

Non-Invasive Techniques to Manage Cancer Related Fatigue: A Literature Review

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Abstract

The fatigue that regularly comes from cancer is termed cancer-related fatigue, and it is a very common symptom in patients with cancer who have received chemotherapy. The present review paper was planned to appraise the basic literature on the topic of the non-invasive techniques to manage cancer-related fatigue. The electronic exploration of literature was carried out in PubMed and Google Scholar. A range of different approaches were used to treat cancer-related fatigue. PMR and RBE were among the best encouraging approaches. Other mind-body and psychosocial approaches such as yoga and mindfulness meditation that focus on the cancer-related fatigue revealed positive effects. These approaches ought to be used by oncology nurses to build up their clinical health education and applied them to decrease the experience of cancer-related fatigue by patients with cancer.

Keywords: *Cancer Related Fatigue; Non-Invasive Techniques; Progressive Muscle Relaxation Exercise*

Introduction

Fatigue is a feeling of exhaustion or absence of energy, and it is persistent even if an individual appears to have an adequate amount of sleep. It can be caused by working excessively, having sleep disturbance, worry and stress, insufficient physical activity, and disease and its management [1].

Among individuals with cancer, fatigue or weakness might be affected by having or recovering from surgical treatment, low levels of electrolyte or low blood counts, changes in levels of hormone and infection [1]. The fatigue that regularly comes from cancer is termed cancer-related fatigue and it's a very common symptom. Nearly, between 80% to 100% of gynaecological cancer patients experienced fatigue [2]. The cancer-related fatigue sources are frequently harder to determine since there are numerous causes involved, and it might be from the disease of cancer and/or the cancer treatment side effects [1]. The fatigue as a result of cancer and its treatment can continue for weeks, months, or even years and it frequently persists after the end of treatment. For example, in cancer patients receiving chemotherapy, fatigue frequently becomes worse initially and may become better till the next treatment [3].

No x-rays or lab tests can identify or indicate your level of fatigue. The best measure of fatigue arises from the manner the patient describes his level of fatigue to the cancer care team. The patient can define his level of fatigue as none, mild, moderate, or severe. Or he can use a scale of 0 to 10, where 0 means no fatigue at all, and 10 means the worst fatigue he can imagine [3].

Today oncologists patients and caregivers are agreed that cancer-related fatigue is the most important and untreated symptom among patients with cancer. It is most likely due to improvement in the management options for other symptoms connected with cancer and its treatment such as pain and depression. On the other hand, still the problem is existent, it is hardly discussed and treated. Patients and physicians may view cancer-related fatigue as rather to be tolerated instead of a symptom agreeable to differential diagnosis and treatment [4]. Studies revealed that cancer related fatigue was under-treated and rarely discussed in patients with cancer, oncologists and caregivers [5-20].

Aim of the Study

The present review paper was planned to appraise the basic literature on the topic of the non-invasive techniques to manage cancer-related fatigue that may help to reduce fatigue among patients with cancer.

Methods

Search strategy

The electronic exploration of literature was carried out in PubMed and Google Scholar. The keywords were "Progressive Muscle Relaxation Exercise", "Cancer-Related Fatigue". Studies published between 2000 and 2021 were found. Those studies published in the English language that evaluate non-invasive techniques to manage cancer-related fatigue were involved in the present review.

Search outcome

The search of literature created 110 headings for analysis. The ultimate consideration brings about 11 studies.

Results and Discussion

Cancer-related fatigue is very common in patients with cancer who have received chemotherapy and leads to significant negative psychosocial, physical, and financial consequences for patients and caregivers. Assumed the effect of fatigue, treatment choices have to be regularly considered in cancer patients care [21-26]. Management of cancer-related fatigue may increase the quality of life of cancer patients. Nurses have a significant role to help cancer patients through using non-invasive methods. Furthermore, patients select non-invasive methods for management of problems over pharmacological methods Progressive Muscle Relaxation (PMR) being one of the non-invasive techniques can be of great help [27].

Many past intervention studies were conducted on cancer-related fatigue in patients with cancer. These consist of physical activity, mind-body and psychosocial interventions. A quasi-experimental study was conducted to evaluate fatigue before and after getting a PMR program in patients with hepatocellular carcinoma (HCC) who were undertaking trans-arterial chemoembolization (TACE). The study findings indicated that the mean total fatigue score post-TACE day 14 and 28 in the experimental group was lower than pre-TACE ($p < .01$), even with no statistically significant difference of the mean total fatigue score among pre and post-TACE day 5 in the experimental group. At the .05 level, the mean total fatigue score post-TACE day 5, 14, and 28 in the experimental group was statistically lower than the control group. Accordingly, the progressive muscle relaxation program was found to be effective in HCC patients undertaking TACE [28].

In patients with cancer getting radiotherapy, the effectiveness of PMR on fatigue was evaluated. The result indicated that PMR beside routine standard treatment was an effective technique to reduce fatigue in hospitalized patients with cancer receiving radiotherapy [29].

In Indonesia, a quasi-experiment study with pre-and post-test design intended to assess the Relaxation Breathing Exercise (RBE) effectiveness on fatigue among gynecological cancer patients undertaking chemotherapy. The data indicated that conducting RBE four times a day efficiently decreased fatigue better than RBE twice a day among gynaecological cancer patients undergoing chemotherapy [30].

Yoga is a form of mind and body health approaches, and it is found to alleviate the fatigue in patients with cancer. A study aimed to evaluate 8-week yoga exercise program effectiveness in supporting the physical health and psychological of breast cancer women undertaking adjuvant chemotherapy regarding fatigue. The data indicated that the 8-week yoga exercise program developed reduced fatigue effectively among breast cancer patients [31].

Depending on developing literature on the positive impact of mindfulness meditation as a form of mind and body health, Van der Lee, *et al.* [32] intended to assess the effectiveness of mindfulness-based cognitive group therapy in decreasing fatigue among cancer survivors' patients with mixed diagnoses. The researchers found that the Mindfulness-based cognitive approach is an effective therapy for cancer-related fatigue.

Finally, understanding the complexity of cancer-related fatigue, in order to recognize vulnerable patients and build individualized, targeted interventions, is vital to reduce the burden of such a symptom and improve quality of life among patients with cancer [33-43].

Conclusion

Cancer-related fatigue is very common in patients with cancer who have received chemotherapy and leads to significant negative psychosocial, physical, and financial consequences for patients and caregivers. A range of different approaches were used to treat cancer-related fatigue. PMR and RBE were among the best encouraging approaches. Other mind-body and psychosocial approaches such as yoga and mindfulness meditation that focus on the cancer-related fatigue revealed positive effects. These approaches ought to be used by oncology nurses to build up their clinical health education and applied them to decrease the experience of cancer-related fatigue by patients with cancer.

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