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Exercise Recommendations for the Management of Symptoms Clusters Resulting From Cancer and Cancer Treatments

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Objective: *To review existing exercise guidelines for cancer patients and survivors for the management of symptom clusters.*

Data Sources: *Review of PubMed literature and published exercise guidelines.*

Conclusion: *Cancer and its treatments are responsible for a copious number of incapacitating symptoms that markedly impair quality of life. The exercise oncology literature provides consistent support for the safety and efficacy of exercise interventions in managing cancer- and treatment-related*

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symptoms, as well as improving quality of life in cancer patients and survivors.

Implications for Nursing Practice: *Effective management of symptoms enhances recovery, resumption of normal life activities and quality of life for patients and survivors. Exercise is a safe, appropriate, and effective therapeutic option before, during, and after the completion of treatment for alleviating symptoms and symptom clusters.*

Key Words: *exercise, physical activity, cancer, yoga, tai chi.*

Over 1.6 million new cases of cancer will be diagnosed in America in 2016, bolstering the number of Americans who are currently affected by the disease.[1] A large percentage of individuals diagnosed with cancer are undergoing or have completed treatment for the disease. Because of advances in screening and treatment, the mortality rate for all types of cancer was reduced by 23% from 1991 to 2000.[1] Consequently, many Americans diagnosed with this disease are living beyond the once designated life expectancy of 5 years. As screening and treatment continue to get better, the overall number of cancer survivors will increase. Although mortality rates are being reduced, many cancer survivors still suffer from acute, chronic, and late symptoms brought about by cancer and treatments for cancer. Acute symptoms are those that develop before or during treatment, but have a short duration (days, weeks, or months); chronic symptoms may continue for months or years; and late symptoms develop months or years after treatments are complete. All three types of symptoms at any stage of the cancer trajectory have significantly adverse effects on cancer patients and survivors.

Cancer treatment most often includes surgery, chemotherapy, radiation therapy, hormone therapy, immune therapy, and/or a combination of these therapies. These therapies may cause an array of physical and psychological symptoms that hinder a cancer patient's ability to comply with treatment protocols, perform activities of daily living, and maintain a conventional standard of living.[2] Some of the most commonly reported symptoms stemming from cancer and its treatments are loss of physical function, sarcopenia, cachexia, bone loss, cancer-related fatigue (CRF), cognitive impairment, and distress.[2-4] Although these symptoms can occur in isolation, most cancer patients and survivors report being effected by several of these symptoms concomitantly.[5] The clustering effect of these symptoms is not simply additive but can be multiplicative in terms of the negative consequence they portend, significantly impairing a patient's ability to successfully complete treatment and a survivor's ability to thrive post-treatment.[6] Treatments that efficaciously target several symptoms at once are optimal in these situations. Exercise is an effective treatment modality that successfully remediates several symptoms that frequently cluster together.

Underrepresented Populations

Minority and underrepresented populations in the United States (eg, racial and ethnic minorities, individuals living below the poverty line, sexual and gender minorities) bear a disproportionate burden of cancer. Some minority and underserved populations experience higher rates of cancer incidence and prevalence,[7] while others experience higher risk of cancer mortality.[8] The American Cancer Society indicated that some minority populations are more likely to develop and die from cancer than the United States population in general.[9]

Disparities in cancer care also extend into supportive care and symptom management, with lower engagement in rehabilitation, follow-up care, and survivorship care among some minority groups.[8] Research suggests that these health disparities exist because individuals from minority and underserved populations are more likely than their counterparts to report health risk behaviors, including less time spent exercising, more psychological distress, more current alcohol use, more current smoking, and a lifetime history of smoking.[7] Minority and underserved patients may also be more likely to receive a late-stage diagnosis because of