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## Randomized Pilot Test of a Simultaneous Stage-Matched Exercise and Diet Intervention for Breast Cancer Survivors

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**B**reast cancer and its treatments often are associated with adverse effects that can persist for years and decrease health-related quality of life (QOL) (Ahn et al., 2007; Vallance, Courneya, Plotnikoff, Yasui, & Mackey, 2007). In addition, survivors are at increased risk for developing secondary cancers and other morbidities, including cardiovascular disease, diabetes, and osteoporosis (Aziz & Rowland, 2003; Brown, Brauner, & Minnotte, 1993; Hewitt, Rowland, & Yancik, 2003). Evidence suggests that lifestyle behaviors such as regular exercise and a healthy diet can improve health-related QOL and relieve symptom problems and mood disturbances (Basen-Engquist et al., 2006; Blanchard et al., 2003; Courneya, Mackey, et al., 2003; Daley et al., 2007; Darga et al., 2007; Demark-Wahnefried, Rock, Patrick, & Byers, 2008; McBride, Emmons, & Lipkus, 2003; Pinto, Frierson, Rabin, Trunzo, & Marcus, 2005; Tangney, Young, Murtaugh, Cobleigh, & Oleske, 2002; Vallance et al., 2007; Wayne et al., 2006). Healthful lifestyle behaviors also reduce comorbidities, the risk of recurrence, and cancer-specific mortality (Chlebowski et al., 2006; Demark-Wahnefried, Aziz, Rowland, & Pinto, 2005; Demark-Wahnefried, Pinto, & Gritz, 2006; Hewitt et al., 2003; Hewitt, Greenfield, & Stovall, 2005).

Few studies have tested theoretically based interventions that can alter lifestyle behaviors. One such model, the transtheoretical model of change (TTM), is based on the idea that people's readiness to change behavior progresses in stages. According to the TTM, individuals adopting a new behavior progress along the following continuum of five stages of change: precontemplation

**Purpose/Objectives:** To investigate the feasibility and preliminary effects of a simultaneous stage-matched exercise and diet (SSED) intervention in breast cancer survivors.

**Design:** Randomized, controlled trial.

**Setting:** Oncology outpatient treatment clinics at the National Cancer Center in South Korea.

**Sample:** 45 women with breast cancer who completed their cancer therapy.

**Methods:** Participants were assigned to the SSED intervention group ( $n = 23$ ) or a control group ( $n = 22$ ). Participants in the SSED group received a 12-week individualized intervention promoting prescribed exercise and a balanced diet through stage-matched telephone counseling and a workbook.

**Main Research Variables:** Program feasibility, behavioral outcomes (stage of motivational readiness for exercise and diet, physical activity, and diet quality), and quality-of-life (QOL) outcomes (functioning and global QOL, fatigue, anxiety, and depression).

**Findings:** Participant evaluations of the SSED intervention indicated that it was feasible and acceptable. All women felt that the overall intervention contents were appropriate, and 95% believed that the intervention helped to promote healthy behaviors. Objective data also supported the SSED intervention's feasibility (i.e., 91% completed the trial and 100% of intervention calls were received). When compared to control, the SSED intervention group showed significantly greater improvement in motivational readiness for exercise and diet, emotional functioning, fatigue, and depression.

**Conclusions:** Preliminary results suggest that the SSED intervention delivered via telephone counseling and workbook is feasible and beneficial for positive behavioral and QOL outcomes.

**Implications for Nursing:** Nurse-led lifestyle interventions may improve QOL for cancer survivors.