Symptom Clusters in Breast Cancer Survivors: A Latent Class Profile Analysis

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OBJECTIVES: To identify symptom clusters in breast cancer survivors and to determine sociodemographic and clinical characteristics influencing symptom cluster membership.

SAMPLE & SETTING: The authors performed a cross-sectional secondary analysis of data obtained from a community-based cancer registry–linked survey with 1,500 breast cancer survivors 6–13 months following a breast cancer diagnosis.

METHODS & VARIABLES: Symptom clusters were identified using latent class profile analysis of four patient-reported symptoms (pain, fatigue, sleep disturbance, and depression) with custom PROMIS® short forms.

RESULTS: Four distinct classes were identified: symptoms within normal limits (class 1), pain with fatigue and sleep disturbance (class 2), depression with fatigue and sleep disturbance (class 3), and all high symptom burden (class 4). The authors identified four clinically relevant and actionable symptom clusters in early-stage breast cancer survivorship. Certain sociodemographic and clinical characteristics place patients at risk for physical late effects and mental health issues.

IMPLICATIONS FOR NURSING: Common symptom clusters may lead to better prevention and treatment strategies that target a group of symptoms. Results also suggest that certain factors place patients at high risk for symptom burden, which can guide tailored interventions.

Patients with breast cancer commonly experience multiple symptoms, including pain, fatigue, sleep disturbance, and depression. These symptoms not only affect patients at diagnosis and during cancer treatment, but also may persist or develop after treatment ends (Marshall et al., 2016). In studies of breast cancer survivors, the prevalence rates of these symptoms have been reported as follows: pain = 34%–97% (Bao et al., 2018; Ellis, 2013; Hamood, Hamood, Merhasin, & Keinan-Boker, 2018; Seib et al., 2017), fatigue = 31%–86% (Ellis, 2013; Fabi et al., 2017; Mao et al., 2018; Seib et al., 2017), sleep disturbance = 38%–75% (Lowery-Allison et al., 2018; Otte et al., 2016; Seib et al., 2017), and depression = 20%–55% (Avis, Levine, Case, Naftalis, & Van Zee, 2015; Seib et al., 2017).

Often, these symptoms are identified, studied, and managed independently, despite that they rarely occur in isolation. Better clarity on the prevalence and severity of co-occurring symptoms, or symptom clusters, will inform symptom management more effectively (Miaskowski et al., 2017). A symptom cluster has been defined as "two or more symptoms that are related to each other and that occur together. Symptom clusters are composed of stable groups of symptoms that are relatively independent of other clusters, and they may reveal specific underlying dimensions of symptoms" (Kim, McGuire, Tulman, & Barsevick, 2005, p. 278).

Chronic symptom clusters may have long-term effects on the quality of life of breast cancer survivors (Roiland & Heidrich, 2011). Identifying symptom clusters and their relationship to patient characteristics may lead to a better interpretation for clinical presentation of breast cancer survivors' overall symptom experience and provide greater insight into the planning of future interventions. In effect, understanding symptoms as a cluster may guide healthcare providers to develop more targeted and effective interventions