

# Meta-Analysis of the Effect of Psychoeducational Interventions on Pain in Adults With Cancer

Elizabeth C. Devine, PhD, RN, FAAN

**Purpose/Objectives:** To determine the effect of psychoeducational interventions on pain in adults with cancer.

**Data Sources:** 25 intervention studies published from 1978–2001.

**Data Synthesis:** When analyzed across all studies, a statistically significant, beneficial effect on pain was found. However, threats to validity were present in some studies. The most serious of these involved a lack of random assignment to treatment condition and a floor effect on pain. When limited to the studies with the best methodologic quality, the effect on pain continued to be statistically significant. Effect on pain by type of treatment was examined and found to be somewhat variable and limited by the small number of studies testing each type of treatment.

**Conclusions:** Methodologic quality was variable. Reasonably strong evidence exists for relaxation-based cognitive-behavioral interventions, education about analgesic usage, and supportive counseling. Minimal data were available about the relative effectiveness of different types of psychoeducational interventions because few studies included within-study contrasts of different experimental interventions and usual care was not well documented.

**Implications for Nursing:** Psychoeducational interventions are not a substitute for analgesics, but they may serve as adjuvant therapy. Assessment and clinical judgment are critical. The intervention must be acceptable to patients and not too burdensome for patients in pain to use.

## Key Points . . .

- ▶ Inadequately controlled pain is a problem for adults with cancer.
- ▶ Adjunctive treatment of pain with some forms of psychoeducational interventions for pain is promising.
- ▶ Additional high-quality research is needed to determine the relative effectiveness of different types of treatment, the duration of treatment effect, and the frequency with which the treatment should be administered to achieve maximum effect.
- ▶ Quality of life is a key outcome variable that should be measured in future research on the effect of psychoeducational interventions on pain.

Millions of people are diagnosed with cancer every year, and studies have estimated that the majority of individuals with cancer, at some point, will experience pain from their disease (Agency for Healthcare Research and Quality, 2002; Bonica, 1990). However, many researchers have found that pain management is lacking and must be improved (Cleeland et al., 1994; Coyle, Adelhardt, Foley, & Portenoy, 1990; Wells, 2000). In response, efforts have been made to improve pain management for individuals with cancer (Jacox, Carr, & Payne, 1994; Jadad & Browman, 1995; Zech, Grond, Lynch, Hertel, & Lehmann, 1995).

Although analgesics are a mainstay of pain management, they may cause undesired effects such as sedation, nausea, constipation, and renal or liver toxicity. Researchers have examined the effect of adjunctive pain therapy in adults with cancer using educational, psychosocial, and cognitive-behavioral interventions (hereafter referred to as psychoeducational interventions). If practice is to be evidence based, the strength of the research basis for these psychoeducational interventions must be examined and communicated to clinicians. Although relevant systematic reviews of this topic have been conducted (Carroll & Seers, 1998; Devine & Westlake, 1995; Pan, Morrison, Ness, Fugh-Berman, & Leipzig, 2000; Smith, Holcombe, & Stullenbarger, 1994; Thomas & Weiss, 2000;

Trijsburg, van Knippenberg, & Rijpmma, 1992; van Fleet, 2000; Wallace, 1997), most of these reviews do not include recent studies, some lack critical information about the review methodology used (e.g., search strategies, inclusion criteria), some include studies with both adults and children without separate analysis, some include studies with a wide range of painful chronic conditions, and most provide narrative summaries of the statistical analyses in individual studies rather than quantitative analysis of effect size values (i.e., the quantitative estimate of a treatment's effect on pain).

Standard terminology does not exist for the class of interventions that is the focus of this review: education, relaxation, guided imagery, music, hypnosis, cognitive reappraisal, coping strategies, and supportive counseling. Conducting separate systematic reviews on each of these intervention classes is problematic because many studies have incorporated more than one of these types of interventions in the experimental treatment. The terms used to classify most or all of these interventions have included cognitive-behavioral (Kwekkeboom, 1999), psychoeducational (Devine & Westlake, 1995), complementary (Loitman, 2000), complementary and alternative (Pan

---

*Elizabeth C. Devine, PhD, RN, FAAN, is a professor in the School of Nursing at the University of Wisconsin–Milwaukee. This research was supported, in part, by National Institutes of Health Grant #R15 NR04750. A longer version of this review will be published and updated in the Cochrane Database of Systematic Reviews. (Submitted February 2002. Accepted for publication May 30, 2002.)*

Digital Object Identifier: 10.1188/03.ONF.75-89