

# Longitudinal Subgrouping of Patients With Cancer Based on Symptom Experiences: An Integrative Review

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**PROBLEM IDENTIFICATION:** The purpose of this integrative review is to identify literature describing (a) subgrouping patients with cancer based on symptom experiences and their patterns of symptom changes over time and (b) methodologies of subgrouping patients with cancer based on symptom experiences.

**LITERATURE SEARCH:** PubMed®, CINAHL®, and PsycINFO® were searched through January 2019.

**DATA EVALUATION:** Studies were appraised for patterns of symptom change over time and methodologic approach using the QualSyst quality rating scale.

**SYNTHESIS:** 11 studies met inclusion criteria. Clinical variables that influence symptom patterns were diverse. The most common clustering method was latent variable analysis (73%), and all studies collected symptom data prospectively using survey analysis to assess symptoms.

**IMPLICATIONS FOR PRACTICE:** The majority of studies (91%) observed that the symptom experience within the group of patients with cancer changed over time. Identifying groups of patients with similar symptom experiences is useful to determine which patients need more intensive symptom management over the trajectory of cancer treatment, which is essential to improve symptoms and quality of life.

**KEYWORDS** cancer; symptom clusters; symptom experiences; longitudinal study; oncology

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Patients with cancer face a number of severe symptoms, such as pain (Brant et al., 2011), fatigue (Ameringer et al., 2013; Brant et al., 2011), sleep disturbance (Ameringer et al., 2013; Brant et al., 2011), depression (Brant et al., 2011), and nausea (Ameringer et al., 2013). Experiencing these symptoms has been shown to affect functional status and quality of life in people with cancer (Hwang et al., 2003; Kroenke et al., 2013). Symptom management in this population is further complicated by the experience of having multiple co-occurring symptoms, known as symptom clusters (SCs) (Bender et al., 2008; Dodd et al., 2004; Fan et al., 2007). Several studies reported that the occurrence of SCs negatively affects patient outcomes, such as patients' functional status (Dodd et al., 2001; Doong et al., 2015; Illi et al., 2012; Kim et al., 2012; Lin et al., 2013; Miaskowski et al., 2006, 2007; Rha & Lee, 2017; Ryu et al., 2010), quality of life (Dodd et al., 2010; Fox & Lyon, 2006; Gold et al., 2016; Henoch & Lövgren, 2014; Hwang et al., 2016; Lin et al., 2013; Miaskowski et al., 2006, 2007; Nho et al., 2017; Phlighbua et al., 2013; Rha & Lee, 2017; Ryu et al., 2010), or healthcare use (Miaskowski et al., 2017).

A literature review reported the most commonly identified SCs in chronic conditions, including cancer and other rare diseases, as (a) fatigue, pain, depression, and sleep disturbance; (b) nausea and vomiting; and (c) anxiety and depression (Miaskowski et al., 2017). These symptom profiles may vary based on demographic and clinical characteristics and may change based on disease trajectories over time. Groups of patients may share similar experiences of a particular SC (e.g., all mild symptoms, all severe symptoms, or a mixture of both). The National Institute of Nursing Research (2019) set a research priority with the goal of facilitating delivery of tailored and effective