

This material is protected by U.S. copyright law. Unauthorized reproduction or online display is prohibited. To purchase quantity reprints, e-mail [reprints@ons.org](mailto:reprints@ons.org). For permission to reproduce multiple copies, e-mail [pubpermissions@ons.org](mailto:pubpermissions@ons.org).

# Subjective Sleep Quality, Objective Sleep Characteristics, Insomnia Symptom Severity, and Daytime Sleepiness in Women Aged 50 and Older With Nonmetastatic Breast Cancer

Carol A. Enderlin, PhD, RN, Elizabeth Ann Coleman, PhD, RNP, AOCN®, Catherine Cole, PhD, RN, ACNS-BC, Kathy C. Richards, PhD, RN, FAAN, Robert L. Kennedy, PhD, Julia A. Goodwin, PhD, Laura F. Hutchins, MD, and Karen Mack, BSN, RN, RNP, OCN®, CCRP

**S**leep quality often is poor in adult women with breast cancer (Berger et al., 2009; Berger, Farr, Kuhn, Fischer, & Agrawal, 2007; Carpenter et al., 2004). Sleep disturbance also is common (Davidson, MacLean, Brundage, & Schulze, 2002), and may remain problematic throughout breast cancer treatment (Byar, Berger, Bakken, & Cetak, 2006). Objective sleep changes among adult women with breast cancer reportedly include less than average duration of nocturnal sleep time (Ancoli-Israel et al., 2006; Berger et al., 2007; Payne, Piper, Rabinowitz, & Zimmerman, 2006), frequent nocturnal awakenings (Ancoli-Israel et al., 2006; Berger et al., 2007), and increased insomnia symptoms (Bardwell et al., 2008; Haghighat, Akbari, Holakouei, Rahimi, & Montazeri, 2003; Savard, Simard, Blanchet, Ivers, & Morin, 2001). In addition, daytime sleepiness has been found to increase during chemotherapy (Kuo, Chiu, Liao, & Hwang, 2006). A detailed review of these sleep issues and studies regarding women aged 50 years and older has been described elsewhere (Enderlin et al., 2010.)

## Patient Impact

The detrimental impact of poor sleep quality on the daytime symptoms and health-related quality of life of women with breast cancer has been suggested in several studies. Poor subjective sleep quality was significantly associated with poor functional well-being, greater fatigue intensity, greater disruptions in social interactions, and lower positive states of mind in women prior to adjunct therapy for breast cancer (Vargas et al., 2010). Among breast cancer survivors, significant correlates of poor subjective sleep quality included poor physical functioning, depressive symptoms, and distress.

**Purpose/Objectives:** To examine subjective sleep quality in women aged 50 and older as predicted by cancer status, age, number of comorbidities, and symptoms of depressed mood; and to describe objective sleep characteristics, insomnia symptom severity, and daytime sleepiness.

**Design:** Descriptive.

**Setting:** Urban university and private oncology clinics in the southern United States.

**Sample:** 32 women with and 35 without nonmetastatic breast cancer, aged 50–90 years ( $\bar{X}$  = 64.9, SD = 4.67).

**Methods:** Two telephone interviews, the Pittsburgh Sleep Quality Index, Profile of Mood States, three days of home actigraphy, Insomnia Severity Index, Epworth Sleepiness Scale, and medical records review.

**Main Research Variables:** Subjective quality of sleep; secondary objectives were sleep characteristics, insomnia symptoms, and daytime sleepiness.

**Findings:** Poor subjective sleep quality was predicted by depressed mood ( $p < 0.00005$ ). All mean objective sleep characteristics were similar for the breast cancer and comparison groups. Nocturnal awakenings were excessive (9.2 versus 7.3). Mean sleep onset latency was longer for the breast cancer group than for the comparison group (34.8 versus 15.6 minutes). Mean insomnia severity scores for the breast cancer group indicated subthreshold insomnia symptoms, and no clinically significant insomnia for the comparison group (8.9 versus 6.4). Mean daytime sleepiness scores were normal for both groups (7 versus 6).

**Conclusions:** Subjective sleep quality was predicted by depressed mood only. Sleep in the breast cancer group was characterized by poor sleep quality, frequent nocturnal awakenings, and insomnia symptoms.

**Implications for Nursing:** Screening and monitoring in women aged 50 and older with breast cancer may help promote early sleep intervention; however, additional collaborative research regarding the underlying causes of sleep disruption is needed.