Symptom Clusters in Chinese Patients With Primary Liver Cancer

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Primary liver cancer (PLC) is an increasingly critical healthcare issue throughout the world, in part because of widespread hepatitis B and C virus (HBV and HCV) infections, excessive alcohol consumption, and continuing obesity (Sherman, 2004). Globally, PLC ranks sixth and third on the lists of cancer morbidity and mortality, respectively, with an estimated 748,000 patients newly diagnosed with PLC in 2008 and 696,000 deaths occurring, 85% of which were found in lesser-developed countries (Jemal, Center, DeSantis, & Ward, 2010). Of note, more than 50% of the worldwide cases of PLC occur in China (Jemal et al., 2010), where PLC ranks third in cancer incidence and is the second-leading cause of cancer death (Ministry of Health of the People's Republic of China, 2011). These dismal statistics mirror the reality that PLC often is diagnosed at an advanced stage with a poor prognosis. Patients with PLC suffer from an array of symptoms caused by the cancer itself and its treatments, such as pain, fever, anorexia, mood disorders, and fatigue (Bianchi et al., 2003; Zhu, 2003). In clinical practice, these symptoms seldom occur individually but usually appear in groups or clusters. The co-occurrence of multiple symptoms, in comparison to that of a single symptom, may lead to a prolonged delay in scheduled treatments and effectiveness of treatment protocols and a more rapid decline in a patient's quality of life (QOL). However, only a limited number of studies in the literature have addressed symptom clusters in patients with PLC; therefore, this area should be further explored to develop more efficient and effective approaches to symptom management for patients with PLC.

Considering the large population of patients with PLC in China and the benefits of alleviating their multiple symptoms, the authors conducted a study to explore symptom cluster profiles in Chinese patients with PLC. The main objectives of this study were to identify symptom clusters and their clinical meanings in Chinese patients with PLC, to examine the factors related

Purpose/Objectives: To derive symptom clusters and their clinical meanings in Chinese patients with primary liver cancer (PLC), to examine the factors related to the identified symptom clusters, and to validate the impact of the identified symptom clusters on patients' quality of life (QOL).

Design: Cross-sectional.

Setting: Inpatient departments at a medical center for hepatobiliary disease in China.

Sample: 277 patients with PLC, aged 18–77 years.

Methods: Data were collected from a number of measures, including demographic and disease characteristics, the MD Anderson Symptom Inventory, six additional symptom items specific to PLC, and the Functional Assessment of Cancer Therapy–Hepatobiliary questionnaire. Factor analysis was used to derive symptom clusters, independent-samples t test or one-way analysis of variance was performed to identify the factors related to each symptom cluster, and multivariate regression models were applied to examine the predictive impact of the identified symptom clusters on PLC.

Main Research Variables: Demographic and medical variables, symptom clusters, and QOL.

Findings: Three symptom clusters were identified: gastrointestinal sickness, neuropsychological, and liver dysfunction. Patients who received liver protection treatment, received more than one kind of treatment, and had poorer physical performance, worse liver function, and more advanced cancer scored higher in severity across all three symptom clusters. All of the symptom clusters explained 48% of the QOL variance, and the liver dysfunction symptom cluster (adjusted $R^2 = 0.425$) showed a superior influence.

Conclusions: The liver dysfunction symptom cluster may be unique to Chinese patients with PLC. Patients with certain demographic and disease characteristics could be at risk for experiencing severe symptom clusters. In addition, a differential impact of the symptom clusters on QOL was noted in these patients.

Implications for Nursing: The factors related to severity should be considered when managing symptom clusters. Because the predictive impacts of the three individual symptom clusters on QOL were varied and ordered in magnitude, healthcare providers should first alleviate the primary symptom cluster. This approach could be cost-effective and improve QOL.