

Assessing Skin Cancer Screening in a Student-Run Healthcare Clinic

Creative solutions could increase skin cancer screening rates, especially among patients whose risk may be underestimated.

BY CINDY WASSEF, BA AND STEVEN E. KELLER, PHD

The incidence of skin cancer is on the rise, with the Skin Cancer Foundation estimating that one of every six Americans will develop skin cancer in their lifetime.¹ In order for there to be optimum detection and treatment, primary prevention in the form of regular, yearly screening and detection of skin cancer is imperative. Furthermore, regular screening is necessary in order to more successfully perform secondary preventive/treatment measures, such as excision and biopsy. Primary care physicians play a central role in this screening because of the frequency of patient contacts. Skin cancer screening rates in primary care settings have been low, with one national study reporting a rate of 15.8 percent among family practitioners and internists.² Considering that 40 percent of doctors visits are to a primary care physician, an improvement in their screening rates can lead to a significant increase in the detection and prevention of skin cancer.³

One reason for the low screening rates may be the ambiguous screening guidelines offered to physicians. Many different organizations have published their suggestions, but no consensus statement has been issued. The United States Preventive Services Task Force (USPSTF) has concluded that the current evidence is “insufficient to assess the balance of benefits and harms of using a

Despite the fact that skin cancer is the most prevalent cancer in the United States, vague screening recommendations and inadequate screening are still commonplace.

whole-body skin examination by a primary care clinician or patient skin self-examination for the early detection of cutaneous melanoma, basal cell cancer, or squamous cell skin cancer in the adult general population.”⁴ The American Cancer Society suggests periodic screening for skin cancer during routine cancer-related checkups, although no specific exam frequency is specified.⁵ The American Academy of Dermatology suggests initial screening for those who have never had an assessment and regular follow-up for those previously diagnosed with skin cancer but gives no interval for screening frequency because of the variability of need from person to person.⁶

While the above organizations heavily advocate sun protection for the prevention of skin cancer, it is important to

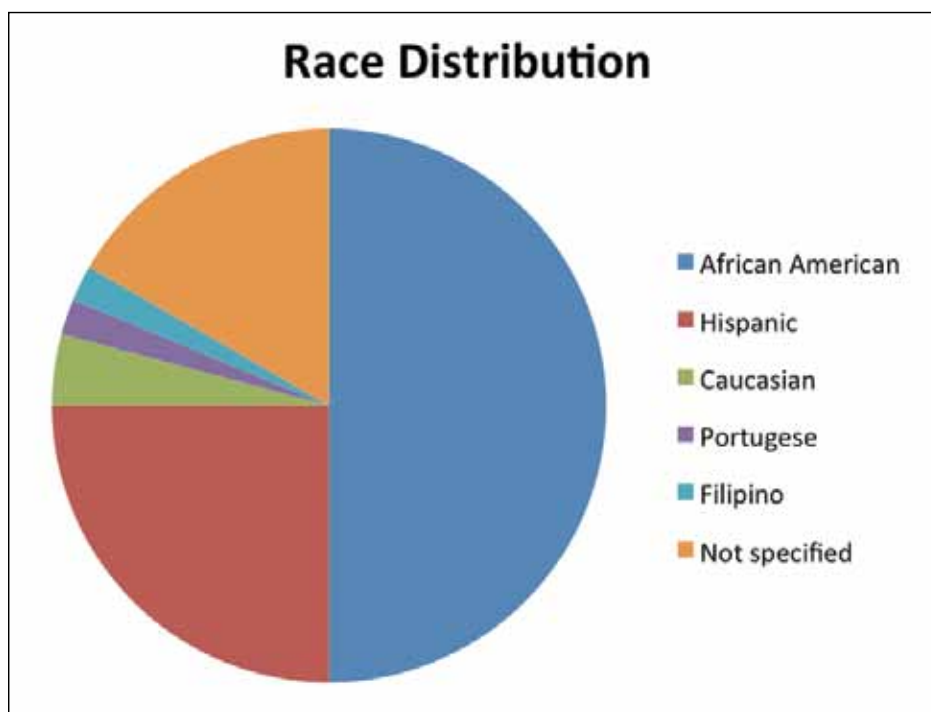


Figure 1. Race/ethnicity distribution of patients reviewed.

take note that other factors play a role in the development of skin cancer, especially in different ethnic groups. Non-melanoma skin cancer is more common in fair-skinned people and is uncommon in Black, Hispanic, and Asian populations. Unlike in the Caucasian population, amount of sun exposure does not correlate to formation of squamous cell carcinoma in black populations. Black populations tend to develop squamous cell carcinomas in non-sun exposed areas and in sites of prior scars, trauma, burn injuries, ulcers, and inflammatory skin conditions.¹

Despite the fact that skin cancer is the most prevalent cancer in the United States, vague screening recommendations and inadequate screening are still commonplace. Considering the widely accepted fact that early detection of skin cancer leads to more favorable outcomes, it is imperative that primary care providers be diligent in screening. The objective of our study was to perform a qualitative assessment through a retrospective chart review to assess whether our student-run primary care clinic was meeting the guidelines set forth by the USPSTF, American Cancer Society, and the American Academy of Dermatology.

MATERIALS AND METHODS

A chart review was conducted in the Student Family Healthcare Center (SFHCC), Newark, NJ, a student-run

volunteer healthcare center that provides services to adults in the Newark, NJ area. Each patient is examined by a team of four to five medical students at various levels of education and then seen by a supervising attending physician. Students are responsible for gathering patient history, preliminary physical examination, as well as preventive counseling. Fifty charts were randomly selected for review. Information from all visits were reviewed to assess skin cancer screening as defined by the guidelines set forth by the USPSTF, American Cancer Society, and American Academy of Dermatology. Other data, including age, ethnicity, gender, whether patient was screened for skin cancer, how many times they were screened, length of time the person had been a

patient at the clinic, and whether they had any risk factors for the development of skin cancer based upon their ethnicity, were also assessed. Positive screening was defined as any notation in the patients' chart mentioning skin cancer screening during any encounter.

ANALYSIS

Fifty randomly selected charts were reviewed during fall 2012. The median age of the patients was 46.76. The gender distribution was 38 percent male and 62 percent female. Racial/ethnic distribution was 48 percent African American, 24 percent Hispanic, four percent Caucasian, four percent Asian, two percent Portuguese, two percent Filipino, and 16 percent for whom race was not indicated (Figure 1). The average length of time as a patient of the SFHCC was 29.44 months. Of these patients, a total of 40 (80 percent) had been screened for skin cancer at some point during their time as a patient at the SFHCC. These patients had been screened for skin cancer a total of 110 times for an average of 2.75 screenings per person. Given the average length of time as patient being 29.4 months or 1.2 years, the average person received 2.2 screenings per year.

Among African Americans, 18 of the 24 (75 percent) included in the study were screened for skin cancer. Of the 18 screened, 10 (56 percent) had risk factors, such as trauma and previous scars, that predisposed them to the develop-

ment of skin cancer. Two patients with risk factors were not screened for skin cancer.

DISCUSSION

Skin cancer screening rates in this student-run health care clinic were 80 percent—higher than the 15.8 percent reported by a national study of family practitioners and internists; no studies were available through our PubMed search regarding screening rates in other student-run clinics. The high screening rates could be attributed to many causes, including increased emphasis on screening in medical student education, prompts present in the electronic medical record system that may increase the frequency with which screening is conducted, and expanded amounts of time for patient visits, which allows for greater attention to preventive care services. Given the urban population that the clinic serves, it is important to screen not only every patient but also pay particular attention to risk factors specifically for the African American community. Special care should be taken to routinely examine any areas of trauma, scars, burn injuries, or inflammatory conditions.

Further assessment of skin cancer screening among medical students in this clinic can be studied through surveys of students, assessing their knowledge of currently recommended skin cancer screening, how often screening is performed, and their knowledge of culturally specific parameters for screening. In one study, fourth-year medical students from seven medical schools were surveyed regarding their experience with and the amount of education received during medical school about skin cancer examinations and their level of comfort when performing the exam. Among the 659 students who completed the survey, 22.9 percent had never observed a skin cancer examination, 26.7 percent had never been trained to perform a skin cancer examination, and 43.4 percent reported never having had a chance to practice the examination. When asked if skin cancer examination was underemphasized in their medical education, 46.6 percent of students somewhat agreed, and 22 percent strongly agreed. With regard to skill level when performing a skin cancer examination, 18.8 percent of students described themselves as very unskilled, while 32.3 percent described themselves as somewhat unskilled.⁷ Such results are especially disturbing, considering that anywhere from 30 percent to 54 percent of students surveyed at each medical school reported their intention of entering the field of primary care, a field which traditionally has arguably the greatest opportunity to perform screenings because of increased patient encounters.^{2,7}

Providing students with more tools, such as dermoscopes, may also increase the accuracy of screening. Past studies have found that providing students with both

tools and teaching can enhance their skin cancer screening efficacy. In one study, medical students were divided into two groups: one receiving a skin cancer examination lecture alone and one receiving the same lecture as well as a dermoscopy tutorial. Students were asked to assess images of 10 lesions prior to and after their respective interventions. Those receiving the dermoscopy tutorial were also given dermoscopic images along with the lesional images. When comparing pre- and post-intervention diagnosis, students in the group that received both the lecture and dermoscopy tutorial had significant improvement in correctly identifying lesions, compared to the group who received only a lecture ($p < .001$). Overall, the group receiving the combination intervention rather than lecture alone had less of a decline in diagnostic accuracy in seven of the 10 lesions.⁸

Documentation regarding recommendations for self-skin examinations, yearly in-office skin examinations, and suggestions for sunscreen use were not seen in any of the charts reviewed. This counseling is essential for the continued preventive care of patients against skin cancer. Studies have shown the rates of yearly self-skin examination to be between 23 percent to 61 percent and yearly clinical skin exams to be between eight percent to 21 percent.⁹ Based upon these results, there is clearly room for improvement. Diligent screening is especially important in high-risk populations, including those with a family history for skin cancer and for whom occupational exposure predisposes them to skin cancer development. In a study of patients at high-risk for developing skin cancer, surveys were distributed to 1,000 physicians who devoted at least 50 percent of their practice to primary care and could be contacted by telephone and fax. Non-responders received a follow-up mailing one month later, and three weeks later the survey was faxed again to the remaining physicians who had not returned them. Of those who responded, 59 percent of practitioners reported performing routine skin examinations on their high-risk patients, while only 32 percent performed regular skin examinations on their average-risk patients. Rates for counseling about regular skin exams, sun protection, and avoidance of tanning booths were also lower among average-risk patients than high-risk individuals. A major obstacle cited by 64 percent of practitioners who returned the survey was patient reluctance about screening.³

Given the fact that the SFHCC serves an urban population with little other access to regular healthcare, it is imperative that we integrate as much screening and education about skin cancer as possible. Early screening visits as well as education about sun protection should be a mainstay of care. In addition, many organizations provide instructional material for both patients and

healthcare providers regarding the detection and surveillance of the skin. Making these tools available to our patients will only help to reinforce self-skin examinations. While practitioners have cited time as an impediment to screening, our unique position as a student-run clinic with expanded time allows for proper history-taking and physical exam; this negates lack of time as a barrier to screening. Continued emphasis and possible checklists to be used at yearly physical exams indicating all of the necessary screening and counseling should help to improve counseling rates.

VIGILANT SCREENING WORKS

Skin cancer can be easily prevented through vigilant screening, with primary care physicians serving as the main interface for screening. Rates in our student-run clinic for skin cancer screening were over 80 percent; however, the use of an electronic medical record system with evaluation prompts may have increased the amount of screening performed. Further analysis, such as surveys among students in the clinic regarding the extent of screening performed during their patient encounters and their knowledge about the currently recommended skin cancer screening regimens, can also aid in assessing how well our clinic is providing information regarding skin cancer preventive care. Equally important is whether students are educated about and

being vigilant about assessing race-specific risk factors, such as scars and areas of inflammatory changes. ■

Ms. Wassef and Dr. Keller both had full access to all of the data in the study and take responsibility for the integrity of the data and the accuracy of the data analysis. This study did not receive any financial support and there were no sponsors involved.

Cindy Wassef, BA is a third-year medical student at UMDNJ-New Jersey Medical School, Newark, NJ.

Steven E. Keller, PhD is a Professor of Family Medicine at UMDNJ-New Jersey Medical School, Newark, NJ.

1. Diepgen TL, Mahler V. The epidemiology of skin cancer. *Br J Dermatol*. 2002;146(Suppl 6):1-6.
2. Oliveria SA, Christos PJ, Marghoob AA, Halpern AC. Skin cancer screening and prevention in the primary care setting: national ambulatory medical care survey 1997. *J Gen Intern Med*. 2001;16(5):297-301.
3. Geller AC, O'Riordan DL, Oliveria SA, et al. Overcoming obstacles to skin cancer examinations and prevention counseling for high-risk patients: results of a national survey of primary care physicians. *J Am Board Fam Pract*. 2004;17(6):416-23.
4. U.S. Preventive Services Task Force. Screening for Skin Cancer, Topic Page. February 2009. <http://www.uspreventiveserVICEStaskforce.org/uspstf/uspsskca.htm>.
5. Skin Cancer Prevention and Early Detection. American Cancer Society. 2012.
6. Skin Cancer: Tips for preventing and finding. <http://www.aad.org/skin-conditions/dermatology-a-to-z/skin-cancer/tips>.
7. Moore MM, Geller AC, Zhang Z, et al. Skin cancer examination teaching in US medical education. *Arch Dermatol*. 2006;142(4):439-44.
8. Liebman TN, Goulart JM, Soriano R. Effect of dermoscopy education on the ability of medical students to detect skin cancer. *Arch Dermatol*. 2012;148(9):1016-22.
9. Kasparian NA, Brånström R, Chang YM, et al. Skin examination behavior: the role of melanoma history, skin type, psychosocial factors, and region of residence in determining clinical and self-conducted skin examination. *Arch Dermatol*. 2012;148(10):1142-51.