

# Psychological and Physical Interventions for the Management of Cancer-Related Pain in Pediatric and Young Adult Patients: An Integrative Review

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**P**ain is one of the most distressing symptoms for children and young adults with cancer (Hedén, Pöder, von Essen, & Ljungman, 2013; Olson & Amari, 2015). Studies show that 49%–62% of children and young adults with cancer experience pain, often prolonged, during the course of their treatment (Baggott et al., 2010; Varni, Burwinkle, & Katz, 2004). Pain negatively affects a young person's quality of life (Bhat et al., 2005; Sung et al., 2009; Varni et al., 2004), impedes cancer recovery (Shepherd, Woodgate, & Sawatzky, 2010), results in patient and family distress (Hedén et al., 2013; Miller, Jacob, & Hockenberry, 2011; Walker, Gedaly-Duff, Miaskowski, & Nail, 2010), and is associated with long-term morbidity (Chordas et al., 2013; Lu et al., 2011). Pain related to cancer also represents a significant cost burden to the healthcare system and families (Abernethy, Samsa, & Matchar, 2003), with pain being the most common reason adult patients with cancer use emergency health services (Barbera, Taylor, & Dudgeon, 2010; Kuo, Saokaew, & Stenehjelm, 2013; Tsai, Liu, Tang, Chen, & Chen, 2009; Walker et al., 2010). Despite this knowledge, the management of pain in pediatric and young adult patients with cancer has not kept pace with advancements in treatment protocols (Woodgate, 2008). Several reasons have been proposed to explain why this pain is undermanaged, including (a) misconceptions about analgesic use and pain expression, (b) concern about undesirable diagnostic tests in the case of pain, (c) concern about opioid addiction, and (d) patient temperament and reported quality of life (Ameringer, 2010; Fortier et al., 2012; Fortier, Wahi, Bruce, Maurer, & Stevenson, 2014).

The causes of pain in pediatric and young adult patients with cancer are diverse, likely also contributing to difficulties in its management. Cancer pain may result from the disease itself or from the many associated in-

**Purpose/Objectives:** To identify and appraise current evidence related to the effectiveness of psychological and physical (nonpharmacologic) pain management modalities for children and young adults with cancer.

**Data Sources:** Electronic searches in MEDLINE®, EMBASE, CINAHL®, PsycINFO, and Web of Science™ (from database inception to June 2013) for clinical trials.

**Data Synthesis:** A total of 32 unique studies were identified. Substantial heterogeneity existed across identified studies, precluding meta-analysis. Therefore, a narrative review of included studies is presented. Studies featured psychological and/or physical pain interventions for children and young adults (N = 1,171) aged 1–21 years with a variety of cancer diagnoses. Interventions included aromatherapy, art therapy, distraction, hypnosis, physical activity, physical positioning, touch therapy, and multimodal cognitive-behavior therapy. Twenty-two studies (69%) reported success in preventing or reducing pain intensity. The level of evidence and methodologic quality of studies were generally low.

**Conclusions:** Current nonpharmacologic pain interventions for pediatric and young adult patients with cancer are diverse. Several modalities significantly decreased pain intensity, suggesting that these strategies may be effective methods of pain treatment, particularly in the case of painful medical procedures. Future well-designed, multicenter, randomized, controlled trials are needed to further discern treatment effects on pain and other health outcomes in this population and to compare the relative effectiveness of different modalities.

**Implications for Nursing:** Nurses play a key role in pain assessment and management in pediatric and young adult patients with cancer. The studies included in this review constitute the beginnings of an evidence base that supports the need to implement psychological and physical interventions to improve pain outcomes in pediatric and young adult patients with cancer.

**Key Words:** cancer; pediatric; pain management; psychological; physical; nonpharmacologic

*ONF*, 42(6), E339–E357. doi: 10.1188/15.ONF.E339-E357