



## Patient training in cancer pain management using integrated print and video materials: A multisite randomized controlled trial <sup>☆</sup>

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### Abstract

Standard guidelines for cancer pain treatment routinely recommend training patients to reduce barriers to pain relief, use medications appropriately, and communicate their pain-related needs. Methods are needed to reduce professional time required while achieving sustained intervention effectiveness. In a multisite, randomized controlled trial, this study tested a pain training method versus a nutrition control. At six oncology clinics, physicians ( $N = 22$ ) and nurses ( $N = 23$ ) enrolled patients ( $N = 93$ ) who were over 18 years of age, with cancer diagnoses, pain, and a life expectancy of at least 6 months. Pain training and control interventions were matched for materials and method. Patients watched a video followed by about 20 min of manual-standardized training with an oncology nurse focused on reviewing the printed material and adapted to individual concerns of patients. A follow-up phone call after 72 h addressed individualized treatment content and pain communication. Assessments at baseline, one, three, and 6 months included barriers, the Brief Pain Inventory, opioid use, and physician and nurse ratings of their patients' pain. Trained versus control patients reported reduced barriers to pain relief ( $P < .001$ ), lower usual pain ( $P = .03$ ), and greater opioid use ( $P < .001$ ). No pain training patients reported severe pain ( $> 6$  on a 0–10 scale) at 1-month outcomes ( $P = .03$ ). Physician and nurse ratings were closer to patients' ratings of pain for trained versus nutrition groups ( $P = .04$  and  $< .001$ , respectively). Training efficacy was not modified by patient characteristics. Using video and print materials,

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with brief individualized training, effectively improved pain management over time for cancer patients of varying diagnostic and demographic groups.

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## 1. Introduction

All cancer pain guidelines include a mandate for patient education within standard practice [1,16,20,25]. Studies argue convincingly that improved cancer pain treatment depends in part on training patients, as well as physicians and nurses, to understand treatment options [8,15,27], to communicate effectively about pain and its treatment [23,36], and to use opioids appropriately [17,31,36,39].

Patient pain training is neither new nor unproven. However, effective strategies are needed that have sustained impact while requiring feasible amounts of professional time. Clinical trials document the efficacy of patient education in improving cancer pain knowledge [6,13,24,40] and outcomes [12,26,29], although these efforts are not universally successful in reducing pain [13,37]. Nearly all clinical trials have had relatively brief endpoints of 2–6 weeks, whereas cancer pain often continues for much longer.

A barrier to the adoption of routine patient pain training is the professional time required. Furthermore, it is difficult for educators to consistently repeat the same core information that all patients require. While changing content helps to maintain the involvement of trainers, variations can lead to patients receiving incomplete information. Alternatively, repetition results in disinterested trainers 'going through the motions' without ensuring that learning and not just teaching has occurred. Print materials reinforce face-to-face training, sometimes with audiotapes and sometimes including caregivers in training [10,18,19,24]. Videos or DVDs help both providers and patients by presenting information in a standardized yet engaging manner, allowing face-to-face time to be individualized. Videos have been used in clinical trials with varying, modest success [3,10,22,40]. The challenge is to determine methods and materials that optimize professional time while achieving sustained, effective cancer pain control.

This study tested a training procedure designed to ensure that content and presentation were standardized, while professional time was conserved for addressing individual patient needs, based on psycho-educational principles [12]. Administration was targeted to 'learnable moments', when patients had cancer-related pain, but were healthy enough to learn and apply new information. We hypothesized that, compared with the active control, patients who watched the pain video and received the

handbook, followed by individualized training, would (1) have fewer barriers to treatment, (2) report lower pain, and (3) be more likely to take prescribed opioids over the 6-month follow-up than patients who received similar training on a non-pain topic. We also hypothesized that trained patients would communicate their pain levels more directly to their physicians and nurses, thereby improving the professionals' knowledge of their patients' pain levels, leading to improved pain treatment.

## 2. Methods

### 2.1. Participants

#### 2.1.1. Sites

Twenty-two oncologists and the 23 nurses who work with them at six urban and rural regional oncology clinics consented to participate and to enroll eligible patients in the randomized clinical trial of pain or nutrition training. The six sites included oncology clinics in (1) an urban private medical center, (2) an urban public university medical center, (3) an urban HMO, (4) a small urban private practice clinic, (5) a small suburban private practice clinic, and (6) a mid-sized rural medical center. Each site included at least two oncologists and nurses, and each oncologist had at least two patients who participated.

#### 2.1.2. Physicians and nurses

Participating physicians and nurses completed descriptive information after consenting to study participation.

#### 2.1.3. Patients

Inclusion criteria for patient entry to the study were: (1) cancer diagnosis with disease-related persistent pain; (2) life expectancy of at least 6 months; (3) ambulatory functional status; (4) cancer treatment expected to be stable over the next 6 months; (5) age over 18; and (6) English reading and writing proficiency adequate to participate in the intervention and assessments. Exclusion criteria included active alcohol or other substance abuse and major psychiatric diagnosis for which treatment was being received. Of 226 patients screened, 93 met eligibility and consented to participate, 15 declined consent (Fig. 1).

### 2.2. Procedure

#### 2.2.1. Overview

Materials were developed specifically for this randomized controlled trial targeting ambulatory cancer patients with disease-related pain who were expected to live at least for 6 months. The Institutional Review Board (IRB) of the Fred Hutchinson Cancer Research Center and each IRB for the participating institutions approved the study protocol and human

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