

See page 447 for suggested questions to begin discussion in your journal club.

This material is protected by U.S. copyright law. Unauthorized reproduction or online display is prohibited. To purchase quantity reprints, e-mail reprints@ons.org. For permission to reproduce multiple copies, e-mail pubpermissions@ons.org.

Identifying Primary Concerns in Patients Newly Diagnosed With Lung Cancer

Rebecca H. Lehto, PhD, RN, OCN®

Lung cancer is the leading cause of cancer death and the second most common cancer in the United States (Jemal, Siegel, Xu, & Ward, 2010) and, as such, is a major stressor for those affected (Hill, Muers, Connolly, & Round, 2003). All patients with newly diagnosed lung cancer need to be assured that their concerns are elicited and discussed. Although psychological distress and the need to screen for its occurrence is well recognized (Vodermaier, Linden, & Siu, 2009), targeting the distress source gives care providers an opportunity to potentially modify or resolve the concerns that underlie the distress. Cancer research focusing on patients with early-stage disease is sparse, as is research comparing illness perceptions and concerns prior to and following surgical resection. Therefore, the purpose of this exploratory study was to examine illness perceptions and concerns during pretreatment planning prior to surgery (time 1) and again three to four weeks after surgery (time 2) in patients newly diagnosed with early-stage lung cancer. Secondary study aims were to examine cancer-related worry and to determine if factors in the healthcare environment, such as perceived provider support and autonomy in managing appointments, were associated with lessened concerns.

Background and Significance

Although the five-year survival rate for all stages of lung cancer combined is only 16%, patients diagnosed with early-stage disease have the potential for cure with complete surgical resection (American Cancer Society [ACS], 2010; Molina, Yang, Cassivi, Schild, & Adiel, 2008). Although the survival estimate for localized disease is 53% at five years, only 15% of lung cancer cases are diagnosed at an early stage (ACS, 2010). Every year, more than 25,000 individuals in the United States become long-term survivors of lung cancer—a status defined as living five years after diagnosis—as

Purpose/Objectives: To compare illness concerns before and after surgery in patients newly diagnosed with early-stage lung cancer, and to determine whether perceived healthcare environment factors were associated with reduced concerns and cancer-related worry.

Design: Participants completed a semistructured interview using the conceptual content cognitive map (3CM) method. Important concepts were identified in a spatial array representative of a cognitive map of the illness.

Setting: A comprehensive cancer center and a Veterans Affairs medical center in the midwestern United States.

Sample: 34 men (n = 22) and women (n = 12), aged 47–83 years (\bar{X} = 65, SD = 10), with newly diagnosed lung cancer were interviewed at the time of diagnosis and again three to four weeks after surgery.

Methods: Content and frequency analysis and descriptive statistics were used to characterize the data. Correlation studies and paired t tests were used to determine relationships among the main study variables.

Main Research Variables: Illness perceptions, worry, and health environment experience.

Findings: Twelve primary content domains were identified pre- and postoperatively (seven negative and five positive). Cancer-related worry was related to negative content and to fears both before and after surgery. Positive health environment perceptions were related to positive content after surgery.

Conclusions: The findings demonstrate important areas of concern that can be targeted to reduce psychological distress and promote adaptation.

Implications for Nursing: The willingness of nurses to identify concerns, assist patients to participate in care, and identify strategies to manage unresolved issues early in the treatment trajectory is integral to optimize long-term adjustment.

a result of improved early detection and advances in surgical techniques and adjuvant treatments (Molina et al., 2008; Sugimura & Yang, 2006). Despite increasing numbers of individuals living with a history of lung cancer, research in lung cancer groups has lagged

behind that of other cancers (Sugimura & Yang, 2006). Although research shows that patients treated for lung cancer are vulnerable and report higher illness burden, lower quality of life, and higher psychological distress compared to survivors of other cancers, much of the research that has been conducted has focused on patients with advanced disease with expected terminal outcomes (Li & Girgis, 2006; Zabora, BrintzenhofeSoc, Curbow, Hooker, & Piantadosi, 2001). Using mixed methods longitudinally, Tishelman, Lövgren, Broberger, Hamberg, and Sprangers (2010) found that patients with inoperable lung cancer had concerns identified as “most distressing” that were not captured by commonly used quantitative distress measures. Some of those concerns included a broad range of specific symptoms, outlook (i.e., managing the uncertainty, worry, fear of death, and the future), and healthcare system factors (Tishelman et al., 2010). A large study by McIlmurray et al. (2001) examined the needs of a general population of patients with cancer and found that the patients’ strongest perceived needs centered on the desire for healthcare professionals to take time for listening and discussion, to be able to actively participate in the treatment plan, and to have information about the treatment and what to expect. Patients also identified the need for support from healthcare providers, family, and friends (McIlmurray et al., 2001). In the Tishelman et al. (2010) study, 27% of the participants with inoperable lung cancer identified contact with the healthcare system as causing the most concern at one or more time points during the first year postdiagnosis.

Less is known about the needs of individuals facing their illness at earlier phases of the treatment trajectory over time (Li & Girgis, 2006). In addition, perhaps because of the lowered life expectancy associated with lung cancer, targeted mental health interventions aimed to help vulnerable patients diagnosed with curable lung cancer who may become long-term survivors are less developed (Li & Girgis, 2006). This dearth of inquiry is unfortunate as high psychological distress is associated with higher mortality in lung cancer survivors (Hamer, Chida, & Molloy, 2009).

An unexpected diagnosis of cancer and the need for treatment provides a basic existential context for worry, and the negative impact has been reported (Uchitomi, Nagai, Nishiwaki, Akechi, & Okamura, 2003; Weisman & Worden, 1976–1977). Worry characterized by repetitive and involuntary aversive thoughts related to perceived threats (Borkovec, Alcaine, & Behar, 2004) is shown to have an adverse impact on daily function, mood, and relationships in patients with cancer (Stefanek, Shaw, DeGeorge, & Tsottles, 1989). Intrusive negative thoughts and intense concerns were related to poor adjustment and psychological morbidity three years post-treatment in breast cancer survivors (Matsuoka et al., 2002). Although few studies

have examined worry in relation to individualized concerns in lung cancer, anxiety and worrisome concerns are highly significant in this population (Buchanan, Milroy, Baker, Thompson, & Levack, 2009). Patients with lung cancer perceive stigma for having an illness that often is associated with cigarette smoking and often experience guilt and shame (Chapple, Ziebland, & McPherson, 2004; Else-Quest, 2006). Among long-term survivors of lung cancer, subgroups of patients experience ongoing mental distress, citing increased apprehension about life, shaken self-confidence, heightened uncertainty, and perceptions of uselessness (Maliski, Sarna, Evangelista, & Padilla, 2003). A prospective study of psychological distress in patients with lung cancer conducted in the 12 months following curative resection found distress early in the illness continuum to be predictive of distress at 12 months (Uchitomi et al., 2003). Other studies have shown relationships between numbers and severity of unresolved concerns and later development of anxiety disorder, major depression, or both, in patients with early-stage and advanced lung cancer (Hill et al., 2003). In summary, research is needed that examines specific illness concerns and worry in the early treatment trajectory for patients with limited-stage lung cancer who are anticipating curative treatment. The current study takes a small step toward addressing this important issue by comparing illness perceptions and concerns before and after surgery and determining relationships between cancer-related worry and modifiable factors associated with the healthcare environment.

Theoretic Framework

The study is based on person-environment cognitive map theory (Kaplan & Kaplan, 1981). Cognitive maps are mental structures that are formed by person-environment interactions that represent an individual’s perceptions of a specific situation or problem. Through an interconnected network of learned concepts in memory structure, cognitive maps guide the capacity for integrating, interpreting, and learning new information, problem solving, and for future planning by influencing what information is attended to in the environment and how the information is perceived (Kaplan & Kaplan, 1981). Contents of cognitive maps that are most accessible often are the most important, meaningful, and concerning to the individual. Therefore, these contents also are of high importance for oncology nurses to recognize and address in patients who are newly diagnosed with a life-threatening illness such as lung cancer.

The role of environment, either positive or negative, in cognitive map formation is critical. Environments can be compatible, possessing characteristics that are congruent with existing cognitive structure and, therefore,

coincident with positive perceptions, or incompatible, possessing features that carry the potential for undermining the individual's native capacity for managing the situation (Kaplan & Kaplan, 1981). Health environments that encourage the individual to actively participate in their own care and provide support during the difficult post-diagnostic period may assist in the development of cognitive structures of illness that promote long-term adaptation.

Methods

Data derived for this repeated-measures, mixed-method design were collected as part of a study that examined the role of worry on the formation of cognitive representations of illness in patients with a new diagnosis of lung cancer. The convenience sample includes patients who were diagnosed with early-stage lung cancer, were treated with surgery, and who completed two testing interviews. Eligibility criteria for the study included that the participants be aged 21 years or older, have a primary lung tumor that was amenable to surgical resection, and be able to read and write in English to permit completion of the study requirements. Potential participants were excluded if they had a known previous history of cancer; a documented cognitive or psychiatric disorder; a history of a debilitating medical disorder; advanced cardiac, respiratory, or renal disease that would complicate study participation; or if they were taking psychoactive medication that would impede participation.

The study sample was comprised of 34 adults aged 47–83 years ($\bar{X} = 65$) who were being evaluated for thoracic surgery following a new diagnosis of early-stage non-small cell lung cancer at a Veterans Affairs hospital and a regional cancer center in the midwestern United States (see Table 1). Most of the sample were men (65%), reflective of a VA recruitment site. In addition, most of the sample were Caucasian ($n = 33, 97\%$), with one (3%) African American. Most of the sample had a history of cigarette smoking ($n = 33, 97\%$), and nine (27%) participants were smokers at the time of diagnosis. The majority of the sample received a lobectomy for either stage I or II disease. Two patients, who were diagnosed with early-stage lung cancer, received a staging of IIIa following surgery.

Instruments

The **conceptual content cognitive map (3CM)** was used to elicit information about the individual's perceptions and concerns related to a new lung cancer diagnosis. The 3CM is an established technique for measuring cognitive content, processes, and structure that gives participants the opportunity to explore their knowledge structures (Kearney & Kaplan, 1997). The procedure

Table 1. Sample Characteristics

Characteristic	\bar{X}	SD	Range
Age (years)	65	10	47–83
Education (years)	13	2	8–18
Characteristic	n		
Marital status			
Married	23		
Widowed	8		
Divorced	3		
Gender			
Male	22		
Female	12		
Health conditions			
Arthritis	1		
Combination ^a	12		
Diabetes mellitus	1		
Hypertension or cardiac	6		
Pulmonary (chronic obstructive pulmonary disease)	6		
None	8		
Stage of disease			
I	15		
II	17		
III	2		
Surgery			
Lobectomy	30		
Pneumonectomy	3		
Resection	1		
Postsurgery treatment^b			
Surveillance	29		
Radiation	3		
Chemotherapy	2		

N = 34

^aCombination of hypertension and/or cardiac disease, diabetes mellitus, and arthritis

^bNo treatment started until after the study completion

involves asking participants to think about and write down the important concepts related to a particular subject matter and then having them organize the items in a way that is meaningful to them. The findings are then preserved as presented. No constraints are placed on the number or organization of thought content. The method is particularly well suited to studies where less is known about individual's perceptions and information is necessary to determine appropriate plans for action (Kearney & Kaplan, 1997).

In the current study, the 3CM provided a method for examining the illness perceptions and concerns of the individual participants and served as a basis for inferring about developing cognitive structures related to lung cancer. Participants used Post-it® notes to write down things that came to mind about the cancer diagnosis. Participants then coded the content with positive (+) or negative (–) signs for affect associated with the specific content. The participants organized the items into groups that were labeled and rated from 1 (not or very little worrisome) to 5 (extremely worrisome).

Incorporating both a quantitative and qualitative methodology, results were evaluated by analyzing content, by developing categories that emerged from the data based on groupings of related statements, and by determining the frequency of worry content items (Hickey & Kipping, 1996; Sink, 2001). Content was quantified and qualitatively analyzed for substance. Although this was the first test of the validity of the instrument in a cancer population, the method has established early construct and concurrent validity (Kearney & Kaplan, 1997). Two independent nurse scientists analyzed, summarized, and coded content to assure inter-rater reliability of the coding scheme. Concurrence was achieved between the investigator and the expert in the data analysis.

Three questions addressed levels of cancer-related worry. Participants rated their current levels of worry about cancer, treatment, and the impact of cancer-related worry on daily functioning on a five-point scale ranging from 1 (not at all) to 5 (a lot) (Lerman et al., 1991; McCaul, Branstetter, O'Donnell, Jacobson, & Quinlan, 1998). The questions were used in conjunction with worry rates associated with the 3CM content to quantify levels of cancer-specific worry and as a measure of concurrent validity before surgery ($r = 0.63, p < 0.005$) and after surgery ($r = 0.33, p < 0.05$). Alpha reliabilities for the three questions at the two time points were 0.85 and 0.77, respectively.

Seven questions were developed to ascertain information about the participants' perceived experiences in relation to the healthcare environment. The healthcare environment questions were developed with the input from three doctoral-prepared experts in addition to the investigator. The experts included an oncology nurse scientist with expertise related to cognitive function in cancer and a cognitive theorist with expertise related to factors that enhance person-environment compatibility. Participants were asked to rate on a five-point scale from 1 (not at all) to 5 (always or a lot) statements related to their current experiences with the healthcare environment. Higher scores reflected higher agreement with the statements. In summary, the health environment experience questions reflected perceptions about personal treatment participation, time taken by doctors and nurses to listen to concerns, and personal opportunities to make choices and ask questions relative to treatment and scheduling of appointments. Alpha reliabilities for the seven questions were 0.81 at time 1 and 0.8 at time 2, demonstrating satisfactory reliability for the purposes of the exploratory study.

Procedures

Scientific review and human subject review committees at the respective institutions approved all study procedures. During a pretreatment visit, patients who met the study criteria were approached to determine their interest in study participation. If the patients were recruited, the first interview (time 1) occurred during the same pretreatment clinical visit before the scheduled surgery. The second interview (time 2) occurred during a scheduled outpatient appointment about three to four weeks following surgery ($\bar{X} = 25.5$ days, $SD = 6.2$). All measures were administered using a standard set of instructions, and all testing was conducted in private clinic rooms away from distractions and people. The interviews generally were completed in 15 minutes. However, individual variability occurred in the amount of time taken to collect the 3CM data that coincided with the participant's personal preference.

Results

Table 2 depicts the 3CM data, including number of content, mean numbers of negative- and positive-coded content, mean worry rates, cancer-related worry, and the illness experience questions at the two time points. The mean 3CM worry scores were lower postoperatively and were approaching significance ($t = 1.78, df = 33, p = 0.08$). The mean scores on the cancer-related worry questions were reflective of generally moderate levels of cancer-related worry that decreased significantly over time ($t = 2.94, df = 33, p < 0.05$) and ranged from the lowest to the highest score possible at both time points. The range of scores of the health environment experience questions generally reflected perceived satisfactory interactions with the healthcare environment at both time points.

Twelve content categories were derived from the content maps that included both negative and positive domains. Content coded as negative included concerns related to the cancer diagnosis and treatment, the need for

Table 2. Results of Main Study Variables

Measure	Time 1			Time 2		
	\bar{X}	SD	Range	\bar{X}	SD	Range
Overall content	6.24	3.68	1–16	5.76	3.54	1–17
Negative-coded items	3.68	3.06	0–12	2.82	3.4	0–13
Positive-coded items	2.71	3.24	0–12	2.88	2.5	0–8
Conceptual content cognitive map worry ratings	3.35	1.5	1–5	2.76	1.37	1–5
Healthcare environment questions	29.59	5.34	13–35	30.29	4.65	12–35
Cancer-related worry questions	11.15	3.78	3–15	9.15	3.44*	3–15

* $p < 0.05$

Note. Time 1 information was collected during a pretreatment clinical visit, and time 2 information was collected about three to four weeks after surgery.

information, symptoms, fears, death-related concerns, being a burden on loved ones, and smoking. Content coded as positive included identifying active strategies, focusing on recovery, being positive, getting positive support from friends and family, and spirituality (see Tables 3 and 4).

Paired *t* tests were used to compare content before and after surgery. Significantly more cancer diagnosis and treatment content was noted prior to surgery than following surgery ($t = 2.07$, $df = 33$, $p < 0.05$). In addition, significantly more symptom content occurred following surgery than prior to surgery ($t = 8.78$, $df = 33$, $p < 0.005$). Content numbers before and after surgery for the remaining 10 content groups were not significant between the two time points. In general, although similarity was found in means between negative- and positive-coded content pre- and postoperatively, the range for the negative-coded content remained similar at both time points, whereas the range for positive-coded content was lower postoperatively.

The relationships among the 3CM worry rates and specific contents pre- and postoperatively were examined with Spearman Rho correlation coefficients. Preoperatively, the 3CM worry rates were inversely correlated with positive-coded content ($r = -0.36$, $p < 0.05$) and the content category being positive ($r = -0.45$, $p < 0.05$), and were positively correlated with negative-coded content ($r = 0.4$, $p < 0.05$) and fear content ($r = 0.39$, $p < 0.05$). Postoperatively, the 3CM worry rates were inversely correlated with positive-coded content ($r = -0.45$, $p < 0.05$), and were positively correlated with negative-coded content ($r = 0.67$, $p < 0.05$) and the fear content category ($r = 0.44$, $p < 0.05$), demonstrating an increased strength of these relationships following surgery. Both the 3CM worry rates ($r = -0.36$, $p < 0.05$) and the cancer-related worry questions ($r = -0.36$, $p < 0.05$) were inversely related to the healthcare environment experience questions preoperatively. In addition, the healthcare environment experience questions were significantly positively correlated to positive-coded content following surgery ($r = 0.36$, $p < 0.05$).

Discussion

Lung cancer is a very serious illness that places tremendous cognitive, emotional, and physical burden on affected individuals. Patients diagnosed with lung cancer are more likely to be older and to have comorbid conditions that also affect treatment outcome (Hill et al., 2003). Regardless, a goal for all patients with a cancer diagnosis is to continue life interests, family roles, a sense of self-identity, and to maintain functional independence. Illness-related concerns and worry can interfere with function in all of these important domains. Patients newly diagnosed with cancer that have multiple concerns and high anxiety are prone to long-term problems with adjustment and adaptation (Stark et

al., 2002). Early identification of concerns for individuals with high worry is critical for optimizing adaptation.

The 3CM as a method to identify concerns was useful because it provided a starting point for addressing the most salient and meaningful areas of concern from the patient's point of view. Participants made many

Table 3. Examples of Types of Content Within Categories

Category	Types of Content
Active strategies	Read experts on breathing; talk to people; do all I can for self; keep busy; don't drag your feet—see doctor; work when I can and rest when tired; don't think too much; do things for others, don't focus on self.
Being positive	Stay positive; I know a positive attitude is important; feel lucky because of early diagnosis; be optimistic; hope for the best.
Cancer diagnosis and treatment	Surgery preparation; did it get diagnosed early enough?; why me?; uncertain about lymph node that tested positive; uncertainty; overwhelmed
Death or death preparation	Not scared of death; am I going to die?; worry about dying; afterlife?; will I die soon?; funeral arrangements; what things I have left to do that are not done; have will and power of attorney; get affairs in order.
Fears	Very scared; worried about recurrence of cancer; I'm afraid to learn my tumor has spread; I have had panic attacks.
Information and communication	Need information; access Internet; get second opinion; not knowing what will happen; ask all the questions.
Negative support	Don't want to be a burden; impact on family; a difficult feeling of being a burden or source of sad feelings to loved ones; worry about wife worries.
Positive support	Your mate takes care of you; got good care from my wife; lots of cards; share with family; let family and friends help.
Recovery	Bought a getting-well wardrobe; make getting better a full-time job; realize that this is temporary.
Smoking	Quit smoking; still want a cigarette no matter what; will I continue to be able not to smoke?; loss; when I see women smoke, I think will they get cancer also?
Spirituality	Thank God for health; keep faith in higher power; faith in Jesus Christ; peace I felt; trust God; accept God's judgment; my healing was a miracle.
Symptoms and pain	More pain than expected; loss of air; stomach is shriveled; no sleep; tiring; much pain but is controllable

comments that extended beyond what they cited on the Post-it notes, suggesting that the method was helpful in allowing patients to identify and voice important concerns relative to their illness. Participants were positive about the personalized interview and did not describe the method as burdensome. Having time to reflect on the illness via the cognitive mapping exercise may encourage patients to gain perspective as they consider both positive and negative implications. Also important are possible explanations for the variation in content provided by the participants. Research has shown that patients with cancer have different styles of communicating and seeking information related to their illness (Eheman et al., 2009). The patients who did not identify concerns may have actively avoided divulging this information, could have been in denial related to having concerns, or simply did not have any concerns related to their illness at the time of testing and, therefore, required less time to complete the exercise (Vos & de Haes, 2007). An advantage of the 3CM method is that personal preference in sharing information is supported while providing an expedient method for identifying salient personal concerns.

The findings indicate important similarities and differences in illness perceptions and concerns before and following surgery for lung cancer. Concerns related to the diagnosis and treatment remain important at both time points but were significantly lessened following surgery. In contrast, patients had significantly more concerns related to symptoms following the surgery. Contents related to active strategies were very important both before and following surgery. Although 7 of the 12 identified content domains were negative, perceptions of many of the patients with early-stage lung cancer appeared to be leveraged by positively framed and aversive content. Positive-themed content related to active strategies, recovery, maintaining a positive attitude, recognizing positive support from others, and spirituality. Such content suggests psychological adaptation with productive mental effort aimed toward the maintenance and restoration of optimal function. Thinking positive may instill feelings of gratitude as reflected by contents such as, "Thank God for health," and "Feel lucky because of early diagnosis," and may assist in building perspective.

Importantly, the contents in the cognitive maps identify concrete domains that can be used for assisting the patient with managing his or her concerns. Studies have found that provision of healthcare information does not always get transmitted to the patient effectively (Cimprich & Ronis, 2003). Findings from the current study demonstrate that strong anchoring of the illness experience in an emotional context occurs. If a patient is concerned about how he or she is going to quit smoking, or if the cancer has spread, healthcare information may not be processed and information is lost. Such worrisome concerns are involuntary and carry powerful

Table 4. Most Frequent Conceptual Content Cognitive Map Categories by Number of Content at Each Time Point

Content	Time 1	Time 2
Active strategies	36	45
Being positive	17	21
Cancer diagnosis and treatment	66	43
Death or death preparation	25	22
Fears	35	26
Information and communication	42	20
Negative support	17	10
Positive support	13	16
Recovery	18	24
Smoking	11	11
Spirituality	10	7

affective undertones that are primal to the fundamental self, and, thus, would be difficult for the individual to attend to healthcare information.

Positive perceptions of the healthcare environment were associated with positive-coded content in the cognitive maps three to four weeks following surgery. These findings are particularly important considering that the postoperative period is a time that is intensely physically and psychologically challenging. These findings suggest that the healthcare environment may be an important factor in the early development of cognitive structures related to the illness.

Research Implications

This exploratory study provides important information about the concerns that patients with newly diagnosed lung cancer have before and following surgery. An advantage of the study design was the mixed-method approach used to investigate the concerns that were most important to the patients facing treatment for early-stage disease. More research with larger and more diverse samples of patients newly diagnosed with lung cancer that follows the illness trajectory over time could provide more information about whether cancer-related concerns are modified, resolved, or increased following an extended period of recovery. The findings support the need for well-designed research studies that can provide information on relationships among concerns, worry, healthcare environment perceptions, and subsequent adaptation in patients who will become long-term survivors of lung cancer.

Limitations

Certain limitations of the exploratory study are recognized. The time duration on the cognitive map exercise was not recorded, an important factor that likely influenced extent of content provided. The exploratory study was the first to use the health-related environment questions. As such, findings related to the healthcare

environment questions serve as a stepping stone for additional inquiry, and more testing would be needed to validate results. Another limitation stems from the small convenience sample that was predominantly male and lacking in ethnic and cultural diversity.

Implications for Nursing Practice

Illness symptoms are of high concern to patients following surgery for lung cancer. Although postoperative pain is the primary complaint, other important symptoms also demand recognition and intervention. Nurses can advocate for and facilitate effective symptom management and provide related therapeutic strategies and patient education.

The smoking content indicate that many of the patients with smoking histories, nine of whom were active smokers at the time of diagnosis, were very concerned about the behavior. Nurses can assist patients with lung cancer by actively listening to their concerns related to smoking and can help the patient work through difficult feelings about smoking by being a supportive presence. In addition, resources to assist with cessation and withdrawal symptoms can be provided.

Facing death may be a sensitive and difficult issue to address for healthcare providers because they interact with patients with lung cancer in an acute context, an arena focused on sophisticated treatments and cure. Healthcare providers can recognize the importance of death-related concerns in the early phases of lung cancer and work to become comfortable in listening for and discussing death concerns. Such direct discussions may reduce anxiety and worry related to end-of-life planning and assist patients with life priorities.

Identifying individual concerns early may help the nurse understand what the most anxiety-provoking issues are while also helping the patient gain insight and awareness. Worry is important and can even be adaptive in the face of cancer because the process assists the individual to prepare for and predict what might happen and to focus cognitive resources on areas of important concern. Given the presence of positive and negative perceptions related to the illness, nurses can assist patients in optimizing behaviors that strengthen psychological adaptation. The willingness of team members to answer questions, to listen to concerns, and to encourage active

patient participation in the treatment plan all contribute positively to perceptions early in the illness continuum.

Conclusion

The study was a unique opportunity to examine the concerns of patients with a new diagnosis of early-stage lung cancer before and after surgery. Nurses play a critical role in guiding patients through the early phases following a cancer diagnosis and early treatment. Patients with newly diagnosed lung cancer amenable to surgical resection experience a wide range of important concerns related to the physical disease, the proposed medical and surgical management, and future recovery. Given what is known about high psychological distress among patients with cancer following diagnosis, the findings emphasize the importance of healthcare providers being ready to assess, discuss, and listen to the individualized concerns related to the illness. In addition, the findings from this study also emphasize that many individuals consider positive strategies and strive to maintain a positive attitude when facing a diagnosis of lung cancer amenable to curative treatment. Patients facing surgery for lung cancer need to feel assured that their concerns will be addressed, sense that discussions about uncomfortable topics such as smoking and death are permissible, and believe that healthcare team members are willing to listen and participate in their care. Such efforts may reduce cancer-related worry, lead to the resolution of concerns, and enhance the possibility of long-term positive adjustment to the illness.

The author gratefully acknowledges the University of Michigan for permission to use the data for public dissemination and the Ann Arbor VA Health Care System for assistance with the research and access to volunteers for the study. The author thanks the faculty at the University of Michigan, including Judith Lynch-Sauer, PhD, RN, for assistance with data analysis and coding, and Bernadine Cimprich, PhD, RN, FAAN, Stephen Kaplan, PhD, Laurel Northouse, PhD, RN, FAAN, and Barbara Therrien, PhD, RN, FAAN, for their time and expertise.

Rebecca H. Lehto, PhD, RN, OCN[®], is an assistant professor in the College of Nursing at Michigan State University in East Lansing. This research was funded by the National Institutes of Nursing research grant (1 F31 NR07695-01A1) and supported by the Mary Margaret Walther Program for Cancer Care Research. Lehto can be reached at rebecca.lehto@hc.msu.edu, with copy to editor at ONFEditor@ons.org. (Submitted February 2010. Accepted for publication May 25, 2010.)

Digital Object Identifier: 10.1188/11.ONF.440-447

References

- American Cancer Society. (2010). *Cancer facts and figures, 2010*. Atlanta, GA: Author.
- Borkovec, T.D., Alcaine, O.M., & Behar, E. (2004). Avoidance theory of worry and generalized anxiety disorder. In R.G. Heimberg, C.L. Turk, & D.S. Mennin (Eds.), *Generalized anxiety disorder: Advances in research and practice* (pp. 77–108). New York, NY: Guilford Press.
- Buchanan, D., Milroy, R., Baker, L., Thompson, A.M., & Levack, P.A. (2009). Perceptions of anxiety in lung cancer patients and their support network. Retrieved from <http://www.springerlink.com/content/0w70385172956762/>
- Chapple, A., Ziebland, S., & McPherson, A. (2004). Stigma, shame, and blame experienced by patients with lung cancer. *BMJ*, 328, 1470–1473. doi:10.1136/bmj.38111.639734.7C
- Cimprich, B., & Ronis, D. (2003). An environmental intervention to restore attention in women with newly diagnosed breast cancer. *Cancer Nursing*, 26, 284–292. doi:10.1097/00002820-200308000-00005

- Eheman, C.R., Berkowitz, Z., Lee, J., Mohile, S., Purnell, J., Rodriguez, E.M., . . . Morrow, G. (2009). Information-seeking styles among cancer patients before and after treatment by demographics and use of information sources. *Journal of Health Communication, 14*, 487–502. doi:10.1080/10810730903032945
- Else-Quest, N.M. (2006). *The development of adaptive cognitions, guilt, and shame in cancer patients* (Doctoral dissertation). University of Wisconsin, Madison, WI. Retrieved from University of Michigan Microform 3222779, Ann Arbor, MI: Proquest Information and Learning Company.
- Hamer, M., Chida, Y., & Molloy, G.J. (2009). Psychological distress and cancer mortality. *Journal of Psychosomatic Research, 66*, 255–258.
- Hickey, G., & Kipping, C. (1996). A multistage approach to the coding of data from open-ended questions. *Nurse Researcher, 4*, 81–91.
- Hill, K.M., Muers, A.Z., Connolly, K., & Round, C. (2003). Do newly diagnosed lung cancer patients feel their concerns are being met? *European Journal of Cancer Care, 12*, 35–45.
- Jemal, A., Siegel, R., Xu, J., & Ward, E. (2010). Cancer statistics, 2010. *CA: A Cancer Journal for Clinicians, 60*, 277–300.
- Kaplan, S., & Kaplan, R. (1981). *Cognition and environment*. New York, NY: Praeger.
- Kearney, A.R., & Kaplan, S. (1997). Toward a methodology for the measurement of knowledge structures of ordinary people: The conceptual content cognitive map (3CM). *Environment and Behavior, 29*, 579–617. doi:10.1177/0013916597295001
- Lerman, C., Trock, B., Rimer, B.K., Boyce, A., Jepson, C., & Engstrom, P.F. (1991). Psychological and behavioral implications of abnormal mammograms. *Annals of Internal Medicine, 114*, 657–661.
- Li, J., & Girgis, A. (2006). Supportive care needs: Are patients with lung cancer a neglected population? *Psycho-Oncology, 15*, 509–516.
- Maliski, S.L., Sarna, L., Evangelista, L., & Padilla, G. (2003). The aftermath of lung cancer: Balancing the good and the bad. *Cancer Nursing, 26*, 237–244. doi:10.1097/00002820-200306000-00011
- Matsuoka, Y., Nakano, T., Inagaki, M., Sugawara, Y., Akechi, T., Imoto, S., . . . Uchitomi, Y. (2002). Cancer-related intrusive thoughts as an indicator of poor psychological adjustment at three or more years after breast surgery: A preliminary study. *Breast Cancer Research and Treatment, 76*, 117–124. doi:10.1023/A:1020572505095
- McCaul, K.D., Branstetter, A.D., O'Donnell, S.M., Jacobson, K., & Quinlan, K.B. (1998). A descriptive study of breast cancer worry. *Journal of Behavioral Medicine, 21*, 565–579. doi:10.1023/A:1018748712987
- McIlmurray, M.B., Thomas, C., Francis, B., Morris, S., Sothill, K., & Al-Hamad, A. (2001). The psychosocial needs of cancer patients: Findings from an observational study. *European Journal of Cancer Care, 10*, 261–269. doi:10.1046/j.1365-2354.2001.00280.x
- Molina, J.R., Yang, P., Cassivi, S.D., Schild, S.E., & Adiel, A.A. (2008). Non-small cell lung cancer: Epidemiology, risk factors, treatment, and survivorship. *Mayo Clinic Proceedings, 83*, 584–594. doi:10.4065/83.5.584
- Sink, K.K. (2001). *Perceptions, informational needs, and feelings of competency of new parents* (Doctoral dissertation). Retrieved from University of Michigan Microform 3001050, Ann Arbor, MI: Proquest Information and Learning Company.
- Stark, D., Kiely, M., Smith, A., Velikova, G., House, A., & Selby, P. (2002). Anxiety disorders in cancer patients: Their nature, associations, and relationship to quality of life. *Journal of Clinical Oncology, 20*, 3137–3148. doi:10.1200/JCO.2002.08.549
- Stefanek, M.E., Shaw, A., DeGeorge, D., & Tsottles, N. (1989). Illness-related worry among cancer patients: Prevalence, severity, and content. *Cancer Investigation, 7*, 365–371. doi:10.3109/07357908909039865
- Sugimura, H., & Yang, P. (2006). Long-term survivorship in lung cancer: A review. *Chest, 129*, 1088–1097. doi:10.1378/chest.129.4.1088
- Tishelman, C., Lövgren, M., Broberger, E., Hamberg, K., & Sprangers, M.A.G. (2010). Are the most distressing concerns with inoperable lung cancer adequately assessed? A mixed-methods analysis. *Journal of Clinical Oncology, 28*, 1942–1949. doi:10.1200/JCO.2009.23.3403
- Uchitomi, Y., Nagai, K., Nishiwaki, Y., Akechi, T., & Okamura, H. (2003). Depression and psychological distress in patients during the year after curative resection of non-small cell lung cancer. *Journal of Clinical Psychology, 21*(1), 69–77.
- Vodermaier, A., Linden, W., & Siu, C. (2009). Screening for emotional distress in cancer patients: A systematic review of assessment instruments. *Journal of the National Cancer Institute, 101*, 1464–1488. doi:10.1093/jnci/djp336
- Vos, M.S., & de Haes, J.C. (2007). Denial in cancer patients, an explorative review. *Psycho-Oncology, 16*, 12–25. doi:10.1002/pon.1051
- Weisman, A.D., & Worden, J.W. (1976–1977). The existential plight in cancer: Significance of the first 100 days. *International Journal of Psychiatry in Medicine, 7*, 1–15.
- Zabora, J., BrintzenhofeSoc, K., Curbow, B., Hooker, C., & Piantadosi, S. (2001). The prevalence of psychological distress by cancer site. *Psycho-Oncology, 10*, 19–28.

For Further Exploration

Use This Article in Your Next Journal Club Meeting



Journal club programs can help to increase your ability to evaluate the literature and translate those research findings to clinical practice, education, administration, and research. Use the following questions to start the discussion at your next journal club meeting. At the end of the meeting, take time to recap the discussion and make plans to follow through with suggested strategies.

1. This article is about people who received an unexpected diagnosis of lung cancer. When patients seek medical help for a minor concern and find they have a life-threatening illness, how can the nurse help them deal with this news?
2. People with lung cancer often say they suffer from social stigma for having an illness most often associated with cigarette smoking. What feelings would this bring up in these patients?
3. How can nurses help patients diagnosed with lung cancer stop smoking?
4. The author of this study discusses cognitive maps. How would you, as an oncology nurse, describe a cognitive map, and how can these maps be useful to oncology nurses?
5. What positive concerns were identified by the patients in this study?
6. How can nurses help patients adapt to a cancer diagnosis?

Visit www.ons.org/Publications/VJC for details on creating and participating in a journal club. Photocopying of this article for discussion purposes is permitted.