Can Multidimensional Pain Assessment Tools Help Improve Pain Outcomes in the Perianesthesia Setting?

Emily Petti, BA, Clara Scher, BA, Lauren Meador, MPH, Janet H. Van Cleave, PhD, RN, M. Carrington Reid, MD, PhD

DELIVERING EFFECTIVE PAIN CARE remains a serious challenge for nurses in the perianesthesia setting. Up to 80% of postoperative patients experience pain, with a significant majority of affected patients reporting moderate-to-severe levels of pain.[1] Fewer than half report adequate pain relief.[2] The scope of the problem is significant in the United States given that approximately 48 million surgical and nonsurgical procedures are performed each year in both inpatient and ambulatory care settings.[3] Inadequate pain treatment is associated with numerous complications in the perianesthesia setting, including impaired mobility, risk for pulmonary infections, sympathetic activation, and risk for myocardial ischemia, prolonged length of stay, and increased health care costs.[4-9] One of the most concerning complications is persistent postsurgical pain. Depending on the type of surgery, the incidence of persistent postsurgical pain ranges between 5% and 85%.[10] Poorly managed pain has been a well-documented but unresolved issue in all sectors of the health care system for several decades. This problem has led to a variety of responses, including implementation of the pain as the fifth vital sign (P5VS) initiative.

A Brief History of P5VS

In a 1995 address to the American Pain Society (APS), then President Dr James Campbell appealed for consideration of P5VS.[11] In a series of policy initiatives following Dr Campbell's call to action, the Veterans Health Administration implemented mandatory pain screening in all Veterans Affairs health centers, and the Joint Commission introduced pain assessment as a requirement in their 2001 pain management standards.[12,13] In 2002, the Centers for Medicare and Medicaid Services released the Hospital Consumer Assessment of Healthcare Providers and Systems Survey; the survey included pain management questions. Survey results were eventually tied to Medicare reimbursement rates, introducing a direct financial incentive for health systems to focus on patients' pain control. These initiatives promoted the use of the numeric rating scale (NRS), a unidimensional screening method in which patients rate their pain intensity on an 11-item scale ranging from 0 (no pain) to 10 (worst possible pain).[14]

Despite widespread adoption of P5VS, a growing body of literature suggests that this policy initiative has not improved the quality of pain care delivered in the United States. In 2006, Mularski et al[15] investigated the impact of P5VS at a Veterans Affairs medical center by analyzing pre- and postimplementation pain levels documented in patients' medical records. The results demonstrated no improvement in pain care after implementation of the new assessment procedure. In a related study, investigators examined the impact of P5VS

Ms. Emily Petti and Ms. Clara Scher are co-first authors.

Emily Petti, BA, Department of Medicine, Weill Cornell Medical Center, New York, NY; Clara Scher, BA, Department of Psychiatry, Weill Cornell Medicine, New York, NY; Lauren Meador, MPH, Department of Medicine, Weill Cornell Medical Center, New York, NY; Janet H. Van Cleave, PhD, RN, New York University, Meyers College of Nursing, New York, NY; and M. Carrington Reid, MD, PhD, Department of Medicine, Weill Cornell Medical Center, New York, NY.

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Address correspondence to Maureen F. Cooney, Pain Care column editor, Pain Management, Westchester Medical Center, Rm 2108 Macy Pavilion, 100 Woods Road, Valhalla, NY 10595; e-mail address: maureen.f.cooney@gmail.com.

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on pain treatment and found that providers frequently failed to conduct further evaluation of patients' pain in the subgroup that endorsed NRS scores in the moderate-to-severe range, suggesting that ascertaining and documenting NRS scores does not invariably improve pain outcomes.[16,17] Adding to recent efforts to evaluate the quality of pain control, European Commission-funded researchers developed an international acute pain registry entitled PAIN OUT.[18] The researchers analyzed the pain registry data and found that, despite clinician adherence to the recommended guidelines, most patients did not achieve acceptable pain outcomes. These findings are consistent with several other US-based studies.[1,16,17] One such study compared pain outcomes pre- and postimplementation of mandatory NRS pain screening and continuing education activities that included a focus on pain assessment and dosage. Despite using this two-pronged approach, investigators did not find any improvements in pain outcomes after the intervention.[17] Finally, a US-based survey study designed to allow comparison with previously collected survey data was similarly discouraging in that only minor improvements were documented in postsurgical pain outcomes during the past 20 years.[19]

Reasons Why the P5VS Initiative Has Not Been Successful

Given the broad diffusion of P5VS in practice, many perianesthesia nurses routinely use numerical ratings to ascertain patients' pain levels. Yet, reliance on numerical ratings alone to guide pain treatment has proven problematic. Although numerical ratings are simple, easy to use, and constitute valid and reliable measures, they are limited in representing a patient's overall pain experience.[20,21] This is because the experience of pain is multidimensional with sensory, affective, cognitive, and functional components. Capturing only one element of the pain experience (ie, severity level) can lead to poor pain outcomes. One qualitative study highlighted the benefits and limitations of using numerical ratings to assess patients' pain. Patients reported that use of numeric pain ratings produced a feeling of security and confidence that patients' providers cared for them as individuals, creating an atmosphere of responsiveness and attention to their care. For nurses, the use of numerical ratings provided a communication tool that facilitated the sharing of pain information with other team members (eg, physicians, physical therapists). Despite these benefits, patients reported difficulty giving a number that matched their pain level—that a number did not tell the full story of their pain experience. Instead, patients voiced a desire to use adjectives to describe their pain. In addition, patients were uncertain as to how their ratings were used.[21]

These narratives highlight the challenges in the patients' use of a unidimensional pain intensity score and the challenge providers face when interpreting scores.[22] It is widely understood that a score of 0 means no pain and is thus a concrete anchor for the low end of the scale. However, the subjective nature of both reporting and interpreting numeric rating scores makes it hard to know how to best respond when pain levels are elevated, for example, when a patient reports a pain score of 7 out of 10, while at the same time reporting that their pain level is acceptable.[23,24] In addition, there is evidence that nurses sometimes use subjective interpretation and may change patients' scores to record what they believe to be a more accurate and appropriate number.[25]

Another limitation of using NRS scores alone to guide treatment decisions occurs in care systems that link specific treatments with specific pain scores. In many hospitals, protocols call for administering higher doses of opioids when patients report elevated NRS scores (eg, scores of 7 or greater).[21,26,27] An example is an order for oxycodone 5 mg orally every 4 hours if needed for NRS 5 to 7 and 10 mg orally for NRS greater than 7 in an effort to facilitate individual initiation and titration of opioid dosing. Linking-prescribed opioids with a given pain intensity score may deter nurses from conducting a thorough pain assessment and evaluation of patients' functional status. Tying a pain intensity score to a specific opioid dose poses the risk for serious opioid-related adverse effects such as advancing sedation and respiratory depression.[27] Moreover, linking opioid doses with pain intensity scores places patients at risk for overtreatment of pain.[28,29] Opioid use has become a national crisis, with prescription opioid overdoses accounting for the highest number of unintentional overdose deaths in the United States.[30] Given that many individuals