

# Sleep, Mood, and Quality of Life in Patients Receiving Treatment for Lung Cancer

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**L**ung cancer is the second most common form of cancer but the leading cause of cancer death in both men and women (Siegel, Naishadham, & Jemal, 2013). In 2013, an estimated 228,190 individuals will be diagnosed with lung cancer and 159,480 will die from the disease (American Cancer Society [ACS], 2013). Although advances in knowledge about cancer biology and improvements in early diagnosis and treatment have increased the opportunities for long-term survival, the prognosis remains poor with a five-year survival rate of only 16% (ACS, 2013). As such, the impact of the disease and treatment on patients' symptoms and quality of life (QOL) requires exploration.

The vast majority of patients with lung cancer are diagnosed with advanced disease, a high burden of symptoms (i.e., dyspnea, hemoptysis, cough, and chest pain), poorer QOL, and shortened survival (Buchanan, Milroy, Baker, Thompson, & Levack, 2009; Hopwood & Stephens, 1995, 2000; Siegel et al., 2013; Steinberg et al., 2009). Research has demonstrated that early integration of symptom management leads to meaningful improvements in QOL, mood, and survival in patients with lung cancer (Temel et al., 2010). However, few studies have focused on sleep as a factor influencing symptom burden and QOL.

Individuals with lung cancer are reported as having the highest or second highest level of sleep disturbances relative to other cancers and noncancer controls, and so may be a particularly at-risk population for sleep problems (Davidson, MacLean, Brundage, & Schulze, 2002; Palesh et al., 2010). A Canadian study using well-established diagnostic criteria and involving 982 outpatients revealed that those with lung cancer ( $n = 114$ ) had a higher prevalence of sleep problems, including excessive daytime sleepiness, sleeping more than usual, severe fatigue, and using sleeping pills more often than patients with other solid tumors (Davidson

**Purpose/Objectives:** To distinguish relationships among subjective and objective characteristics of sleep, mood, and quality of life (QOL) in patients receiving treatment for lung cancer.

**Design:** Descriptive, correlational study.

**Setting:** Two ambulatory oncology clinics.

**Sample:** 35 patients with lung cancer.

**Methods:** The following instruments were used to measure the variables of interest: Pittsburgh Sleep Quality Index (PSQI), Hospital Anxiety and Depression Scale, Functional Assessment of Cancer Treatment–Lung (FACT-L), a sleep diary, and a motionlogger actigraph.

**Main Research Variables:** Sleep, mood, and QOL.

**Findings:** Significant differences were found between sleep diary and actigraph measures of sleep efficiency ( $p = 0.002$ ), sleep latency ( $p = 0.014$ ), sleep duration ( $p < 0.001$ ), and wake after sleep onset ( $p < 0.001$ ). Poor sleepers (PSQI score greater than 5) were significantly different from good sleepers (PSQI score of 5 or lower) on sleep diary measures of sleep efficiency and sleep latency and the FACT-L lung cancer symptom subscale, but not on mood or actigraph sleep measures.

**Conclusions:** Although patients with lung cancer may report an overall acceptable sleep quality when assessed by a single question, those same patients may still have markedly increased sleep latencies or reduced total sleep time. The findings indicate the complexity of sleep disturbances in patients with lung cancer. Lung cancer symptoms had a stronger association with sleep than mood. Research using prospective methods will help to elucidate their clinical significance.

**Implications for Nursing:** Patients receiving treatment for lung cancer are at an increased risk for sleep disturbances and would benefit from routine sleep assessment and management. In addition, assessment and management of common symptoms may improve sleep and, ultimately, QOL.

**Knowledge Translation:** A high frequency of sleep disturbances in patients receiving treatment for lung cancer was evident, and poor sleepers had lower QOL. Sleep disturbances may be more related to lung cancer symptoms than anxiety or depression. Improving lung cancer symptoms such as dyspnea may improve sleep.