

Sigma's 30th International Nursing Research Congress

Self-Management in Cancer Patients With Pain: A Mixed-Method Review

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Purpose:

The number of cancer survivors was estimated to be more than 15.5 million in the US in 2016 from the time of cancer diagnosis until the end of their life.¹ The number will continue to grow around 23 million by 2026 due to early diagnosis, medical and technology advancement.¹ Thirty to eighty five percent of cancer patients experience pain; 66% of advanced cancer patients, around 55% of cancer patients with treatment, and 30% of cancer patients with complete cancer treatments suffer pain.² Although analgesic use is the most common treatment for cancer patients with pain, narcotic analgesics in particular have many undesirable side effects, including addiction.³ As a result, many cancer patients are no longer satisfied with traditional drug managements of their pain.⁴ Thus, many cancer patients with pain look for non-pharmacologic interventions to manage their pain.⁵

One or two decade(s) ago, oncologists had focused on only cancer treatments or acute care related to cancer. This old cancer practice has been changed that cancer cares should be considered as continuing or long-term cares.⁶ Cancer patients deal with pain on a daily basis at home. Furthermore, cancer treatment and end-of-life care is increasingly shifted to the outpatient or home settings. Therefore, cancer patients require self-management ability or skill to manage their pain symptoms and daily cares and eventually enhance quality of life. To empower self-managing for cancer patients with pain, cancer patients need support by healthcare providers and healthcare systems.⁷ One of the best ways to improve patient's self-management is that researchers or healthcare providers choose specific interventions for their patients.

Quantitative and qualitative studies which were conducted using pain self-management interventions based on cancer patient's home were evaluated. Thus, the results can inform not only healthcare providers and researchers to empower cancer patients in a collaborative way, but also healthcare policy makers to enhance patient's outcomes.

Methods:

PubMed, CINAHL (EBSCO), Scopus (Elsevier), and Cochrane Central Register of Controlled Trials (Wiley) were used for this mixed-method review from January 2011 to May 2018. A total of 16 quantitative studies and 2 qualitative studies were included for this review.

Results:

Overview

All interventions are divided into three types which are educational and/or counseling program, complementary and alternative medicine (CAM) therapy, and exercise. All interventions were required a minimum instruction, assessment, and counselling to explain a specific program or intervention.

Self-Management Interventions in Quantitative Studies

The 16 quantitative studies utilized educational and/or counseling program (n = 12), complementary and alternative medicine (CAM) therapy (n =3), and exercise (n = 1). All CAM studies used only auricular acupressure (AA) intervention. Those self-management interventions were used more during survivorship

(n = 9) than treatment or end of life. Most studies used randomized controlled trial (RCT) for their intervention (n =12). All CAM and exercise intervention studies were conducted within 3 years. On the other hand, the number of educational and/or counseling intervention studies have decreased since 2013. Nine of the included 16 studies were statistically significant on pain management: three AA studies (100%), one exercise study (100%), and five of the 12 educational and/or counseling studies (42%). There were no statistically significant effects on educational and/or counseling intervention studies since 2013. The duration of intervention ranged from one week to six months. The follow-up (n =8) ranged from one month to one year.

Self-Management Interventions in Qualitative Studies

The two qualitative studies in this review incorporated only educational and/or counseling programs.

Complementary and Alternative Medicine Therapy/Auricular Acupressure

Advancements of pain management in western medicine have given cancer patients pain relief, but patients have not been completely satisfied with many reasons, including side effects of pain medications. CAM therapies have been utilized to assist cancer patients who were not satisfied with western pain management. There are seven modes of complementary or alternative medicine modality in the US (acupuncture, acupressure, massage, yoga, hypnosis, relaxation/progressive muscle relaxation and guided imagery, biofeedback).⁵ Not all CAM therapies can be incorporated with self-management component such as acupuncture.⁸ For instance, acupuncture therapy is required by an acupuncturist or specialist during the entire intervention.⁸ However, acupressure therapy is only required by an acupuncturist or specialist at the beginning of an intervention, after which the patient can self-manage during the rest of the intervention.

The three studies in this review showed that AA was statistically effective in relieving cancer pain.⁹
^{10 2} Most of studies measured pain severity (n =3) and interference (n=2), but only one study measured blood biomarkers and pain medication usage as pain outcomes changed. All pain outcomes in the three studies were statistically significant. However, uncertainty remains regarding the strength of the evidence, due to the small number of studies included and lack of consistent methodologies.

Exercise

Cantarero-Villanueva et al. (2011) tested the effects of three sessions of exercise (warm, resistance and aerobic exercise training, and cool down) on cancer survivors with pain three times per week (each session lasted 90 min) via online.¹¹

Educational and/or Counseling Programs

Self-Management Intervention in Quantitative Studies

The 12 studies had education sessions and ten studies had counseling sessions. There were variability of educational and/or counseling programs in the intervention (mode of intervention and intervention periods), and study design (types of comparison group). The combination interventions of educational and counseling were PRO-SELF pain control program (PCP), psycho-educational program, cognitive behavioral program, rational-emotional therapy, and problem-solving training. All studies had in person education and five studies had telephone consultation by a nurse. Studies not only telephone counseling but also education intervention were statistically significant.^{12 13 14 15} The telephone counseling was used usually in cancer patients in their end of life.

Self-Management Intervention in Qualitative Studies

All qualitative studies (n=2) had the combination of education and counseling sessions. The studies explained that pain management should consider individual contexts including understanding, organizing, storing, scheduling, remembering, and taking the medications at home.

Discussion:

In this mixed-method review, 16 quantitative and 2 qualitative studies were evaluated on pain self-management interventions on cancer patients. Pain outcomes in the included studies were pain severity, physical function, pain self-efficacy, and pain medication usage. All interventions in the review are divided into three types: educational and/or counseling program, CAM therapy, and exercise. The 16 quantitative studies utilized all three types of interventions, however the 2 qualitative studies used only education and/or counseling programs.

Overall, self-management (SM) interventions in this review were varied in study design, duration, and methodology so it is hard to compare them to one another. All interventions were required a minimum instruction, assessment, and counselling to explain a specific program or intervention.

The two qualitative studies suggested that pain intervention and management should tailor to individual culture. Nine of the included 16 quantitative studies were statistically significant on pain severity and pain medication usage; three AA studies (100%), one exercise study (100%), and five of the 12 educational and/or counseling studies (42%). Additionally, there were no statistically significant effects on educational and/or counseling intervention studies since 2013. Thus, AA and exercise interventions are promising to enhance pain management in cancer patients compared to only educational and/or counseling intervention. However, little is known of the mechanism of AA and the small number of AA and exercise studies cannot conclude that AA and exercise therapies are better than educational and/or counseling intervention. We need further studies on AA, exercise, and educational and/or counseling interventions.

Conclusion:

This mixed-methods review informed prevalence, trend, and future implications of SM intervention for better pain management outcomes in cancer patients. The small number of AA and exercise studies and the lack of protocols and consistent methodologies across the studies preclude that specific interventions can be the best choice among included SM interventions in the review.

Title:

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Keywords:

Cancer patients, Pain management and Self-management

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Abstract Summary:

Cancer patients require self-management ability or skill to manage their pain symptoms and daily cares and eventually enhance quality of life. Auricular acupressure therapy may be one of promising adjunct therapies because AA studies have reported that AA improves in empowering self-management and decreasing pain severity.

Content Outline:

Introduction

The problem of cancer pain

The importance of Self-management in cancer pain

The purpose of my study

Methods

Process of conducting my mixed method systematic review

Overview

Self-Management Interventions in Quantitative Studies

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References

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Author Summary: Eunhea You, RN, MSN, PhD candidate. I am an instructor at Rutgers university. I am also an adjunct faculty at Berkeley college. I am a Phd candidate at Rutgers university. I recently published titled "Effects of Auricular Acupressure on Pain Management: A Systematic Review" in pain management nursing journal in 2018.