

Social Cognitive Theory and Physical Activity During Breast Cancer Treatment

Laura Q. Rogers, MD, MPH, Prabodh Shah, MD, Gary Dunnington, MD, Amanda Greive, MPH, Anu Shanmugham, MBBS, MPH, Beth Dawson, PhD, and Kerry S. Courneya, PhD

Purpose/Objectives: To measure the association between physical activity and social cognitive theory constructs during breast cancer treatment.

Design: Cross-sectional survey.

Setting: Midwestern, academic oncology clinic.

Sample: 21 primarily Caucasian (90%) female patients with breast cancer undergoing treatment. 76% were ≥ 50 years old; 76% had stage I or II disease. 17 completed the study.

Methods: Survey (structured interview or self-administration), chart audit, pedometer, and seven-day physical activity recall.

Main Research Variables: Steps per day, energy expenditure, self-efficacy, barriers, partners and role models, prior physical activity counseling, physical activity knowledge, pretreatment physical activity, outcome expectations and values, goals, reinforcement management, and emotional well-being.

Findings: A higher average of steps per day was significantly associated with having an exercise role model and higher annual income. A higher daily energy expenditure (kilocalories per kilogram body weight per day) was significantly associated with higher barrier self-efficacy, higher task self-efficacy, having an exercise partner, having an exercise role model, higher physical activity enjoyment, and lower negative value score.

Conclusions: Social cognitive theory may provide a useful framework for understanding physical activity among patients with breast cancer during treatment, but correlation strength varies with physical activity measurement type.

Implications for Nursing: Social cognitive theory and physical activity during breast cancer treatment warrant additional study with larger sample sizes and multivariate analyses. Interventions to increase physical activity among patients with breast cancer may use social cognitive theory and assess theory constructs as potential mediators or moderators in intervention evaluation.

Key Points . . .

- Barrier and task self-efficacy are important social cognitive theory constructs to consider for understanding physical activity behavior or designing physical activity interventions for patients with breast cancer during treatment.
- Careful selection of physical activity assessment is needed because the specific methodology may influence observed associations between social cognitive theory constructs and physical activity behavior.
- Future research evaluating physical activity and social cognitive theory in patients with breast cancer should enroll a sufficient number of participants to allow multivariate analysis evaluating all constructs simultaneously to determine the most important constructs.
- Physical activity interventions for patients with breast cancer should address barrier and task self-efficacy, physical activity enjoyment, exercise partners, exercise role models, perceived exercise barriers, and pretreatment physical activity behavior.

patients with cancer during treatment (Dishman, 1994; Glanz, Lewis, & Rimer, 1997). Because physical activity correlates and mechanisms differ for different groups of patients with cancer, depending on cancer type, focusing specifically on patients with breast cancer is important (Blanchard, Courneya, Rodgers, & Murnaghan, 2002; Courneya, Blanchard, & Laing,

Exercise has a beneficial impact on psychological and physiologic factors among patients with breast cancer (Courneya, Mackey, & Fairey, 2003). Randomized, controlled trials have suggested that exercise can improve quality of life, fatigue, body composition, flexibility, aerobic fitness, and cancer-related immune system components (Burnham & Wilcox, 2002; Courneya, Friedenreich, et al., 2003; Courneya, Mackey, et al., 2003; Courneya, Mackey, & Fairey; Fairey, Courneya, Field, & Mackey, 2002; Irwin & Ainsworth, 2004; Mock et al., 1997, 2001).

In an effort to bring what is known about the benefits of exercise to a larger number of patients with breast cancer, exercise-promotion programs must be designed. Such programs should be grounded in proven behavior theory and reflect the unique physical activity correlates and barriers experienced by

Laura Q. Rogers, MD, MPH, is an associate professor of medicine, and Prabodh Shah, MD, is a professor and chief of hematology/oncology, both in the Department of Medicine, Gary Dunnington, MD, is a professor and chairman in the Department of Surgery, Amanda Greive, MPH, and Anu Shanmugham, MBBS, MPH, are on the research staff, and Beth Dawson, PhD, is a professor emeritus in the Department of Medicine, all in the School of Medicine at Southern Illinois University in Springfield; and Kerry S. Courneya, PhD, is a professor and Canada research chair on the Faculty of Physical Education at the University of Alberta in Edmonton, Canada. (Submitted August 2004. Accepted for publication November 3, 2004.) (Mention of specific products and opinions related to those products do not indicate or imply endorsement by the Oncology Nursing Forum or the Oncology Nursing Society.)

Digital Object Identifier: 10.1188/05.ONF.807-815