

Review Article

A Systematic Evaluation of Content, Structure, and Efficacy of Interventions to Improve Patients' Self-Management of Cancer Pain

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Abstract

Context. Cancer pain continues to be extensively undertreated, despite established guidelines. Although the efficacy of interventions that support patients' self-management of cancer pain has been demonstrated in several studies, the most effective components of these interventions remain unknown.

Objectives. The purpose of this review of experimental and quasi-experimental studies was to systematically describe the structure and content components, as well as the efficacy of various components, of interventions designed to improve patients' self-management of cancer pain.

Methods. A systematic review of the literature was done that supplemented the 2009 meta-analysis of Bennett et al. Intervention components were categorized using content analysis. The intervention components were compared based on their calculated largest effect sizes (ESs) within each study (i.e., Hedges G_u for between-group differences in pain intensity scores).

Results. Based on 34 publications (i.e., 24 interventions), seven structure and 16 content components were identified. In 11 studies with statistically significant ESs, the largest ES within each study ranged from -1.87 to -0.44 , which represented clinically meaningful effects. No single component was found to have a discernable influence on ES.

Conclusion. This analysis provides researchers and clinicians with a detailed overview of the various structural and content components, as well as various combinations that were tested in intervention studies to improve cancer pain management. However, because of a variety of limitations, the most efficacious

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intervention components or combination of components remain to be determined in future studies. *J Pain Symptom Manage* 2012;44:264–284. © 2012 U.S. Cancer Pain Relief Committee. Published by Elsevier Inc. All rights reserved.

Key Words

Pain, patient education, cancer, behavioral interventions, self-care, educational interventions, family caregiver, systematic review

Introduction

Despite the availability of analgesics and established guidelines to maximize treatment efficacy,^{1,2} cancer pain remains undertreated.^{3–5} An extensive portion of this undertreatment can be attributed to patient factors or barriers that hinder effective pain management.^{6,7} Although many interventions to support patients' self-management of cancer pain have been developed and tested, it remains unclear which intervention components are most effective.^{8–10} Therefore, the purpose of this review of experimental and quasi-experimental studies was to systematically describe the structure and content components, as well as the efficacy of various components, of interventions designed to improve patients' self-management of cancer pain.

Background

Pain is one of the most frequent symptoms experienced by oncology patients.^{1,11} Although effective treatments exist,^{3,5} more than 40% of cancer patients experience moderate-to-severe pain.^{2,12,13} Because of the deleterious effects of pain on mood, functional status, and quality of life, pain control is an essential component of cancer treatment.^{14,15} Established guidelines describe five steps that are crucial for optimal pain management by clinicians and patients: assessment, planning, implementation of actions, evaluation of these actions, and adaptations if pain management is inadequate.^{3,5,16} Clinicians diagnose and treat pain, whereas patients and their family caregivers (FCs) need to follow these five steps on a daily basis to achieve pain control. Cancer patients and their FCs need to apply complex self-management strategies, such as self-monitoring of pain and related symptoms, obtaining the prescribed pain medication, taking pain medication on a regular

schedule, and using nonpharmacologic pain management strategies. Finally, patients need to evaluate the effectiveness of these strategies and make adaptations if necessary by titrating as-needed medications and effectively communicating with their clinicians if their pain is not relieved.¹⁶

If applied correctly, pain management strategies can reduce pain in 95% of oncology patients.¹² However, a large part of undertreatment of cancer pain is attributed to patient barriers. For example, oncology patients take only 56% to 70% of their medication despite being in severe pain, even if analgesics were prescribed correctly.^{6,17} Patient barriers are multifactorial and often a consequence of a lack of knowledge about cancer pain and its self-management.^{6,18,19} As an example, opioids are associated with fears and misconceptions.^{6,20,21} In addition, practical problems, such as difficulty obtaining prescribed pain medication, difficulty tailoring medications to individual needs, or inadequate management of side effects, were found to inhibit optimal pain control.^{6,22}

Lorig²³ defines interventions that support patients' self-management as a "set of planned activities designed to improve patients' behaviors, health status, or both" (p. xiii) and describes self-management and its support as a complex process. It is no longer sufficient for patients with cancer pain to learn and practice distinct skills. They also need to manage their pain as a part of daily life using advanced problem-solving skills.^{23,24} Often, interventions that are designed to support patients' self-management are guided by theoretical frameworks that provide directions on how to change patients' cognitions (alterations in knowledge, beliefs, and attitudes)^{23,25} and behaviors (alterations in actions and skills).²⁵ In addition, affective aspects of an intervention have received more attention, particularly in terms of the identification

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