

# Variability of Patterns of Fatigue and Quality of Life Over Time Based on Different Breast Cancer Adjuvant Chemotherapy Regimens

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**B**reast cancer is the most frequently diagnosed cancer among women in the United States. According to the American Cancer Society ([ACS], 2009), an estimated 192,370 new cases of invasive breast cancer and an additional 62,280 new cases of in situ breast cancer are expected to occur in the United States in 2009. Since 1990, deaths from breast cancer in women younger than age 50 have decreased by 3.3% per year and, in women age 50 or older, by 2% per year (ACS, 2009). With a decrease in death rates has come an increase in five-year survival rates. The five-year survival rate is 98% for localized disease and 84% for regional breast cancer (ACS, 2009). This adds up to more than 2.3 million breast cancer survivors in the United States today (ACS, 2007).

Adjuvant chemotherapy usually is recommended after surgery for patients who are at significant risk for disseminated disease. Chemotherapy has been demonstrated to reduce the risk of breast cancer recurrence by 30%–50% (Moulder & Hortobagyi, 2008). Anthracycline-based regimens, including doxorubicin or epirubicin, are the breast cancer adjuvant chemotherapy standards of care (National Comprehensive Cancer Network [NCCN], 2008b). Medical oncologists perform a thorough work-up to determine prognostic information to select one chemotherapy regimen over another. One of the newer laboratory tests that has been found to help determine which type of chemotherapy will be superior to another is the level of human epidermal growth factor receptor 2 (HER2-neu) expression (NCCN, 2008b). Lymph node status also helps oncologists decide whether to add taxanes (i.e., paclitaxel or docetaxel) to the chemotherapy regimen (Box & Russel, 2004). Clinical trials have found improved disease-free and overall survival rates for lymph node-positive breast cancer by adding taxanes after standard anthracycline-based chemotherapy treatments and by delivery of identical doses of chemotherapy on a more frequent basis, referred to as dose-dense therapy (Moulder & Hortobagyi).

Cancer-related fatigue (CRF) is the most common complaint of patients (Prue, Rankin, Allen, Gracey, &

**Purpose/Objectives:** To examine the relationships among fatigue and physical and mental quality of life (QOL) and different adjuvant chemotherapy regimens in patients with stage I–IIIA breast cancer prior to, during, and after treatment.

**Design:** Longitudinal, descriptive design embedded in a randomized, clinical trial.

**Setting:** Outpatient oncology clinics in the midwestern United States.

**Sample:** 196 postoperative women, mean age of 52 years, receiving anthracycline-based chemotherapy regimens: dose-dense taxane, dose-standard taxane, or dose-standard without taxane.

**Methods:** The Piper Fatigue Scale and Medical Outcomes Study SF-36<sup>®</sup> (v.2) Survey were completed 48 hours prior to treatment 1, at treatments 4 and 8, and 30 days after the final treatment.

**Main Research Variables:** Fatigue, adjuvant chemotherapy regimen, and QOL.

**Findings:** Fatigue and mental QOL changed significantly over time for all regimens, but the patterns of change did not differ based on regimen. Physical QOL changed significantly over time for all regimens, and the pattern of change differed based on whether taxanes were received. Higher fatigue was correlated with lower physical and mental QOL prior to and 30 days after the final treatment, regardless of regimen.

**Conclusions:** Women who receive taxanes are at higher risk for lower physical QOL over time. Higher fatigue was associated with lower QOL regardless of the chemotherapy regimens.

**Implications for Nursing:** Clinicians should screen patients for fatigue and assess for contributing factors at clinic visits. Methods to integrate evidence-based fatigue interventions into practice should be tested and outcomes evaluated.

Cramp, 2006). Fatigue has been reported by more than 90% of patients with cancer (Prue et al.). Factors that have been related to increased levels of CRF in patients include anxiety, depression, anemia, poor sleep quality, symptom distress, and lower levels of physical activity (de Jong, Courtens, Abu-Saad, & Schouten, 2002; Prue et al.). Evidence-based interventions for CRF have been rated for their effectiveness by the Oncology Nursing