6

Portenoy, R., Mehta, Z., & Ahmed, E. (2023). Cancer pain management with opioids:

Optimizing analgesia. UpToDate. Retrieved on February 27, 2023 from, [https://www-uptodate-com.sacredheart.idm.oclc.org/contents/cancer-pain-management-with-opioids-](https://www-uptodate-com.sacredheart.idm.oclc.org/contents/cancer-pain-management-with-opioids-optimizing-analgesia?search=cancer%20pain%20treatment&source=search_result&selectedTitle=1~150&usage_type=default&display_rank=1)

optimizing-

analgesia?search=cancer%20pain%20treatment&source=search_result&selectedTitle=1~

150&usage_type=default&display_rank=1

Swarm, R., Paice, J., Anghelescu, D., Are, M., Bruce, J., Buga, S., Chwistek, M., Cleeland, C.,

Craig, D., Gafford, E., Greenlee, H., Hansen, E., Kamal, A., Kamdar, M., LeGrand, S.,

Mackey, S., McDowell, R., Moryl, N., Nabell, L.,...Gurski, L. (2019). Adult cancer pain,

version 3.2019. *JNCCN*, 17(8), 977-1007. <https://doi.org/10.6004/jnccn.2019.0038>

Appendix A

Searching: **CINAHL Complete** | [Choose Databases](#)

defense and veterans pain rating scale or DVPRS Select a Field (optional) ▾ Search

AND ▾ nursing documentation Select a Field (optional) ▾ Clear ?

OR ▾ pain perception Select a Field (optional) ▾

OR ▾ pain assessment Select a Field (optional) ▾

OR ▾ pain scales Select a Field (optional) ▾

OR ▾ pain documentation or measurement Select a Field (optional) ▾

OR ▾ pain rating Select a Field (optional) ▾ + -

[Basic Search](#) | [Advanced Search](#) | [Search History](#) ▶

Refine Results

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Boolean/Phrase:
(defense and veterans pain rating scale or DVPRS) AND nursing d...

Expanders
Apply equivalent subjects

Limiters
Published Date: 20110101-20211231
English Language


Search Results: 1 - 10 of 198,919


1. Evaluation of Patients Using Numeric **Pain-Rating Scales**.

 (Includes abstract) Yesilyurt, Maide; Faydali, Saide International Journal of Caring Sciences, 1 Background. The identification of **pain** as a finding, the **assessment** of treatment and care d

Subjects: Patient **Assessment**, **Pain Measurement**, Sensitivity and Specificity, Clinical Ass 19-44 years; Male; Female

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Searching: **MEDLINE with Full Text** | [Choose Databases](#)

defense and veterans pain rating scale or DVPRS Select a Field (optional) ▾ Search

AND ▾ nursing documentation Select a Field (optional) ▾ Clear ?

OR ▾ pain perception Select a Field (optional) ▾

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Published Date: 20110101-20211231
English Language

Search Results: 1 - 10 of 642,369

1. **Pain Perception** Associated with Mini-Implants and Interventions for **Pain Mana**

 (English) ; Abstract available. By: Sreenivasagan S; Subramanian AK; Selvaraj A; Marya A. BioMed research Pub. Co; PMID: 34861334
Orthodontists use mini-implants temporarily as an effective mode of skeletal anchorage devices. The placem

Subjects: Dental Implants adverse effects; **Pain** physiopathology; **Pain Measurement** instrumentation; **Pain** Questionnaires; Young Adult

 [HTML Full Text](#)  [PDF Full Text](#)

2. Objective **pain** stimulation intensity and **pain** sensation **assessment** using mach electrodermal activity.

Searching: **Cochrane Database of Systematic Reviews** | [Choose Databases](#)

defense and veterans pain rating scale or DVPRS Select a Field (optional) ▾ Search

AND ▾ nursing documentation Select a Field (optional) ▾ Clear ?

OR ▾ pain perception Select a Field (optional) ▾

OR ▾ pain assessment Select a Field (optional) ▾

OR ▾ pain scales Select a Field (optional) ▾

OR ▾ pain documentation or measurement Select a Field (optional) ▾

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Boolean/Phrase:
(defense and veterans pain rating scale or DVPRS) AND nursing d...

Expanders
Apply equivalent subjects

Limiters
Published Date: 20110101-20211231

Search Results: 1 - 10 of 416

1. Virtual reality distraction for acute **pain** in children

 (Cochrane Review). **Reviewers:** Lambert, Veronica; Lambert, Veronica; Boytan, Patrick; Borz Palliative and Supportive Care Group. *Cochrane Database of Systematic Reviews*; New this |

Subjects: Adolescent; Child; Child, Preschool; Humans; Acute **Pain** diagnosis; Attention; Bia Trials as Topic; Acute **Pain** prevention & control; **Pain**, Procedural prevention & control; Virtua

 [HTML Full Text](#)  [PDF Full Text](#) (1063016 bytes)

2. Wound cleansing for treating venous leg ulcers

 (Cochrane Review). **Reviewers:** McLain, Niamh EM; McLain, Niamh EM; Moore, Zena EH; A

Appendix B

Table 1. Search Terms and Search Results by Database [CINAHL]

| Search Terms | Number of hits | Number of title & abstract reviewed | Number of full-text articles reviewed | Number of articles selected for this review without duplicates |
|----------------------------------------------------------|----------------|-------------------------------------|---------------------------------------|----------------------------------------------------------------|
| Pain | 84,377 | | | |
| Pain and Assessment | 39,930 | | | |
| Pain and Defense and Veterans Pain Rating Scale or DVPRS | 27 | 15 | 8 | 7 |
| Pain rating and Adult patients | 183 | 21 | 20 | 15 (-1) |
| Pain and Nursing documentation | 17 | 7 | 6 | 4 |
| Adult patients and Pain perception | 44 | 23 | 8 | 6 (-1) |
| Pain assessment and Electronic Health Record* | 46 | 19 | 12 | 8 |

Table 2. Search Terms and Search Results by Database [MEDLINE]

| Search Terms | Number of hits | Number of title & abstract reviewed | Number of full-text articles reviewed | Number of articles selected for this review without duplicates |
|-----------------------------------------------------------------|----------------|-------------------------------------|---------------------------------------|----------------------------------------------------------------|
| Pain (MeSH) | 423,673 | | | |
| Pain (MeSH) and Pain assessment (MeSH) | 55,429 | | | |
| Pain (MeSH) and Defense and Veterans Pain Rating Scale or DVPRS | 37 | 13 | 7 | 5 (-4) |

| | | | | |
|-------------------------------------------------------------|-----|----|----|---------|
| Pain rating and Adult patients | 229 | 27 | 20 | 13 (-8) |
| Pain (MeSH) and Nursing documentation | 48 | 8 | 6 | 3 (-1) |
| Adult patients and Pain perception (MeSH) | 137 | 17 | 13 | 11 (-7) |
| Pain assessment and (MeSH) Electronic Health Record* (MeSH) | 148 | 19 | 14 | 12 (-6) |

Table 3. Search Terms and Search Results by Database [Cochrane]

| Search Terms | Number of hits | Number of title & abstract reviewed | Number of full-text articles reviewed | Number of articles selected for this review without duplicates |
|-----------------------------------------------------------------|----------------|-------------------------------------|---------------------------------------|----------------------------------------------------------------|
| Pain (MeSH) | 1,107 | 4 | 3 | 1 (-1) |
| Pain (MeSH) and Pain assessment (MeSH) | 372 | 5 | 3 | 0 |
| Pain (MeSH) and Defense and Veterans Pain Rating Scale or DVPRS | 0 | 0 | 0 | 0 |
| Pain rating and Adult patients | 1 | 0 | 0 | 0 |
| Pain (MeSH) and Nursing documentation | 0 | 0 | 0 | 0 |
| Adult patients and Pain perception (MeSH) | 0 | 0 | 0 | 0 |
| Pain assessment (MeSH) and Electronic Health Record* (MeSH) | 0 | 0 | 0 | 0 |

Appendix C

Table 4. Evidence Summary

| Citation | Conceptual Framework | Design/ Method | Sample/ Setting | Major Variables Studied and Their Definitions | Outcome Measurement | Data Analysis | Findings | Level of Evidence/ Quality | Quality of Evidence: Critical Worth to Practice |
|------------------------------------------------------------------------------------------------------------------|------------------------------------|-----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Author Year Title County Funding | Theoretical basis for study | | Number Characteristics Exclusion criteria Attrition | Independent variables IV1 = IV2 = Dependent variables | What scales used - reliability info (alphas) | What stats used | Statistical findings or qualitative findings | Level = | Strengths Limitations Risk or harm if implemented Feasibility of use in your practice |
| Article 1 | | | | | | | | | |
| Blackburn et al., 2018. Use of the Defense and Veterans Pain Rating Scale in patients with cancer. Columbus, OH. | N/A | Quality Improvement Project | Sample: 32% nurses completed surveys. 68% attrition. 144 patients completed surveys, convenience sample. Inclusion criteria: Adult ages 25-78, men, women, outpatient, or inpatient oncology (convenience sample), Sample of oncology nurses from various oncology units at an Ohio teaching hospital. Exclusion criteria: N/A. | TP | Likert scale for overall patient and nursing satisfaction Chart audit of pain medication consistency before and after intervention. | Evidence Based Practice Literature review, chart audits, satisfaction surveys | Pain medication consistency improved by 38% after intervention. 78% (n=50) nurses preferred the DVPRS to previously used pain assessment tools. 100% (n=144) patients reported the DVPRS was easier to understand, easier to use, and better in describing their pain compared to the NRS, | Level IV/ EBP implementation/Low Quality | Strengths: Expanded pain assessment tools at a university hospital. Received favorable survey results with patients and nurses. Chart audit demonstrated improvement after intervention. Study improved generalizability of findings by expanding to outpatient and inpatient oncology units. Limitations: Low completion rate of 38% for nurses completing post intervention surveys. Patients were a convenience sample, unblinded, and the sample lacked heterogeneity, poor randomization (certain clinics were favored). |

| | | | | | | | | | |
|------------------------------------------------------------------------------------------------------------------------------------------------|-----|---------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | | | | | | | | | Feasibility of use in your practice setting: Project is applicable to my setting. |
| Article 2 | | | | | | | | | |
| Buckenmaier et al., 2013. Preliminary Validation of the Defense and Veterans Pain Rating Scale (DVPRS) in a Military Population. Bethesda, MD. | N/A | Quasi-Experimental Study Single measure design was used to validate the DVPRS and obtain pain data from a military population. | Sample : 350 participants Inclusion Criteria : Adult Patients who were hospitalized or outpatient, able to read and understand English, 18 years or older, alert and capable of reporting current pain levels and recalling events, newly combat injured service members hospitalized for more than 24 hours, and active duty military personnel or veterans who had military-related injuries or other pain issues. Exclusion | IV: Word descriptors DV: Interpretation of pain score DV: Validity of the DVPRS. | Five item DVPRS, which combined NRS with FRS-R for pain intensity and four supplemental items measuring general activity, mood, sleep, and level of stress. A mean summary score was calculated for supplemental items. 7 item interference subscale from the BPI for comparison reliability and validity. | Psychometric testing of the DVPRS using measures for internal consistency reliability and content, criterion, and construct validity. Data was analyzed with correlational statistics, principal component factor analysis, and Student's t-tests and Mann-Whitney U-tests for group comparisons. | Patients interpreted pain better with the word descriptors. DVPRS with word descriptors first $r=0.929$ (N=171; $P<0.001$) . DVPRS without word descriptors $r=0.882$ (N=177; $P<0.001$) . Interclass correlation coefficient was 0.943 showing excellent alignment of word descriptors by respondents (N=42) matching pain to item correctly. Highest accuracy with pain scores of 0 (100%), 1 (97.6%), 8 (78.6%), | Level II/ Prospective (cohort) design Good Quality | Strengths: The DVPRS demonstrated acceptable reliability and validity and has important implications for standardizing pain assessment practices throughout military and veteran healthcare settings, improving screening practices to identify risk for pain-related issues, and providing a minimum set of patient-reported outcomes for communication and documentation across transitions of care. This may be applicable for use in my practice setting. Limitations: Study requires longitudinal and repeated measures to confirm effect. Generalizability of findings is limited to the military population. The tool needs to be expanded to other populations other than adult males in the military or |

| | | | | | | | | | |
|----------------------------------------------|-----|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|------------------------------------------------|---------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|----------------------------------------------------------------------------------------------------------------|
| | | | <p>criteria: patients under 18, military dependents, unable to verbalize pain levels or understand pain questions, cognitive impairment, unable to understand the assent form.</p> | | | | <p>9 (71.4%), 10 (73.8%) Lowest accuracy with pain scores of 4 (54.8%), 5 (52.4%), 6 (35.7%). Inaccurate results only varied by one point on the scale.</p> <p>High internal consistency reliability of 0.902 inpatient and 0.866 outpatient.</p> <p>Inpatient reported less pain and lower mean scores to supplemental items. Outpatients had higher pain and lower mean scores to supplemental items.</p> | | <p>veterans. The tool needs to be applied to setting other than research to assess for clinical relevance.</p> |
| Article 3 | | | | | | | | | |
| Banks et al., 2021. 586 Patient Satisfaction | N/A | Pilot Study | Sample: Of 42 participants, 32 complete | IV1= DVPRS IV2= NRS Dependent variables = | Likert scale for overall patient satisfaction. | Percentages of satisfaction scores with the | ICU patients preferred the DVPRS | Level VI/ Low Quality | Strengths: DVPRS improved patients' satisfaction |

| | | | | | | | | | |
|---------------------------------------------------------------------------------------------------------|--|--|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------|--------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|--|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>on for the Use of DVPRS in the Assessment of Pain in the Burn and Surgical ICU. Ontario, Canada.</p> | | | <p>d the study. 18 patients were in the DVPRS arm and 14 were in the NRS arm. Characteristics: Patients were offered satisfaction surveys following the intervention. Inclusion criteria: Adult patients from the burn ICU or surgical ICU of a teaching hospital. Exclusion criteria: patients under the age of 18, patients not requiring critical care.</p> | <p>Patients' satisfaction with pain relief</p> | <p>Analysis of data.</p> | <p>NRS and DVPRS were calculated to find the median and interquartile range. Multivariate logistic analysis adjusting for age, gender, and ICU using NRS conferred lower odds of complete satisfaction with pain management compared to the DVPRS.</p> | <p>over the NRS. The DVPRS appeared to be as effective as the NRS in pain relief and gave providers more information about patients' pain.</p> | | <p>with pain assessment and showed to be as effective as NRS in pain relief. No change in pain control occurred during this study. Study is promising preliminary study for future RCT. Study improved generalizability of findings to other healthcare settings. Study used randomization, improving its internal validity. Setting of study is not applicable to my clinical setting. Limitations: Small sample size. Cohort lacked heterogeneity. Study length varies because patients' complete surveys at discharge. The length of the study is not specified. Inclusion and exclusion criteria are not identified.</p> |
|---------------------------------------------------------------------------------------------------------|--|--|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------|--------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|--|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

| | | | | | | | | | |
|----------------------------------------------------------------------------------------------------------------------------------------------|-----|--------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | | | | | | | | | |
| Article 4 | | | | | | | | | |
| Polomano et al., 2016. Psychometric Testing of the Defense and Veterans Pain Rating Scale (DVPRS) : A New Pain Scale for Military Population | N/A | Cohort Study | Sample; 307 active-duty service members and veterans experiencing acute or chronic pain. Inclusion criteria: Setting: Maceio Hospital, Brazil. Inclusion criteria: adults able to read and understand English, 18 years of age or older, alert, and capable of reporting current pain levels and recalling events, hospitalized for more than 24 hours, being treated for pain in outpatient settings, and active-duty military personnel or Veterans with military- | IV: A new set of facial representations designating pain levels - revised DVPRS. DV: Matching number rating to faces scale DV: Correctly identifying pain with faces scale and supplemental questions | Likert scale | All data were analyzed with SPSS v22.0 (Armonk, New York). Descriptive statistics are reported for all five individual DVPRS 2.0 items, and a mean score for the four supplemental questions. Psychometric testing for the DVPRS 2.0 included tests for internal consistency reliability (Cronbach's alpha), and test-retest reliability (Pearson's Product Moment (r) correlation coefficients), interrater reliability [intraclass | Results demonstrated acceptable internal consistency reliability (Cronbach's alpha = 0.871) and test-retest reliability (r = 0.637 to r = 0.774) for the five items. Excellent interrater agreement was established for correctly ordering faces depicting pain levels and aligning them on the pain intensity scale (Kendall's coefficient of concordance, W = 0.95 and 0.959, respectively). Construct validity was supported by an exploratory principal compone | Level II/Randomized clinical trial/Good Quality | Strengths: A majority, 70.9% (n = 219), felt that the DVPRS was superior to other pain scales. Shows controls for bias. Limitations: Study was limited by a single assessment of pain and related outcomes; not observance of meaningful changes in pain over time or responses to therapeutic interventions. Findings lack generalizability, sample is not heterogeneous. Sample is not randomized. Sensitivity and specificity were not measured. Not applicable to my clinical setting. |

| | | | | | | | | | |
|--|--|--|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|
| | | | <p>related injuries or other pain conditions. Exclusion criteria: military dependents, who were not Veterans; unable to verbalize pain levels or understand questions about their pain level; experiencing cognitive impairment from a confirmed diagnosis of moderate to severe TBI or neurodegenerative diseases from advanced aging; unable to understand the written information summarizing the study and expectations of participants.</p> | | | <p>s correlation coefficients (ICC), and interrater agreement (Kendall's coefficient of concordance - W) for ordering faces in order of increasing pain intensity and aligning them on the DVPRS pain intensity item. An exploratory principal component factor analysis was performed for construct validity. Group comparisons were done using parametric (Student's t-tests for independent groups and Paired t-tests) and nonparametric statistics.</p> | <p>nt factor analysis and known groups validity testing. Most participants, 70.9%, felt that the DVPRS was superior to other pain rating scales.</p> | | |
|--|--|--|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|

Appendix D

Table 5. Levels of Evidence Synthesis Table: PICO Question #1

PICO Question #1: In adult oncology patients (P) how does DVPRS (I) compared to current pain assessment (C) affect pain assessment (O)?

| | 1 | 2 | 3 | 4 |
|---------------------------------------------------------------------------------------|---|---|---|---|
| Level I: Systematic review or meta-analysis | | | | |
| Level II: Randomized controlled trial | | X | | X |
| Level III: Controlled trial without randomization | | | | |
| Level IV: Case-control or cohort study | X | | | |
| Level V: Systematic review of qualitative or descriptive studies | | | | |
| Level VI: Qualitative or descriptive study, CPG, Lit Review, QI or EBP project | | | X | |
| Level VII: Expert opinion | | | | |

LEGEND

1= Blackburn et al., 2018. 2= Buckenmaier et al., 2013. 3= Banks et al., 2021. 4= Polomano et al., 2016.

Appendix E

Table 6. Outcome Synthesis Table: PICO Question #1

PICO Question #1: In adult oncology patients (P) how does DVPRS (I) compared to current pain assessment (C) affect pain assessment (O)?

| | 1 | 2 | 3 | 4 |
|-------------|----|----|----|----|
| PS | ↑ | NE | ↑ | ↑ |
| NS | ↑ | NE | NE | NE |
| PMA | ↑ | NE | NE | NE |
| PR | NC | ✓ | NE | ↑ |
| EOU | ↑ | ↑ | ↑ | ↑ |
| PUOS | ↑ | ↑ | ↑ | ↑ |
| PUPL | NR | NR | ↑ | NE |

SYMBOL KEY

↑ = Increased, ↓ = Decreased, NC = No Change, NE = Not Examined, NR = Not Reported (introduced at beginning but never reported at the end), ✓ = applicable or present

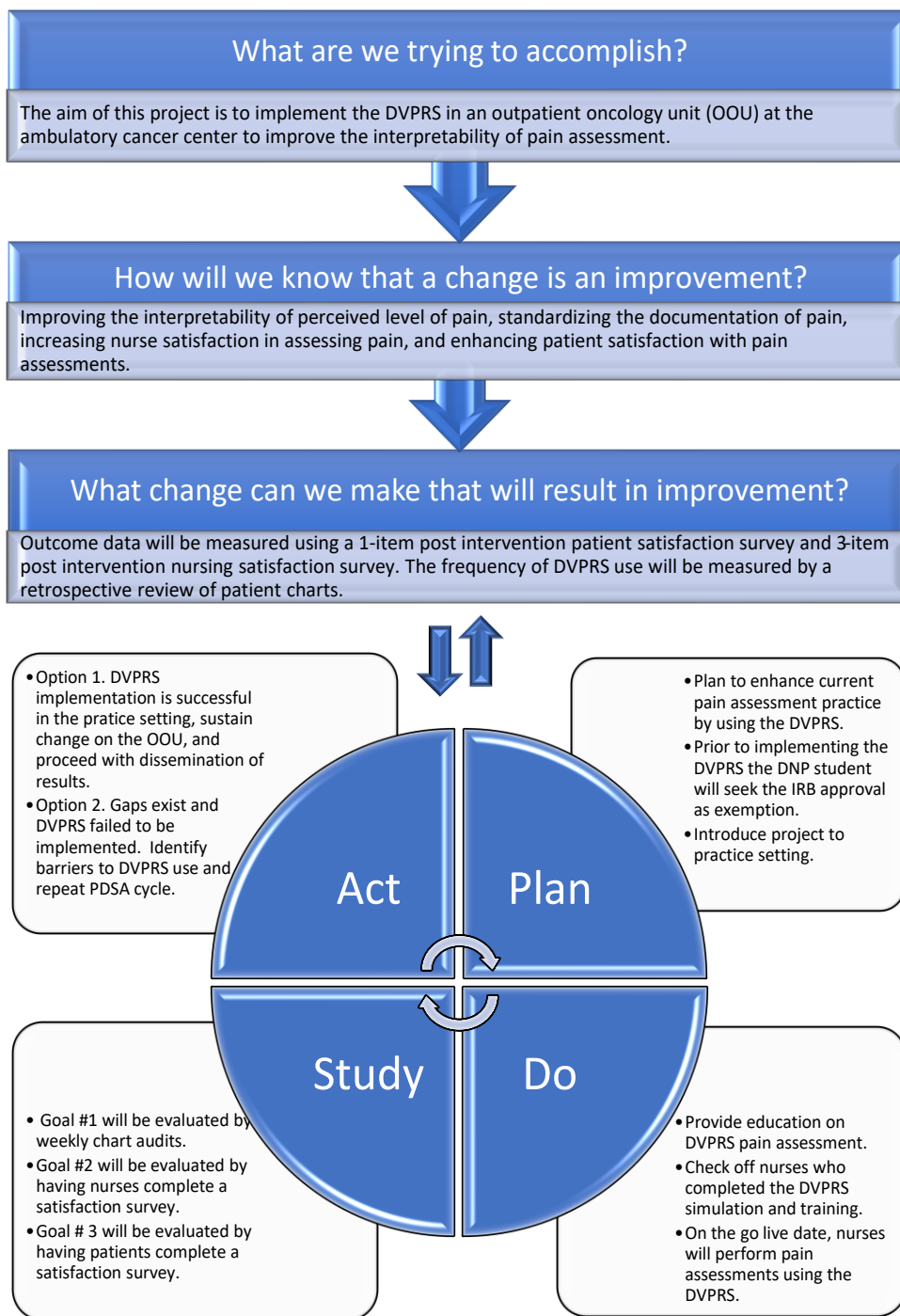
LEGEND

1= Blackburn et al., 2018. **2**= Buckenmaier et al., 2013. **3**= Banks et al., 2021. **4**= Polomano et al., 2016.

PS= Patient Satisfaction; NS= Nursing Satisfaction; PMA= Pain Medication Administration; PR= Pain Rating; EOU= Ease of use (the DVPRS); PUOS= Patient Understanding of Scale; PUPL= Provider Understanding of Pain Level.

Appendix F

The MFI-PDSA Cycle



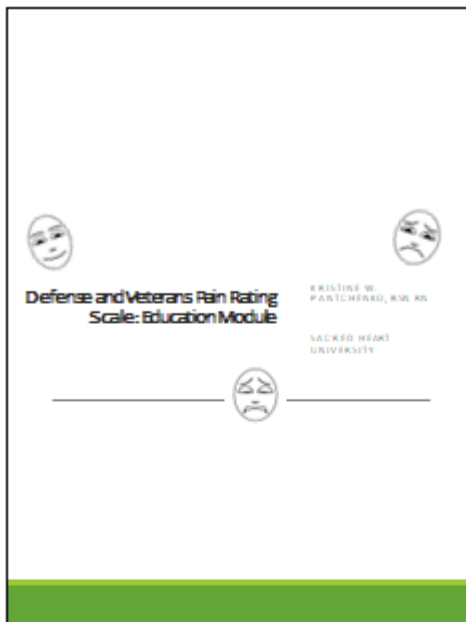
Appendix G

Organizational Assessment

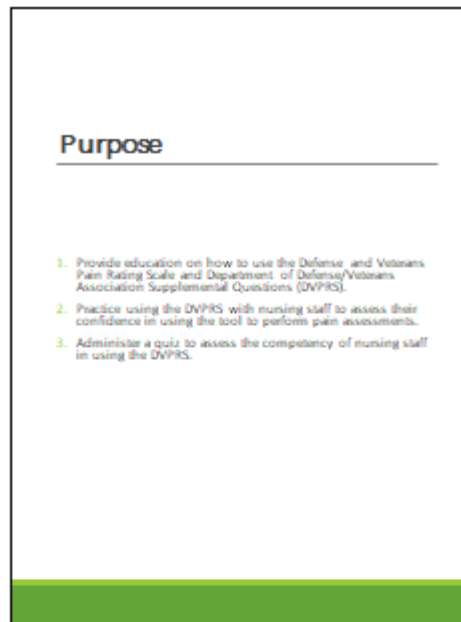
| Step | Data | Date |
|---------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|
| 1. Project and goals with level of leadership buy in. | Leadership support has been obtained from the Nursing Director. Need to gain support from ACC IRB, Pain Committee, and CMO. | In progress |
| 2. Stakeholders who will benefit from the improvement. | Short-term: the nursing staff, patients Long-term: the nursing staff, clinical teams, doctors, and patients. | 3/2022 |
| 3. The process that requires redesign. | The framework for educating staff about DVPRS is developed based on a previous tool used to educate staff. | 7/2022 |
| 4. Data needs and the required support for data management and analysis. | The project goal, global aim, process, and outcome have been identified. The process for collecting data needs to be agreed upon by the nursing staff. The process for measuring data needs to be agreed upon by the project team. | 9/2022 In progress |
| 5. Interprofessional team creating a neutral problem-solving environment. | The project team will consist of the author as the project manager, the nurse director as project promoter, and the PPC co-chair as project coordinator. The study group will consist of nursing staff and patients. | 3/2022 |
| 6. All employees involved in every level of process. | All employees involved include nurses, nursing director, nurse educators, nurse practitioner, pain committee, IRB, and CMO. | 3/2022 |
| 7. Economic needs of the project. | DVPRS will be incorporated into scheduled shifts, which is already compensated by ACC. Expenses associated with materials used to educate staff or measure data will come from the IRB fund bank and the author's fiscal contributions. | In progress |
| 8. Realistic ideas and the appropriate buy in to celebrate success. | An idea for celebrating success includes providing lunch and coffee for the nursing staff during and upon completion of data collection. The funds required for purchasing lunch is to be discussed with the nursing director, who has allocated funds for nurse engagement opportunities. | In progress |

Appendix H

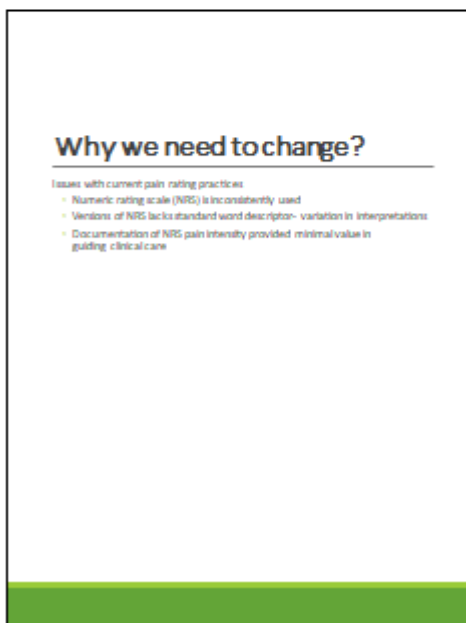
DVPRS Education Module and Simulation Quiz



1



2




3



4

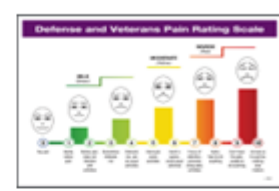
Learning Activity

Matching of pain intensity ratings with faces




5

Defense and Veterans Pain Rating Scale (DVPRS)



6

Department of Defense/Veterans Health Administration Supplemental Questions



7

Why use the DVPRS instead of the NRS?

- A universal comprehensive patient-reported pain assessment tool that includes intensity, increases function, and improves quality of life and well-being
- Intended for both acute and chronic pain
- Assesses for other dimensions of pain (to identify how pain is impacting the patient)
- Pain intensity scores can remain unchanged while other measurements can indicate an improvement in quality of life

8

Why is DVPRS and supplemental questions better than NRS? (cont.)

- Provides important indicators for success or failure of pain management therapy
- Documentation with standardized terminology will allow for better pain trending

9

Video on how to use DVPRS



<https://vimeo.com/174237044>

10

Case Studies

One case study



11

Simulation Quiz

Nurses will perform pain assessment using these steps:

- 1) Assess patient's pain intensity level using the DVPRS
 - Using the DVPRS 0-10 pain scale, paying close attention to the words connected to each number, how would you rate your pain today?
- 2) Assess patient's overall well-being and impact of pain on activity, mood, sleep, and stress using the Supplemental Questions
 - During the last 24 hours,
 - Describe how the pain has or has not been affected without analgesia?
 - Describe how the pain has or has not been affected without sleep?
 - Describe how the pain affected your mood?
 - Describe how the pain contributed to your stress?

12

Summary

- OPRS and supplemental questions promotes meaningful discussions about pain and comorbidities between clinician and patient
- OPRS provides information necessary to guide further clinical evaluation and to establish personalized biopsychosocial treatment plans
- Pain questions provide consistency and standardization of data that can be integrated into electronic health record
- Applicable to all patients and HCP across all settings

13



Questions?

14

References

McIntyre T, et al. (2011) The impact of patient self-report on pain management. [Pain Medicine, 12\(12\), 1985-1992.](#)

Wong J, et al. (2010) The impact of patient self-report on pain management. [Pain Medicine, 11\(12\), 2085-2092.](#)

Wong J, et al. (2010) The impact of patient self-report on pain management. [Pain Medicine, 11\(12\), 2085-2092.](#)

Wong J, et al. (2010) The impact of patient self-report on pain management. [Pain Medicine, 11\(12\), 2085-2092.](#)

Wong J, et al. (2010) The impact of patient self-report on pain management. [Pain Medicine, 11\(12\), 2085-2092.](#)

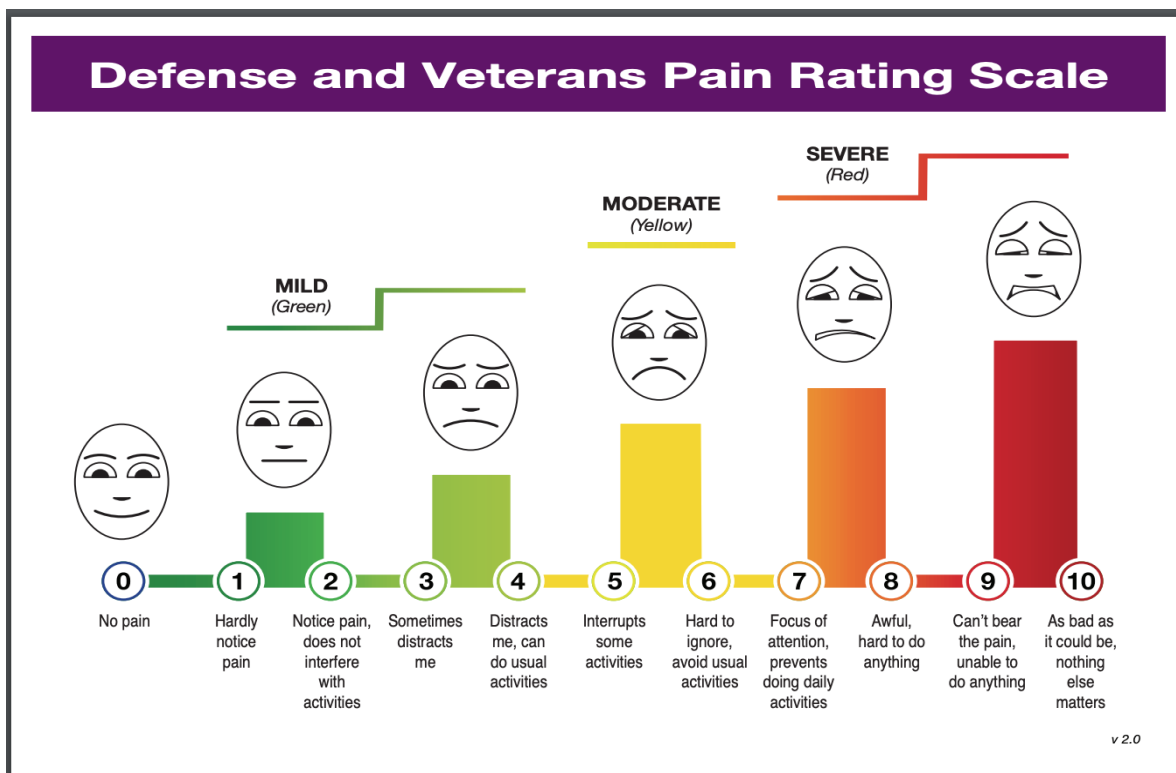
15

Table 6.*Project Timeline*

| Action | Date |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------|------------|
| Project proposal to Miwa Saito, Director of Nursing | 02/07/2022 |
| Project proposal to ACC Institutional Review Board | 11/2022 |
| Meet with Pain Committee to discuss project proposal | 10/2022 |
| DNP project oral presentation | 12/2022 |
| Nursing Education lunch-and-learn on DVPRS | 01/2023 |
| Patient satisfaction survey with DVPRS tool | 02/2023 |
| Implementation | 02/2023 |
| Complete pilot, post education pain assessment simulation to staff, post implementation patient satisfaction survey, and post implementation nurse survey | 03/2023 |

Appendix I

DVPRS Tool



DoD/VA PAIN SUPPLEMENTAL QUESTIONS

For clinicians to evaluate the biopsychosocial impact of pain

1. Circle the one number that describes how, during the past 24 hours, pain has interfered with your **ACTIVITY**:

0 — 1 — 2 — 3 — 4 — 5 — 6 — 7 — 8 — 9 — 10

Does not interfere Completely interferes
2. Circle the one number that describes how, during the past 24 hours, pain has interfered with your **SLEEP**:

0 — 1 — 2 — 3 — 4 — 5 — 6 — 7 — 8 — 9 — 10

Does not interfere Completely interferes
3. Circle the one number that describes how, during the past 24 hours, pain has affected your **MOOD**:

0 — 1 — 2 — 3 — 4 — 5 — 6 — 7 — 8 — 9 — 10

Does not affect Completely affects
4. Circle the one number that describes how, during the past 24 hours, pain has contributed to your **STRESS**:

0 — 1 — 2 — 3 — 4 — 5 — 6 — 7 — 8 — 9 — 10

Does not contribute Contributes a great deal

*Reference for pain interference: Cleeland CS, Ryan KM. Pain assessment: global use of the Brief Pain Inventory. Ann Acad Med Singapore 23(2): 129-138, 1994.

v 2.0

Appendix J

Nurse Quiz

Nurse Self-Assessment Quiz

Please complete the nurse self-assessment quiz. This quiz is self-graded and used to determine your understanding of the various key components of the DVPRS tool. A score of a 7/7 is required to pass this quiz. If you score below a 7 on the quiz, please review the material then retake the quiz. Once you pass the quiz please contact me to set up a brief simulation interview to demonstrate your use of the tool. Thank you kindly for your participation in this exercise. Completion of the quiz and your score of the material will have no impact on your employment. Thanks again!

* 1. Match pain intensity rating with face.



- 1-3
- 4-6
- 7-10

* 2. Match pain intensity rating with face.



- 1-3
- 4-6
- 7-10

* 3. Match pain intensity rating with face.



- 1-3
- 4-6
- 7-10

* 4. Select the four functional aspects of pain from the list of choices.
(select all 4)

- sleep
- appetite
- activity
- happiness
- mood
- pain
- motivation
- stress

Done

<https://www.surveymonkey.com/r/39W6BM8>

Appendix K

Data Collection Tool

| ID number starting with 1 | DVPRS completed yes=1, no=0 | Supplement questions asked yes=1, no=0 | Supplemental questions asked ACTIVITY yes=1, no=0 | Supplemental questions asked SLEEP yes=1, no=0 | Supplemental questions asked MOOD yes=1, no=0 | Supplemental questions asked STRESS yes=1, no=0 |
|---------------------------|--------------------------------|-------------------------------------------|---------------------------------------------------------|------------------------------------------------------|-----------------------------------------------------|-------------------------------------------------------|
| 1 | | | | | | |
| 2 | | | | | | |
| 3 | | | | | | |
| 4 | | | | | | |
| 5 | | | | | | |
| 6 | | | | | | |
| 7 | | | | | | |
| 8 | | | | | | |
| 9 | | | | | | |
| 10 | | | | | | |

Appendix L

Patient Survey

Client Survey



*Scan QR Code with
phone to complete
the survey online.*

Thank you for agreeing to participate in this panel by completing this survey. **This survey is voluntary and will have no impact on your care.**

Please answer question one, listed below. This question is required if you choose to participate in the survey. You can provide additional feedback by answering question two, which is optional and not required.

Thank you kindly for your participation in this survey!

**Please complete the survey below then hand it back to the nurse,
OR
complete survey with your phone by scanning the QR code above.**

1. On a scale of 0 to 10, with 0 being the least and 10 the most, rate your experience with the DVPRS pain scale. (Please select a number).



2. Is there additional feedback that you would like to provide?
(Please use the area below to enter additional information).

Appendix M

Nurse Survey

Nurse Survey

Thank you for agreeing to participate in the panel by completing this survey. Please be aware that this survey is voluntary and will have no impact on your employment.

Please provide your personal evaluation of the DVPRS pain scale by placing an "X" in the box indicating your agreement.

You have the optional opportunity to provide additional feedback by responding to question four.

Digital access to survey: <https://www.surveymonkey.com/r/3K7FJFC>

| Question | Strongly disagree 1 | Disagree 2 | Neutral 3 | Agree 4 | Strongly agree 5 |
|---------------------------------------------------------|------------------------|---------------|--------------|------------|---------------------|
| 1. The DVPRS is easier to understand than the NRS. | | | | | |
| 2. The DVPRS is easier to use than the NRS. | | | | | |
| 3. The DVPRS is better than the NRS at describing pain. | | | | | |

4. Is there any additional feedback that you would like to provide? Please use the area below to enter additional information.

Appendix N

Project Advisor Approval to Pursue QI Project



DR. SUSAN L. DAVIS, R.N.,
& RICHARD J. HENLEY
COLLEGE OF NURSING
Sacred Heart University

July 15, 2022

[REDACTED]
New York, New York

To whom it may concern,

Kristine Pantchenko is a student in our DNP program at the Davis & Henley College of Nursing and I am her DNP project faculty advisor. Kristine has the approval to pursue the DNP project titled, *Implementation of a Functional Pain Scale*. She has completed the required CITI training for our program and she plans to present her project proposal to the DNP project team in August 2022. Please reach out to me by phone or email if you should have further questions.

Warm regards,

Kerry A. Milner, DNSc, APRN, FNP-BC, EBP-CH

Kerry A. Milner, DNSc, APRN, FNP-BC, EBP-CH
Professor

[REDACTED]
[REDACTED]



DR. SUSAN L. DAVIS, R.N.
& RICHARD J. HENLEY
COLLEGE OF NURSING
Sacred Heart University

December 16, 2022

[Redacted]

Institutional Review Board
New York, NY

To whom it may concern

This letter confirms that Kristine Pantchenko, a DNP student at Sacred Heart University, has had her DNP project approved by the DNP project faculty advisor and DNP project team. The project was also reviewed by Sacred Heart University Institutional Review Board and deemed to be a quality improvement project and given an exempt status. Please contact me if you have questions.

Warm regards,

Kerry A. Milner, DNSc, APRN, FNP-BC, EBP-CH

Kerry A. Milner, DNSc, APRN, FNP-BC, EBP-CH
Professor & DNP Project Faculty Advisor

[Redacted]

Appendix O

Hospital Leadership Approval to Perform QI Project

[Redacted]

[Redacted]
Multiple Myeloma Program

[Redacted]

July 26, 2022

RE: Pantchenko, Kristine

To The Center for Nursing Research and Innovation:

Kristine Pantchenko, BSN, RN is pursuing her Doctor of Nursing Practice – Family Nurse Practitioner degree at Sacred Heart University. Per the guidelines of her program, she is required to complete a quality improvement project in her clinical setting. Kristine has chosen to discuss the efficacy of functional pain assessments versus the current standard for her quality improvement project. I have given Kristine my approval to perform the project on the Multiple Myeloma unit at [Redacted]

Regards

[Redacted Signature]

Vanessa Tran, BA, BSN, RN, CCRN
Nursing Manager
Multiple Myeloma

[Redacted]

Appendix P

IRB Approval to Perform QI Project

Dear Applicant,

Thank you for your submission to the IRB requesting exempt review. Based on the application submitted, the IRB is pleased to approve your submission and we wish you great success in your research.

Sincerely,

Christopher Taber

Chair, IRB

Christopher B. Taber, PhD, CSCS, USAW3, EP-C, PES

Director, Exercise and Sport Science M.S. Program

Associate Professor

College of Health Professions

Sacred Heart University



Appendix Q

Hospital IRB Approval to Pursue QI Project



Center for Nursing Research and Innovation



December 15, 2022

Kristine Pantchenko, RN BSN, ONS/ONCC
Sacred Heart University

RE: Project Approval

Dear Kristine,

This letter is confirmation of approval from the Nursing Project Approval Council, [redacted] Department of Nursing Center for Nursing Research and Innovation (CNRI), within the [redacted] Hospital, for the conduction of the project, *Implementation of a Functional Pain Scale*.

This project is from Kristine Pantchenko of Sacred Heart University, as part of satisfaction of the program requirements for a DNP program. The Nursing Project Approval Council determined this project to be Quality Improvement. This project does not meet the definition for human subjects research and does not require Institutional Review Board review. The goals for this project align with the mission, vision, and priority areas of [redacted] Health System.

Sincerely,



Nurse Scientist
Center for Nursing Research and Innovation at The [redacted]

Kristine Pantchenko
Project Lead Name

Kristine Pantchenko
Project Lead Signature

12/16/2022
Date

*In signing this document, I understand that should my project change in any way, I will notify the NPAC prior to implementation of these changes. I also agree to notify the NPAC upon completion of my project and respond to requests for more information about my progress.

*In case of publication of project findings, I will notify NPAC by emailing [redacted]

Appendix R

PDSA Implementation Process and Deviations from Original Plan

| Implementation of DVPRS for adult cancer patients with pain | | | | |
|-------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Steps | Project go-live date | During implementation phase | Half-way mark of implementation phase | Post Implementation phase |
| Date | 2/6/23 | 2/17/23 | 2/20/23 | 3/13/23 |
| Cycle | 1 | 1 | 1 | 1 |
| Pilot 1: PDSA | The PI team plans to: Test the process for assessing pain using the DVPRS and documenting the tool in the EHR clinic note, measure nursing satisfaction with the DVPRS assessment, and measure patient satisfaction with the DVPRS assessment. | | | Obtain feedback from nurses and patients on the DVPRS, satisfaction scores, and review data collection |
| | <p>Steps in the process:</p> <ol style="list-style-type: none"> 1. Nurses will receive education on performing a pain assessment using the DVPRS. 2. Nurses will receive education on documenting the DVPRS in the EHR clinic note. 3. Nurses will screen all in-clinic patients with pain using the DVPRS. 4. Nurses will document pain assessment in appropriate fields in the EHR clinic note. 5. Nurses will hand patients a patient satisfaction survey after asking DVPRS questions. 6. The pilot will run for four weeks. 7. Project lead will be on-site the week before the pilot, day of the pilot initiation, and 1-2 days per week during the pilot. | <p>Steps in the process:</p> <ol style="list-style-type: none"> 1. Project lead will send bi-weekly emails with instructions, tips, and steps for documenting the DVPRS in the EHR clinic note. 2. Project lead will engage nurses by celebrating their use of the tool with edible rewards. 3. Project lead will use the time providing snacks to nurses as an opportunity to provide individualized education and clarify concepts with nurses. 4. Nurse will receive timely remediation as requested by the project lead. 5. Nurses will continue to screen all in-clinic patients with pain using the DVPRS. 6. Nurses will continue to provide patients with a satisfaction survey after performing the DVPRS assessment. 7. Nurses will hold anonymous patients' satisfaction surveys until obtained by project lead on a weekly basis. 8. Project lead will perform a weekly retrospective chart review of 20 patients seen by nurses during clinic. 9. Project lead will measure the frequency of DVPRS documentation in the EHR clinic note. 10. Project lead will calculate weekly mean score of patient satisfaction survey. 11. Pilot will run for four weeks. | <p>Steps in the process:</p> <ol style="list-style-type: none"> 1. Project lead will perform mid-point evaluation to identify facilitators and barriers to project implementation. 2. Project will discuss barriers to project implementation with nursing staff. 3. Project lead will continue to send emails to foster increased used of the DVPRS. 4. Project lead will perform weekly rounds to remind nurses to document the DVPRS. 5. Project lead will perform weekly rounds to remind nurses to provide the patient survey. 6. The project will be piloted for an additional week, five weeks total. The first week will be considered a test run to the pilot. 7. Project lead will review twenty nurse written patient notes weekly. 8. The pilot will run for five weeks. | <p>Steps in the process:</p> <ol style="list-style-type: none"> 1. Project lead will complete a retrospective review of five weeks of nursing notes. 2. Project lead will calculate the frequency of DVPRS use over five weeks, with the first week not counted in the formal first pilot. 3. Project lead will distribute a nursing satisfaction survey through email, QR code, and paper format. 4. Project lead will collect and analyze the remainder of the patient surveys. 5. Project lead will calculate mean nursing satisfaction score. 6. Project lead will calculate mean patient satisfaction score. 7. Project lead will calculate how many nursing notes contained the DVPRS over the course of the pilot. |

Appendix S

Nursing Satisfaction Survey Results

| Nursing Satisfaction Survey Results | |
|--------------------------------------------|-------------------|
| Nurse | Mean Score |
| 1 | 0 |
| 2 | 3.33 |
| 3 | 4 |
| 4 | 3 |
| 5 | 3 |
| 6 | 4.67 |
| 7 | 4 |
| 8 | 3.33 |
| 9 | 0 |
| 10 | 0 |
| Average of Scores | 3.62 |

Appendix T**Patient Satisfaction Survey Results**

| Patient Satisfaction Survey Results | |
|--------------------------------------------|---------------------|
| Patient | Survey Score |
| 1 | 0 |
| 2 | 0 |
| 3 | 0 |
| 4 | 7 |
| 5 | 7 |
| 6 | 6 |
| 7 | 7 |
| 8 | 6 |
| 9 | 0 |
| 10 | 0 |
| 11 | 0 |
| 12 | 0 |
| 13 | 0 |
| 14 | 0 |
| 15 | 0 |
| 16 | 0 |
| Average Survey Score | 6.6 |

Appendix U

Executive Summary

Best practices include assessing functional status in addition to pain intensity in patients with cancer experiencing pain. The Defense and Veterans Pain Rating Scale (DVPRS) with functional assessment is an effective tool for assessing pain intensity and functional status in patients with cancer.

The Model for Health Care Improvement was followed for the planning, implementation, and evaluation of this project. The project objective was to improve pain assessment among outpatient oncology patients in an adult cancer center by implementing the DVPRS and evaluating patient and nurse satisfaction with this tool. Nurses completed an online education module and self-assessment quiz before an in-person simulation checkoff demonstrated their correct use and documentation in the EHR of the DVPRS. Weekly audits of the electronic health record (EHR) for DVPRS use and documentation were done. Patient satisfaction was measured after each use of the DVPRS. Nurse satisfaction with the DVPRS was measured at the end of the 5-week pilot.

All the nurses (n=10, 100%) completed the DVPRS education and simulation check-off. Over a 5-week pilot period, a total of 16 DVPRSs were completed and documented in the EHR indicating minimal use by the nurses. Five patients completed the survey on satisfaction with DVPRS and reported a positive experience. Nurse (n=7, 70%) satisfaction with the DVPRS tended toward neutral.

Barriers encountered during the project implementation were many. The top five barriers were the following.

- A lack of leadership support for this project.

- More in-person support from the project lead was needed.
- Low buy-in for the QI project from nursing staff.
- Decreased access to support materials (e.g.: Patient Satisfaction Survey) on the unit.
- Clinic interruptions contributing to low utilization of the DVPRS tool and Patient Satisfaction Survey by nurses.

For the next cycle of change in this outpatient oncology unit in an adult cancer center nurse buy-in should be evaluated and having APRNs and MDs assess patients' pain using the DVPRS should be part of the process improvements.