Perceived Self-Efficacy
A concept analysis for symptom management in patients with cancer

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BACKGROUND: Perceived self-efficacy (PSE) for symptom management plays a key role in outcomes for patients with cancer, such as quality of life, functional status, symptom distress, and healthcare use. Definition of the concept is necessary for use in research and to guide the development of interventions to facilitate PSE for symptom management in patients with cancer.

OBJECTIVES: This analysis will describe the concept of PSE for symptom management in patients with cancer.

METHODS: A database search was performed for related publications from 2006–2016. Landmark publications published prior to 2006 that informed the concept analysis were included.

FINDINGS: Greater PSE for symptom management predicts improved performance outcomes, including functional health status, cognitive function, and disease status. Clarification of the concept of PSE for symptom management will accelerate the progress of self-management research and allow for comparison of research data and intervention development.

THE PURPOSE OF A CONCEPT ANALYSIS IS TO CLARIFY CONCEPTS by examining their structure and function and to expand the body of nursing knowledge (Walker & Avant, 2011). The concept of perceived self-efficacy (PSE) for symptom management in patients with cancer is important because patients are expected to self-manage symptoms, but few have the ability to do so (Hoffman, 2013). The concept of PSE for symptom management includes both PSE and symptom management.

Self-efficacy is a key component of self-management of symptoms and is vital for the implementation of needed behaviors. People are motivated to act only when they believe they can influence results (Bandura, 2001). Studies have shown that self-efficacy positively influences self-management behavior and is linked to higher quality of life (QOL) and improvements in health status, including decreased physical and psychological symptoms (Lorig & Holman, 2003; Phillips & McAuley, 2013; Porter, Keefe, Garst, McBride, & Baucom, 2008; Torbit, Albiani, Crangle, Latini, & Hart, 2015).

Symptom management is a key component of nursing and cancer care (Armstrong, 2014). Symptoms for patients with cancer are frequently occurring, severe, occur in clusters, and lead to symptom burden and/or distress (Barsevick, 2007; Beck, Towsley, Caserta, Lindau, & Dudley, 2009). Self-management of symptoms optimizes outcomes and influences QOL and survival in patients with cancer (McCorkle et al., 2011). The outcomes of unmanaged symptoms include increased symptom distress and poor prognosis along with decreased QOL, functional status, and survival (Gapstur, 2007).

The Oncology Nursing Society’s Research Agenda identified symptom management and self-management as priorities (Knobf et al., 2015). The National Institute of Nursing Research (2016) also identified symptom science and self-management as priority research areas. Conceptual clarity will aid in these endeavors.

This concept analysis defines and clarifies the concept of PSE for symptom management in patients with cancer. As cancer survivors live longer, symptom management becomes important for improving health outcomes, increasing QOL, improving functional status, and decreasing demand for healthcare services; all of which decrease the cost of care (Ryan & Sawin, 2009). Analysis of this concept will allow for conceptual clarity in research.
and aid in developing interventions to enhance self-efficacy for symptom management.

Methods
Walker and Avant’s (2011) method was used to determine the antecedents, defining attributes, and consequences of the concept of PSE for symptom management. PSE and symptom management have been described previously as individual concepts (see Tables 1 and 2), but have not been analyzed together. The attributes, antecedents, and consequences from the individual concept analysis of PSE and symptom management were analyzed and synthesized with data gathered from the literature search to inform this concept analysis.

Data Sources
Self-efficacy, perceived self-efficacy, symptom management, and cancer were used to search the CINAHL®, Google Scholar, PubMed, MEDLINE®, and PsycINFO® databases. Inclusion criteria were literature that related to PSE, self-efficacy, and symptom management in adult patients with cancer and published in English from 2006–2016. Exclusion criteria were duplicate publications and topics not directly related to self-efficacy and symptom management or adults with cancer. A manual search of references identified additional publications. Landmark publications published prior to 2006 that informed the concept analysis were included. Of the 183 titles and abstracts reviewed, 55 met inclusion criteria or were landmark publications. A concept analysis combining self-efficacy and symptom management has not been published.

Results
Definitions and Uses of the Concept
PSE is a person’s beliefs about his or her ability to produce effects (Bandura, 1986, 1997). Self-efficacy can be further explained as implementing behaviors that are situation- or domain-specific, with outcome expectancies dependent on the context (Hoffman et al., 2009). The concept of PSE deals with perceived ability, while other similar terms describe the management of behaviors, such as self-regulation, self-care, self-monitoring, self-management, and patient-directed monitoring (Novak, Costantini, Schneider, & Beanlands, 2013).

For patients with cancer, PSE is a person’s belief in his or her ability to implement behaviors to achieve a desired outcome, such as symptom management. Self-efficacy becomes important when a person chooses a plan of action, determines the degree of effort required to achieve the outcome, and understands the amount of perseverance needed to continue when it is difficult (Hoffman, 2013). Knowledge and skills are required to implement a behavior, but self-efficacy also requires motivation, competence, and perseverance. As PSE increases, patients become empowered to change behaviors (Hoffman, 2013).

Symptom management in cancer is “a dynamic and multidimensional process in which patients intentionally and purposefully act on and interact with the perception (or previous perception) of the symptom(s) to initiate activities or direct others to perform activities to relieve or decrease distress from and prevent the occurrence of a symptom” (Fu, LeMone, & McDaniel, 2004, p. 68). Symptom self-management is an application of strategies by an individual to relieve symptoms (Hsiao, Moore, Insel, & Merkle, 2014). Symptom management begins with awareness, presence of discomfort or suffering, and identification and assessment of symptoms from the person’s perspective (Fu et al., 2004). Symptom management includes the presence of one or more symptoms, the symptom experience (intensity, distress, quality, temporality, and appraisal), the effectiveness of interventions, and the measurement of related outcomes (Brant, Dudley, 2012).

Table 1

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<thead>
<tr>
<th>AUTHOR</th>
<th>CONCEPT</th>
<th>ATTRIBUTES</th>
<th>ANTECEDENTS</th>
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<tbody>
<tr>
<td>Robb, 2012</td>
<td>Self-efficacy in nursing education</td>
<td>Confidence, Perceived capability, Perseverance</td>
<td>Event occurrence, Reaction to event, Interpretation of behaviors needed, Judgment of capability to perform required behavior</td>
<td>Person decides to perform behavior, Person decides not to perform behavior, Person performs behavior after verbal persuasion.</td>
</tr>
<tr>
<td>Townsend &amp; Scanlan, 2011</td>
<td>Self-efficacy related to student nurses in the clinical setting</td>
<td>Confidence, Capability, Persistence, Strength</td>
<td>Mastery experiences, Vicarious experiences, Social persuasion, Physiologic and affective state</td>
<td>Approach versus avoidance, Quality of performance, Persistence</td>
</tr>
<tr>
<td>Zulkosky, 2009</td>
<td>Self-efficacy</td>
<td>Cognitive and affective processes, Locus of control</td>
<td>Social experiences, Performance accomplishment, Verbal persuasion, Physiologic cues</td>
<td>Low levels of self-efficacy: Avoiding complex responsibilities, Lower motivation, Giving up, Higher stress and depression</td>
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</table>
PERCEIVED SELF-EFFICACY

Beck, & Miaskowski, 2016). Symptoms that occur in clusters require different methods of management. For example, pain may exacerbate depression, anxiety, or fatigue, adding to the complexity of care.

PSE for symptom self-management is the “ability to implement situation-specific behaviors to attain established goals, expectations, or designated types of outcomes” (Hoffman, 2013, p. E19). Hoffman (2013) further defined symptom self-management as “a dynamic, self-directed process of implementing behaviors that recognize, prevent, and relieve or decrease the timing (frequency, duration, occurrence), intensity, distress, concurrence, and unpleasant quality from symptoms to achieve optimal performance outcomes” (p. E19). PSE for symptom management is the ability to implement behaviors to prevent, recognize, and relieve symptoms in patients with cancer.

Defining Attributes
Attributes must be present if the concept exists (Walker & Avant, 2011). The attributes of PSE for symptom management in patients with cancer are cognitive processes, affective processes, motivation, confidence, competence, and awareness (see Figure 1).

COGNITIVE PROCESSES
Cognitive processes involve forming ideas, setting goals, and acting to meet them (Zulkosky, 2009). Perception of ability plays a role in learning skills, performing competently, and persevering (Bandura, 1997). How patients perceive and evaluate symptoms (cognitive appraisal) is a catalyst for a response (Hoffman, 2013). PSE for symptom management requires cognitive processes to acquire knowledge, competence, and confidence related to PSE and the management of symptoms.

AFFECTIVE PROCESSES
Affective processes, such as feelings of anxiety, stress, or depression, influence PSE (Bandura, 1997; Mystakidou et al., 2010; Sato & Sumi, 2015). Symptom management is influenced by affective processes because symptom awareness and decisions for management may be altered in conditions of high emotion or distress that are present in patients with cancer at points in the disease trajectory. Emotional reactions can change thought processes and actions and have a relationship with cognitive processes (Zulkosky, 2009). Both cognitive processes and affective processes are needed for behavior change (Ryan & Sawin, 2009).

TABLE 2.
CONCEPT ANALYSIS OF SYMPTOMS IN PATIENTS WITH CANCER

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<th>ATTRIBUTES</th>
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<tbody>
<tr>
<td>Armstrong, 2003</td>
<td>Symptom experience</td>
<td>Symptom occurrence and distress, Situational and existential meaning</td>
<td>Demographic characteristics, Disease characteristics, Individual characteristics</td>
<td>Adjustment to illness, Quality of life, Mood, Functional status, Disease progression, Survival</td>
</tr>
<tr>
<td>Fu et al., 2004</td>
<td>Symptom management</td>
<td>Subjective, Experimental, Intentional, Multidimensional, Dynamic process, Positive and negative outcomes</td>
<td>Not given</td>
<td>Symptom status, Quality of life, Performance</td>
</tr>
<tr>
<td>Gapstur, 2007</td>
<td>Symptom burden</td>
<td>Dynamic, Multidimensional, Quantifiable, Subjective, Physiologic</td>
<td>Multiple symptoms related to worsening disease status</td>
<td>Decreased survival, Poor prognosis, Delay or termination of treatment, Increased hospitalizations, medical costs, Decreased functional status, Lowered self-reported quality of life</td>
</tr>
<tr>
<td>Kim et al., 2005</td>
<td>Symptom clusters</td>
<td>Relationships of symptoms, Relationships of clusters, Concurrence, Underlying dimensions, Stability, Common etiology</td>
<td>Presence of two or more symptoms</td>
<td>Poorer physical health status, Interference with activities of daily living, Emotional distress, Increased financial burden</td>
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MOTIVATION
A person's belief in his or her efficacy affects choices made in management behaviors, including how much effort to expend (Bandura, 1991). Despite having the knowledge or ability to perform behaviors, patients may choose not to act (Zulkosky, 2009). Outcome expectancies are a person's belief that an action will lead to a specific result and, in the case of symptom management, includes prevention or relief of symptoms (Lev, 1997). Motivation must be present for both PSE and symptom management.

CONFIDENCE
A characteristic of self-efficacy is confidence, which is the belief in the ability to perform a task or behavior (Robb, 2012). PSE for managing pain, fatigue, and other symptoms is key to a person's ability and competence to handle challenging situations. Confidence affects competence and motivation and is a required attribute for PSE for symptom management.

COMPETENCE
Knowledge and skills, including managing medical equipment and communicating with providers, are required to be competent in symptom management (Ryan & Sawin, 2009). Competence also includes the physical ability to perform behaviors that could include exercising for fatigue or changing a dressing. The capability of performing actions required to manage symptoms is influenced by motivation, confidence, and cognitive and affective processes and is needed for PSE for symptom management.

AWARENESS
PSE is being aware of the ability to be effective, which includes competence, physical ability, and controlling actions (Zulkosky, 2009). Symptom awareness is being cognizant of a sensation, something not known, and interpreted considering the experience. Symptoms are subjective and only known when patients report their presence (Rhodes & Watson, 1987). PSE for symptom management occurs when patients are aware of changes in their bodies, or the perception of abnormal feelings or symptoms, and then have the confidence, motivation, and competence to respond to the situation.

Constructed Cases

MODEL CASE
A model case is an example of a how the concept is used that incorporates all the defining attributes of a concept (Walker & Avant, 2011). A woman diagnosed with leukemia who has undergone several rounds of chemotherapy described her self-efficacy for symptom management before her diagnosis and in subsequent hospitalization and treatment. “Since I was diagnosed with cancer, I’m more aware of my body and I pay attention to changes in how I feel.” This demonstrates cognitive processes and symptom awareness because she is aware of changes in her body. She demonstrates motivation by stating “I’ll do whatever it takes to stay out of the hospital,” and “The more I do for myself, the more I get to stay out of the hospital, and that means everything to me.” In addition, the woman said, “I know the symptoms of infections, I was able to monitor that pretty well. I check my central line for signs of infection. I had mucositis so I couldn’t eat or talk, I had to force myself to get pills down. I performed oral care four times a day and ate soft foods. Then my blood counts went up and my mucositis went away and it was better.” These statements show that she is competent in medication administration and has the cognitive ability to manage a complex regimen. Recognizing changes, being aware of her body, and understanding feelings of fear demonstrate affective processes, multidimensionality, dynamics, and awareness. Her statement that, “I’m confident in myself because I know I can’t always rely on others,” further demonstrates that she perceives herself to have self-efficacy for symptom management.

CONTRARY CASE
A contrary case is an example of not having self-efficacy for symptom management, where none of the attributes are present (Walker & Avant, 2011). Patients may not recognize that self-efficacy is not present, and do not take steps to manage symptoms. This was the case with a middle-aged woman with lymphoma who had stroke-like symptoms but did not tell anyone she was having difficulty forming words. She said, “Why didn’t I tell my husband? I don’t know,” and “I don’t follow through. I had a problem and I didn’t tell anybody.” She did not report developing tingling pain

FIGURE 1.
PERCEIVED SELF-EFFICACY FOR SYMPTOM MANAGEMENT

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<tr>
<th>ATTRIBUTES</th>
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<tr>
<td>Cognitive processes</td>
<td>Presence of symptoms</td>
<td>Symptom relief</td>
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<td>Affective processes</td>
<td>Dynamic</td>
<td>Health status</td>
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<tr>
<td>Motivation</td>
<td>Multidimensional</td>
<td>Cost of care</td>
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<tr>
<td>Confidence</td>
<td>Performance accomplishment</td>
<td>Quality of life</td>
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<tr>
<td>Competence</td>
<td>Verbal persuasion</td>
<td>Behavior performance</td>
</tr>
<tr>
<td>Awareness</td>
<td>Presence of threat or fear</td>
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on the right side of her chest and upper arm. During a physical examination, the healthcare provider identified a rash with small blisters. When asked about the rash and whether she was aware, the woman said, “I felt it, but didn’t think it mattered; they told me to expect these things.” These statements reflect lack of cognitive processes and motivation and lack of awareness that action could be taken to manage these symptoms.

Antecedents
Antecedents must be in place before the occurrence of a concept (Walker & Avant, 2011). The antecedents of PSE for symptom management in patients with cancer are presence of symptoms, performance accomplishments, verbal persuasion, and perception of threat or fear.

PRESENCE OF SYMPTOMS
Symptoms bring awareness of new needs followed by the response of patients to the needs (Fu et al., 2004). Symptoms indicate changes in biopsychosocial functioning, sensations, or cognition, and provide clinical information (Dodd et al., 2001). In addition to symptom presence, patients also perceive the severity and amount of distress or discomfort (Rhodes & Watson, 1987). How symptoms are perceived can affect the intensity of the symptom experience (Brant et al., 2016).

Cancer is a dynamic disease, with remissions and recurrences possible (Gapstur, 2007). Symptom management includes evaluating symptoms, determining the meaning and the required behavior, and is affected by types of symptoms, timing (during or after active treatment), environment (home or hospital), and expected outcomes. Each time a symptom occurs, the cycle of evaluation, determining meaning, and behavior is repeated (Fu et al., 2004). Changes in management strategies may also occur. PSE is a product of environment, cognition, affective processes, and physical components that are all dynamic (Hoffman, 2013). The presence of stress, anxiety, and depression affects PSE (Bandura, 1997).

Symptom presence and the behaviors required for management are multidimensional, having physical, cognitive, emotional, social, and situational components (Armstrong, 2003; Brant et al., 2016; Lenz, Pugh, Milligan, Gift, & Suppe, 1997). Symptom management includes perception and cognition, as well as responses to experience, their illness, expected outcomes, and environment (Fu et al., 2004). How people perceive their symptoms and the resulting PSE for symptom management is multidimensional (Armstrong, 2003).

PERFORMANCE ACCOMPLISHMENT
Successful performance of behavior builds PSE (Bandura, 1997). Encouragement of performance accomplishments includes allowing people to practice a behavior or use return demonstration which, when successful, promotes increased PSE (Zulkosky, 2009). Conversely, failure to perform a behavior may decrease PSE. Distractions, the complexity of the task, emotional state, and expertise of the individual modeling the behavior all affect the ability to perform a behavior (Richard & Shea, 2011). People take pride in their accomplishments when they believe their success is related to their efforts and will expend more effort on tasks or behaviors when they believe they are proficient (Zulkosky, 2009).

VERBAL PERSUASION
Verbal persuasion is when someone convinces another that they have the capability for a behavior such as symptom management (Zulkosky, 2009). When people hear encouragement, they are more likely to use greater effort (Bandura, 1997). People can be convinced that they can be successful at task performance. Verbal persuasion can be from healthcare providers, family and friends, or other patients, such as in support groups.

PRESENCE OF THREAT OR FEAR
Symptoms may be perceived as a threat to an individual’s health (Hoffman, 2013). Evaluation of symptoms involves the intensity, location, frequency, and affective impact, and the threat posed by the symptom (Dodd et al., 2001). The presence and experience of symptoms may bring a perception of fear and threat, determining whether it is dangerous or potentially disabling, which is the catalyst for initiating management activities (Fu et al., 2004). Interpreting symptoms as recurrence or worsening of cancer may cause avoidance behavior that will negatively influence PSE (Hoffman, 2013).

Consequences
Consequences are a result of the occurrence of a concept (Walker & Avant, 2011). The consequences of PSE for symptom management in patients with cancer include symptom relief, health status, cost of care, QOL, and performance of the management behavior.
SYMPOTOM RELIEF
Low PSE for symptom management may result in poorly managed symptom clusters that lead to increased distress, increased depression and anxiety, and decreased functional status, and may affect relationships and daily life (Kim, McGuire, Tulman, & Barsevick, 2005). Other costs of unmanaged symptoms include increased healthcare use and interference with treatment schedules, which can lead to the potential for untreated malignancies or disease (Kim et al., 2005). Effective symptom management leads to symptom relief, decreased distress, and decreased symptom occurrence (Fu et al., 2004).

HEALTH STATUS
Health status includes indicators such as relief or worsening of symptoms, functional status, symptom distress level, and survival (Fu et al., 2004). Symptom occurrence is an indicator of health status and patient functioning.

COST OF CARE
Symptom management affects cost of healthcare through use of resources, treatment-related services, and hospitalizations (Brant et al., 2016; Gapstur, 2007). Cost–benefit ratio is important in evaluating various symptom management interventions (Brant, Beck, & Miaskowski, 2010). Cost is another component of the multidimensionality of symptom management.

QUALITY OF LIFE
Symptom presence and effects have a negative effect on QOL, including role performance, functional status, physical performance, cognitive functioning, delay of treatment, and disease status (Brant et al., 2016; Gapstur, 2007). Self-efficacy has been linked to symptom distress, psychological health, and QOL (Bergkvist et al., 2015; Hochhausen et al., 2007; Kohn et al., 2010; Lee et al., 2006; Liang et al., 2016; Liao et al., 2014; Wu et al., 2012). Effective symptom management leads to decreased number or presence of symptoms and directly affects QOL (Fu et al., 2004). PSE for symptom management can lead to prevention of symptoms and increased QOL.

BEHAVIOR PERFORMANCE
Symptom management in patients with cancer is complex. Patients with low PSE may experience more stress and depression and have lower motivation (Zulkosky, 2009). Performance of symptom management behavior requires problem solving, physical function, and role function (Buffart et al., 2014; Fu et al., 2004). Those with cognitive deficits are challenged in managing complex treatment regimens. Increased number and severity of symptoms can be related to lower cognitive functioning or ineffectual management behaviors (Fu et al., 2004). PSE for symptom management allows patients to perform the behaviors needed for symptom management.

IMPLICATIONS FOR PRACTICE
- Understand that the concept of perceived self-efficacy for symptom management in patients with cancer is important because patients are expected to self-manage symptoms, but few have the ability to do so.
- Teach behaviors for managing symptoms to help patients increase self-efficacy for symptom management.
- Suggest resources and interventions to increase self-efficacy, such as partnering, goal setting, education, social support, and Internet tools.

Empirical Referents
Empirical referents are how one recognizes or determines the existence of concepts and are used to develop instruments to measure concepts in research (Walker & Avant, 2011). Self-efficacy can be measured by asking a person if he or she has confidence in taking action (Lorig & Holman, 2003). Measurement instruments that have been used in research include the General PSE scale (Jerusalem, Schwarzer, & Schwarzer, 1992), the Arthritis Self-Efficacy Scale (Lorig, Chastain, Ung, Shoor, & Holman, 1989), the Breast Cancer Self-Efficacy Scale (Champion et al., 2013), and the Patient-Reported Outcomes Measures Information System (PROMIS) self-efficacy scales for managing chronic conditions (PROMIS, 2016). Instruments related to PSE for symptom management in patients with cancer include the PSE for Fatigue Self-Management tool (Hoffman et al., 2011) and the Symptom-Management Self-Efficacy Scale for Breast Cancer (Liang, Wu, Kuo, & Lu, 2015).

Discussion
Many publications exist in nursing literature regarding the broad concept of self-efficacy. Limited literature is published that combines PSE with symptom management in patients with cancer. The concept characteristics described here take prior work by Bandura (1997) in the self-efficacy theory and others and apply it to the situation of PSE for symptom management in patients with cancer. This concept analysis also further expands upon the concepts that are in the theory of symptom self-management by Hoffman (2013). PSE for managing symptoms is vital to the ability to manage the complex physical and psychological challenges of cancer (Mystakidou et al., 2010). PSE for symptom management is easily influenced, positively or negatively, because of the dynamic state of cancer diagnosis and subsequent treatment. Presence of symptom clusters has the potential to increase the level of symptom distress and complexity of care and is important when considering how to enhance PSE for symptom management (Hoffman, 2013). Individuals with high PSE for symptom management may have decreased symptom occurrence, symptom distress, and higher QOL (Porter et al., 2008).

Implications for Nursing
Recognizing deficits in PSE for symptom management is critical for providing overall care for patients with cancer. Gaps may exist...
between PSE and ability for symptom management. Patients may have high PSE but may not have the emotional, cognitive, or physical capability to perform needed behaviors. A patient with self-efficacy for symptom management may perceive symptoms as less distressing. Nurses are positioned to help patients learn new behaviors for managing symptoms. Interventions to increase self-efficacy, which include partnering, goal setting, education, social support, and Internet tools, can aid in making decisions for symptom management (Foster et al., 2016; Goldberg, Hinchey, Feder, & Schulman-Green, 2016; Lee et al., 2006; Myall et al., 2015; Ruland et al., 2013; Schulman-Green & Jeon, 2015; Weber et al., 2007; Zhang et al., 2014; Zhu, Ebert, & Wai-Chi Chan, 2017). Symptom burden may be a barrier for implementation of PSE interventions. PSE for symptom management is an ever-changing concept within a dynamic cancer environment that requires strategy changes over time.

Conclusion
PSE for symptom management can be learned by patients (Hoffman, 2013). Using individualized plans of care based on the attributes, antecedents, and consequences provided in this article, nurses can partner with patients to reduce symptom burden, facilitate effective symptom management, increase health status, and increase QOL. Conceptual definition and clarity allow for additional research initiatives and interventions. This concept should be used in further research regarding symptom management in patients with cancer, particularly in patients with complex symptomatology, such as those with multiple comorbid conditions or advanced disease, or those receiving intense treatments. Additional research is warranted to find ways to increase self-efficacy for symptom management in cancer care and, therefore, improve patient outcomes.

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