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# Fatigue, Pain, and Functional Status During Outpatient Chemotherapy

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Approximately 1.44 million new cases of cancer were diagnosed in the United States in 2007 (Jemal et al., 2009). Incidence rates from 1995 for men and 1999 for women through 2004 have remained fairly constant, whereas mortality rates have decreased continually since the early 1990s; thus, more people are living with cancer and experiencing the consequences of active treatment. Cancer treatments may result in better survival outcomes, which are certainly desirable; however, treatments may negatively affect quality of life, with increased symptoms impacting functional status. Symptoms that are particularly prevalent and bothersome are fatigue and pain.

Nursing care for cancer-related fatigue includes three major interventions: monitoring and assessing patients, taking actions to facilitate rest and conserving energy, and teaching patients and family members self-management strategies (Mitchell, Beck, Hood, Moore, & Tanner, 2007). However, interventions and strategies often are not very effective (Yurtsever, 2007) or well defined, and gaps exist in the knowledge regarding the management of fatigue and the relationships of fatigue and pain with changes in functional status over time during chemotherapy treatment (Mitchell et al., 2007). Original work by Mishel (1988) established that lack of information regarding expected treatment effects on symptoms and how to interpret and manage persistent or new symptoms can contribute to uncertainty and distress. Clinical and informational or educational interventions need to be based on well-defined problems and the patterns of their occurrence and timed to occur before fatigue and pain levels are distressful and functional status is impaired (National Comprehensive Cancer Network, 2008). Maximal benefit will be gained from interventions that are tailored specifically to the patients' relationships of the symptoms of fatigue, pain, and functional status. Given, Given, Azzouz, Stommel, and Kozachik (2000) suggested that the synergistic effect of multiple symptoms is unknown, and the coexistence of symptoms may have more than an additive effect on functional status (Lenz, Pugh, Milligan, Gift,

**Purpose/Objectives:** To examine the relationship of fatigue and pain with functional status and the pattern of the two symptoms' occurrence over time in individuals with cancer who were receiving outpatient chemotherapy. The aims were to describe the levels of fatigue and pain with functional status and the inter-relationships with each other and with demographic and clinical variables over time.

**Design:** Descriptive, correlational.

**Setting:** Outpatient chemotherapy clinic in the New England region of the United States.

**Sample:** Total available population of 70 consecutive adult patients with breast cancer (n = 9), colorectal cancer (n = 21), lung cancer (n = 21), or lymphoma (n = 19).

**Methods:** Retrospective data were extracted from the medical records; descriptive, correlational, and mixed-modeling methods were used to describe the sample and to examine the relationships of the symptoms and functional status.

**Main Research Variables:** Fatigue, pain, functional status, and demographic and clinical factors.

**Findings:** Fatigue was the most frequently reported symptom; pain was rarely and almost exclusively reported by patients with lung cancer or lymphoma during their early treatments. Fatigue and functional status impairment were highly associated with each other and had similar relationships with the other variables.

**Conclusions:** The patterns and relationships of fatigue and functional status reported by this fairly healthy sample provide useful information to help guide early assessments and nursing interventions for people receiving outpatient chemotherapy.

**Implications for Nursing:** The patterns and severity of symptoms and functional status impairment in people with colorectal cancer or lymphoma warrant further investigation. Targeted exercise interventions for specific outpatient populations should be developed and tested to address specific patterns of symptoms and functional status impairment in individuals with cancer.

& Suppe, 1997). Examining the relationships of multiple symptoms is important to effectively treat concurrent symptoms (Miaskowski, Dodd, & Lee, 2004; Given et al., 2000).