

**Table 1. Characteristics of included studies**

| Author, year                                    | N (I/C) | Population   | Intervention   | Comparator   | Outcomes  | Follow-up                        |
|---|---------|--|--|--|---|----------------------------------|
| <b>Skills/coping training, and/or education</b> |         |  |  |  |   |                                  |
| Jahn 2014                                       | 128/135 | Adult patients with a cancer diagnosis, pain $\geq 3$ on NRS | <ul style="list-style-type: none"> <li>A nurse-led counselling program: Starting with admission, patients received booster sessions every 3<sup>rd</sup> day and one follow-up telephone counselling session within 2–3 days after discharge.</li> <li>Counselling sessions in 3 modules: <ul style="list-style-type: none"> <li>'Pharmacologic pain management', addressed reliable pain assessment, effective communication about pain, and administration of pain medication.</li> <li>'Non-pharmacologic pain management', included information on the effectiveness of complementary pain treatment methods.</li> <li>'Pain-related discharge management', advice on how to maintain the self-management strategies learned in modules one and two after discharge, and a checklist to ensure adequate discharge management.</li> </ul> </li> <li>The content of all 3 modules was summarized within the 33-page patient education booklet, 'Leaving the pain behind'.</li> </ul> | Standard care  | <ul style="list-style-type: none"> <li>BPI pain intensity</li> <li>EORTC QLQ C30</li> </ul>                     | 4 weeks after hospital discharge |
| Koller 2013                                     | 19/20   | Oncology outpatients<br><br>Cancer pain $\geq 3$ on NRS      | <ul style="list-style-type: none"> <li>6 visits and 4 phone calls in a 10-week period.</li> <li>Provision of information using academic detailing.</li> <li>Patients and FCs received corresponding print materials and individualized information.</li> <li>Skills building</li> <li>Teaching on how to titrate prescribed analgesics to individual needs, individual goal setting.</li> <li>A mutual agreement on self-management strategies to reach these goals.</li> </ul>  | Standard care from clinicians with no standardized pain self-management support. | <ul style="list-style-type: none"> <li>NRS pain intensity</li> <li>Self-efficacy Questionnaire (SEQ)</li> </ul> | 22 weeks                         |

|             |       |  |   |   |  |          |
|-------------|-------|--|---|---|--|----------|
|             |       |  | <ul style="list-style-type: none"> <li>Nurse coaching. Individual information was reinforced, and the effectiveness of the pain and side-effect management plan was evaluated in conjunction with the patient and FC.</li> </ul>  |   |  |          |
| Koller 2018 | 19/20 | Adult oncology patients with pain scores $\geq 3$ on NRS | <ul style="list-style-type: none"> <li>The intervention consisted of an in-hospital visit before discharge and telephone calls after discharge.</li> <li>In-person visits after discharge were scheduled only if patients had routine follow-up visits due to their cancer treatment.</li> <li>Laminated cards were used to visualize the intervention's content for the patients.</li> <li>Patients received a corresponding booklet that summarized the information from the intervention session and a pillbox to organize their oral medication.</li> </ul>   | <p>Routine cancer care that did not include any cancer pain self-management support.</p> <p>After the 6-week study period, patients in the control group were offered pain self-management support.</p> | <ul style="list-style-type: none"> <li>BPI pain intensity</li> <li>Pain Self-efficacy</li> <li>Questionnaire Medical Outcome Study Short-Form (QoL)</li> </ul> | 6 weeks  |
| Musavi 2021 | 40/35 | Adult metastatic cancer patients, $\geq 3$ on VAS        | <ul style="list-style-type: none"> <li>The needs assessment form was delivered to the intervention group patients to complete.</li> <li>Then, pain self-management education was performed in the three steps of providing information, skills development and guidance in the intervention group.</li> <li>First step was accomplished by providing information in the hospital and at the time of hospitalization.</li> <li>Second step, the patients were practically trained to use the VAS and implement complementary medicine approaches, face-to-face and in the presence of the accompanying person. They were also taught how to perform pharmaceutical pain relief.</li> <li>Third step, guidance, included weekly and monthly follow-up evaluation of pain severity and the quality of life.</li> </ul> | Routine training  | <ul style="list-style-type: none"> <li>VAS Pain severity</li> <li>EORTC QLQ-C30</li> </ul>   | 3 months |

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|                |         |  |  |  |   |          |
|----------------|---------|--|--|--|---|----------|
| Kravitz 2012   | 157/150 | Adults with cancer and pain (worst pain score $\geq 4$ for the past two weeks or pain that interfered "moderately" with functioning) | Tailored education and coaching:<br><br>Self-administered questionnaire, followed by conversation with trained health educator and follow-up phone calls at 2, 6 and 12 weeks  | Enhanced usual care  | <ul style="list-style-type: none"> <li>• Pain intensity</li> <li>• Short form-12</li> <li>• CPSE</li> </ul>                             | 12 weeks |
| Raphaelis 2020 | 61/92   | Adult patients with cancer related pain $\geq 3$ NRS   | A face-to-face in-hospital session by a trained nurse to prepare discharge according to key strategies, information on pain self-management, and skills building.<br><br>After discharge, cancer pain self-management was coached via phone calls.   | Standard care: routine pain assessment, documentation and pain medication but not structured pain self-management support.   | <ul style="list-style-type: none"> <li>• BPI pain intensity</li> <li>• EORTC-C30</li> <li>• Pain Self-efficacy Questionnaire</li> </ul> | 3 months |
| Rustøen 2014   | 87/92   | Adult outpatients with cancer, bone metastasis, average pain $\geq 2.5$ NRS  | <p>Specially trained oncology intervention nurse visited the patients in their home at Weeks 1, 3 and 6 and conducted telephone interviews at Weeks 2, 4 and 5.</p> <ul style="list-style-type: none"> <li>• At the Week 1 visit, the PRO-SELF nurse conducted an academic detailing session.</li> <li>• At Weeks 2, 4 and 5, the PRO-SELF nurse contacted patients by phone and reviewed their pain intensity scores and analgesic intake.</li> <li>• At Weeks 3 and 6, the PRO-SELF nurse made home visits where the educational material was reinforced, and additional coaching about pain management took place.</li> </ul> | <ul style="list-style-type: none"> <li>• A booklet about cancer pain management</li> <li>• Home visits and nurse telephone interviews same with IG</li> </ul> <p>Pain management diary recorded their pain intensity scores and analgesic intake</p> | • NRS pain intensity  | 6 weeks  |
| Syrjala 2008   | 48/45   | Adults with a cancer diagnosis with disease-related persistent pain  | Pain education plus training (30-45) including a 15 minute video and patient could take notes, plus phone call after 72 hrs (10 min)   | Nutrition education plus training (30-45) including a 15 minute video and patient could take notes, plus phone call after 72 hrs (10 min)  | • BPI pain intensity  | 6 months |

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|  |       |   |   |   |  |          |
|--|-------|---|---|---|--|----------|
| Knoerl 2018b   | 30/30 | Adult participants diagnosed with breast, gastrointestinal and other cancers with self-reported $\geq 4$ of 10 worst CIPN pain that persisted $\geq 3$ months               | Usual care from primary provider + Proactive Self-Management Program for Effects of Cancer Treatment (PROSPECT) Participants completes a link 'Steps For Me'. Website recommends modules based on patient's responses. Patient may use modules as much as they desired; no additional encouragement to access modules were made | Usual care from primary provider; received access to intervention after completion of study-related surveys | <ul style="list-style-type: none"> <li>• NRS pain severity</li> <li>• EORTC QLQ CIPN</li> </ul>              | 8 weeks  |
| Valenta 2022   | 18/16 | Outpatients with cancer pain  | PRO-SELF© Plus PCPs based on three key strategies: nurse coaching, self-care skills building to manage pain and associated symptoms, and provision of information through academic detailing  | Usual care  | <ul style="list-style-type: none"> <li>• BPI pain severity</li> <li>• Self-efficacy Questionnaire</li> </ul> | 6 weeks  |
| Bennett 2021   | 80/81 | Adults with advanced incurable cancer (locally advanced or metastatic) and experiencing cancer-related pain (tumor or treatment related), with a pain score of BPI $\geq 4$ | Usual care plus Supported Self-Management intervention delivered within the oncology clinic and palliative care services by locally assigned community palliative care nurses (health professional), consisting of self-management/educational support and pain monitoring  | Usual care  | <ul style="list-style-type: none"> <li>• BPI pain severity</li> <li>• EORTC QLQ-C30 Summary Score</li> </ul> | 12 weeks |
| Kelleher 2021  | 14/17 | Colorectal cancer patients reporting pain and psychological distress  | Telephone-based coping skills training (CST): five 45-60 minute sessions of a cognitive-behavioral theory-based protocol to manage pain and distress  | Standard care: informational pamphlets related to survivorship health and cancer center services            | <ul style="list-style-type: none"> <li>• BPI pain severity</li> <li>• FACT-G</li> <li>• CPSE</li> </ul>      | 3 months |
| <b>Patient-controlled at-home relaxation/distraction</b> |       |   |   |   |  |          |
| Kwekkeboom 2012  | 43/43 | Patients with advanced lung, prostate, colorectal, or gynecologic cancers receiving treatment that had experienced pain, fatigue, and sleep                                 | <p>Patient-controlled cognitive-behavioral intervention</p> <p>The 12 CB strategies were presented in 4 categories: symptom-focused imagery, nature-focused imagery, relaxation exercises, and nature sounds</p>  | Waitlist, usual care  | <ul style="list-style-type: none"> <li>• NRS pain intensity</li> </ul>                                       | 8 weeks  |

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|            |       |                                    |   |                   |                      |         |
|------------|-------|------------------------------------|---|-------------------|----------------------|---------|
|            |       | disturbance in the past week       |   |                   |                      |         |
| Eaton 2021 | 21/19 | Cancer survivors with chronic pain | Four weeks of listening to a hypnosis recording daily (relaxation induction followed by suggestions for relaxation and comfort, as well as posthypnotic suggestions for permanence of the benefits experienced with the recording and for self-hypnosis practice) | Wait-list control | • NRS pain intensity | 8 weeks |

**BPI: brief pain inventory; CB: cognitive behavioral; CIPN: chemotherapy-induced peripheral neuropathy; CPSE: Chronic Pain Self-Efficacy scale; EORTC QLQ-C30: European Organization for Research and Treatment for Cancer Quality of Life Questionnaire; FACT-G: Functional Assessment of Cancer Therapy-General NRS: numeric rating scale; VAS: visual analog scale.**