



## Systematic Review

**The Impacts of Depression Treatment on Health-Related Quality of Life in Cancer Patients: A Systematic Review****Andrik Hermanto, Gabriel Wanda Sinawang, Mohamad Roni Alfaqih and Rohmatul Faizah**

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**ABSTRACT**

**Introduction:** Cancer diagnosis can have a profound negative impact on the health-related quality of life (HRQoL) of cancer patients. Cancer patients also suffer from psychological pressures including sadness, depression, hopelessness, anxiety and worry. The literature review was employed to determine the effects of depression on health-related quality of life (HRQoL) in cancer patients.

**Methods:** A systematic review was conducted by searching the Science Direct, Scopus and Google Scholar databases. The integrative review of the 10 articles was focused on the 10 years period from 2008 to 2018. The language used was English and the search was conducted using predefined keywords.

**Results:** All of the journals discussed the impact of depression treatment on health-related quality of life in cancer patients. Based on all of the journals, depression can be reduced by health education, physical activity and medicine therapy

**Conclusion:** Despite the treatment for depression, the patient's HRQoL did not improve during the measurement timeframe. Quality of life is a priority health outcome in cancer treatment but the clinical approaches to ameliorate depression in cancer patients appear to be suboptimal.

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**INTRODUCTION**

A cancer diagnosis in adults is frequently accompanied by a negative impact on mental health, such as changes in body image and function, persistent pain, distress and anxiety, a fear of cancer recurrence and death, due to which there is an increased risk of depression among adults with cancer. In fact, 25% to 38% of adults with cancer have reported experiencing depression. Comorbid depression in adults with cancer is negatively associated with health-related quality of life (HRQoL), which, in turn, may decrease survival. For instance, 16% of breast cancer survivors were reported to be depressed and depression was inversely associated with HRQoL. Health-related quality of life (HRQoL) has been defined as the functional effect of an illness and its consequent therapy upon a patient, as perceived by the patient themselves. To improve HRQoL and hence survival in this vulnerable group,

adults with cancer and comorbid depression should be offered pharmacological or psychological treatment for depression. The importance of detecting and treating depressive illness in cancer patients lies not only in the relief of the psychological distress and its impact on quality of life but also on the consequent health service and societal costs. In addition, depression has been associated with the increased impairment of the human immune response and thus, poorer survival.

A more recent systematic review and meta-analysis examining the use of antidepressants for treating depression in cancer patients reported that only one study included quality of life as an outcome. Another systematic review of the effect of cognitive behavioral therapy and health education on depression in adult cancer survivors reported an improved quality of life through the therapy. An RCT of the collaborative care management of depression among cancer patients showed an improvement in

HRQoL, although the study may not be broadly generalizable as it focused on low income and predominantly Hispanic patients.

Few studies that have evaluated the impact of depression treatment on HRQoL have specifically focused on a particular type of cancer. For instance, studies on women with breast cancer reported that the treatment of depression, either by pharmacological agents or psychosocial interventions, improves quality of life and longevity. Furthermore, the majority of studies evaluated quality of life, which is a broad and distinctive construct measuring overall general well-being, whereas HRQoL, which may evaluate the physical, social and mental health dimensions, specifically describes a health construct using functioning and well-being. This study aims to determine the effects of pharmacological and non-pharmacological therapies on reducing the depression in cancer patients so as to increase HRQoL.

## MATERIALS AND METHODS

The literature review was employed according to the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines. The database search was performed in March 2019 for articles dated in the last 5 years, which included those in the Scopus, Science Direct and Ebscho databases. The keywords used were alone or in combination as follows: cancer, cancer depression, Health Related Quality of Life and cancer treatment. The limitations used in the literature search were published in the last 5 years and they were also English-only articles. Once all of the articles were found, duplicate articles were removed.

The criteria for inclusion in this review included the following: (1) the studies that involved cancer patients that had been received or that were still receiving therapy and (2) studies that involved cancer therapy as their intervention for increasing depression.

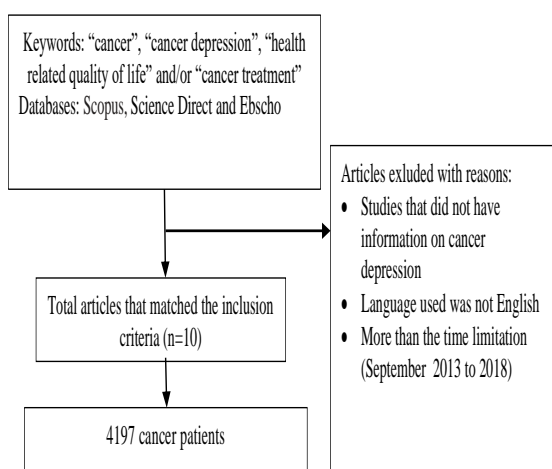


Figure 1. Flowchart of the research on depression in cancer patients

The criteria for exclusion included the following: (1) studies that did not have information on cancer and depression, (2) the language used was not English and (3) outside of the time limitation of September 2013 to 2018.

## RESULTS

The articles that were used in this review used a randomized controlled trial in addition to quantitative, qualitative and experimental study. The research took place in the USA, China, Spain, Korea and Taiwan. A total of 10 articles are met the inclusion criteria for this review.

Total respondents in this review are 4197 cancer patients who received pharmacological and non-pharmacological therapy. There is 3 journal that using a pharmacological therapy for cancer patient and 7 journals that using a non-pharmacological therapy.

### Pharmacological therapy

From the 10 articles that were reviewed, 4 articles used the pharmacological therapy as a comparison intervention [2, 8-10]. These interventions support the chemotherapy undergone by the cancer patients directly. In this intervention, the patients were not given any therapy other than the specified treatment before undergoing chemotherapy. The treatment usually given in cancer patients is paroxetine and fluoxetine. Paroxetine is effective at reducing major depression in cancer patients with malignant melanomas who are to receive a high-dose of interferon alpha therapy. Paroxetine was found to be effective at reducing the depressive symptoms of breast, lung, hematological, gynecological and gastrointestinal cancer patients who reported fatigue in their second chemotherapy cycle. Fluoxetine was not effective at reducing caseness for depression in a trial that included patients with breast, gynecological or hematological cancer who presented with major depressive disorder.

### Non-pharmacological therapy

From the 10 articles that were reviewed, 6 articles used non-pharmacological therapy as a comparison intervention [1, 3-7]. The interventions provided included health education and physical therapy. Health education is important in order to understand the information needs of the cancer patients to better address their needs and thus, to improve health care delivery. Many of the fears and uncertainties surrounding cancer treatment and outcomes may be lessened with changes in the information sharing patterns between breast cancer patients. Physical activity has similar benefits for depressive symptoms. Implementing physical activity during and post-treatment, could preempt the decline in cancer survivors. Specifically, moderate to vigorous physical activity in cancer survivors has been shown to have a complimentary effect on information processing speed. This suggests that physical activity may be a

preventative measure for cognitive decline in breast cancer survivors.

### **Impact of depression treatment on health-related quality of life**

Health-related quality of life (HRQOL) is an important outcome measure of chronic illness management and treatment, including anticancer treatment. HRQOL is particularly important for patients with cancer because the survival time of this disease is likely to be short and its treatments are expected to be toxic and limited in efficacy. A number of factors including age, marital status, income, cancer stage, treatment regime and cell type are found to be significantly associated with poor QOL in patients with cancer. The effect of depression on the HRQOL of patients with cancer has not been investigated, although there is convincing evidence that depression negatively affects the HRQOL of the general population.

## **DISCUSSION**

This systematic review indicates that there is limited trial data available on the efficacy/tolerability of pharmacological and non-pharmacological interventions for patients with cancer and depression. The reviewed studies varied in the type of pharmacological interventions employed, in the characteristics of the studied populations, in the type, grade and stage of the subject's cancer, in the treatments being received and in the trial design, including the outcome measures used.

### **Pharmacological therapy**

Pharmacological interventions reported on the efficacy of antidepressants in terms of change in caseness for clinical depression as opposed to changes in the scores indicating the level of depressive symptoms. Paroxetine was found to be effective at reducing major depression in patients with malignant melanomas who were to receive high-dose interferon alpha therapy and at reducing the caseness for depression in breast cancer patients receiving chemotherapy. Fluoxetine was not effective at reducing caseness for depression in a trial that included patients with breast, gynecological or hematological cancer.

Paroxetine and fluoxetine were both effective at reducing depressive symptoms in 3 trials that included patients with a range of cancers (breast, lung, hematological, gynecological and gastrointestinal) and the tetracyclic antidepressant mianserin was also shown to be effective at reducing depressive symptoms in breast cancer.

Pharmacological therapy can effectively to reduce anxiety in cancer patients. However, pharmacological therapy includes side effects such as an elevation in blood pressure, dry mouth, blurred vision, constipation, urinary retention, cardiac arrhythmia, tachycardia, sedation, postural hypotension, dizziness and headache.

### **Health Education**

Health education showed that increased access to health information enhanced the chances of better health outcomes such as decreased depression and anxiety, which in turn result in an improved quality of life among the cancer patients. The findings regarding the impact of access to healthcare information on depression, anxiety and quality of life could be attributed to uncertainties that characterize the patient's perceptions about treatment outcomes and prognosis. Thus, increased access to health information may serve to alleviate the levels of depression and anxiety associated with living with cancer patients which in turn result in an improved quality of life. Even though one would expect that in some cases, factual information about negative treatment outcomes may heighten the levels of anxiety and depression among the patients, this was not the case in this study. These findings highlight the importance of the information needs of cancer patients as the evidence suggests that access to health information leads to better mental and physical health outcomes. Access to health information did not have any significant direct influence on the quality of life of the participants. This finding is consistent with the previous studies that did not find there to be any significant direct influence from access to health information on the quality of life among cancer patients. However, the results showed that there was an indirect impact from access to information on quality of life through short-term health outcomes such as decreased depression and anxiety.

### **Physical Therapy**

Physical activity was effective at improving cognition in those who did not receive chemotherapy. Those who did showed only minimal improvements in cognition with increasing levels of moderate physical activity. The results of our study suggest that the effects of chemotherapy on the brain may not be mitigated by moderate levels of physical activity. Applying more targeted exercise protocols may be necessary to show improvements in cognition and depressive symptoms in those who received chemotherapy.

Cancer treatment requires a combination of pharmacology and non-pharmacology. The role of the nurses, in addition to helping to provide treatment, helps in the non-pharmacological treatment as well so then the depression in cancer patients can be reduced.

## **CONCLUSION**

The sparse number of studies on the pharmacological interventions used for cancer patients with depression provides some evidence that antidepressants are effective at reducing depression/depressive symptoms in cancer patients. Although more data is needed regarding the safety and efficacy of antidepressants, there is some evidence that cancer patients with depression are

responsive to treatment. Overall, the small number of trials related to pharmacological interventions for cancer patients with depression/depressive symptoms, the high dropout rates in some trials and a lack of reporting of adverse events/tolerability should be used as a caution against drawing definitive conclusions about which antidepressants are the most effective or well-tolerated by cancer patients in general or by patients with specific types of cancer.

There is limited trial data on the efficacy of non-pharmacological interventions in treating depression/depressive symptoms in cancer patients. Cognitive behavioral therapy appears to be effective at reducing the depressive symptoms in cancer patients.

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