

# Distinct Trajectories of Fatigue and Sleep Disturbance in Women Receiving Chemotherapy for Breast Cancer

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Data used in this analysis were collected as part of National Institutes of Health (NIH)/Department of Health and Human Services (DHHS) (R01 CA8947) and NIH/DHHS (R01 CA120558). Whisenant was supported, in part, by a T32 Institutional Training Grant in Cancer, Aging, and End-of-Life Care (T32NR013456). Wong is supported by a grant from the NIH.

Whisenant, Beck, and Mooney completed the data collection. Whisenant, Wong, Mitchell, and Mooney provided the analysis. All authors contributed to the conceptualization and design, provided statistical support, and contributed to the manuscript preparation.

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Submitted February 2017. Accepted for publication June 8, 2017.

**Keywords:** breast cancer; sleep; fatigue; latent growth mixture modeling; latent class analysis; symptoms

*ONF*, 44(6), 739–750.

doi: 10.1188/17.ONF.739-750

**Purpose/Objectives:** To examine self-reported severity of fatigue and disturbed sleep experienced daily by women with breast cancer during multiple cycles of chemotherapy, exploring potential classes of women experiencing similar symptom trajectories.

**Design:** In a secondary analysis, classes of women experiencing similar patterns of fatigue and disturbed sleep were identified.

**Setting:** Oncology clinics in the United States.

**Sample:** 166 women with breast cancer receiving chemotherapy.

**Methods:** Severity scores were self-reported daily using an automated system. Classes of fatigue and disturbed sleep severity were identified using latent growth mixture modeling.

**Main Research Variables:** Fatigue, disturbed sleep, age, stage of disease, education, employment, marital status, chemotherapy regimen, hours lying down, and missed work.

**Findings:** Three fatigue classes were identified: mild decreasing (59% cycle 2, 64% cycle 3), low moderate decreasing (30% cycle 2, 25% cycle 3), and high moderate decreasing (11% both cycles). Two disturbed sleep classes were identified: mild decreasing (89% cycle 2, 81% cycle 3) and increasing (11% cycle 2, 19% cycle 3). Women in the high moderate decreasing fatigue class were more likely to have received doxorubicin ( $p = 0.02$ ) and spent more hours lying down ( $p = 0.02$ ).

**Conclusions:** Patterns of symptom trajectories for fatigue and disturbed sleep were distinguished by baseline symptom severity.

**Implications for Nursing:** Identification of women at risk for fatigue and disturbed sleep may allow clinicians to intensify symptom management.

Treatment for breast cancer is associated with toxicities that significantly diminish quality of life, interfere with activity and employment, and interrupt treatment (Bradley, Neumark, Luo, & Schenk, 2007; Cleeland et al., 2003). Considerable evidence suggests variability in symptom trajectories during the course of chemotherapy treatment for breast cancer. However, current evidence has not identified individuals at risk for severe symptom trajectories prior to treatment initiation and symptom escalation (Dodd, Cho, Cooper, & Miaskowski, 2010).

Fatigue and disturbed sleep are common and cause distress in women receiving chemotherapy for breast cancer (Beck et al., 2010; Berger & Higginbotham, 2000; Huang, Chen, Liang, & Miaskowski, 2014; Kuo, Chiu, Liao, & Hwang, 2006). Although fatigue increases with the initiation of treatment, it does not increase with time (Byar, Berger, Bakken, & Cetak, 2006; Jacobsen et al., 1999; Nieboer et al., 2005; Payne, Piper, Rabinowitz, & Zimmerman, 2006). During chemotherapy, the frequency and duration of nighttime awakening and difficulty falling asleep increase and women report the poorest sleep quality on the first night following treatment (Beck