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Transitoriness in cancer patients: a cross-sectional survey of lung and gastrointestinal cancer patients

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Abstract

Objective Despite earlier diagnosis and advancements in treatment, cancer remains a leading cause of death in the world (13% of all deaths according to the World Health Organization) among men and women. Cancer accounts for approximately 20% of the deaths in the USA every year. Here, we report the findings from a cross-sectional survey of psychosocial factors in lung and gastrointestinal cancer patients. The aim of the study was to explore the associations among transitoriness, uncertainty, and locus of control (LOC) with quality of life. Transitoriness is defined as a person's confrontation with life's finitude due to a cancer diagnosis.

Methods A total of 126 patients with lung or gastrointestinal cancer completed eight self-reporting questionnaires addressing demographics, spiritual perspective, symptom burden, transitoriness, uncertainty, LOC, and quality of life.

Results Transitoriness, uncertainty, and LOC were significantly associated with one another ($r=0.3267$, $p=0.0002$/$r=0.1994$, $p=0.0252$, respectively). LOC/belief in chance has a significant inverse relationship with patients' quality of life ($r=-0.2505$, $p=0.0047$). Transitoriness, uncertainty, and LOC were found to have a significant inverse relationship with patients' quality of life (transitoriness state: $r=-0.5363$, $p=0.0000$/trait: $r=-0.4629$, $p=0.0000$/uncertainty: $r=-0.4929$, $p=0.0000$/internal LOC: $r=0.1759$, $p=0.0489$/chance LOC: $r=-0.2505$, $p=0.0047$).

Conclusion Transitoriness, uncertainty, and LOC are important concepts as they adversely influence patients' quality of life. Incorporating this finding into the care of cancer patients may provide them with the support they need to cope with treatment and maintenance of a positive quality of life.

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Introduction

The fact that cancer may be fatal remains one of its most significant characteristics [1]. In particular, many patients with lung and gastrointestinal (GI) cancer have a poor prognosis [2]. Annually, approximately 300,000 men and women die of lung or GI cancer in the USA [2]. As a result, these patients face life's transitoriness, which constitutes an important aspect of life after a cancer diagnosis [3, 4]. Transitoriness describes cancer patients' realization that they may die as a result of their disease and that death may

come sooner than expected. Fear of death is part of this experience, but patients tend to emphasize their fear of burdening their families with the potentiality for death [5]. Qualitative studies indicate that a sense of transitoriness finds expression in increased anxiety, anger, uncertainty [5, 6], and a perception of lessened control, which, in turn, may lead to impaired self-confidence and even depression [7, 8]. Transitoriness also contributes to an increased motivation for change and keen interest in life, as manifested in altered life priorities and goals [5, 6]. Eventually, patients aim to find a way to accept death as part of the disease and to incorporate this awareness into their everyday life [1]. They become aware that they need to put their affairs in order, to ensure that the household will continue to function, and/or that family and friends are not left with unsolvable and insurmountable problems [4, 9].

Besides the confrontation with life's finitude, psychological factors such as uncertainty, anxiety, and distress can significantly and adversely influence cancer patients' quality of life [10, 11]. Uncertainty is defined in this context as people's ability to determine the meaning of illness-related events [12]. Being confronted with uncertainty can motivate people to attempt to adjust to the changing demands associated with their illness [12, 13]. These studies have focused predominantly on cancer survivors, women with breast cancer or men with prostate cancer [14, 15]. Cancer patients also experience changes in locus of control [16]. The term "locus of control" (LOC) refers to where individuals believe their control to be regarding their health [17]. A higher degree of control over decisions and a higher level of influence over the illness situation are assumed to positively affect individuals' quality of life. Validation studies conducted by Wallston [17, 18] with patients with arthritis, chronic pain, diabetes, and cancer indicated that cancer patients had a higher belief in chance[1] than patients with other chronic diseases. A cross-sectional study employing a convenience sample of 95 African American demonstrated that a higher belief in powerful others was related to a greater self-esteem [7]. Quality of life in cancer patients has often been studied regarding treatments and symptoms [19, 20]. However, patients' sense of transitoriness and its relationship to uncertainty, LOC, and quality of life as symptoms of a cancer diagnosis in patients with lung and GI cancer have yet to be examined in detail. Studies concerning the sense of transitoriness due to a cancer diagnosis and its influence on patients' quality of life have been predominantly qualitative in nature [1, 21]. Information about the sense of transitoriness is necessary if we are to fully comprehend how patients experience their disease and cancer treatment.

Therefore, a cross-sectional study was conducted to explore the interrelationships among transitoriness, uncertainty, LOC, and quality of life in lung and GI cancer patients. In particular, we have addressed the hypotheses that cancer patients' sense of transitoriness is related to uncertainty and LOC and that their sense of transitoriness, uncertainty, and LOC is negatively associated with quality of life.

Patients and methods

Study design and setting

This cross-sectional study was conducted at the Sidney Kimmel Comprehensive Cancer Center and the Bayview Medical Center at the Johns Hopkins Medical Institutions (Baltimore, MD, USA), a large teaching facility in the USA, and was approved by its institutional review board.

Patients

A total of 193 patients with a diagnosis of lung or GI cancer at various stages who visited the Center between May 2006 and August 2007 were enrolled in the study. The inclusion criteria for this study were: (a) of any ethnic group, (b) >21 years of age, (c) able to speak and read English, (d) inpatient or outpatient at this teaching facility, (e) not in hospice care. Patients were approached by study team members while they were inpatients or were waiting for consultations or treatments. After patients had signed the consent form, they received the set of questionnaires described below and then completed them either on site or at home.

Instruments

The four main variables in this study, i.e., a sense of transitoriness, uncertainty, LOC, and quality of life, were assessed by means of five questionnaires administered to the patients. Two other questionnaires were used to assess patients' physical symptoms and spiritual practices.

Transitoriness

Scales for assessing transitoriness have yet to be developed, but patients' fear of death after a cancer diagnosis has been assessed in the past by using anxiety measures such as the State–Trait Anxiety Scale [22]. This scale has been enhanced to include measures for the states and traits of anger, depression, and curiosity [23]. This instrument, therefore, was considered to provide information on the attributes of transitoriness, i.e., fear of death, anger at the situation, curiosity for life, and a potential for depression as a result of an overwhelming sense of transitoriness [3, 5].

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[1] The subscale 'chance LOC' measures the extent to which patients believe their health and illness situation is due to luck and chance [8].

The State–Trait Personality Inventory is valid with a reliability of $r=0.78$ to $r=0.90$ [24] and consists of eight Likert-based subscales, each totaling in ten items. The responses range from 80 to 320 points. Higher scores indicate a stronger sense of transitoriness.

Uncertainty

Mishel's Uncertainty in Illness scale [25] was used to measure uncertainty, i.e., the extent to which people are able to determine the meaning of disease-related events [12]. This Likert-type questionnaire consists of 33 items, with responses ranging from 32 to 160 points with higher scores indicating more uncertainty. This is a valid instrument with a reliability of $r=0.90$ [25].

Locus of control

The Multidimensional Health LOC Scale [17] was employed to measure patients' perception of LOC, i.e., the extent to which people believe their health is dependent on their behavior [17]. There are three different forms of this scale: namely A, B, and C. Forms A and B are purported to be interchangeable and measure people's general beliefs about health LOC. The recommendation is to always use form C, which is condition specific, in conjunction with either A or B [26]. Forms B and C were used. Form B encompasses three subscales: internal LOC, chance, and powerful others. Form C encompasses four subscales: internal LOC, chance, doctors, and other people LOC [27]. Form B's Cronbach's α ranges from 0.60 to 0.70 [26]; form C's Cronbach's α ranges from 0.70 to 0.87. These two forms together consist of 36 Likert scale items, with responses ranging from six to 36 for the subscales internal, chance, and powerful others of forms B/C and from 6 to 18 for the subscales doctors and other people responses. Neither form B nor C adds up to a total score, but higher scores indicate higher levels of control.

Quality of life

The Functional Assessment of Cancer Therapy (FACT-G) developed by Cella et al. [28] was used to assess patients' quality of life. The FACT-G version 4 measures people's subjective assessment of their physical, social, emotional, and functional well-being. The FACT-G version 4 consists of 27 items with a five-point Likert-type response scale with a Cronbach's α of 0.80 [28]. The scores for the physical, social, and functional well-being subscales range between 0 and 28. The scores of the emotional well-being subscale range between 0 and 24. The sum score for the total scale ranges from 0 to 108 [28]. Higher scores indicate increased quality of life.

Other instruments

Patients' symptom burden was assessed using the MD Anderson Symptom Inventory (MDASI) [29]. This scale assesses current symptoms in addition to the related distress and interference in usual activities [29]. The MDASI consists of 13 Likert-type questions with responses ranging from 0 to 130, and higher scores indicate increased symptom burden. Participants also provided an overview of their spiritual practices with the Spiritual Perspective Scale [30]. This scale measures people's views and behaviors that are due to the people's belief in some dimension of transcendence or a spiritual guide beyond human beings [30]. It consists of ten Likert-type questions with responses ranging from 10 to 60 with higher scores indicating more frequent spiritual practice.

Data analysis

Data were entered and analyzed using Stata Intercooled 9®, a software package for descriptive and inferential statistics. Apart from the demographics scale, sum scores were calculated according to the manuals and specifications of the questionnaire developers. The findings obtained from these instruments were analyzed using means and standard deviations, calculated for the whole sample and women and men separately. Pearson correlations between quality of life and transitoriness, uncertainty, and LOC were calculated separately, with p values of ≤ 0.05 being considered significant. Multivariate linear regression was used to assess the potential associations between transitoriness and quality of life after adjusting for sex and disease site.

Findings

Demographics

Of the 193 cancer patients enrolled in the present study, 39% ($n=75$) completed the set of questionnaires on site. The remainder ($n=118$) completed them elsewhere, and 33% ($n=64$) of these patients mailed their set of questionnaires back. Of the 139 returned questionnaires, 65.3% ($n=126$) were fully completed and usable for analysis. This overall response rate was achieved by follow-up phone calls by the study team.

The final sample size was $n=126$ (51% women) with an average age of 61.4 years (SD=9.59; men: mean = 61.7 years, SD=9.27; women: mean = 61.1 years, SD=9.95), and 80% were married. The majority of the participants were Caucasian (89%). The ethnic variability in this sample reflected the demographics of the center where the study was conducted.

Colorectal, lung, and pancreatic cancer were almost equally represented in the study population. A total of 35 participants (40% women) had been diagnosed with colorectal cancer, 38 (55% women) with lung cancer, and 30 (50% men) with pancreatic cancer. A fourth group of 23 patients (61% women) had liver (22%), stomach (39%), gallbladder (35%), or anal cancer (4%). The majority of the participants (34%; 60% women) presented with stage IV disease. Stage I was identified in 11 patients (27% women), stage II in 12 patients (33% women), and stage III in 29 patients (48% women). In the case of 31 patients (55% women), the disease was not staged. Among those with colorectal, lung, or pancreatic cancer, more than half presented with stage IV disease. In the group with various cancer diseases, only a third presented with stage IV disease. Three quarters of the participants had been diagnosed <15 weeks prior to study enrollment (mean = 14.79, SD=22.90). The majority of our participants (73%) had had a surgical intervention and were undergoing chemotherapy treatment (92.9%); less than half the participants were in radiation therapy (46.8%). About half of all participants ($n=58$) were receiving a combination of chemotherapy and radiation. Only nine patients had neither received chemotherapy nor radiation therapy treatments. A symptom burden of 41.48 (SD=30.20; range = 0–121) for the whole sample ($n=126$) indicated that patients suffered from at least four symptoms out of a total of 13, whether physical, such as nausea, or psychosocial, such as impaired mood. Women's ($n=64$) mean symptom burden was 41.86 (SD=29.02) and men's ($n=62$) was 43.06 (SD=31.90). The participants most frequently noted fatigue (mean = 3.66, SD= 3.84), reduction on their ability for general activity (mean = 3.25, SD=2.85), and restricted household work (mean = 3.21, SD=2.97). The least concern was vomiting (mean = 0.52, SD=1.46).

Eighty-two percent of the participants (52 women; 51 men) reported Christian faith. Across all participants, a mean of 43.58 (SD=14.09) for the Reed Spiritual Perspective Scale [30] was obtained. Women ($n=64$, mean = 46.07, SD=13.79) reported a slightly higher level of spiritual practice than men ($n=62$, mean = 41.18, SD=14.07), but this difference was only marginally significant ($t=-1.9215$, degrees of freedom =118, $p=0.0571$; Table 1).

Nonresponders

Of the 193 patients approached, a total of 67 patients (35 women) did not complete the survey. The majority of these patients experienced disease progression, which prevented them from participating in the study. The average age of the nonresponders was 61.66 years (range 32–87 years). Approximately, half of these patients ($n=32$) were married, but over a third did not indicate their marital status ($n=26$). Similarly, the majority of these patients ($n=48$) did not

Table 1 Demographics of the study population ($n=126$)

Variables	All ($n=126$)
Gender	
Women	64
Men	62
Age in years [mean (SD)]	61.36 (9.59)
Marital relations	
Married	101
Divorced	8
Widowed	8
Single	9
Ethnicity	
Caucasian	111
African–American	9
Asian	2
Hispanic	2
Other	1
Disease stage	
Stage 1	11
Stage 2	12
Stage 3	29
Stage 4	43
Not staged	31
Symptom burden [mean (SD)][a]	42.45 (30.35)
Religious affiliation	
Christian	103
Muslim	1
Jewish	8
Other	14
Spirituality [mean (SD)][b]	43.58 (14.09)

The numbers in the table are counts

[a] Score on the MD Anderson Symptom Inventory [47]

[b] Score on the Spiritual Perspective Scale [48]

provide information on their educational background. However, 15 patients indicated undergraduate and higher education. More than two thirds of the patients ($n=44$) did not indicate their spiritual affiliation. A third of the patients ($n=21$) stated that they were of Christian faith; one person was of the Islamic and one person of the Jewish faith. The majority of the nonresponders were Caucasian ($n=43$) along with one Hispanic and one Asian person. Unfortunately, 17 African Americans decided against participation due to concerns about confidentiality.[2] Of the nonrespond-

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[2] There was a passage in the standard consent form employed by the Johns Hopkins Medical Institutions that the participant's general/ family practitioner outside the hospital may be informed of health care data if requested. For the African American people, this particular passage was unacceptable, and no satisfactory alternative could be found.

ers, 16 patients had been diagnosed with bile duct cancer; $n=13$ patients had lung cancer, and an equal group ($n=13$) were patients with colorectal cancer. However, 24 patients did not identify the cancer site.

Transitoriness

The mean sum score for the state portion of the State–Trait Personality Inventory [24] was 75.64 (SD=13.39) and for the trait portion was 77.15 (SD=11.11). Overall, men and women demonstrated approximately the same levels of state and trait transitoriness. However, men tentatively had higher trait transitoriness than women ($p=0.0506$). Equally, men had higher levels of trait anger than women ($p=0.0456$). The neutral depression threshold in the state part was given at mean = 14.37 (SD=5.89) for men and mean = 14.79 (SD=5.05) for women [24]. A mean of 19.57 (SD=6.90) for men and a mean of 22.18 (SD=7.05) for women indicated mild depression [24]. With regard to our sample, neither men nor women were close to the mild depression level given as the threshold for state depression. For trait depression threshold, mean = 17.58 (SD=6.57) for men and mean = 18.52 (SD=5.88) for women were reported [24]. These values were greater than the ones of our participants. Cronbach's α was calculated as 0.9307 for the state portion and 0.9383 for the trait portion (Table 2).

Uncertainty

The uncertainty scale sum score was calculated for 32 items as indicated by Mishel [12]. Our study participants ($n=126$) demonstrated a mean uncertainty level of 87.31 (SD=10.41), with a 95% confidence interval of [85.47; 89.16]. Their perception of the situation's ambiguity was calculated at 32.62 (SD=9.13), and the complexity was found to be 27.04 (SD=3.45). The study participants considered the inconsistency of the information at 14.59 (SD=3.17) and the illness' unpredictability at 13.06 (SD=3.64). Men

demonstrate a mean level of uncertainty of 87.32 (SD=9.50) and are similar to women with a mean of 87.29 (SD=11.30). Cronbach's α was 0.8728.

Locus of control

Medium levels emerged for men and women regarding internal LOC, chance, and powerful others. The findings of the "doctors" subscale indicated that the study participants relied on health care professionals, whereas other people appeared to have a less important role regarding LOC. Men and women differed in the levels of LOC. Only the difference between LOC and "significant others" emerged as significant ($p=0.0035$). Cronbach's α was 0.6458 for form B and 0.7980 for form C (Table 3).

Quality of life

In this sample ($n=126$), the mean self-reported level of quality of life as measured by the FACT-G was 41.64 (SD=8.91). The men report a mean level of quality of life of 42.15 (SD=9.66), and the women reported a slightly lower mean of 40.99 (SD=8.53). Cronbach's α was 0.9142 (Table 4).

Association among the main variables

No significant differences were found among patients with lung, colorectal, pancreatic, and other GI cancer regarding transitoriness, uncertainty, LOC, or quality of life. Calculation of the Pearson correlations demonstrated significant inverse associations between quality of life and transitoriness, uncertainty, and chance LOC. A significant positive relationship was found between quality of life and internal LOC. In addition, quality of life was found to be inversely correlated with symptom burden as measured by the MDASI, transitoriness, and uncertainty. Findings with p values of <0.05 are reported (Table 5).

Multivariate linear regression was used to assess the association between quality of life and transitoriness while adjusting for gender and cancer site. After adjustment, the multivariate linear regression analysis results were found to explain 32% (r-squared) or 30% (adjusted r-squared) of the variance in quality of life (F (4, 121)=14.23, $p=0.0000$) for our sample of $n=126$ (Table 6).

Discussion

Overall, the levels of transitoriness state and trait, uncertainty, and LOC in our population were found to be moderate to high in comparison to the norms provided by Spielberger [24], Mishel [12], and Wallston [17, 18] on the respective measurements. This study sample consisted of an

Table 2 Transitoriness in the study population ($n=126$)

Transitoriness	Present study [mean (SD)]	
	Men ($n=62$)	Women ($n=64$)
State anxiety	18.58 (6.19)	18.38 (5.91)
Trait anxiety	17.02 (5.82)	16.69 (4.74)
State anger	12.56 (4.65)	11.89 (3.57)
Trait anger	16.26 (4.71)	14.81 (3.21)
State curiosity	27.40 (5.76)	26.89 (5.58)
Trait curiosity	30.23 (5.82)	28.67 (6.21)
State depression	18.24 (6.12)	17.37 (5.81)
Trait depression	15.61 (5.85)	15.08 (4.94)

Table 3 Locus of control (LOC) results for the study population (n=126)

	Present study [mean (SD)]	
	Men (n=62)	Women (n=64)
LOC form B		
Internal	24.52 (4.41)	22.66 (5.90)
Chance	16.48 (5.81)	18.37 (5.36)
Powerful others	24.87 (5.10)	23.23 (5.50)
LOC form C		
Internal	17.65 (6.80)	16.55 (6.57)
Chance	17.40 (8.00)	20.09 (7.65)
Doctors	15.05 (2.40)	14.41 (2.58)
Other people	11.92 (3.61)	9.94 (3.842)

even number of men and women. Among this sample, lung and GI cancer are evenly distributed. The majority of the study participants had stage IV disease. This may be due to the group of patients with pancreatic cancer. Most of our study population had been diagnosed with stage IV disease fewer than 15 weeks prior to participation. A majority of the participants also were undergoing surgical intervention, chemotherapy, and/or radiation therapy. The levels of state and trait transitoriness and uncertainty in the study participants may be thus explained. Having cancer is exceedingly stressful [10], produces high levels uncertainty [9, 10], and induces anxiety [10], anger [31], and a sense of transitoriness [1, 5]. Being in treatment for cancer is considered highly stressful, provoking anxiety and uncertainty depending on the extent of the changes in body and lifestyle due to the disease, as well as the degree of involvement patients experience in treatment decision-making processes [32, 33].

In this sample, surprisingly, the depression levels were not found to exceed the mild depression threshold [24]. However, because information concerning the specifics of medication or antidepression treatment were not collected, it is difficult to interpret these findings clinically. Nevertheless, depression remains an important psychosocial symptom that is prevalent in cancer patients and influences the coping process [7, 10].

The study participants experienced high levels of uncertainty (mean = 87.31, SD=10.41). Three quarters of our sample had received the diagnosis of cancer less than 15 weeks prior to participation in the study. Also, the majority of the study participants were undergoing anticancer treatment. These aspects may explain the levels of uncertainty in the study participants. Uncertainty has been found among patients with prostate cancer who are undergoing watchful waiting [34, 35] or among survivors of breast cancer [15]. Among the latter group, the uncertainty levels (mean = 57.08, SD=10.14) were lower than the ones of our study participants [15]. Undergoing anticancer treatment has been described as being a distressing situation for patients and their families, as the situation is found to be unstable and not predictable [32, 33].

The LOC levels in our sample do not exceed the referential data provided by Wallston [17, 18] that were obtained upon the validation processes of forms B and C. Our study participants' LOC levels as assessed by form B were slightly lower than the ones found in Taiwanese cancer patients [36] and the ones found in African American cancer patients [37]. Evidence exists that higher belief in chance, i.e., to what extent people believe that their health and illness situation is due to pure luck and chance, may influence screening practices for breast cancer among women [38, 39]. It can be argued that the importance of belief in chance that was found in our sample may also be due to the many unknown aspects of lung and GI cancer and that investigations into the etiology of the cancer may not produce conclusive results [40, 41]. These uncertainties associated with cancer and its etiology are considered difficult to accept and may impair patient coping [7].

In our sample, the significant association among a sense of transitoriness, uncertainty, and LOC supports results from qualitative studies that indicate such a relationship [1, 5, 9]. A sense of transitoriness, uncertainty, and LOC showed a statistically significant inverse correlation with quality of life. The interrelationship of uncertainty with quality of life in this sample ($r=-0.4929$, $p=0.0000$) was congruent with that reported in the literature ($r=-0.462$) [13]. Similarly, research employing the positive and negative affect schedule has indicated a relationship ($r=0.26$) between quality of life and LOC [42, 43]. However,

Table 4 Quality-of-life results for the study population

	All (n=126) Mean (SD)	Women (n=64) Mean (SD)	Men (n=62) Mean (SD)
Quality of life (FACT)	41.56 (9.08)	40.99 (8.53)	42.15 (9.66)
Subscale physical well-being	19.17 (5.82)	18.52 (5.64)	19.84 (5.98)
Subscale social/family well-being	11.44 (2.39)	11.49 (2.21)	11.39 (2.58)
Subscale emotional well-being	6.25 (1.65)	6.29 (1.51)	6.20 (1.79)
Subscale functional well-being	4.70 (1.67)	4.69 (1.61)	4.71 (1.76)

Table 5 Statistically significant correlations among the main variables (n=126)

Dependent variable	Independent variables	Correlation
Transitoriness state	Uncertainty	$r=0.3267, p=0.0002$
Transitoriness trait	Uncertainty	$r=0.2678, p=0.0024$
Transitoriness state	Chance locus of control (form B)	$r=0.1994, p=0.0252$
Transitoriness trait	Chance locus of control (form B)	$r=0.2280, p=0.0102$
Quality of life (FACT)	Transitoriness state	$r=-0.5363, p=0.0000$
Quality of life (FACT)	Transitoriness trait	$r=-0.4629, p=0.0000$
Quality of life (FACT)	Uncertainty	$r=-0.4929, p=0.0000$
Quality of life (FACT)	Internal locus of control (Form B)	$r=0.1759, p=0.0489$
Quality of life (FACT)	Chance locus of control (Form B)	$r=-0.2505, p=0.0047$
Quality of life (FACT)	Chance locus of control (Form C)	$r=-0.1816, p=0.0418$
Quality of life (FACT)	Symptom burden	$r=-0.6701, p=0.0000$

p values ≤0.05 for variable 1 vs. variable 2 were considered significant

studies have not yet shown that patients' belief in chance significantly reduces their perception of quality of life. Studies focusing on this factor may yield important information, enabling a better understanding of cancer patients.

Although our study was sufficiently powered, stratification of the results by cancer site was not possible because each of the four disease groups in this sample was too small. In addition, the majority of the participants were Caucasian. Although the study was open to all patients from diverse ethnic backgrounds, only a very small number of African American, Hispanic, and Asian people could be enrolled. Further investigation of the potential effect of the type of cancer on the parameters assessed here including ethnic group is necessary in order to enable us to determine their relationship to transitoriness. Although transitoriness has been associated with patient outcomes such as quality of life [44], the extent to which this relationship was observed in the present study is surprising. The fact that transitoriness accounted for 32% of the variability in quality of life is a novel finding. These results suggest that psychosocial factors are important for all patients and need to be considered if quality cancer care is to be provided. In future studies, the association of transitoriness with other psychosocial factors in patients with other cancers, such as head and neck cancer, and of diverse ethnic backgrounds should be examined along with various psychosocial factors and their association with quality of life over time.

Conclusion

The findings from this cross-sectional study demonstrate that patients with lung and GI cancer experience medium to high levels of transitoriness, uncertainty, and LOC, which adversely influence patients' quality of life. Therefore, it is important to consider these factors as psychosocial symptoms and include them in cancer care. It is necessary not only to assess physical symptoms systematically and periodically but also psychosocial factors including a sense of transitoriness, uncertainty, and LOC coupled with inquiries as to the patients' current worries and preoccupations.

Further study of a sense of transitoriness, uncertainty, LOC, and their relationship to quality of life in lung and GI cancer patients over the disease trajectory in relation to other symptoms is necessary in order to obtain a more thorough understanding of the patients' experience and needs. Thus, it will be possible to develop and implement instruments that help to systematically assess these factors on a regular basis to gain a better understanding of patients' quality of life and their coping with the disease. More comprehensive information about the disease situation can be obtained, which can lead to earlier recognition of clinically relevant anxiety or depression. In addition, clinically relevant resources such as patient curiosity or support by significant others may be identified. This would provide for earlier and important referrals to be obtained if necessary.

Table 6 Transitoriness and quality of life (n=126)

Quality of life (FACT)	Coef.	Std. err.	T	$P>|t|$	95% conf. interval	
Sex	−2.28	1.39	−1.64	0.103	−5.02	0.47
Cancer site	−0.47	0.64	−0.74	0.46	−1.75	0.80
Transitoriness State	−0.28	0.07	−3.82	0.000	−0.42	−0.13
Transitoriness Trait	−0.16	0.09	−1.80	0.075	−0.34	0.02
_cons	77.35	5.43	14.26	0.00	66.60	88.09

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