

Importance of Physical Appearance in Patients With Skin Cancer

JOSEPH F. SOBANKO, MD,*† DAVID B. SARWER, PhD,†‡§ ZINTA ZVARGULIS, BS,||
AND CHRISTOPHER J. MILLER, MD*†

BACKGROUND Physical appearance influences nearly every aspect of human life—impacting how people are judged and subsequently treated by others.

OBJECTIVE To summarize the literature that addresses the psychosocial impact of facial scarring, with a particular emphasis on scarring after skin cancer treatment.

MATERIALS AND METHODS A comprehensive PubMed search was conducted to find articles related to scarring and appearance in the contexts of cutaneous oncology and surgical reconstruction. References from retrieved articles were also considered for review.

RESULTS Scars, especially on the head and neck, change physical appearance and can negatively impact psychosocial functioning. Medical professionals may underestimate the importance of physical appearance for patients with skin cancer. Validated patient-reported outcome (PRO) tools may prove better than objective scar ratings to identify patients who may experience psychosocial impairment from scarring.

CONCLUSION Scarring after skin cancer surgery can profoundly affect psychosocial functioning. Perioperative use of validated PRO tools can help to identify patients with scar concerns. Heightened awareness of patients' psychosocial status will allow practitioners to offer appropriate counseling or support.

D. B. Sarwer discloses that he has consulting relationships with BAROnova, Enteromedic, and Ethicon. These relationships have had no impact on the content of this manuscript. The other authors have indicated no significant interest with commercial supporters.

Physical appearance influences nearly every aspect of the lives, including interpersonal relationships, personal sense of well-being, employment opportunities, and financial compensation.^{1–5} Americans spend more than \$12 billion per year on cosmetic procedures to enhance their appearance.⁶ The epidemic of skin cancer affects a growing number of Americans, and surgeries to treat their tumors can leave scars that change their physical appearance and negatively impact psychosocial functioning. This article reviews the literature documenting the

influence of physical appearance and facial scarring on psychosocial functioning in patients with skin cancer and provides suggestions for the identification and management of patients at risk for psychosocial impairment from scarring.

Facial Scarring Affects Identity

Americans place a high value on maintaining and preserving a “normal” physical appearance. Although it is difficult to define a “normal” facial appearance,

**Division of Dermatologic Surgery and Cutaneous Oncology, Department of Dermatology, Perelman School of Medicine, University of Pennsylvania, Philadelphia, Pennsylvania; †Edwin and Fannie Gray Hall Center for Human Appearance, University of Pennsylvania, Philadelphia, Pennsylvania; ‡Departments of †Psychiatry and §Surgery, University of Pennsylvania, Philadelphia, Pennsylvania; ||School of Medicine, Thomas Jefferson University, Philadelphia, Pennsylvania*

individuals within and across races consistently rate appearance more favorably when faces are symmetric⁷ and have traits such as skin health and color that represent averages, rather than extremes, of a population.⁸ People with facial disfigurement are often stigmatized for appearing different than “normal”⁹ and may be considered “dysfunctional” by others.^{10,11} Strangers who observe photographs of people with facial abnormalities such as scars are more likely to judge them as dishonest, unsuitable for employment, unintelligent, and unattractive.¹²

If a person has visible scarring, gaze patterns of observers deviate to the site of the scar.¹³ Those with noticeable scars may grow self-conscious when they recognize the altered gaze patterns of onlookers, and the perceived stigma may interfere with communication skills, personal relationships, work life, and leisure activities.¹⁴ To avoid disfigurement, the majority of adults would “go to any lengths to minimize scarring, even if they resulted in only small improvements in scar appearance.”¹⁵ In 1 study, half of adults were so averse to scars of the face that they would risk at least a 7% chance for death to obtain a normal physical appearance, and more than 13% of adults would accept a 30% to 45% risk for death to obtain a normal face.¹⁰

The Psychosocial Impact of Scarring After Skin Cancer Surgery

The psychosocial impact of scarring from the treatment of facial skin cancers affects patients across all demographics. Whereas younger patients tend to experience the greatest preoperative anxiety levels,¹⁶ elderly patients also express great concern for their physical appearance.¹⁷ Men and women may express equal concern about the appearance of a scar.¹⁵ Some patients fear the prospect of facial disfigurement from surgery for cancer of the face even more than the possibility of postoperative limitations in vision, breathing, or speech.^{18–20} Furthermore, high levels of preoperative anxiety about possible disfigurement can diminish the ability to cope effectively after surgery.^{21,22}

The satisfaction of patient with skin cancer correlates significantly with the final aesthetic outcome of surgery.²³ Postoperatively, many patients report dissatisfaction

with their appearance, especially if multiple treatment modalities are used (e.g., surgery plus radiation).^{24–26} Patients may be dissatisfied if their surgical scar is larger than expected.²⁷ As patients try to reconcile the memory of their appearance before surgery, their notion of ideal appearance, and the actual appearance after surgery,¹⁶ many will struggle to adapt to the changes in their appearance.²⁸ Anxiety about appearance and social isolation after skin cancer surgery can result in a decreased quality of life (QOL), which can have economic implications for some patients.^{17,29–31} Among the 13% of cancer survivors who quit work for cancer-related reasons, patients with head and neck cancer have the highest adjusted risk for going on medical disability because of the psychosocial burden of dysfunction and disfigurement.^{32,33}

Medical professionals may underestimate and misinterpret the importance of physical appearance and scarring for patients.³⁴ Patients report that their scars can be dismissed as trivial by their clinician,¹⁴ or they believe more concerned with their own facial scarring than their surgeon.¹⁵ However, the degree of patient psychosocial distress is not associated with the objective severity or size of a scar but rather the perceptions of scar severity by the patient. Even if onlookers grade a scar to be acceptable by objective criteria, the patients’ own subjective assessment of the scar visibility is the primary influence on patients’ psychosocial morbidity.³⁷ What some clinicians may consider nominal scarring may translate into substantial anxiety and self-consciousness for patients.³⁸ This point is underscored by the observation that some patients with scars in nonvisible locations can experience worse psychological stress than patients with visible scars.³⁷

Instruments to Measure Patient-Reported Outcomes for Skin Cancer Treatment May Help to Quantify Psychosocial Distress

Although numerous instruments have been validated to measure scar appearance,³⁹ objective assessment of scar appearance does not necessarily correlate with the degree of psychosocial distress.^{35,36} To assess the psychosocial impact of scarring after surgery for skin cancer, patient-reported outcome (PRO) instruments may prove most useful. Patient-reported outcome

instruments that assess changes in QOL and other relevant psychosocial domains are increasingly recognized by the Agency for Healthcare Research and Quality, as well as other agencies such as the Food and Drug Administration and National Institutes of Health as important treatment outcomes.⁴⁰ Such QOL instruments have been used for patients with psoriasis, acne, and atopic dermatitis.^{41–43} However, these general QOL instruments have less relevance for patients with skin cancer.⁴⁴ In particular, existing tools created for patients with melanoma are not generalizable to patients with other skin cancer, as their validation occurred in a population with advanced disease who often struggle with different preoperative and postoperative concerns.^{44–46}

Recent review articles have identified the most relevant PRO tools for use in patients with nonmetastatic facial skin cancer.^{47–49} There are presently 5 validated tools available for research and clinical use (Table 1). Although these questionnaires are designed to obtain baseline information and identify changes that occur with treatment, they have limited capability to elicit concerns about physical appearance and scarring. Among these 5 tools, the Facial Skin Cancer Index (FSCI) is most helpful to investigate scar concerns, as it possesses an appearance subscale specific to scar visibility (Figure 1).⁴⁸

The Patient-Reported Impact of Scars Measure (PRISM) offers an alternative to these previously validated PRO instruments.⁵⁵ Although it was not developed and validated specifically in a skin cancer population, the PRISM provides an alternative measure to quantify the impact of scarring on patients. This 37-item tool is consisted of 13

questions related to scar symptoms (e.g., “my scar itches a lot”) and 24 questions related to QOL (e.g., “my scar affects my confidence”). The PRISM allows for monitoring of patient progression through treatment and also can be used to compare subgroups of patients. Use of the PRISM in conjunction with measures of scar severity such as the Vancouver Scar Scale can provide a comprehensive global scar severity assessment. Although the PRISM has not been used with skin cancer patients, future studies will be helpful to assess its utility.⁵⁶

Attention to Psychosocial Concerns May Improve Outcomes for Patients With Skin Cancer

Addressing the psychosocial concerns about scarring may improve outcomes after treatment of skin cancer. High levels of preoperative anxiety about possible disfigurement can diminish the ability to cope effectively after surgery.^{21,22} Conversely, patients with better preoperative coping ability predict a better postoperative behavioral response.¹⁶ Patients with better pretreatment skin-related QOL, less comorbidity, and better mental health status are more likely to have better skin-related QOL and long-term satisfaction after nonmelanoma skin cancer (NMSC) treatment.^{57,58} Rumsey and Harcourt⁵⁹ believe that many of these positive attributes buffer a patient from the distress of physical appearance alteration.

Previous studies have shown that skin cancer patients with the highest risk for anxiety are young, female, and have tumors on visible locations.^{60,61} The aforementioned PRO instruments may help identify patients with psychosocial distress in other demographic groups. For example, Caddick and colleagues⁶⁰ suggest that patients with lower FSCI scores be offered support services, such as self-help handouts, ready access to support organizations, and engaging friends or relatives for support, to cope with the effects of treatment, and recovery.

Referral to mental health professionals may be considered when the psychosocial burden is particularly great. Much of the literature that addresses coping strategies for altered facial appearance focuses on

TABLE 1. Skin Cancer–Specific Instruments

Skin Cancer–Specific Instruments

1. European Organization for Research and Treatment of Cancer Quality of Life Questionnaire—Melanoma Module (EORTC QLQ-M)⁵¹
2. Functional Assessment of Cancer Therapy—Melanoma (FACT-M)⁵²
3. Facial Skin Cancer Index (FSCI)⁵³
4. Skin Cancer Quality of Life Impact Tool (SCQOLIT)⁵⁴
5. SCQOL⁵⁵

Skin Cancer Index (SCI)

The following questions ask about your views on skin cancer or its treatment and how it may affect you socially, at work, or at home, and other areas of concern. For each of the following, please indicate how much your skin cancer affects your life by marking an "X" in the **one** box that most closely matches how you feel at the present time.

During the past month, how much have you..

	Very Much	Quite a Bit	Moderately	A Little Bit	Not at All
1. Worried that your skin cancer will spread to another part of your body?					
2. Felt anxious about your skin cancer?					
3. Worried that family members may also develop skin cancer?					
4. Worried about the cause of skin cancer?					
5. Felt frustrated about your skin cancer?					
6. Worried that your tumor may become a more serious type of skin cancer?					
7. Worried about new skin cancers occurring in the future?					
8. Felt uncomfortable when meeting new people?					
9. Felt concerned that your skin cancer may worry friends or family?					
10. Worried about the length of time before you can go out in the public?					
11. Felt bothered by people's questions related to your skin cancer?					
12. Felt embarrassed by your skin cancer?					
13. Worried about how large the scar will be?					
14. Thought about how skin cancer affects your attractiveness?					
15. Thought about how noticeable the scar will be to others?					

Figure 1. Skin Cancer Index.

patients with significant facial disfigurement, a group of patients who shares limited similarities with patients with traditional skin cancer. Some psychological interventions have offered benefit for those with altered facial appearance. Cognitive behavioral therapy (CBT) has shown to improve body image, QOL, and self-esteem in patients with vitiligo and is often the first line of treatment for individuals suffering from significant facial disfigurement.^{5,62,63} Patients in a disfigurement support unit experienced reduced anxiety, depression, and appearance-related distress with CBT.⁶⁴ Social interaction skill workshops for disfigured patients also reduced anxiety and social distress in disfigured patients.⁶⁵ However, a systematic review conducted on psychosocial interventions for patients with “visible differences” reported that the current strength of the evidence is limited.⁶⁶ Because of limited methodological quality and an inability to compare various interventions, the

authors of the systematic review failed to produce favorable findings that other reviews reported.⁶⁷

Considering this, dermatological surgeons may want to consider screening for psychosocial distress—impairment in QOL, body image dissatisfaction, depression, and anxiety—in certain groups of patients with skin cancer (e.g., instances where significant facial deformity is anticipated or when a patient expressly admits to poor coping abilities). Additional studies for evaluation and management of psychosocial distress and scar concerns are warranted, but it has already been demonstrated that young females with NMSC and patients with tumors located on the lip are at risk for diminished QOL from their skin cancer.⁶⁸ Conversely, patients who are younger (<50 years old), have no prior NMSCs, and undergo less complex reconstructions experience significantly greater QOL improvement after

skin cancer treatment.⁶⁸ If the surgeon and his or her staff have concerns about their ability to address the psychosocial status of a patient, referral to a known mental health professional (ideally someone with interest or expertise in health psychology, physical appearance, and body image) is recommended.^{63,69}

Conclusion

The growing number of skin cancer surgeries in the United States can leave scars that alter patient physical appearance and may dramatically decrease patient psychosocial functioning. Understanding the psychosocial impact of surgery for skin cancer can help physicians to improve the informed consent process as well as preoperative and postoperative counseling. Patient outcomes can be optimized by selecting the treatment modality that not only eradicates the skin cancer but also meets patient expectations regarding physical appearance.

References

- Speltz ML, Richman L. Progress and limitations in the psychological study of craniofacial anomalies. *J Pediatr Psychol* 1997;22:433–8.
- Tietje LCS. Is “lookism” unjust? the ethics of aesthetics and public policy implications. *J Libert Stud* 2005;19:31–50.
- Biddle JE, Hamermesh DS. Beauty and the labor market. *Am Econ Rev Environ Health* 1994;84:1174–94.
- Pope AW, Ward J. Factors associated with peer social competence in preadolescents with craniofacial anomalies. *J Pediatr Psychol* 1997;22:455–69.
- Sarwer DB, Magee L. Physical appearance, society. In: Sarwer DB, Pruzinsky T, Cash TF, Goldwyn RM, Persing JA, Whitaker LA, editors. *Psychological aspects of reconstructive and cosmetic plastic surgery: clinical, empirical, and ethical perspectives*. Philadelphia: Lippincott Williams & Wilkins; 2006; pp. 23–36.
- Singer N. Vanity’s Downturn: Botox Use, and Allergan Sales, Dip. *NYTimes.com* 2009. Available from: http://www.nytimes.com/2009/02/05/business/05allergan.html?_r=0. Accessed October 27, 2009.
- Moller AP. Developmental stability and fitness: a review. *Am Nat* 1997;149:916–32.
- Little AC, Jones BC, DeBruine LM. Facial attractiveness: evolutionary based research. *Philos Trans R Soc Lond B Biol Sci* 2011;366:1638–59.
- Goffman E. *Stigma: notes on the management of spoiled identity*. Prentice-Hall: Englewood Cliffs, 1963.
- Borah GL, Rankin MK. Appearance is a function of the face. *Plast Reconstr Surg* 2010;125:873–8.
- Kim YJ, Park JW, Kim JM, Park SH, et al. The functionality of facial appearance and its importance to a Korean population. *Arch Plast Surg* 2013;40:715–20.
- Rankin M, Borah GL. Perceived functional impact of abnormal facial appearance. *Plast Reconstr Surg* 2003;111:2140–6; discussion 7–8.
- Ishii L, Carey J, Byrne P, Zee DS, et al. Measuring attentional bias to peripheral facial deformities. *Laryngoscope* 2009;119:459–65.
- Brown BC, McKenna SP, Siddhi K, McGrouther DA, et al. The hidden cost of skin scars: quality of life after skin scarring. *J Plast Reconstr Aesthet Surg* 2008;61:1049–58.
- Young VL, Hutchison J. Insights into patient and clinician concerns about scar appearance: semiquantitative structured surveys. *Plast Reconstr Surg* 2009;124:256–65.
- Dropkin MJ. Body image and quality of life after head and neck cancer surgery. *Cancer Pract* 1999;7:309–13.
- Steinbauer J, Koller M, Kohl E, Karrer S, et al. Quality of life in health care of non-melanoma skin cancer—results of a pilot study [in English, German]. *J Dtsch Dermatol Ges* 2011;9:129–35.
- Koster ME, Bergsma J. Problems and coping behaviour of facial cancer patients. *Soc Sci Med* 1990;30:569–78.
- van Doorne JM, van Waas MA, Bergsma J. Facial disfigurement after cancer resection: a problem with an extra dimension. *J Invest Surg* 1994;7:321–6.
- Mast BA. Functional outcomes of microsurgical reconstruction of delayed complications following head and neck cancer ablation. *Ann Plast Surg* 1999;42:40–5.
- Langius A, Bjorvell H, Lind MG. Oral- and pharyngeal-cancer patients’ perceived symptoms and health. *Cancer Nurs* 1993;16:214–21.
- Scott DW. Anxiety, critical thinking and information processing during and after breast biopsy. *Nurs Res* 1983;32:24–8.
- Dixon AJ, Dixon MP, Dixon JB. Prospective study of long-term patient perceptions of their skin cancer surgery. *J Am Acad Dermatol* 2007;57:445–53.
- Liu HE. Changes of satisfaction with appearance and working status for head and neck tumour patients. *J Clin Nurs* 2008;17:1930–8.
- Lockhart JS. Nurses’ perceptions of head and neck oncology patients after surgery: severity of facial disfigurement and patient gender. *ORL Head Neck Nurs* 1999;17:12–25.
- List MA, Siston A, Haraf D, Schumm P, et al. Quality of life and performance in advanced head and neck cancer patients on concomitant chemoradiotherapy: a prospective examination. *J Clin Oncol* 1999;17:1020–8.
- Cassileth BR, Lusk EJ, Tenaglia AN. Patients’ perceptions of the cosmetic impact of melanoma resection. *Plast Reconstr Surg* 1983;71:73–5.
- Dropkin MJ. Coping with disfigurement and dysfunction after head and neck cancer surgery: a conceptual framework. *Semin Oncol Nurs* 1989;5:213–9.
- Bjorland K, Kaasa S, Mastekaasa A. Quality of life in patients treated for head and neck cancer: a follow-up study 7 to 11 years after radiotherapy. *Int J Radiat Oncol Biol Phys* 1994;28:847–56.
- McDonough EM, Varvares MA, Dunphy FR, Dunleavy T, et al. Changes in quality-of-life scores in a population of patients treated for squamous cell carcinoma of the head and neck. *Head Neck* 1996;18:487–93.
- Morton RP, Davies AD, Baker J, Baker GA, et al. Quality of life in treated head and neck cancer patients: a preliminary report. *Clin Otolaryngol Allied Sci* 1984;9:181–5.
- Short PF, Vasey JJ, Tunceli K. Employment pathways in a large cohort of adult cancer survivors. *Cancer* 2005;103:1292–301.
- Spelten ER, Sprangers MA, Verbeek JH. Factors reported to influence the return to work of cancer survivors: a literature review. *Psychooncology* 2002;11:124–31.

34. Bull R, Rumsey N. The Social psychology of facial appearance. Springer Vale: New York, 1988.
35. Partridge J, Rumsey N. Skin scarring: new insights may make adjustment easier. *BMJ* 2003;326:765.
36. Sarwer DB, Crerand CE, Magee L. Cosmetic surgery and changes in body image. In: Cash TF, Smolak L, editor. *Body image: a handbook of science, practice, and prevention*. 2nd ed. New York: Guilford; 2011; pp. 394–403.
37. Brown BC, Moss TP, McGrouther DA, Bayat A. Skin scar preconceptions must be challenged: importance of self-perception in skin scarring. *J Plast Reconstr Aesthet Surg* 2010;63:1022–9.
38. Tebble NJ, Adams R, Thomas DW, Price P. Anxiety and self-consciousness in patients with facial lacerations one week and six months later. *Br J Oral Maxillofac Surg* 2006;44:520–5.
39. Roques C, Teot L. A critical analysis of measurements used to assess and manage scars. *Int J Low Extrem Wounds* 2007;6:249–53.
40. Lohr K. Quality measures: patient-reported outcomes for quality improvement of clinical practice national quality measures clearinghouse 2012. Available from: <http://www.qualitymeasures.ahrq.gov/expert/printview.aspx?id=36851>. Accessed February 24, 2013.
41. Klassen AF, Newton JN, Mallon E. Measuring quality of life in people referred for specialist care of acne: comparing generic and disease-specific measures. *J Am Acad Dermatol*. 2000;43(2 Pt 1):229–33.
42. Linnet J, Jemec GB. An assessment of anxiety and dermatology life quality in patients with atopic dermatitis. *Br J Dermatol* 1999;140:268–72.
43. Badia X, Mascaro JM, Lozano R. Measuring health-related quality of life in patients with mild to moderate eczema and psoriasis: clinical validity, reliability and sensitivity to change of the DLQI. The Cavide Research Group. *Br J Dermatol* 1999;141:698–702.
44. Rhee JS, Loberiza FR, Matthews BA, Neuburg M, et al. Quality of life assessment in nonmelanoma cervicofacial skin cancer. *Laryngoscope* 2003;113:215–20.
45. Cornish D, Holterhues C, van de Poll-Franse LV, Coebergh JW, et al. A systematic review of health-related quality of life in cutaneous melanoma. *Ann Oncol* 2009;20(Suppl 6):vi51–8.
46. Burdon-Jones D, Thomas P, Baker R. Quality of life issues in nonmetastatic skin cancer. *Br J Dermatol* 2010;162:147–51.
47. Gibbons E, Casanas i Comabella C, Fitzpatrick R. A structured review of patient-reported outcome measures for patients with skin cancer, 2013. *Br J Dermatol*. 2013;168:1176–86.
48. Lee EH, Klassen AF, Nehal KS, Cano SJ, et al. A systematic review of patient-reported outcome instruments of nonmelanoma skin cancer in the dermatologic population. *J Am Acad Dermatol* 2013;69:e59–67.
49. Bates AS, Davis CR, Takwale A, Knepp GJ. Patient-reported outcome measures in nonmelanoma skin cancer of the face: a systematic review. *Br J Dermatol* 2013;168:1187–94.
50. Aaronson NK, Ahmedzai S, Bergman B, Bullinger M, et al. The European Organization for Research and Treatment of Cancer QLQ-C30: a quality-of-life instrument for use in international clinical trials in oncology. *J Natl Cancer Inst* 1993;85:365–76.
51. Cormier JN, Davidson L, Xing Y, Webster K, et al. Measuring quality of life in patients with melanoma: development of the FACT-melanoma subscale. *J Support Oncol* 2005;3:139–45.
52. Matthews BA, Rhee JS, Neuburg M, Burzynski ML, et al. Development of the facial skin care index: a health-related outcomes index for skin cancer patients. *Dermatol Surg* 2006;32:924–34; discussion 34.
53. Burdon-Jones D, Gibbons K. The Skin Cancer Quality of Life Impact Tool (SCQOLIT): a validated health-related quality of life questionnaire for non-metastatic skin cancers. *J Eur Acad Dermatol Venereol* 2013; 27:1109–13.
54. Vinding GR, Christensen KB, Esmann S, Olesen AB, et al. Quality of life in non-melanoma skin cancer—the skin cancer quality of life (SCQoL) questionnaire. *Dermatol Surg* 2013;39:1784–93.
55. Brown BC, McKenna SP, Solomon M, Wilburn J, et al. The patient-reported impact of scars measure: development and validation. *Plast Reconstr Surg* 2010;125:1439–49.
56. Durani P. Patient assessments of scarring: patient-reported impact of scars measure or patient scar assessment questionnaire? *Plast Reconstr Surg* 2011;127:1744–5.
57. Chen T, Bertenthal D, Sahay A, Sen S, et al. Predictors of skin-related quality of life after treatment of cutaneous basal cell carcinoma and squamous cell carcinoma. *Arch Dermatol* 2007;143:1386–92.
58. Asgari MM, Bertenthal D, Sen S, Sahay A, et al. Patient satisfaction after treatment of nonmelanoma skin cancer. *Dermatol Surg* 2009;35:1041–9.
59. Rumsey N, Harcourt D. Body image and disfigurement: issues and interventions. *Body Image* 2004;1:83–97.
60. Caddick J, Green L, Stephenson J, Spyrou G. The psycho-social impact of facial skin cancers. *J Plast Reconstr Aesthet Surg* 2012;65: e257–9.
61. Kasparian NA, McLoone JK, Butow PN. Psychological responses and coping strategies among patients with malignant melanoma: a systematic review of the literature. *Arch Dermatol* 2009;145:1415–27.
62. Papadopoulos L, Bor R, Legg C. Coping with the disfiguring effects of vitiligo: a preliminary investigation into the effects of cognitive-behavioural therapy. *Br J Med Psychol* 1999;72(Pt 3):385–96.
63. Block AR, Sarwer DB. Presurgical psychological screening: understanding patients, improving outcomes. Washington: American Psychological Association; 2013; pp. 296.
64. Kleve L, Rumsey N, Wyn-Williams M, White P. The effectiveness of cognitive-behavioural interventions provided at Outlook: a disfigurement support unit. *J Eval Clin Pract* 2002;8:387–95.
65. Robinson E, Rumsey N, Partridge J. An evaluation of the impact of social interaction skills training for facially disfigured people. *Br J Plast Surg* 1996;49:281–9.
66. Bessell A, Moss TP. Evaluating the effectiveness of psychosocial interventions for individuals with visible differences: a systematic review of the empirical literature. *Body Image* 2007;4:227–38.
67. Jarry JL, Ip K. The effectiveness of stand-alone cognitive-behavioural therapy for body image: a meta-analysis. *Body Image* 2005;2: 317–31.
68. Rhee JS, Matthews BA, Neuburg M, Logan BR, et al. The skin cancer index: clinical responsiveness and predictors of quality of life. *Laryngoscope* 2007;117:399–405.
69. Sarwer DB. Psychological assessment of cosmetic surgery patients. In: Sarwer DB, Pruzinsky T, Cash TF, Goldwyn RM, Persing JA, Whitaker LA, editors. *Psychological aspects of reconstructive and cosmetic plastic surgery: clinical, empirical, and ethical perspectives*. Philadelphia: Lippincott Williams & Wilkins; 2006; pp. 267–83.

Address correspondence and reprint requests to: Joseph F. Sobanko, MD, Perelman Center for Advanced Medicine, 3400 Civic Center Boulevard, Rm1-330S, Philadelphia, PA 19104, or e-mail: Joseph.sobanko@gmail.com