



Adult Cancer Pain: An Evidence-Based Update



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A B S T R A C T

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Cancer often produces excruciating pain, which sends waves reverberating through the person's body, mind, spirit, and social interactions diminishing their quality of life and that of those closest to them. This updated review will summarize the latest research exploring the biologic mechanisms, psychosocial impact, and evidence-based approaches to treating cancer pain. Persons with cancer should not live or die with needless pain because of the detrimental effects it has on longevity and quality of life. This review intends to inform nurses of evidence-informed best practices they can use to prevent avoidable suffering that results from cancer pain.

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The problem of pain in persons with cancer

Cancer is the leading cause of death, claiming 8 million lives in 2012 worldwide; with 14 million new cases diagnosed annually (International Agency for Research on Cancer, 2014). Aside from the threat of dying, cancer pain is the most common source of distress attributed to the disease. Despite 50 years of research claiming cancer pain can be prevented and successfully alleviated in 90% of cases, the vast majority endure pain with 33% reporting moderate or severe pain intensity (Haumann, Joosten, & Everdingen, 2017). Sadly, evidence-based approaches are underused even with the distressing intolerable suffering of advanced disease (Fujii et al., 2017). Prevalence studies show a third of survivors, half of patients actively being treated, and 80% at the end of life endure cancer pain. A failure to improve pain control despite remarkable advances in understanding and treating cancer is a call to action to best use available treatments while developing safer and more effective therapies (National Cancer Institute [NCI], 2017). Unfortunately, strong analgesics are now frequently withheld until the final weeks of life (Ziegler, Mulvey, Blenkinsopp, Petty, & Bennett,

2016). Strong analgesics and interventional approaches like nerve blocks, palliative radiation, or neurosurgery that work well at earlier stages may be less effective, riskier, or be contraindicated at advanced disease stages in the setting of nervous system sensitization, increased frailty, blood anomalies, and diminished functioning of major organ systems.

Patients may be reluctant to report pain out of fear that their disease is getting worse, distracting professionals from focusing on curing the disease, and/or the stigmas attached to pain and its treatments. These patient beliefs are among many common barriers that interfere with assessing and treating cancer pain. Many patients lack insight into the impact psychosocial factors have on the perceived intensity of pain, that can be lowered by seeking and accepting help, as well as learning and using self-initiated coping skills. Patients' unrealistic expectations, ranging from therapeutic nihilism (e.g., that would not work) to the expectation that pain be eliminated; are misaligned with the reality that a 30% to 50% reduction in pain is considered successful and a 1-point reduction on a 0 to 10 intensity scale may be clinically meaningful (NCI, 2017).

As part of nurses' duty to assess and manage pain through patient-centered evidence-informed interventions (American Nurses Association/American Society for Pain Management Nursing, 2016; US Department of Health and Human Services [USDHHS], 2016), it is important to help overcome these barriers

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and refute mistaken beliefs. Nurses may inadvertently convey or reinforce the notion that eliminating pain is a realistic expectation. Instead, pain reduction, improved biopsychosocial functioning, and avoiding treatment-related harm is a more realistic achievable goal (USDHHS, 2016; Wiffen et al., 2017b). Nurses are also in a key position to communicate factors that affect patient adherence (e.g., costs, environmental security, concerns about burdening others, etc.) and inclusion of pain management as part of the team-based treatment plan.

Nurses can lead by example by shedding biases regarding the patient's age, gender, appearance, or behavior, which conveys a lack of trust or respect and contributes to undertreatment (Luckett et al., 2013). The conduct of a thorough multidimensional assessment and effectively communicating the findings to help the team develop a personalized therapeutic plan can be mastered by nurses (Bennett, Paice, & Wallace, 2017). Perhaps the greatest concern of patients, families, and professionals alike relates to the use of opioids. Even if patients and professionals agree that an opioid is medically necessary, their judgment may be superseded by regulations and payer policies, which requires additional documentation and advocacy steps by nurses (Anson, 2017; Bennett et al., 2017).

Many professionals, including nurse, harbor fears about causing an addiction or contributing to an opioid overdose death. Although all patients prescribed opioids are at risk, the development of an opioid use disorder is infrequent, and overdose deaths occur in fewer than 1% of patients prescribed opioids (Arnstein, St. Marie, Zimmer, 2017b; Chou et al., 2014a,b; Dasgupta et al., 2016). Despite substantial declines in opioid prescribing since 2012, overdosed deaths have skyrocketed, primarily because of illicit drugs (Pezalla, Rosen, Erensen, Haddox, & Mayne, 2017; Rudd, Seth, David, & Scholl, 2016). The Centers for Disease Control and Prevention (CDC) developed opioid-prescribing recommendations for primary care providers to guide the management of chronic non-cancer pain (Dowell, Haegerich, & Chou, 2016) that have subsequently been adopted by regulators and payers to define appropriate prescribing for all patients. Some mandate that opioids should be tapered or stopped unless a 30% improvement in both pain and functioning is sustained. This benchmark is unrealistic because no research shows any treatment that meets the criteria (Tayeb, Barreiro, Bradshaw, Chui, & Carr, 2016). Although the CDC guidelines specifically exclude patients with cancer undergoing active treatment or at the end of life; hospice patients with cancer pain have become collateral damage, too afraid to take analgesics given policies and media aimed at resolving the opioid crisis (Glod, 2017). Thus, distinguishing illicit versus legitimately prescribed opioids and better utilization of evidence-based guidelines to treat cancer pain and palliative care patients are needed (Sohal, Mangu, & Laheru, 2017).

How cancer pain differs

Cancer pain is different from other forms of acute or chronic pain; often with mixed (somatic, visceral, and neuropathic) types of nerves/pathways involved. The psychosocial aspects of pain are often exacerbated by overwhelming thoughts or feelings associated with an uncertain future, loss of control, and potential dire consequences of death and disfigurement. This total pain experience demands more than a biomedical treatment approach to address the biopsychosocial and spiritual suffering many with cancer pain experience (NCI, 2017).

Uncontrolled pain sensitizes peripheral and central nerves, with subsequent neuroplastic changes to the structure and function of nerves in a way that amplifies, prolongs, and spreads pain

in a pathologic fashion (Aronoff, 2016). When cancer invades nerves, visceral capsules, and bone, a unique form of cellular destruction and compression occurs triggering neuroimmune interactions that excrete cellular and neuroinflammatory substances. Immune cells are recruited that release proinflammatory chemicals that promote new nerve growth that further heighten sensitivity to pain. Spontaneous (unprovoked) pain, hyperalgesia (intensified pain), and allodynia (pain provoked by a nonpainful stimulus) result; whereas other nerve changes spread and sustain pain signaling long after the stimulus has passed (Brown & Ramirez, 2015). As new immunotherapies are developed and used, they may inadvertently trigger this heightened sensitivity to pain, such as is seen with certain forms of graft-versus-host disease (Brown & Ramirez, 2015).

Pain assessment

The assessment of pain begins with a simple screening question like, "Are you having any pain or discomfort?" Affirmative responses warrant a more comprehensive assessment based on the patient's age, ability to self-report, and clinical resources. The acronym WILDA guides the nurse to ask about the words used to describe pain, intensity, location, duration, and aggravating or alleviating factors (Fink, 2000). For acute procedural pain, there are several well-validated pain intensity measures available for patients who are able to self-report their discomforts (Ferreira-Valente, 2011). Patients with cognitive or communication deficits can have pain behaviors like grimacing, moaning, guarding, agitation, or aggression quantified with validated tools (Herr, Coyne, McCaffery, Manworren, & Merkel, 2011). Observing how these measurable behaviors change in response to interventions reveals the most reliable behaviors indicative of pain in that individual.

Given variations when pain persists, it is useful to ask about changes in pain over time. Inquire about what pain is like at its best, at its worst, and on average during that period; then compare it to pain right now. New or worsening pain in patients with cancer warrants an evaluation of disease progression. When pain is chronic, multidimensional scales provide insight into the complex, interrelated sensory-discriminative (physical), affective-motivational (psychosocial), and interpretive (cognitive) components of the experience. The McGill Questionnaire and the Brief Pain Inventory are standard tools used to evaluate these domains in research (Song et al., 2016) but are often impractical or inappropriate in some clinical settings. Subscales with as few as 2 or 3 items that provide a single score are an effective way of monitoring cancer pain over time (Kroenke, Theobald, Wu, Tu, & Krebs, 2012).

To guide treatment planning, also consider the patient's goals and expectations, responses to prior pain treatments, and pain's impact on activities of daily living. If opioids are part of the treatment plan, evaluate the patient's risk of harm; including a personal or family history of substance abuse (National Comprehensive Cancer Network [NCCN], 2017a; NCI, 2017). Even if the patient reports no current pain, if a potentially painful procedure is planned, it is important to create a calm and comfortable procedural environment as well as identify their prior experiences with procedural pain and level of anxiety about the procedure. According to the National Cancer Collaborative Network guidelines, analgesics and/or anxiolytic therapy should be offered before uncomfortable diagnostic or therapeutic interventions (NCCN, 2017a).

Best practices in cancer pain control

In 1986, the World Health Organization outlined the principles for effective pain management. These include a stepped approach

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