

# Relationships Among Pain, Fatigue, Insomnia, and Gender in Persons With Lung Cancer

Amy J. Hoffman, PhD, RN, Barbara A. Given, PhD, RN, FAAN, Alexander von Eye, PhD, Audrey G. Gift, PhD, RN, FAAN, and Charles W. Given, PhD

**Purpose/Objectives:** To examine the relationships among pain, fatigue, insomnia, and gender while controlling for age, comorbidities, and stage of cancer in patients newly diagnosed with lung cancer within 56 days of receiving chemotherapy.

**Design:** Secondary data analysis.

**Setting:** Accrual from four sites: two clinical community oncology programs and two comprehensive cancer centers.

**Sample:** 80 patients newly diagnosed with lung cancer.

**Methods:** Analysis from baseline observation of a randomized clinical intervention trial. Multinomial log-linear modeling was performed to explain the relationships among pain, fatigue, insomnia, and gender.

**Main Research Variables:** Pain, fatigue, insomnia, and gender.

**Findings:** For all people with lung cancer, fatigue (97%) and pain (69%) were the most frequently occurring symptoms; insomnia occurred 51% of the time. A model containing all main effects (two-way interactions of pain and fatigue, pain and insomnia, and insomnia and gender; and the three-way interaction of pain, fatigue, and insomnia, along with three covariates [age, comorbidities, and stage of cancer]) was a good fit to the data. Parameter estimates indicated that a statistically significant effect from the model was the three-way interaction of pain, fatigue, and insomnia. Gender did not make a difference. Age, comorbidities, and stage of cancer were not significant covariates.

**Conclusions:** For people newly diagnosed with lung cancer undergoing chemotherapy, multiple symptoms occur simultaneously rather than in isolation; a symptom cluster exists, consisting of pain, fatigue, and insomnia; and no relationship was found among gender, pain, fatigue, and insomnia.

**Implications for Nursing:** By understanding this symptom cluster, healthcare providers can target specific troublesome symptoms to optimize symptom management and achieve the delivery of high-quality cancer care.

## Key Points . . .

- People newly diagnosed with lung cancer and undergoing chemotherapy suffer from concurrent, severe symptoms.
- The presence of several symptoms occurring together, known as a symptom cluster, is a cause for concern because concurrent symptoms are likely to increase the overall level of symptom severity.
- Multiple concurrent symptoms such as pain, fatigue, and insomnia may be best targeted using an anticipatory approach. The report of one symptom should be considered a risk factor for a cluster of symptoms.
- The symptom management process needs to be altered to account for multiple concurrent symptoms that should be anticipated, assessed, and treated as a whole.

Amy J. Hoffman, PhD, RN, is a recent research fellow at the National Institute of Nursing Research, National Institutes of Health, in Bethesda, MD, and a doctoral graduate from the College of Nursing at Michigan State University in East Lansing; Barbara A. Given, PhD, RN, FAAN, is a university distinguished professor in the College of Nursing, Alexander von Eye, PhD, is a professor in the Psychology Department, Audrey G. Gift, PhD, RN, FAAN, is a professor in the College of Nursing, and Charles W. Given, PhD, is a professor in the Department of Family Practice, College of Human Medicine, all at Michigan State University. This research was supported by (a) a National Institutes of Health, National Institute of Nursing Research, Individual Ruth L. Kirschstein National Research Service Award, grant number 1F31 NR009621-01A1, project title: *Fatigue, Self-Efficacy, and Functional Status in People With Lung Cancer*, principal investigator Amy Hoffman; (b) a Mary Margaret Walther Cancer Research Fellowship, Behavioral Cooperative Oncology Group, Walther Cancer Institute, Indianapolis, IN; (c) the BlueCross BlueShield of Michigan Foundation, grant number 1044.SAP, project title: *Fatigue, Self-Efficacy, and Functional Status in People With Lung Cancer*, principal investigator Amy Hoffman; and (d) the Sigma Theta Tau International Honor Society of Nursing, Kappa Epsilon Chapter-at-Large, Michigan. (Submitted October 2006. Accepted for publication March 4, 2007.)

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Lung cancer is the most commonly diagnosed and lethal cancer, irrespective of gender, in the world (Parkin, Bray, Ferlay, & Pisani, 2005). As a result, lung cancer and its corresponding symptoms have had a tremendous effect on the lives of those who suffer with the disease. However, little is known about the role that gender plays in the symptom experience of people with lung cancer. According to Cooley, Short, and Moriarty (2002), targeting research toward gender