

The Effects of a Comprehensive Exercise Program on Physical Function, Fatigue, and Mood in Patients With Various Types of Cancer

Lindsey Renee Hanna, MS, Patricia Frist Avila, RN, MSN, OCN®, John D. Meter, MA, Donald R. Nicholas, PhD, and Leonard A. Kaminsky, PhD

Purpose/Objectives: To evaluate the effectiveness of a comprehensive exercise program consisting of low-to-moderate intensity aerobic and resistance exercise twice a week for 16 sessions with patients in active treatment and cancer survivors beyond treatment related to improvements in physical function, fatigue, and mood.

Design: Retrospective analysis of archived data.

Setting: Cancer center in a 350-bed teaching hospital in east central Indiana.

Sample: 39 patients with cancer and cancer survivors who voluntarily completed a 16-session comprehensive exercise program.

Methods: Physical function, fatigue, and mood were evaluated using the six-minute-walk test, Profile of Mood States questionnaire, and Piper Fatigue Scale questionnaire pre- and postprogram. The program consisted of low-to-moderate aerobic and resistance exercise, education, and support twice weekly.

Main Research Variables: Physical function, fatigue, and mood.

Findings: Pre- and postprogram outcome measures had significant differences ($p < 0.05$). Participants had significant improvements in physical function, fatigue, and mood.

Conclusions: A comprehensive exercise program consisting of low-to-moderate intensity aerobic and resistance exercise, education, and support twice a week for eight weeks results in significant improvements in physical function, fatigue, and mood in patients in active treatment and cancer survivors beyond treatment.

Implications for Nursing: The comprehensive exercise program is feasible for many institutions using current resources and collaborating among departments to mitigate the short- and long-term effects of fatigue and improve quality of life for cancer survivors with a variety of diagnoses and stages.

Key Points . . .

- Patients with cancer experience many negative side effects, such as fatigue, depression, loss of physical function, weakness, and a decreased quality of life that may last long after treatment has ended.
- Evidence supports the use of exercise to help alleviate side effects of cancer and its treatments.
- Use of a comprehensive exercise program that includes exercise, education, and support may be a useful way to improve physical function, fatigue, and mood in patients with various types of cancer, regardless of stage and treatment status.

from survival to quality of life (QOL). In the mid-1980s, studies emerged reporting exercise as an effective means of side effect management, particularly fatigue (Winningham & MacVicar, 1988; Winningham, MacVicar, Bondoc, Anderson, & Minton, 1989).

The purpose of this study was to evaluate the effectiveness of a comprehensive exercise program using low-to-moderate intensity aerobic and resistance exercise for patients with various types of cancer on physical function, fatigue, and mood.

Literature Review

Background

Exercise for patients with cancer is becoming widely accepted as therapy for alleviation of side effects and enhanced QOL.

Lindsey Renee Hanna, MS, is a cancer exercise program specialist and Patricia Frist Avila, RN, MSN, OCN®, is a clinical nurse specialist, both in the Cancer Center at Ball Memorial Hospital in Muncie, IN. John D. Meter, MA, is a doctoral student and Donald R. Nicholas, PhD, is a professor, both in the Department of Counseling Psychology and Guidance Services; and Leonard A. Kaminsky, PhD, is a professor in the School of Physical Education, Sport, and Exercise Science and the coordinator of the Clinical Exercise Physiology program, all at Ball State University in Muncie. In addition, Nicholas is the coordinator of Cancer Counseling Services at the Cancer Center at Ball Memorial Hospital. (Submitted February 2007. Accepted for publication October 18, 2007.)

Digital Object Identifier: 10.1188/08.ONF.461-469

An estimated 1.4 million new cancer cases will be diagnosed in the United States in 2008 (American Cancer Society, 2008). Cancer treatment varies from a single surgery to months or even years of radiation, chemotherapy, immunotherapy, or other targeted cancer therapies. All cancer treatments potentially have serious side effects, which can include fatigue, muscle loss, hair loss, nausea, pain, weakness, loss of appetite, depression, anxiety, sleep disruptions, and loss of ability to perform activities of daily living (Courneya & Friedenreich, 1999; Morrow, Andrews, Hickok, Roscoe, & Matteson, 2002; Pedro, 2001). Fatigue is the most common and distressing side effect reported by patients with cancer and is more severe and prevalent in patients receiving treatment (Sood & Moynihan, 2005; Winningham, 2001). With earlier diagnosis and as treatments become more specialized, patients are living longer, resulting in a shift in patient care