OBJECTIVES:

To examine the literature on symptom clusters and the impact of co-occurring symptoms on the physical function of patients with cancer during treatment.

DATA SOURCES:

Research and review articles.

CONCLUSION:

Unmanaged symptoms occur in what are often called symptom clusters. A focus on known and frequently present co-occurring symptoms, such as pain, fatigue, and sleep disturbance, might be the most efficient and effective way to manage specific symptoms and improve patient functioning.

IMPLICATIONS FOR NURSING PRACTICE:

Nurses should select assessments that identify multiple symptoms and define their co-occurrence.

KEYWORDS:

Physical function, patient outcomes, symptom clusters, cancer treatment

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SYMPTOM CLUSTERS AND PHYSICAL FUNCTION FOR PATIENTS RECEIVING CHEMOTHERAPY

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IN THE PAST decade, consideration of the symptom experience for cancer patients focusing on single symptoms has given way to evidence that unmanaged symptoms occur in what are often called clusters or symptom combinations.[1-4] For cancer patients, assessment of a single symptom is too narrow, seldom reflects the patient's real situation, underestimates the symptom burden that the patient is experiencing, and results in a less comprehensive approach to symptom management. Research has provided support that together multiple symptoms may have a more negative effect on patients' quality of life than the occurrence of single symptoms.[4-6]

This article examines the literature on symptom clusters and the impact of multiple co-occurring symptoms on physical functioning of patients with cancer during treatment. The presence of multiple co-occurring symptoms is critical to patients not only because of concern for altered comfort or distress, but also because multiple symptoms often cause alteration in physical function with subsequent altered quality of life.[7] Symptom burden resulting from multiple co-occurring symptoms may lead to treatment reductions, delays, or discontinuation, any of which could have a negative effect on the treatment's effectiveness if patients do not receive the desired full therapeutic dose.[3] In addition, patients may be unable to carry out their daily activities often caused by lowered physical function.[3,8-10] In addition, recent research addresses the impact of physical activity on survivorship

and a lower rate of recurrence for breast, colon, and prostate. Physical functioning with a focus on return to physical function is critical to understand.[11]

How patients function during their cancer treatment has been a critical component of the therapeutic outcomes of cancer care. Functional measures are important gauges to assess cancer care effectiveness. Poor physical function is strongly associated with poor quality of life and thus has become an important component of clinical trial outcomes and often determines drug dosage, reduction of dosage, continuation of therapy, or actual cessation of treatment.[12] The ability of patients to continue to carry out their usual daily activities and self-care are critical to how patients assess the therapeutic process of their cancer care and their prognosis. Patient and family decisions are often based on functional abilities.

Clusters

The term "cluster" suggests the formation of an aggregate of symptoms that are related to each other in a logical or predictable way.[13] The term "symptom cluster," recently described through a concept analysis by Kim et al,[14 (p 601)] indicated that a symptom cluster "consists of two or more symptoms that are related to each other and that occur together." Dodd et al[3,6] indicate that symptom clusters are symptoms that appear concurrently and may or may not have a common etiology. Miaskowski[15] extends this thinking by suggesting that symptoms can be related to one another through a common mechanism or etiology, by sharing common variance, or by producing different outcomes than individual symptoms alone. Relationships among symptoms within a cluster should be stronger than relationships among symptoms across different clusters, and are independent of other symptom clusters or combinations.

The literature shows that co-occurring symptoms are related to physical function, but few authors discuss how the management of symptoms also relates to function and continued functional ability despite the cancer or cancer treatment. There are antecedents such as disease severity, mental health status (eg, anxiety and depression), social support, knowledge, and gender that should be considered when examining the co-occurrence of multiple symptoms; together they affect functional outcomes.[4,5] Individuals with numerous and severe symptoms experience significant decline in function when compared with those with a limited number of mild symptoms. The relationships among these multiple symptoms are "multiplicative," meaning that two or more symptoms have a synergistic effect on one another and on other symptoms.[3,4,6] Lowering the severity or occurrence of one symptom can then have a catalytic effect on the control of others and thus have an impact on symptom burden.

The number of co-morbid conditions that patients report may also exacerbate impaired physical function. The increased number of symptoms from co-morbid conditions and, together with multiple symptoms from cancer and cancer treatment, may lower physical function. Thus, comorbidity has to be an essential component of the symptom assessment. Cancer-specific or cancer treatment-specific symptoms need to be targeted for intervention.[8,16-20]

A clear understanding is needed of what impact multiple, co-occurring symptoms from cancer or cancer treatment can have, what factors alter the combination of symptoms, and what effects the combination of symptoms have on the patients' level of functioning and their ability to continue therapy and carry out their daily activities. Based on these factors, a consideration then is how should care be altered for a patient with pain, fatigue, and insomnia occurring together as compared with a patient with pain only?

Symptom Effect on Physical Function

The synergistic effects of symptom clusters versus a single symptom on patient outcomes, such as physical function, depression, and quality of life, have been examined.[5,8,21] Severity of symptoms, such as fatigue, is influenced by pain, fever, dyspnea, insomnia, and nausea, thus affecting functional impairment and function. Given et al[8] found that pain, fatigue, and insomnia together resulted in the changes in physical function. Among cancer patients receiving chemotherapy, fatigue alone and pain and fatigue together were predictive of numerous other symptoms. Patients experiencing both pain and fatigue reported on average 6.3 other symptoms; those reporting fatigue alone had 4.4 other symptoms; and those with pain alone reported 3.8 other symptoms. Patients with neither pain or fatigue had, on aver-