

# Assessing Coughing and Wheezing in Lung Cancer: A Pilot Study

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**Purpose/Objectives:** To establish reliability and validity of two self-report questionnaires, the Lung Cancer Cough Questionnaire and the Lung Cancer Wheezing Questionnaire.

**Design:** Prospective, exploratory pilot study.

**Setting:** Clinical oncology settings in the southern United States.

**Sample:** 31 adult women with lung cancer.

**Methods:** Content validity of both questionnaires was assessed through a comprehensive literature review and an expert judge panel. Concurrent validity was established by Spearman rank correlation coefficients and Wilcoxon Rank Sum tests with items from other valid tools. Test-retest reliability was assessed by percent agreement, kappa, paired t tests, and correlations. Internal consistency was determined by Cronbach's alpha.

**Main Research Variables:** Cough, wheeze.

**Findings:** Cronbach's alpha showed excellent internal consistency and percent agreement, and kappa showed similarity of item responses across test-retest administrations. Nonsignificant paired t tests indicated similar mean scores, and significant test-retest correlations supported test-retest reliability.

**Conclusions:** Preliminary testing indicates good reliability and validity for both questionnaires. Both instruments can identify people with problems of coughing and wheezing and have the potential for monitoring these symptoms over time and determining effectiveness of interventions.

**Implications for Nursing:** Assessment of coughing and wheezing is an important component of monitoring respiratory symptoms of lung cancer. Both of these symptoms can be amenable to interventions. Further research is needed to confirm psychometrics and sensitivity of these tools.

## Key Points . . .

- Coughing and wheezing are common symptoms associated with lung cancer and the presenting symptoms in more than 50% of patients.
- Consistent assessments of these symptoms are important for symptom management.
- Further study is needed to confirm the performance of these instruments in clinical settings.

course of these symptoms has limited symptom management in this area.

The purpose of this study was to develop two tools to assess the presence and severity of the lung cancer-related symptoms cough and wheezing. Valid and reliable instruments can aid in the early assessment of and intervention for these symptoms as well as detect changes resulting from symptom management.

## Relevant Literature

Nearly 95% of patients with lung cancer are symptomatic at initial diagnosis (Beckles et al., 2003), with respiratory symptoms being common (Cooley, 2000). The ranges for initial respiratory symptoms are 8%–75% for cough, 3%–60% for dyspnea, 6%–35% for hemoptysis, and 2%–31% for wheezing (Beckles et al.; Sarna et al., 2002). Dyspnea (Mercandante, Casuccio, & Fulfar, 2000; Thomas & Von Gunten, 2002), coughing (O'Driscoll et al., 1999; Selim et al., 1997), production of phlegm (Epstein, Faling, Daly, & Celli, 1993; Selim et al.), hemoptysis (Herth, Ernst, & Becker, 2001; Kuo, Chen, Chao, Tsai, & Perng, 2000), and wheezing (Martins & Pereira, 1999; Selim et al.) have been reported. In addition, fatigue has been reported as a consequence of respiratory distress that compounds symptomatology (Chang, Curtis, Patrick, &

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Lung cancer is the second most common type of cancer in the United States, responsible for 30% of all cancer deaths (Jemal et al., 2004). Respiratory symptoms are common during the course of the disease and include cough, shortness of breath, and wheezing (Beckles, Spiro, Colice, & Rudd, 2003). These symptoms can affect performance of day-to-day activities and diminish quality of life (QOL). Respiratory symptoms associated with lung cancer can be compounded by a history of or continued smoking (Tyczynski, Bray, & Parkin, 2003). The majority of research on management of respiratory symptoms has focused on the needs of those with dyspnea. Coughing and wheezing are presenting symptoms in 23%–80% of patients with lung cancer (Hollen, Gralla, Kris, Eberly, & Cox, 1999; Landis, Murray, Bolden, & Wingo, 1998; O'Driscoll, Corner, & Bailey, 1999). Little data exist on the management of these troublesome symptoms. Although these symptoms are included in some measures of QOL (Fayers, Bottomley, EORTC QOL Group, & QOL Unit, 2002; Gridelli, Perrone, Nelli, Ramponi, & De Marinis, 2001; Hollen et al.), they often are single items included as part of a global score and rarely are reported as individual items. The lack of available instruments to assess the character, dimensions, and clinical