

Individualized Piano Instruction for Improving Cognition in Breast Cancer Survivors

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PURPOSE: To evaluate the use of individualized piano instruction (IPI) for improving cognition among breast cancer survivors.

PARTICIPANTS & SETTING: Six participants were included in an eight-week piano program with three data collection time points at baseline, midpoint, and postintervention. Participants were recruited from the breast cancer clinic of a university cancer center in South Florida.

METHODOLOGIC APPROACH: Neurocognitive, psychosocial, and self-report assessments were conducted to determine potential benefits and program feasibility, including the NIH Toolbox® Cognition Battery, the Functional Assessment of Cancer Therapy (FACT)-Cognitive Function, the FACT-Breast, the Patient Health Questionnaire-9, the Generalized Anxiety Disorder-7, and a participant questionnaire.

FINDINGS: Results related to potential benefits suggest that IPI may significantly improve overall cognition in breast cancer survivors, with fluid cognition showing improvement. In addition, IPI may improve quality of life and self-reported measures of depression and anxiety, with large to moderate effect sizes, respectively.

IMPLICATIONS FOR NURSING: Nurses should explore different treatment options for chemotherapy-related cognitive impairment and consider including IPI in survivorship care plans.

KEYWORDS individualized piano instruction; cognitive impairment; breast cancer survivors

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The term “chemotherapy-related cognitive impairment” (CRCI) is used to define a toxicity of chemotherapy treatment that affects cognitive abilities. CRCI affects attention, processing speed, executive function, and memory skills in individuals with cancer and survivors (Vannorsdall, 2017). Although it is not uncommon for patients undergoing treatment to have complaints about their cognition, CRCI is often reported to linger after treatment and have long-term effects. A review of CRCI literature suggests that as many as 75% of individuals with cancer had complaints of CRCI, and as many as 35% of them still had unresolved CRCI issues many years following treatment (Janelsins, Kesler, Ahles, & Morrow, 2014). Many cancer survivors complain that CRCI affects their ability to function typically in their work setting, and as many as 13% of cancer survivors cite a decline in their thinking skills as a reason for dropping out of the workforce (Short, Vasey, & Tunceli, 2005).

CRCI in individuals with breast cancer and survivors is well documented, with many studies showing differences in cognition compared to well-matched noncancer controls (Koppelmans et al., 2012; Wefel, Saleeba, Buzdar, & Meyers, 2010). Often, patients with CRCI report issues with executive function and memory (Hodgson, Hutchinson, Wilson, & Nettlebeck, 2013), as well as attention, processing speed (Vannorsdall, 2017), balance, and coordination (Meyers, 2012), among other cognitive skills.

Cognitive impairments following cancer treatment may result from many different factors, like the direct effects of the diagnosis or treatment on the central nervous system, hormonal changes due to postcancer therapies, or incidences of psychological factors, like low mood, and a comorbidity of depression (Biglia et al., 2012), elevated stress, fatigue, anxiety, or other affective symptoms (Vannorsdall, 2017). In addition, a meta-analysis by Hodgson et