

Frailty in Older Breast Cancer Survivors: Age, Prevalence, and Associated Factors

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Older women (aged 65 years and older) constitute the largest group of breast cancer survivors (BCSs) in the United States (Howlander et al., 2012). More than 1.6 million U.S. women aged 65 years and older are BCSs (Centers for Disease Control and Prevention, 2011). Long-term problems reported by BCSs, such as cognitive difficulty, neuropathy, osteoporosis, muscle weakness, weight loss, slow walking speed, and fatigue, may be similar to those of older women without cancer, but may begin at an earlier age (Clough-Gorr, Stuck, Thwin, & Silliman, 2010; Klepin et al., 2010; McCormick, 2006). A useful approach may be to consider the long-term effects of cancer and cancer treatment as *accelerated aging*, or early-onset frailty (McCormick, 2006).

Frailty is an overall weakened physiologic state usually associated with advanced age (Fried et al., 2001). A measurable frailty phenotype model was proposed by Fried et al. (2001) that has been widely adopted in geriatric research and practice. The frailty phenotype is a conceptual cycle of inactivity and increasing weakness that cascades into eventual disability and dependence. Fried et al. (2001) proposed five criteria to measure frailty (unintentional weight loss, exhaustion, weakness, slow walking speed, and low physical activity) and demonstrated that older adults with at least three of the five criteria were at increased risk for worsening mobility, hospitalization, and death. Frailty, as measured by the frailty phenotype, has been strongly associated with older age, hospitalization, development of disability, reduced cardiac and pulmonary function, and reduced exercise capacity in older adults without cancer (Avila-Funes et al., 2008; Bandeen-Roche et al., 2006; Boyd, Xue, Simpson, Guralnik, & Fried, 2005; Fernandez-Bolanos et al., 2008; Santos-Eggimann, Cuénoud, Spagnoli, & Junod, 2009; Szanton, Seplaki, Thorpe, Allen, & Fried, 2010; Weiss, Hoenig, Varadhan, Simonsick, & Fried, 2010; Wong et al., 2010; Woo, Chan, Leung, & Wong, 2010).

Cancer survivors are not yet known to be measurably more frail than other adults of the same age because frailty

Purpose/Objectives: To describe frailty and associated factors in breast cancer survivors (BCSs) and evaluate whether BCSs are frail at an earlier age than female participants from in two large epidemiological studies.

Design: Descriptive, cross-sectional.

Setting: School of Nursing at Oregon Health and Science University.

Sample: 216 BCSs aged 53–87 years who were a mean 5–7 years post-treatment and not currently participating in exercise.

Methods: Performance tests, clinical measures, and self-reported questionnaires provided baseline data on five criteria for frailty.

Main Research Variables: Frailty was defined as meeting three of the five criteria of the frailty phenotype: shrinking, exhaustion, low activity, slowness, and weakness. Data were compared to published data from women in the Cardiovascular Health Study (CHS) and Women's Health and Aging Study (WHAS).

Findings: Eighteen percent of BCSs aged 70–79 years were frail compared to 11% of women of the same age in the CHS and WHAS. Frailty was more common at a younger age in BCSs, and more BCSs were frail in all age groups compared to women in the CHS study until about age 80 years, when prevalence of frailty was similar in the two groups. Fifty percent of BCSs were classified as prefrail because they met one or two of the five frailty criteria. Higher body mass index increased the odds of frailty, and higher physical activity decreased the odds of frailty (odds ratio [OR] = 1.12, $p = 0.003$, and OR = 0.99, $p = 0.000$, respectively).

Conclusions: Frailty and prefrailty may be common in BCSs and may occur at an earlier age than in adults without a history of breast cancer.

Implications for Nursing: Nurses should be alert to prefrailty or frailty at a younger age in BCSs. Awareness and early intervention may delay or prevent frailty.

Knowledge Translation: BCSs may be frail even when they are not yet considered older adults. Prefrailty in BCSs is important to recognize because it suggests impending frailty that could lead to reduced physical functioning or poor health. Prefrailty and frailty could be assessed in BCSs aged 50 years and older in a clinical setting using a few questions about weight, fatigue, and activity levels, in addition to simple tests of walking speed and grip strength, if warranted.