

## *Self Care for Overcoming Sleep Disorders in Cancer Patients: Literature Review*

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**Abstract:** Cancer can cause pain, weakness, sleep problems, and fatigue, and affect functional limitations that affect daily life. One of the most common and frequently complained symptoms in cancer patients is sleep disturbance. This paper aims to determine the effect of self-care to overcome sleep disorders in cancer patients. The author uses several databases, such as Scopus, SpringerLink, and Sage Journal. Clinical Key Nursing for use in the search for relevant articles. There are a total of 8 articles have been analyzed where several self-care interventions are used to treat sleep disorders in cancer patients, including mindfulness, exercise, yoga, dance, and personal psychotherapy. most of them showed results in a decrease in sleep disturbances in cancer patients, but there was one article that did not show significant results related to sleep disturbances. All the articles found were forms of intervention from self-care. There are three articles related to insomnia, one related to sleep quality, and four others related to sleep disturbance. Based on several journals that have been analyzed, it can be concluded that the provision of self-care interventions can affect the incidence of sleep disorders in cancer patients. A practical and secure method, exemplified by self-care practices, seeks to enhance sleep quality, general comfort, and the patient's overall quality of life.

*Keywords:* cancer, self-care, self-care intervention, sleep disorder, sleep quality

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### INTRODUCTION

In 2018, the global incidence of cancer is estimated to have risen to 18.1 million new cases, resulting in 9.6 million deaths. The total number of individuals diagnosed with cancer worldwide is estimated at 43.8 million, as reported by the [World Health Organization \(WHO\) in 2018](#). In Indonesia, data from the Riskesdas survey spanning 2013 to 2018 reveals an increase in the prevalence of cancer patients from 1.4% to 1.49% ([Pangribowo, 2019](#)).

Receiving a cancer diagnosis constitutes a significant life stressor with profound effects on an individual's physiological, psychological, and physical well-being. The trajectory of cancer may involve challenges such as pain, weakness, sleep disruptions, and fatigue, ultimately resulting in limitations in daily functioning. Individuals with cancer often contend with symptoms associated with both their treatment and the specific type and stage of their disease. Among these symptoms, sleep disturbance emerges as a prevalent and distressing issue, significantly impacting the overall quality of life ([Wu & Harden, 2015](#)). Insomnia, in particular, is a common sleep disorder experienced by many patients diagnosed with cancer. This disruption in sleep patterns is frequently observed from the initial diagnosis and can persist throughout the patient's life ([Al Maqbali, 2020](#)).

Evidence suggests that sleep disturbances among cancer patients can detrimentally impact the quality of life, covering both the physical and mental aspects of well-being. These sleep disruptions have been associated with potential cancer recurrence, hindered healing processes, diminished cognitive function, and decreased work activity. Recognizing the importance of self-care in managing chronic diseases, individuals adopt it as a crucial behavior to preserve health, control diseases, and

minimize associated complications ([Wong et al., 2018](#)). Practicing self-care effectively can greatly relieve symptoms and complications, decrease hospitalizations, and improve both the quality of life and the sense of control over chronic diseases. [Butler et al. \(2019\)](#) conducted research categorizing self-care into six domains based on Abraham Maslow's (1943) framework: (1) Physical Domain, (2) Professional Domain, (3) Relational Domain, (4) Emotional Domain, (5) Psychological Domain, and (6) Spiritual Domain.

Several evidence bases related to self-care to treat sleep disorders or improve sleep quality have been applied. A study by Ghavami on post-artery bypass patients showed that self-care interventions could improve the patient's sleep quality ( $p=0.001$ ). In addition, other self-care interventions, such as physical activity such as walking every day, can improve sleep disturbances, sleep quality, and sleep duration ([Wang & Boros, 2021](#)). Other interventions, such as mindfulness meditation, can improve sleep quality in adults with sleep disorders ([Black et al., 2017](#)). Progressive muscle relaxation can improve adolescents' sleep quality. This article was written for several reasons. First, to find out how the effects of some appropriate and valid *self-care* in overcoming sleep disorders, especially in cancer patients. Additionally, the findings may be robust evidence supporting the implementation of standardized sleep-promoting policies and procedures in cancer care settings.

## METHODS

In this literature review, the author uses Preferred Reporting Items for Literature Review and Meta-Analysis (PRISMA) as a reference in collecting related articles. In addition, this systematic review is carried out by adjusting to the PICO model that has been created. This search retrieved data from 2017 to 2022 using ProQuest, Clinical Key Nursing, and Scopus databases. Search terms use free text words just as search terms use both free text words. and the title of the medical subject, that is, the term MeSH, to search for papers in reviews, i.e.,("Sleep") OR (" Insomnia") OR ("sleep disturbances") OR ("sleep disorder") or ("self-care") or ("exercise") or ("yoga") or ("self-care intervention") Furthermore, a compilation of references is curated from the examination of studies and review articles to identify additional relevant research.

A filtration process was applied following a database search that yielded 620 results. Inclusion criteria for this study encompassed: 1) articles employing a research design of Randomized Controlled Trials (RCT) and 2) those involving experimental research. Exclusion criteria involved 1) articles published more than five years ago or before 2017 and 2) articles categorized as literature reviews, systematic reviews, or meta-analyses. Of these, 405 papers were excluded based on criteria such as exceeding the five-year timeframe, not being a research article, or lacking full-text availability. Consequently, 8 studies met the eligibility criteria and were identified for inclusion in the literature review; see [Figure 1](#) for a detailed process.

## RESULTS

A total of 8 articles have been reviewed. Some of the findings in the reviewed article show several self-care interventions to manage pain, such as *mindfulness*, *exercise*, *yoga*, and *dance*. and the effects of personal psychotherapy. All self-care interventions administered were performed on adult patients with cancer. As a large result, research shows that self-care interventions provided are significantly able to help reduce sleep disorders and other symptoms caused by cancer. The review results are described in the synthesis [Table 1](#) and [Table 2](#):

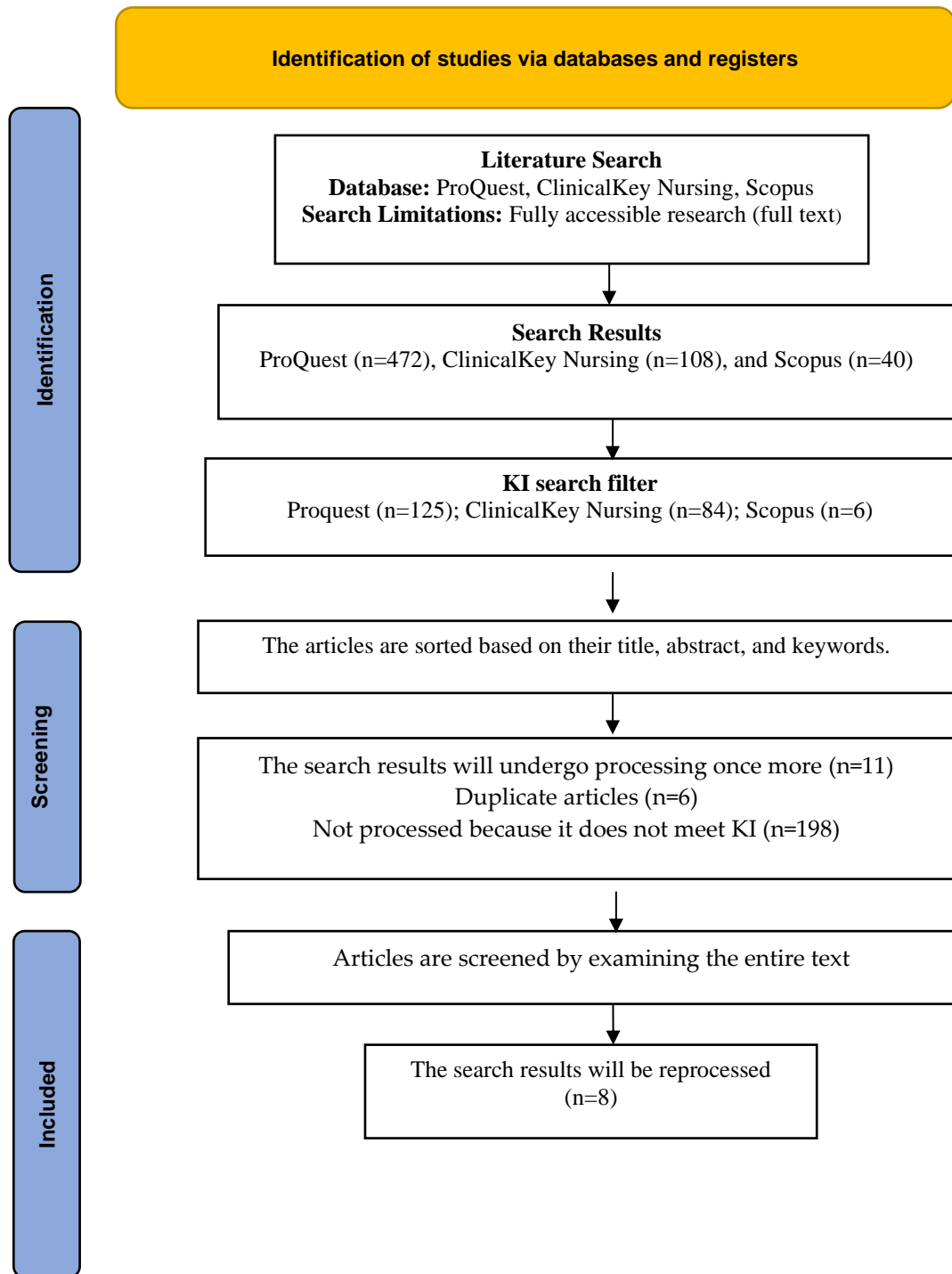


Figure 1  
Article Search Flow with PRISMA

Table 1. Article selected for Review

Article number	Title	Author (Year)
1	The effect of interpersonal psychotherapy on quality of life among breast cancer patients with common mental health disorder: a randomized control trial at Tikur Anbessa Specialized Hospital)	<a href="#">(Belay et al., 2022)</a>
2	Effects of mindfulness-based psychological care on mood and sleep of leukemia patients in chemotherapy	<a href="#">(Zhang et al., 2017)</a>
3	Relationship between sleep and exercise as colorectal cancer survivors transition off treatment	<a href="#">(Coles et al., 2018)</a>
4	Effect of the exercise program on the quality of life of prostate cancer survivors: A randomized controlled trial	<a href="#">(Mardani et al., 2021)</a>
5	Effect of yoga exercise on the quality of life and upper extremity volume among women with breast cancer-related lymphedema: A pilot study	<a href="#">(Pasyar et al., 2019)</a>
6	Effects of a 16-week dance intervention on the symptom cluster of fatigue-sleep disturbance-depression and quality of life among patients with breast cancer undergoing adjuvant chemotherapy: A randomized controlled trial	<a href="#">(He et al., 2022)</a>
7	Effects of a Clinic-Based Exercise Program on Sleep Disturbance Among Cancer Survivors	<a href="#">(Hidde et al., 2020)</a>
8	Effects of exercise on sleep problems in breast cancer patients receiving radiotherapy: a randomized clinical trial	<a href="#">(Steindorf et al., 2017)</a>

Table 2. The outcome of the articles in the review

Article number	Outcomes
1	This research was conducted on breast cancer patients by providing interpersonal psychotherapy. Interpersonal psychotherapy has a significant impact on improving physical function, reducing insomnia, and fatigue, and improving health-related quality of life after 4-8 sessions.
2	A mindfulness intervention was administered to 38 leukemia patients within the experimental group. The post-test analysis revealed statistically significant differences in anxiety, depression, and sleep problems between the experimental group and the control group ( $p < 0.05$ ). Notably, there was a significant reduction in anxiety and depression levels, accompanied by improved sleep outcomes ( $p < 0.05$ ).
3	The study included a sample ranging from 21 to 84 years old, diagnosed with stage I, II, or III colorectal cancer (CRC) and capable of engaging in physical activity, as defined by patients who can independently get out of bed (self-report). Findings indicated that patients classified as inactive statistically reported better sleep quality compared to individuals who did not engage in physical activity. Nevertheless, factors such as retirement, anxiety, and fatigue showed a significant finding association with sleep disruption ( $p < 0.05$ ). Surprisingly, increased physical activity did not exhibit a significant association with decreased sleep disturbances.
4	A total of 35 patients diagnosed with prostate cancer in each group participated in a 12-week exercise program, which included one group exercise session and three individual exercise sessions per week utilizing community training facilities. The results demonstrated statistically significant enhancements in reported physical, role, emotional, social, and sexual functioning. Furthermore, participants in this group reported decreased levels of fatigue, insomnia, constipation, diarrhea, and symptoms related to urinary, intestinal, and hormonal treatments compared to their conditions before the commencement of the exercise program ( $p < 0.085$ ).
5	A group of 40 women diagnosed with breast cancer-associated lymphedema was randomly divided into either the intervention or control group. The group receiving the intervention engaged in 8 weeks of yoga practice classes involving instructor-led exercises twice a week and additional home exercises once a week. Four weeks post-intervention, significant differences were noted between the groups in terms of role function within the quality of life ( $P = 0.03$ ). After 8 weeks of the intervention, significant differences emerged in physical and emotional functioning and overall quality of life ( $p < 0.05$ ). Positive trends were observed in the intervention group for Enhancements in physical, role, emotional, and cognitive capabilities, while scores for fatigue, pain, insomnia, and financial hardship were reduced. However, in terms of edema volume, no notable difference was observed between the two groups at the 4th and 8th weeks following the intervention ( $P > 0.05$ ).
6	Twenty participants diagnosed with breast cancer undergoing neoadjuvant chemotherapy received an interventional dance program aimed at addressing symptoms of fatigue, sleep disturbance, and depression. The outcomes revealed that the group receiving the dance intervention experienced less severe fatigue, sleep disturbances, and depression. Additionally, at week 17, The intervention group showed a reduced occurrence of symptomophilia ( $p=0.003$ ) and a better quality of life ( $p=0.001$ ) compared to the control group.
7	A total of 94 participants, predominantly women diagnosed with over 8 different types of cancer, were involved in the study. Following the program, 39% of participants reported not waking up refreshed, compared to 48% before the program ( $P = 0.08$ ). Post-program, 47% reported waking up at least once per night, similar to the 46% reported pre-program ( $P = 0.97$ ). Regarding sleep quality, 17% indicated a decline, whereas the figure was 24% before the program, although this difference was not statistically significant ( $P = 0.16$ ).
8	In a trial involving 160 participants diagnosed with breast cancer and undergoing radiotherapy, the study compared the effects of resistance exercise to a relaxation control group. The exercise intervention significantly reduced Sleep issues compared to the relaxation control group. In particular, using a scale of 0-100, the average difference between groups was -10.2 ( $p = 0.03$ ) from the beginning to the conclusion of radiotherapy and -10.9 ( $p = 0.005$ ) until the completion of the intervention. This indicated a decrease in sleep problems within the exercise group and an increase in the control group. Although differences were still witnessed at the 12-month follow-up, they were not statistically significant (mean difference = -5.9, $p = 0.20$ ).

## DISCUSSION

Of the eight articles discussed by the authors related to the effect of giving self-care interventions related to sleep disturbances in cancer patients, most of them showed a decrease in sleep disturbances in cancer patients. Still, there was one article that did not show significant results related to sleep disturbances. Of all the articles found, all were forms of intervention from self-care. There are three articles related to insomnia, one related to sleep quality, and four others related to sleep disturbance.

Numerous previous studies have highlighted the frequent occurrence of sleep disturbances among cancer patients. These disturbances encompass a broad spectrum, ranging from the disease's physical impact to the effects of various treatments, including surgery, chemotherapy, radiotherapy, and medications. Additionally, psychosocial stressors such as anxiety, depression, and concerns related to family or financial situations also contribute to sleep disturbances in cancer patients (Al Maqbali, 2020; Strik et al., 2021). Pinpointing the exact etiology of sleep disorders in this context proves challenging. However, certain demographic factors, including being female, older age, lower levels of education, and reduced physical activity, have been consistently associated with an increased likelihood of experiencing sleep disorders (Al Maqbali, 2020).

Certain studies indicate that exercise can affect various physiological functions during sleep, including body temperature regulation, heart function, endocrine activity, metabolism, and immune function (Chennaoui et al., 2015). Additionally, the quality of life of individuals significantly impacts the prevalence of sleep disorders, as demonstrated in a study conducted by Lee et al. (2011). Individuals reporting sleep disorders often exhibit a considerably poorer quality of life.

Poor sleep quality has been associated with unfavorable emotional consequences, linking unhealthy coping to poor sleep and healthy coping to good sleep quality. Neurobiological level, sleep deprivation, and subpar sleep quality can result in Connectivity within the medial prefrontal cortex and ventral anterior cingulate. This indicates possible challenges in overseeing and restraining emotional regulation (Talley & Shelley-Tremblay, 2020). Self-care interventions, which universally aim to induce a relaxed state in individuals, play a crucial role. Creating a relaxed bodily state enhances attention, providing control over the autonomic nervous system, ultimately reducing the impact of worries and promoting a calm mood, thereby alleviating mood disorders. An efficient and secure approach model, such as self-care, strives to enhance sleep comfort, overall comfort levels, and the quality of life for the individuals involved. Traditionally, physicians often prescribe drugs to address poor sleep issues, but these medications may carry specific side effects such as memory impairment, resistance, dependency, and the risk of addiction.

These results suggest that self-care interventions are highly effective in mitigating sleep disorders for cancer patients. From this, it can be concluded that sleep disorders can be influenced by physical and psychological conditions, so the a need to manage both physical and emotional problems of cancer patients.

## CONCLUSION

Based on several journals that have been reviewed, it can be concluded that self-care is very beneficial in reducing sleep disorders in cancer patients. Some of these self-care interventions can be used to support interventions or holistic interventions for cancer patients in overcoming disorders due to the course of the disease and treatment, such as sleep disorders.

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