

Patient Experience Factors and Health-Related Quality of Life in Hospitalized Individuals

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PURPOSE: To identify a relationship between patient satisfaction with the hospital experience and health-related quality of life (HRQOL), as well as determine predictors of each variable.

PARTICIPANTS & SETTING: 50 patients with cancer in two adult oncology units in an academic health sciences center.

METHODOLOGIC APPROACH: A descriptive, cross-sectional design was used. Patient satisfaction was measured by the Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) and HRQOL was assessed using the Quality of Life Patient/Cancer Survivor (QOL-CS) version.

FINDINGS: Patients who were single, diagnosed for 6–10 years, and diagnosed for 11 years or longer had significantly lower patient satisfaction scores. Patients with public insurance, diagnosed for 6–10 years, and diagnosed for 11 years or longer had lower QOL-CS scores. Physical and social well-being scores were associated with higher HCAHPS scores. There was a positive relationship between patient satisfaction and physical and social functioning. Patient demographics were related to patient satisfaction and HRQOL.

IMPLICATIONS FOR NURSING: Nurses should have measurable goals to provide high-quality care to patients with cancer, including satisfaction during hospitalization and promotion of HRQOL.

KEYWORDS health-related quality of life; cancer; hospitalized individuals; risk factors; satisfaction

ONF, 46(2), 238–247.

DOI 10.1188/19.ONF.238-247

Cancer is a significant problem that influences all aspects of a patient's life (de Moor et al., 2013; Siegel, Miller, & Jemal, 2017). Most patients with a new diagnosis of cancer will partake in aggressive treatment (chemotherapy, hospitalization), regardless of their prognosis (Setoguchi et al., 2008). Cancer treatment is often lengthy and requires numerous visits to healthcare facilities. In addition, a majority of patients with cancer are hospitalized during the last month of life (Dartmouth Atlas of Health Care, 2012; Earle et al., 2003, 2004). Patients with cancer experience significant stress related to cancer treatment and hospitalization (Effendy, Vissers, Tejawinata, Vernooij-Dassen, & Engels, 2015).

Health-related quality of life (HRQOL) is one of the most critical factors in determining cancer prognosis and the survival of a patient with cancer (Dharma-Wardene et al., 2004; Li et al., 2012). For this study, HRQOL is defined as the “subjective perception of the impact of health status, including disease and treatment, on physical, psychological, and social functioning, and well-being” (Leidy, Revicki, & Geneste, 1999, p. 114). HRQOL is a multidimensional construct that addresses the physical, psychological, social, and spiritual aspects of life perceived by individuals (Bush et al., 2010; Ferrell, Dow, & Grant, 1995; Hermann & Looney, 2011). All four of these aspects can be affected in some way by the diagnosis of cancer and its treatment (McNulty & Nail, 2015; Yabroff, Lawrence, Clauser, Davis, & Brown, 2004). Many patients with cancer never return to their pre-illness functional status (Effendy et al., 2015). For example, frequent physical hindrances related to cancer include alterations to mobility, self-care and routine tasks, and fatigue-related limitations. In terms of psychological functioning, patients with cancer may exhibit anxiety, depression, fear of recurrence, and guilt related to their experiences (Hamdan-Mansour,

Al Abeiat, Alzoghaibi, Ghannam, & Hanounch, 2015; Hulbert-Williams, Storey, & Wilson, 2015; Jacobsen, 2007; Mitchell, Kaar, Coggan, & Herdman, 2008).

Cancer may influence social and spiritual functioning as well (Effendy et al., 2015; Hamdan-Mansour et al., 2015). One study found that malignant diseases and their treatment often contribute to the exclusion of older adult patients from a social environment and significantly reduce their social contacts. This exclusion becomes increased during chemotherapy (Berat, Nesković-Konstantinović, Nedović, Rapaić, & Marinković, 2015). In addition, cancer can significantly increase a patient's spiritual needs. Spiritual adjustment is often seen as the strongest method for patients with cancer to cope with their diagnosis (Hatamipour, Rassouli, Yaghmaie, Zendedel, & Majd, 2015).

Patient satisfaction with care is an important indicator of quality (Al-Abri & Al-Balushi, 2014; Fingeret, Nipomnick, Crosby, & Reece, 2013). Although numerous studies have focused on patient satisfaction, many of the studies did not define what was meant by patient satisfaction. In addition, the lack of consistent use of one instrument to measure patient satisfaction has made it difficult to build the science in this area (Asadi-Lari, Tamburini, & Gray, 2004; Bamm, Rosenbaum, & Wilkins, 2013). Patient satisfaction is defined, in this study, as the degree of agreement between patient expectations and provided care (Pascoe, 1983). The degree of patient satisfaction during hospitalization is confounded by disease factors, expectations, and uncertainty about outcomes (Jayadevappa, Schwartz, Chhatre, Wein, & Malkowicz, 2010). Improving patient satisfaction with care can enhance patient-provider partnerships that lead to patient compliance with treatment as well as help healthcare providers identify areas for quality improvement (Ahmad et al., 2011; Asadi-Lari, Packham, & Gray, 2003; Fingeret et al., 2013). Therefore, improving patient satisfaction with the hospital experience may improve and enhance patients' outcomes, including HRQOL (Asadi-Lari et al., 2004; Bamm et al., 2013; Von Essen, Larsson, Öberg, & Sjoden, 2002).

Several studies have been conducted to investigate the relationship between HRQOL and patient satisfaction in patients with chronic diseases (al-Mandhari, Hassan, & Haran, 2004; Baumann et al., 2009; Renzi et al., 2005). The resulting science supports the bidirectional relationship between patient satisfaction with care and HRQOL (Bamm et al., 2013). In addition, some studies have examined the relationship between patient satisfaction and HRQOL in patients with specific types of cancer. In a longitudinal study, Sanda et

al. (2008) examined the relationship between HRQOL and patient satisfaction with treatment outcomes using the Expanded Prostate Cancer Index Composite and Service Satisfaction Scale. Findings indicate that changes in HRQOL are strongly correlated with patient satisfaction. In a study conducted with Spanish patients in an oncology day hospital, Arraras et al. (2013) found that HRQOL was positively associated with patient satisfaction, and that nurses had a key role in improving patient satisfaction. Satisfaction with nursing scores were the highest compared to other satisfaction domains and contributed significantly to the overall satisfaction score. However, of note, Levin et al. (2017) found that level of satisfaction in patients undergoing lumbar fusion was not correlated with HRQOL.

It has been inferred that isolated factors could influence physical, psychological, social, and spiritual statuses, as well as patient satisfaction with care, after cancer diagnosis. Identifying these factors is crucial because they might provide a better understanding of HRQOL variability after cancer diagnosis, identify patients at risk, and determine appropriate interventions to improve the patient's HRQOL while hospitalized as well as improve patient satisfaction with care. In a study conducted on Norwegian patients with cancer, Skarstein, Dahl, Laading, and Fosså (2002) found that nurses' and physicians' actions, sharing of information with patients and families, and communication of caring from staff predicted patient satisfaction with care. Complications of cancer treatment have been shown to have a negative effect on the HRQOL that patients experience (Avery et al., 2006).

Nurses are in a unique position to improve patient satisfaction and HRQOL through patient education, symptom management, and therapeutic nurse-patient relationship. For example, Bartlett Ellis, Bakoyannis, Haase, Boyer, and Carpenter (2016) found that patients' perceptions of nurse communication was strongly correlated with new medication communication and positively affected patient satisfaction with care.

The conceptual framework developed by Bamm et al. (2013) provided the foundation for the study. This conceptual framework includes the following four domains as interrelated constructs: HRQOL, satisfaction with care, health status, and other factors. Each domain has multiple aspects. The following aspects were included in the patient satisfaction with care construct: technical aspects, information provision, communication, and coordination. The health status construct includes disease variables that affect function (i.e., disease severity, symptoms, and health level). Other factors includes demographic items. According

to this framework, HRQOL, patient satisfaction, and health status are bidirectionally related. Therefore, it is hypothesized that poor HRQOL scores would be associated with dissatisfied patients. It is also hypothesized that dissatisfied patients will report poor HRQOL.

The objectives of the study were to (a) identify factors (age, gender, type and stage of cancer, type of insurance, marital status, type of cancer, time since diagnosis, and number of days on the unit) that predict patient satisfaction with the hospital experience; (b) identify factors (age, gender, type and stage of cancer, type of insurance, marital status, type of cancer, time since diagnosis, and number of days on the unit) that predict higher HRQOL in hospitalized patients with diagnosis of cancer; and (c) examine the relationship of HRQOL and patient satisfaction with hospital experience in hospitalized patients with a diagnosis of cancer.

Methods

Sample and Setting

A descriptive, cross-sectional study of patients with cancer ($n = 50$) was conducted at two different adult acute oncology care units at the University of Louisville Hospital in Kentucky. Inclusion criteria are being aged 18 years or older, having a cancer diagnosis, being able to read and write English, and being able to communicate with investigators.

Procedures

The study was approved by the University of Louisville Human Subjects Protection Program and by research committees at the site. Participants were identified by staff nurses employed at two adult acute oncology care units. Nurses identified patients who met the inclusion criteria and asked the patients about their interest in study participation. The research team obtained permission from the nursing staff before approaching each patient who had indicated interest in the study. Fifty-three participants were identified by the nurses. Two participants refused to take part, and one participant was unable to complete the study instruments. Data were collected from April to June 2017.

A detailed explanation of the study, including the purpose, risks, benefits, and procedures, was provided to participants in verbal and written form. Participants were compensated with a grooming/hygiene product equivalent to \$15 for participation in the study. The nursing staff on the unit chose the product based on previous feedback from patients. Patients who consented to participate in the study completed two instruments regarding their HRQOL and patient experience while in the hospital.

Variables and Instruments

Demographic information, including age, gender, type and stage of cancer, number of days on the unit, type of insurance, marital status, type of cancer, time since diagnosis, and number of days on the unit, was collected. The two instruments used to examine patients' HRQOL and patient satisfaction were the Quality of Life Patient/Cancer Survivor (QOL-CS) version (Ferrell, Dow, Leigh, Ly, & Gulasekaram, 1995) and the Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) survey (Giordano, Elliott, Goldstein, Lehrman, & Spencer, 2010).

The QOL-CS was used to assess HRQOL. The QOL-CS is a 41-item self-reported multidimensional measurement tool that consists of four HRQOL domains: physical well-being, psychological well-being, social well-being, and spiritual well-being. Patients read each statement and were asked whether they agreed or disagreed with each statement. Scoring was based on a scale ranging from 0 (worst outcome) to 10 (best outcome). Strong psychometric data supported the use of the instrument with patients with cancer (Ferrell, Dow, & Grant, 1995; Ferrell, Dow, Leigh, et al., 1995). Cronbach alphas for the subscales in this study were 0.71 for physical well-being, 0.87 for psychological well-being, 0.72 for social well-being, and 0.68 for spiritual well-being.

The HCAHPS is a 32-item standardized survey instrument that measures patients' perspectives of care (Giordano et al., 2010). The survey contains 21 patient perspectives on care and patient rating items that encompass nine key topics: communication with doctors, communication with nurses, responsiveness of hospital staff, pain management, communication about medicines, discharge information, cleanliness of the hospital environment, quietness of the hospital environment, and transition of care. The survey also includes four screener questions and seven demographic items, which are used for adjusting the mix of patients across hospitals and for analytical purposes. Questions are focused on obtaining the patient's perception of quality (on a 10-point scale ranging from 1 [never] to 10 [always]) because research suggests that patients' perceptions of quality influence their choice of health plans and providers, complaints and malpractice claims, adherence to medical advice, and overall health status outcomes. Results of these questions are compiled into 10 composite scores, known as HCAHPS measures, with a 9 or a 10 on a 1–10 scale being considered high or positive (Centers for Medicare and Medicaid Services, 2017). This national standardized survey focuses on determining

the quality of care provided through understanding patient experiences with care. This survey was designed to help in comparing satisfaction across a range of patients and organizations (Anhang Price et al., 2014). In a systemic review to evaluate instruments that measure patient satisfaction, Beattie, Murphy, Atherton, and Lauder (2015) reported strong psychometric properties of HCAHPS, including content validity, structural validity, internal consistency reliability, and inter-rater reliability. For example, one study included in the systematic review (Keller et al., 2005) reported Cronbach alpha scores of 0.7. They also recommended using this instrument in research aimed to evaluate patient satisfaction. The Cronbach alpha for the instrument in this study was 0.63, which is slightly lower than reported previously.

Statistical Analysis

The current study aimed to determine if any of the variables collected were associated with a positive patient experience or HRQOL. In addition, the authors explored the relationship between patient experience and HRQOL. Initially, the authors performed a descriptive analysis for the complete sample and tested the internal consistency of each instrument (and subscales of the instruments) by calculating Cronbach alphas. The current study's a priori power was 84% (for $n = 90$) for nine predictors in the model. Unfortunately, only 50 participants were recruited. The current study's achieved power was 82% when HCAHPS scores were made a function of the six predictors and 87% when QOL-CS scores were the outcome. With a smaller sample size, violation of the assumptions of the methodology employed was a concern. As such, the authors evaluated sphericity (Mauchly's test), homoscedasticity (plotted residuals versus predicted values), and normal distribution in error (QQ Plot and Shapiro-Wilks test). None of these evaluations suggest significant violations from the assumptions of ordinary least squares (OLS) methodologies. The data analysis associated with each objective is described.

Objective 1: Identify factors (age, gender, type and stage of cancer, type of insurance, marital status, type of cancer, time since diagnosis, and number of days on the unit) that predict patient satisfaction with the hospital experience. The authors used OLS regression techniques in which HCAHPS (measure of patient satisfaction) was made a function of gender, age, marital status, payer, stage of cancer, time since cancer diagnosis, and days on the unit.

Objective 2: Identify factors (age, gender, type and stage of cancer, type of insurance, marital status, type

of cancer, time since diagnosis and number of days on the unit) that predict higher HRQOL in hospitalized patients with a cancer diagnosis. The authors used OLS regression techniques in which QOL-CS

TABLE 1. Sample Characteristics (N = 50)

| Characteristic | n |
|-----------------------------|----|
| Gender | |
| Female | 32 |
| Male | 18 |
| Age (years) | |
| 18-29 | 1 |
| 30-39 | 1 |
| 40-49 | 8 |
| 50-59 | 17 |
| 60-69 | 15 |
| 70-79 | 6 |
| 80 or older | 2 |
| Marital status | |
| Divorced | 6 |
| Living with partner | 1 |
| Married | 30 |
| Single | 6 |
| Widowed | 7 |
| Payer | |
| Private | 20 |
| Public | 21 |
| Private and public | 3 |
| Did not know/did not answer | 6 |
| Time since diagnosis | |
| Less than 6 months | 18 |
| 6 months to 1 year | 9 |
| 2-5 years | 14 |
| 6-10 years | 8 |
| More than 10 years | 1 |
| Stage of cancer | |
| 0 | 2 |
| I | 3 |
| II | 2 |
| III | 7 |
| IV | 15 |
| Unknown stage | 21 |
| Time on the unit | |
| Less than 1 week | 39 |
| 1-3 weeks | 9 |
| 1-2 months | 1 |
| More than 2 months | 1 |

scores (measure of HRQOL) were made a function of gender, age, marital status, payer, stage of cancer, time since cancer diagnosis, and days on the unit.

Objective 3: Examine the relationship of HRQOL and patient satisfaction with hospital experience in hospitalized patients with a diagnosis of cancer. The authors calculated bivariate correlation coefficients to test for significant correlation between HCAHPS scores with QOL-CS. Correlation coefficients were calculated for overall HCAHPS scores as well as for each subscale.

Results

Demographic characteristics are presented in Table 1. The majority of patients were married ($n = 30$, 60%), female ($n = 32$, 64%), aged 50–59 years ($n = 17$, 34%), had been diagnosed with cancer for less than six months ($n = 18$, 36%), and had been on the unit for less than a week ($n = 39$, 78%). Table 2 shows the average scores for the HCAHPS and QOL-CS subscales.

Those who were single ($\beta = -1.2$, $p = 0.031$), had been diagnosed for 6–10 years ($\beta = -3.902$, $p = 0.001$), and had been diagnosed for 11 years or longer ($\beta = -5.813$, $p < 0.001$) had significantly lower HCAHPS scores (see Table 3). Those with public insurance ($\beta = -3.047$, $p = 0.019$), those who had been diagnosed for 6–10 years ($\beta = -3.254$, $p = 0.015$), and those diagnosed for 11 years or longer ($\beta = -4.308$, $p < 0.001$) had lower QOL-CS scores. Physical well-being scores ($r = 0.327$, $p = 0.021$) and social well-being on the QOL-CS were associated with higher HCAHPS scores ($r = 0.284$, $p = 0.005$) (see Table 4).

Stage of cancer was collected from only 29 participants (60%). Some cancers are not staged, and some participants could not remember or refused to answer.

TABLE 2. Scores for Quality-of-Life Domains and Patient Satisfaction (N = 50)

| Scale or Subscales | \bar{X} | SD | Range |
|--------------------------|-----------|------|-------|
| HCAHPS | 8.5 | 0.8 | 0–10 |
| QOL-CS | | | |
| Physical well-being | 82.6 | 10.1 | 0–100 |
| Psychological well-being | 78.3 | 12.1 | 0–100 |
| Social well-being | 81 | 7.6 | 0–100 |
| Spiritual well-being | 99.1 | 4.8 | 0–100 |

HCAHPS—Hospital Consumer Assessment of Healthcare Providers and Systems; QOL-CS—Quality of Life Patient/Cancer Survivor version

Note. Higher scores on the HCAHPS and QOL-CS indicate “always” or “best outcome.”

The current study was unable to include stage of cancer in the adjustment model (because adequate power would be threatened). As an exploratory analysis, the authors tested whether stage of cancer was correlated with HCAHPS and QOL-CS scores. Although neither result was significant, the nonsignificant correlation between stage of cancer and QOL-CS scores ($r = 0.484$, $p = 0.092$) may be an artifact of the small sample size and warrants additional investigation.

Discussion

The current study aimed to identify the relationship between patient satisfaction and HRQOL in patients with cancer, as well as demographic and disease predictors of each variable. Cancer and its treatment may affect several aspects of a patient’s life, including the physical, psychological, social, and spiritual aspects (McNulty & Nail, 2015). Patients with cancer require long-term care, frequent hospitalizations, and continuous contact with healthcare personnel (Bamm et al., 2013). Effective interaction between providers and patients, as well as the provision of adequate information and supportive care to patients and families, may affect patient satisfaction during hospitalization and other health outcomes, including HRQOL (Birkelien, 2017).

This study showed that most patients with cancer reported moderate levels of HRQOL and satisfaction with hospital care. Authors of the HCAHPS survey define any value greater than 9 as high (8.5 in the current study). A ceiling effect may exist because a proportion of values near the largest value was observed. A ceiling effect may reflect a lack of discrimination in the HCAHPS survey. In general, patients with cancer report high levels of satisfaction with hospital care (Arraras et al., 2013; Fingeret et al., 2013; Frojd, Lampic, Larsson, & von Essen, 2009; Skarstein et al., 2002). Several factors may influence participants’ responses to satisfaction surveys, including social desirability and response bias (Fingeret et al., 2013). In the current study, the authors tried to minimize social desirability and response bias by ensuring confidentiality and anonymity. Interestingly, most patients in the sample reported high levels of spiritual well-being.

In the current study, patients with a long history of cancer reported lower levels of satisfaction with their hospital experiences and lower levels of HRQOL. Patients with a long history of cancer experience high levels of anxiety (Mitchell, Ferguson, Gill, Paul, & Symonds, 2013), depression (Philip, Merluzzi, Zhang, & Heitzmann, 2013), high burden of cancer (Yabroff et

al., 2004), fear of recurrence (Schootman, Deshpande, Pruitt, Aft, & Jeffe, 2010) and physical symptoms (Schootman et al., 2010). In the current sample, the association between time since diagnosis and negative hospital experience may be related to poor health status (i.e., increased physical symptoms, disease severity, and burden of cancer) associated with a long history of cancer. Poor health status of chronically ill patients was found to be a strong predictor of patient's

satisfaction with care (Bamm et al., 2013; Wensing et al., 1997). In addition, many long-term cancer survivors experienced many health needs that were not met by healthcare providers (Lebel, Tomei, Feldstain, Beattie, & McCallum, 2013). Patients expect healthcare providers to meet their health needs, and unmet health needs may influence their perception of care provided by healthcare providers and, consequently, be associated with low satisfaction with care.

TABLE 3. Regression Analyses (N = 50)

| Predictor | HCAHPS | | QOL-CS | |
|---|----------------------|-----------|----------------------|-----------|
| | Standardized β | p | Standardized β | p |
| Gender | | | | |
| Female | 0.197 | 0.508 | -0.445 | 0.66 |
| Age (years) | | | | |
| 18–29 | 0.181 | 0.911 | 0.795 | 0.435 |
| 30–39 | 0.205 | 0.867 | 0.445 | 0.795 |
| 40–49 | 0.025 | 0.977 | 0.263 | 0.363 |
| 50–59 | -0.512 | 0.557 | 0.928 | 0.502 |
| 60–69 | -0.403 | 0.65 | 0.689 | 0.497 |
| 70–79 | -0.593 | 0.556 | 0.567 | 0.297 |
| 80 or older | Ref | – | Ref | – |
| Marital status | | | | |
| Divorced | -0.952 | 0.782 | 0.634 | 0.533 |
| Living with partner | -0.095 | 0.228 | 1.2 | 0.242 |
| Married | -0.441 | 0.801 | -0.049 | 0.962 |
| Single | -1.2 | 0.031* | 1.184 | 0.248 |
| Widowed | Ref | – | Ref | – |
| Payer | | | | |
| Private | -0.036 | 0.945 | -0.289 | 0.775 |
| Public | -0.762 | 0.15 | -3.047 | 0.019* |
| Private and public | Ref | – | Ref | – |
| Time since diagnosis | | | | |
| Less than 6 months | Ref | – | Ref | – |
| 6 months to 1 year | -1.374 | 0.244 | -1.045 | 0.307 |
| 2–5 years | -1.07 | 0.191 | -1.47 | 0.155 |
| 6–10 years | -3.902 | 0.001** | -3.254 | 0.015* |
| More than 10 years | -5.813 | < 0.001** | -4.308 | < 0.001** |
| Time on the unit | | | | |
| Less than 1 week | Ref | – | Ref | – |
| 1–3 weeks | 0.332 | 0.732 | -0.786 | 0.44 |
| 1–2 months | -0.265 | 0.565 | -0.589 | 0.561 |
| More than 2 months | -0.259 | 0.815 | -0.602 | 0.553 |
| *p < 0.05; **p < 0.01 HCAHPS—Hospital Consumer Assessment of Healthcare Providers and Systems; QOL-CS—Quality of Life Patient/Cancer Survivor version; Ref—reference statistic | | | | |

Fear of recurrence may elevate their level of physical symptoms severity, level of anxiety, and use of health services (Lebel et al., 2013) and, consequently, influence their hospital experience. This impact of cancer may require frequent hospitalization and more efforts from healthcare providers. Therefore, healthcare providers are encouraged to identify patients with a long history of cancer to meet their specific needs. Nurses are encouraged to help patients express their feelings about fear of recurrence. This may alleviate their tension and symptoms and improve their hospital experiences.

Patient satisfaction is confounded by patient expectations and uncertainty about outcomes (Jayadevappa et al., 2010). Therefore, healthcare providers are encouraged to provide patients with complete information about their health status and prognosis. Providing patients with realistic and comprehensive information may make patients have realistic expectations of healthcare providers and, consequently, influence their perception of hospital care (Skarstein et al., 2002). Nurses are in a unique position to educate patients with cancer about their diagnosis and treatment and address their concerns.

Being single was associated with lower level of satisfaction with hospital care. The association between being single and lower level of satisfaction with hospital care may be related to a lack of social support (Arraras et al., 2013). Living without a partner is associated with lack of social support among patients with cancer that will negatively affect their life (Leung, Pachana, & McLaughlin, 2014; Leung, Smith, & McLaughlin, 2016). Lack of support during hospitalization may affect patients' experiences with hospital care. Therefore, nurses should evaluate social support needs and address the needs of patients without social support during hospitalization and direct

KNOWLEDGE TRANSLATION

- Identifying and meeting the needs of individuals with a long history of cancer can improve patient satisfaction with care and health-related quality of life (HRQOL).
- Healthcare providers should address the needs of patients without social support during hospitalization and direct them to professional or lay support resources after discharge.
- Policymakers, healthcare providers, and researchers should be aware of the effect of insurance status on early screening and its effect on patients' outcomes, including HRQOL and increased healthcare expenses.

them to professional or lay support resources after discharge.

Another interesting finding was that insurance status was associated with level of HRQOL. Patients with cancer who have public insurance reported lower levels of HRQOL. Consistent with this finding, studies examining patients with cancer found that public insurance was highly correlated with lower overall HRQOL (Callahan & BrintzenhofeSzoc, 2015; Jensen et al., 2013; Sadetsky et al., 2008). Other studies found that lack of health insurance is also associated with lower levels of HRQOL (Smith et al., 2013; Zhou et al., 2016). Patients with cancer who have low or no insurance coverage may lack the resources to have access to screening and cancer detection in early stages (Penson et al., 2001; Sadetsky et al., 2008). Patients with advanced stages of cancer usually present with more physical, psychological, and social dysfunctions; therefore, policymakers, healthcare providers, and researchers need to be more aware of the possibly detrimental effect of insurance status on early screening and on patients' outcomes, including HRQOL and increased healthcare expenses.

The study also examined the relationships of HRQOL and patient satisfaction with hospital experience in hospitalized patients with a diagnosis of cancer. Physical and social well-being were negatively associated with patient satisfaction with care. This finding is consistent with previous studies conducted with patients with chronic diseases (Baumann et al., 2009; Hamilton et al., 2017). However, other studies showed that quality of care and a patient's interaction with healthcare providers can influence patient satisfaction with care that is associated with a patient's HRQOL (Cramm, Strating, & Nieboer, 2012; Frojd et al., 2009; Renzi et al., 2005). Therefore, more interventions are required to improve nurses' communication skills with patients, to share medical information with

| TABLE 4. Pearson Correlations Between HCAHPS Scores and QOL-CS Domains | |
|--|--------|
| Scale or Subscale | HCAHPS |
| QOL-CS | 0.256 |
| Physical well-being | 0.327* |
| Psychological well-being | 0.162 |
| Social well-being | 0.284* |
| Spiritual well-being | 0.104 |
| *p < 0.05 HCAHPS—Hospital Consumer Assessment of Healthcare Providers and Systems; QOL-CS—Quality of Life Patient/Cancer Survivor version | |

patients, and to engage patients in decision-making. For example, Alaloul, Williams, Myers, Jones, and Logsdon (2014) found that using clear and consistent communication related to pain between patients and nurses can improve patient satisfaction with pain management over time.

Limitations

The cross-sectional design of this study limits causal attributions and is a weakness in terms of understanding factors that influence patient satisfaction and HRQOL over time. More longitudinal research is recommended to understand the relationship between HRQOL and patient satisfaction with care. Another limitation is the small sample size and data being collected from a single center. Future studies with larger sample sizes are recommended to have a better understanding of the HCAHPS subscales. Another limitation of the current study was the reliability of the HCAHPS survey, which was slightly below the acceptable range. This low reliability score may be related to how the HCAHPS survey measures different aspects of patient satisfaction.

Implications for Nursing Practice and Research

Nurses are in a unique position to improve patient satisfaction and HRQOL. A long history of cancer is associated with more physical symptoms and high burden. Improving sense of connection with patients through effective communication, patient engagement, and patient education may improve patient satisfaction with care. Collaboration between nurses and other healthcare providers is required to address the needs of patients with health insurance difficulties. Additional research is needed to understand how perceived social support influences patients' satisfaction with health care. Finally, more studies are needed to evaluate psychometric properties of available patient satisfaction instruments.

Conclusion

This cross-sectional study of patients with a diagnosis of cancer showed that physical well-being and social well-being were positively associated with patient satisfaction. Time since cancer diagnosis was related to patient satisfaction and HRQOL.

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This research was funded by a grant from the Nursing and Interdisciplinary Research Committee at the University of Louisville Hospital.

Alaloul, Myers, DiCicco, Collins, Hogan, Roesler, and Logsdon contributed to the conceptualization and design. Myers, Masterson, and Roesler completed the data collection. Alaloul and Myers provided statistical support. Alaloul, Myers, and Logsdon provided the analysis. Alaloul, Myers, Masterson, Hogan, Roesler, and Logsdon contributed to the manuscript preparation.

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