

# Nonmelanoma Skin Cancer: Disease-Specific Quality-of-Life Concerns and Distress

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**N**onmelanoma skin cancer (NMSC) is the most prevalent form of cancer among Caucasian populations worldwide (Kim & Armstrong, 2012; Madan, Lear, & Szeimies, 2010). The exact number of NMSC diagnoses worldwide is likely to be underestimated because few national and federal cancer registries record NMSCs (Lucas, McMichael, Smith, & Armstrong, 2006). As such, incidence estimates are based on regional registration practices and epidemiologic research (Czajkowska, Radiotis, Roberts, & Körner, 2013). Basal cell carcinoma (BCC) and squamous cell carcinoma (SCC) account for 95% of all NMSC cases (Jung, Metelitsa, Dover, & Salopek, 2010; Trakatelli et al., 2007). NMSC often appears in highly visible areas of the body, with 60%–70% of cases occurring in the head and neck region (Jung et al., 2010; Ragi, Patel, Masud, & Rao, 2010). Notably, 80% of the NMSC cases that occur in this region are located on the face (Caddick, Green, Stephenson, & Spyrou, 2012).

Studies have shown that the diagnosis and treatment of many cancer types have a variety of negative psychological effects (Bultz & Berman, 2010; Ernst, Götze, Brähler, Körner, & Hinz, 2012; Katz, Irish, Devins, Rodin, & Gullane, 2003; Meyer et al., 2012; Singer, Das-Munshi, & Brähler, 2010), which can impact overall patient health (Dausch et al., 2004). An estimated 16%–25% of newly diagnosed patients with cancer experience symptoms of depression (Sellick & Crooks, 1999). Depression has been linked to functional limitations such as loss of independence in instrumental tasks of daily living in cancer survivors, as well as increased costs and use of resources, reduced quality of life (QOL), and decline in patient adherence to medical advice (Adler & Page, 2007; DiMatteo, Lepper, & Croghan, 2000; Körner et al., 2013).

Despite the high incidence rates of NMSC and the negative psychological effects of being diagnosed with cancer, few studies have directly investigated the psychosocial effects of NMSC and its treatment (Chren, Sahay, Bertenthal, Sen, & Landefeld, 2007; Czajkowska, Ra-

**Purpose/Objectives:** To provide a better understanding of the disease-specific quality-of-life (QOL) concerns of patients with nonmelanoma skin cancer (NMSC).

**Design:** Cross-sectional.

**Setting:** Skin cancer clinic of Jewish General Hospital in Montreal, Quebec, Canada.

**Sample:** 56 patients with basal cell carcinoma and/or squamous cell carcinoma.

**Methods:** Descriptive and inferential statistics applied to quantitative self-report data.

**Main Research Variables:** Importance of appearance, psychological distress, and QOL.

**Findings:** The most prevalent concerns included worries about tumor recurrence, as well as the potential size and conspicuousness of the scar. Skin cancer-specific QOL concerns significantly predicted distress manifested through anxious and depressive symptomatology. In addition, the social concerns related to the disease were the most significant predictor of distress.

**Conclusions:** The findings of this study provide healthcare professionals with a broad picture of the most prevalent NMSC-specific concerns, as well as the concerns that are of particular importance for different subgroups of patients.

**Implications for Nursing:** Nurses are in a position to provide pivotal psychosocial and informational support to patients, so they need to be aware of the often-overlooked psychosocial effects of NMSC to address these issues and provide optimal care.

**Key Words:** nonmelanoma skin cancer, basal cell carcinoma, squamous cell carcinoma, psychosocial concerns, quality of life, distress, importance of appearance

diotis, Roberts, & Körner, 2013; Essers et al., 2006; Rhee et al., 2004; Roberts, Czajkowska, Radiotis, & Körner, 2013). Such research is important because treatment of NMSC often results in scars or physical disfigurement, which are experienced as particularly disturbing when occurring in the head and neck region. Patients with tumors on conspicuous areas of the body have reported higher levels of distress (Söllner, Zingg-Schir, Rumpold,

**Table 1. Sample Characteristics (N = 56)**

Characteristic	n
<b>Gender</b>	
Female	32
Male	23
No response	1
<b>Age (years)</b>	
60 or younger	13
61–70	21
71–80	13
Older than 80	9
<b>Caucasian</b>	56
<b>Education</b>	
Some high school or less	2
Completed high school	8
Some CEGEP	5
Completed CEGEP	1
Trade school	4
Some university	10
Completed university	15
Some graduate school	1
Graduate degree	9
No response	1
<b>Marital status</b>	
Married	36
Widowed	10
Divorced	4
Single	4
No response	2
<b>Diagnosis<sup>a</sup></b>	
Basal cell carcinoma	52
Squamous cell carcinoma	14
<b>Location<sup>a</sup></b>	
Head or neck	54
Torso	7
Limbs	5
<b>Time since diagnosis</b>	
Less than 1 month	2
1–2 months	6
3–6 months	10
More than 6 months	37
No response	1

<sup>a</sup> Some patients had concurrent diagnoses.

Note. CEGEP refers to the public postsecondary education collegiate institutions exclusive to the education system in Quebec, Canada.

Mairinger, & Fritsch, 1998) and, depending on the degree of physical disfigurement, treatment can result in psychosocial, sexual, and marital difficulties (Chren et al., 2007; Rhee, Matthews, Neuburg, Burzynski, & Nattinger, 2005).

The few studies investigating the impact of NMSC on QOL have reported mixed results. Some studies have found little handicap (Blackford, Roberts, Salek, & Finlay, 1996; Essers et al., 2006; Lear, Akeroyd, Mittmann, & Murray, 2008; Rhee et al., 2004), whereas one pilot study demonstrated that 31% of patients with NMSC reported a moderate-to-large impairment in QOL domains such as affect, leisure, daily activities, and physical symptoms related to the diagnosis (Steinbauer et al., 2011).

One overall criticism of these studies is that they used global QOL measures, which do not accurately capture disease-specific concerns (Patrick & Deyo, 1989). To address that issue, Rhee et al. (2006) developed the Skin Cancer Index (SCI), a disease-specific QOL measure that assesses patients' QOL across three NMSC-specific domains. This instrument taps into concerns related to the clinical course of the disease (emotional); interpersonal impact (social); and issues regarding disfigurement, scarring, and self-image (appearance). Using this measure in conjunction with a general dermatology-related QOL measure, Rhee et al. (2007) demonstrated that their NMSC-specific QOL measure possesses greater responsiveness and that NMSC can negatively impact patients' QOL (Rhee et al., 2005, 2006).

Because of the high incidence rates of NMSC, developing a better understanding of the concerns of this clinical population is crucial. Although NMSC has a better survival prognosis than most cancers, patients with NMSC still have to deal with the distress and emotional disturbances attributable to a cancer diagnosis in general and frequently are burdened by highly visible disfigurement. That can be of a particular concern for younger patients for whom visible disfigurement from tumor excision may threaten self-esteem and self-confidence (Kneier, 2003). In a large sample of patients with NMSC, those with lesions on their head or neck; women, regardless of lesion location; and patients with lesions on their lips were significantly more likely to have lower QOL at four months post-treatment (Rhee et al., 2007). In addition, patients aged 50 years and younger demonstrated greater QOL improvement over time as compared to older patients in the sample, suggesting that older patients might have more difficulty dealing with the effects of NMSC treatment (Rhee et al., 2007). Those findings point to the possibility of gender and age differences in terms of QOL concerns and as factors contributing to distress. The findings also suggest that the aesthetic importance of the affected region might play a role in the experience of distress, warranting additional investigation.

The purpose of the current study was to develop a better understanding of the disease-specific QOL concerns in patients with NMSC. A secondary goal of the study was to determine the relationship between NMSC-specific QOL concerns and distress, indicative of anxiety and depression. Given that NMSC typically occurs in highly visible areas of the body and that treatment may result in disfigurement (Davis & Spencer, 1997; Jung et al., 2010; Ragi et al., 2010; Trakatelli et al., 2007), an important factor to consider in the relationship between NMSC-specific QOL concerns and distress is the importance that patients ascribe to their appearance. The current authors hypothesized that NMSC-specific QOL concerns would significantly predict distress (i.e., symptoms of anxiety and depression) and that beliefs of the importance

**Table 2. Distress, Quality of Life, and Importance of Appearance by Age and Gender**

Measure	Distress			Gender			Age (Years)							
	Low		High <sup>a</sup>	Female		Male	60 or Younger		61–70		71–80		Older Than 80	
	$\bar{X}$	SD	$\bar{X}$	$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD	
<b>HADS</b>														
Anxiety	2.79	2.52	10**	4.43	4.26	3.54	3.36	5.59	4.22	3.5	4.18	3.85	3.26	3.4
Depression	1.48	1.6	7**	2.18	3.15	2.87	2.42	2.46	2.63	2.14	3.2	2.91	3.26	1.66
Total	4.26	3.69	17**	6.61	6.98	6.42	5.52	8.05	6.09	5.64	7.18	6.76	6.32	4.72
<b>SCI</b>														
Emotional	74.92	24.15	57.62*	67.86	26.6	76.6	22.17	62.09	26.51	76.33	22.36	67.45	31	81.75
Social	90.65	11.57	75	87.19	15.18	88.7	16.67	81.53	14.63	92.14	14.1	84.23	20.8	92.22
Appearance	71.38	27.25	58.33	63.28	27.59	78.26	28.84	62.82	28.79	73.02	23.7	65.38	39.51	74.07
Total	78.98	18.09	63.65*	72.78	20.94	81.19	19.65	68.82	20.33	80.5	17.51	72.35	28.76	82.68
<b>IAS</b>	1.73	1.69	1.03	1.88	1.74	1.22	1.9	1.51	1.95	1.61	1.85	1.35	2.03	1.24

\* $p < 0.05$ ; \*\* $p < 0.001$

<sup>a</sup>High distress group refers to those with a HADS total score of 13 or greater.

HADS—Hospital Anxiety and Depression Scale; IAS—Importance of Appearance Scale; SCI—Skin Cancer Index

of appearance would significantly contribute to the relationship between QOL and distress. Such an understanding would be helpful for nurses, as they play a pivotal role in care of patients with cancer. As the first and most frequent point of contact for patient education and support, nurses need to be aware of the common concerns patients with NMSC are afflicted with, as well as be able to identify common indicators of potential underlying issues.

## Methods

### Participants and Design

From April to July 2010, a consecutive sample of patients treated for NMSC at the Skin Cancer Clinic of Jewish General Hospital in Montreal, Quebec, Canada, was approached for study participation. Ethics approval was obtained from the hospital prior to recruitment.

The inclusion criteria for this study were patients (a) with a primary diagnosis of BCC or SCC at any disease stage who had received surgery for NMSC, (b) 18 years of age and older, (c) who spoke English, and (d) without concurrent major illness. Seventy patients initially agreed to participate in the study. However, 11 had secondary diagnoses other than BCC or SCC and were removed from the final sample. In addition, three participants did not complete the full battery of questionnaires and also were removed from the participant pool, resulting in a total of 56 participants included in the final analyses.

The study used a cross-sectional design employing quantitative assessment instruments. The treating physician informed patients during a regularly scheduled clinic visit of the opportunity to participate in the study. Interested patients met with a research assistant who explained the research protocol and confirmed study eligibility. Once informed consent was obtained, participants individually completed a questionnaire battery, which took about 30 minutes.

### Measures

Sociodemographic (e.g., gender, age, education) as well as medical information (e.g., diagnosis, lesion site, time since diagnosis) were collected (see Table 1).

Psychological distress was assessed with the **Hospital Anxiety and Depression Scale (HADS)** (Zigmond & Snaith, 1983). This 14-item self-report measure is well established in nonpsychiatric hospital populations and has been extensively used in patients with and without cancer (Vodermaier, Linden, & Siu, 2009). The HADS is comprised of a depression and an anxiety subscale, with scores ranging from 0–21 for each subscale and a total maximum score of 42, with higher scores indicating higher psychological distress. The overall scale has been found to have adequate internal consistency ( $\alpha = 0.85$ )

**Table 3. Distribution of Skin Cancer Index Responses According to Gender, Level of Distress, and Age**

QOL Item <sup>a</sup>	Overall <sup>b</sup> (n = 56)		Gender				Distress				Age (Years)							
			Male (n = 23)		Female (n = 32)		Low (n = 46)		High (n = 10)		60 or Younger (n = 13)		61–70 (n = 21)		71–80 (n = 13)		Older Than 80 (n = 9)	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
7. Worried about future SCs	43	77	17	74	26	81	34	74	9	90	12	93	16	76	9	69	6	67
2. Anxious about the SC	39	70	17	74	21	66	30	65	9	90	11	85	13	62	8	62	7	78
13. Worried about scar size	35	63	10	44	24	75*	28	61	7	70	9	69	14	67	7	54	5	56
14. Worried about attractiveness	34	61	10	44	23	72*	27	59	7	70	9	69	13	62	6	46	6	67
15. Worried about scar noticeability	34	61	10	44	23	72*	27	59	7	70	10	77	14	67	6	46	4	44
4. Worried about the cause of SC	30	54	11	48	19	59	22	48	8	80	7	54	10	48	10	77	3	33
1. Worried SC may spread	29	52	11	48	18	56	22	48	7	70	8	62	12	57	6	46	3	33
5. Frustrated about the SC	28	50	10	44	17	53	21	46	7	70	6	46	10	48	6	46	6	67
6. Worried about getting more serious SC	28	50	10	52	15	47	23	50	5	50	8	62	10	48	6	46	4	44
9. Concern about family or friend worrying	28	50	9	39	18	56	22	48	6	60	10	77	9	42	5	39	4	44
3. Worry about family members' SC risk	21	39	5	24	16	50	16	35	6	63	7	54	6	29	5	42	3	33
8. Uncomfortable meeting new people	19	34	7	30	12	38	12	26	7	70	6	46	4	19	7	54	2	22
12. Embarrassed by the SC	19	34	8	35	11	34	13	28	6	60	8	62*	4	19	6	46	1	11
10. Worried about going out in public	17	30	10	44*	6	19	12	26	5	50*	5	39	5	24	5	39	2	22
11. Bothered by people's questions	9	16	3	13	6	19	6	13	3	30	3	23	2	10	4	31	9	–

\*  $p < 0.05$ <sup>a</sup> The shortened item descriptors follow Rhee et al., 2006.<sup>b</sup> Ranked according to endorsement rate in the overall sample. Endorsement rates were compared using chi-squares within groups.

QOL—quality of life; SC—skin cancer

Note. Emotional subscale: items 1–7; social subscale: items 8–12; appearance subscale: items 13–15

(Rodgers, Martin, Morse, Kendell, & Verrill, 2005). In addition, HADS performs well as a screening tool for the presence of symptoms of anxiety and depression (Bjelland, Dahl, Haug, & Neckelmann, 2002; Vodermaier et al., 2009; Walker et al., 2007).

The SCI is a 15-item self-report measure with greater responsiveness to skin cancer-related QOL concerns than general health-related QOL measures (Rhee et al., 2006, 2007). The SCI contains three subscales: emotional, social, and appearance, containing seven, five, and three items, respectively. Scores range from 0–100, with higher scores representing greater QOL. The SCI's three subscales possess excellent internal validity (emotional,  $\alpha = 0.91$ ; social,  $\alpha = 0.82$ ; appearance,  $\alpha = 0.92$ ) (Rhee et al., 2006).

The **Importance of Appearance Scale** was designed to assess the importance individuals place on three domains of body-esteem: general appearance, weight, and others' evaluation of one's body and appearance (Mendelson, Mendelson, & Andrews, 2000). Participants are asked to indicate the relative importance they ascribe to each of nine statements related to these domains. The current study used a combined score based on the two subscales that assess the importance of general appearance and the importance of others' evaluations of one's body and appearance. Scores range from –4 to 4, with higher scores indicating greater importance attributed to one's appearance. These combined subscales possess excellent internal validity ( $\alpha = 0.87$ ) (Lawrence, Fauerbach, & Thombs, 2006).

## Statistical Analyses

Prior to the analyses, the data were screened and met the assumptions of multivariate analysis. Four participants did not respond to one item each, which resulted in four data points missing completely at random on the HADS, which were replaced with nomothetic means. SPSS®, version 20, was used to conduct all of the analyses. To determine the prevalence of distress, a dichotomous variable was created using a previously established HADS cut-off score of 13, indicative of clinically significant distress (Singer et al., 2009). That resulted in two groups being formed: patients experiencing high levels of distress (HADS score of 13 or greater) and patients experiencing low levels of distress (HADS score of 12 or lower). In addition, a series of t tests were conducted to determine whether any differences existed between gender, distress, and age groups in terms of overall QOL scores. To explore the NMSC-specific QOL concerns of this sample, responses to SCI items were dichotomously coded as present or not present. Therefore, any form of positive response to the SCI items was coded as the presence of this QOL concern. Once the proportion of participants endorsing each item on the SCI was calculated, a series of chi-square analyses were performed

to determine whether any differences existed among the sample based on gender, level of distress, or age. Lastly, bivariate correlations and a multiple regression analysis was performed to determine the relationship between QOL, importance of one's appearance, and distress.

## Results

The final sample consisted of 32 women and 23 men (one participant did not report gender). Participants' ages ranged from 34–86 years ( $\bar{X} = 66.84$ ,  $SD = 11.65$ ).

The segregation of participants into two groups resulted in 10 participants being classified as experiencing high levels of distress and 46 as experiencing low levels of distress. In other words, 18% of patients with NMSC in the current study experienced symptoms indicative of clinically significant levels of psychological distress. Additional descriptive statistics for psychological distress can be found in Table 2.

Results indicate that patients experiencing higher levels of distress were more likely than patients experiencing low levels of distress to have lower QOL ( $t [54] = 2.22$ ,  $p < 0.05$ ), particularly in the emotional domain ( $t [54] = 2.05$ ,  $p < 0.05$ ). No differences were found across age groups or between men and women in terms of their QOL, ratings of importance of appearance, or levels of distress.

The distribution of participants that endorsed each item on the SCI, ranked according to the overall sample, is displayed in Table 3. The table also displays the proportion of participants that endorsed each item based on gender, distress level, and age.

The results of the chi-square analyses indicated that participants experiencing significant levels of distress were more likely than those experiencing low levels to endorse the statement "uncomfortable meeting new people" ( $\chi^2 = 7.07$ ,  $df = 1$ ,  $p < 0.05$ ). In addition, women were more likely than men to endorse all the items on the appearance subscale of the SCI. More specifically, women were more concerned about potential size ( $\chi^2 = 5.63$ ,  $df = 1$ ,  $p < 0.05$ ) and conspicuousness ( $\chi^2 = 4.5$ ,  $df = 1$ ,  $p < 0.05$ ) of the scar, as well as attractiveness ( $\chi^2 = 4.5$ ,  $df = 1$ ,  $p < 0.05$ ). Men, on the other hand, were more likely to be worried about going out in public ( $\chi^2 = 3.97$ ,  $df = 1$ ,  $p < 0.05$ ). In terms of age, participants younger than 60 years were more likely to report being embarrassed by their cancer ( $\chi^2 = 9.45$ ,  $df = 3$ ,  $p < 0.05$ ).

The correlations between all variables studied, as well as descriptive statistics, can be found in Table 4. Initially, demographic and medical variables (age, gender, and location of lesion) were to be used in the regression analysis as control predictors. However, those variables were not significantly correlated with distress ( $r = -0.18$ ;  $r = -0.02$ ;  $r = 0.1$ , respectively) and, as such, were not included as control predictors. Similarly, ratings of importance of appearance were not found to be significantly

**Table 4. Correlations and Descriptive Statistics for All Variables**

Measure	1	2	3	4	5	6	7	8
HADS–Anxiety								
HADS–Depression	0.76***							
HADS–Total	0.96***	0.92***						
SCI–Emotional	–0.32**	–0.28*	–0.32**					
SCI–Social	–0.48***	–0.41***	–0.48***	–0.69***				
SCI–Appearance	–0.29*	–0.11	–0.23*	0.67***	0.69***			
SCI–Total	–0.39**	–0.27*	–0.36**	–0.89***	0.85***	0.91***		
IAS	0.1	–0.12	0.01	–0.05	–0.12	–0.25*	–0.17	
Descriptive statistics								
• $\bar{X}$	4.07	2.46	6.54	71.83	87.86	69.05	76.25	1.61
• SD	3.87	2.84	6.3	24.9	15.55	28.81	20.47	1.8

\* $p < 0.05$ ; \*\* $p < 0.001$ ; \*\*\* $p < 0.001$

HADS—Hospital Anxiety and Depression Scale; IAS—Importance of Appearance Scale; SCI—Skin Cancer Index

Note. Numbers 1–8 correspond to the first eight measures listed, in that order.

correlated with overall distress in the sample and were excluded from the final regression analysis ( $r = 0.01$ ).

The combination of social-, emotional-, and appearance-related QOL significantly predicted psychological distress ( $F [3, 52] = 5.76, p < 0.01, R^2 = 0.25$ ) (see Table 5). The adjusted  $R^2$  value of 0.21 indicates that 21% of the variance in psychological distress in patients with NMSC can be predicted by their social-, emotional-, and appearance-related QOL concerns. Although the combination of these variables accounted for 21% of the variance, the social component of QOL was the only predictor contributing significantly to distress ( $\beta = -0.59, t [51] = -3.15, p = 0.003$ ).

## Discussion

The primary goal of the current study was to establish the disease-specific concerns of patients diagnosed with NMSC. The endorsement rates for NMSC-specific QOL concerns demonstrate that 77% of the patient sample, regardless of age, gender, or level of distress, was worried about skin cancer recurrence. That finding is consistent with previous research indicating the most common concerns of patients with skin cancer to be fear of tumor progression and developing another cancer in the future (Burdon-Jones, Thomas, & Baker, 2010).

Although previous research has reported that 45% of patients with NMSC were concerned about potential scarring (Burdon-Jones et al., 2010), the current study's results indicate that this number may have been underestimated, as more than half of the current sample reported concerns about the size (63%) and noticeability (61%) of the scar. Inconsistent with previous findings

indicating that women who face disfiguring treatments are at elevated risk for experiencing distress (Katz et al., 2003; Rhee et al., 2007), the current sample did not reveal gender differences. Rhee et al.'s (2007) sample, however, consisted of patients at a four-month follow-up, whereas 67% of the current study's participants were diagnosed at least six months before the study took place. Distress has been found to be the most elevated during the diagnosis and treatment phases and decreases over time (Cornish, Holterhues, van de Poll-Franse, Coebergh, & Nijsten, 2009). In addition, a large sample of patients with NMSC demonstrated that tumor-related QOL significantly improved following excision of the tumor (Chren et al., 2007). Thus, the longer time since diagnosis in the current sample may have allowed the patients to overcome the initial shock and adjust to the presence of the scar. Although they still were concerned about how the treatment affected their appearance, this did not contribute to their distress.

To the current authors' knowledge, this study is one of the first to report on the prevalence of distress in a NMSC population. About one in five patients (18%) with NMSC scored in a range indicative of clinically significant levels of distress. Interestingly, although 70% of the participants reported feeling anxious about their skin cancer, only 18% of them screened positive for clinically significant levels of distress. Therefore, a large proportion of patients with NMSC might be experiencing some level of anxiety. If unaddressed and combined with other life stressors, these symptoms could lead to more severe emotional disturbances, increasing the burden on patients as well as healthcare services. Therefore, screening

for distress may be a valuable preventive measure in the context of NMSC if followed up with adequate psychosocial interventions (Bultz & Johansen, 2011). Monitoring emotional distress as the “sixth vital sign” in patients with NMSC should be part of a stepped care model in which interventions differing in intensity regarding type and amount of the treatment are provided to meet an individual patient needs (Bower et al., 2013). That has the potential to respond to patients’ concerns and symptomology in a cost-effective manner and to prevent the development of more severe mental health problems, ultimately improving QOL (Richards et al., 2012). Mental health consequences of NMSC would be addressed early on, ensuring that patients would receive adequate supportive care to foster mental and physical health.

A secondary objective of the current study was to determine whether NMSC-specific QOL concerns, as well as importance of appearance, significantly predict distress. Surprisingly, the results did not support that hypothesis. In fact, importance of appearance was not significantly correlated with distress and was not entered into the regression model. However, the results do suggest that NMSC-specific QOL concerns significantly predict distress, which is consistent with previous research on the relationship between cancer-related health worries and psychological distress (Deimling, Bowman, Sterns, Wagner, & Kahana, 2006; Körner, Augustin, & Zschocke, 2011).

Given the age range of the sample, these results suggest that importance of appearance may not significantly contribute to distress for an older adult population of patients diagnosed with NMSC. That may be different for younger subsamples of patients and, as such, indicates a potential avenue for future research.

### Limitations

Limitations of the current study include the small sample size, which reduces the overall power of the conducted analyses. To obtain more conclusive results, the

## Knowledge Translation

Contrary to previous literature, the current study shows that patients with nonmelanoma skin cancer (NMSC) experience clinically relevant levels of anxiety and depressive symptoms.

Monitoring emotional distress within a stepped care approach is suggested as a means to improve the healthcare services provided to patients with NMSC.

Clinicians need to be aware of the quality-of-life concerns of patients with NMSC, who frequently indicate worries about current and future skin cancers as well as appearance-related issues such as scar size and attractiveness.

study should be replicated with a larger sample of patients diagnosed with NMSC. A second limitation is that a large proportion of the sample had been diagnosed at least six months prior to recruitment. Given the fact that distress is highest during the diagnosis and treatment phase, future research should focus on patients recently diagnosed and follow them throughout their treatment. Finally, as a result of recruitment procedures, it was not possible to keep a detailed record of patients declining study participation. As such, key variables that might differentiate individuals who declined versus consented to participate could not be examined.

## Implications for Nursing

The findings of the current study provide healthcare professionals such as nurses with a broad picture of the most prevalent NMSC-specific concerns, as well as the concerns of particular importance for different subgroups of patients. In addition, the results indicate that NMSC-related QOL concerns significantly predict distress manifested through symptoms of depression and anxiety. These findings highlight patient concerns, which the clinical care team should be aware of and prepared to address. Dermatologists, surgeons, and oncologists are core members of this clinical care team, and mental health professionals provide supportive care within the psychosocial oncology services available to patients with NMSC treated at tertiary care facilities (Körner & Fritzsche, 2012). However, nurses are the most immediate providers of psychosocial and informational support and often guide (formally and informally) patients in navigating the healthcare system, including resources available in the community (Beckstrand, Collette, Callister, & Luthy, 2012; Codier, Freitas, & Muneno, 2013; Gleeson et al., 2013; Loiselle et al., 2013). This professional group needs to be aware of the often-overlooked psychosocial effects of NMSC to adjust its own approach to patients when striving for optimal interdisciplinary oncology care (Schreiber,

**Table 5. Standardized Coefficients for Multiple Regression Analysis Predicting Distress**

Variable	B	SE B	$\beta$	t
Constant	25.161	4.636	–	5.428**
SCI–Emotional	–0.011	0.045	–0.045	–0.253
SCI–Social	–0.237	0.074	–0.585	–3.183*
SCI–Appearance	0.044	0.038	0.199	1.143

\* $p < 0.01$ ; \*\* $p < 0.001$

SCI—Skin Cancer Index; SE—standard error

Note.  $F(3, 52) = 5.76, p < 0.01, R^2 = 0.25, \text{Adjusted } R^2 = 0.21$

2013). In addition, as patients with NMSC frequently are seen in different clinical units (e.g., primary care, dermatology, oncology), initiating the dialogue with nursing colleagues outside of oncology is necessary to achieve the joint goal of providing best-practice care.

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Digital Object Identifier: 10.1188/14.ONF.57-65

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