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An Internet-Delivered Video Intervention for Skin Self-examination by Patients With Melanoma

Patients with melanoma are at high risk for disease recurrence and for the development of additional primary lesions. Little is known about interventions that affect patients' skin cancer risk-reducing behavior; we found no published video or Internet interventions. Our interdisciplinary team developed a video, evaluated the feasibility of delivering it via the Internet, and tested its effect on skin self-examination (SSE) performance, knowledge, and self-efficacy in patients with melanoma.

Methods. The University of Arizona institutional review board approved the study. The 13-minute video ad-

ressed skin cancer seriousness and detection and demonstrated SSE techniques. Eight community volunteers previewed the video and were satisfied with the content, images, graphics, and sounds.

To test the video, we used a nonexperimental, 1-group, pretest-posttest design. We recruited adult patients from our cutaneous oncology program who self-reported good Internet and e-mail proficiency. Study patients saw a dermatologic, medical, and/or surgical oncologist during their visit. These specialists deferred skin cancer prevention and detection instruction to a health educator, who met with our participants after the study.

At the time of enrollment, we asked participants to log on to our Web site within the next 2 weeks to complete the pretest questionnaire and view the video. Immediately after enrollment, we sent participants an encrypted e-mail containing unique login information for Web site access to the pretest questionnaire.

We measured SSE knowledge by evaluating patient responses to 10 questions about melanoma warning signs (score of 1 for each correct answer).

We measured SSE self-efficacy by calculating the mean scale score of a 6-item scale (1, very low, to 4, very high). Self-efficacy items addressed confidence in (1) performing SSE, (2) recognizing an unusual mole, (3) finding skin cancer early, (4) SSE extending life, and (5) SSE facilitating self-care (scale $\alpha = .70$).

To measure SSE performance, we used the method detailed by Weinstock et al,¹ querying how often during the previous 2 months participants had examined their skin on 7 specific body areas from head to toe. Examination of all 7 areas constituted a thorough SSE (score, 1). Any areas looked at 0 times constituted no SSE (score, 0).

After completing the pretest questionnaire, participants accessed the video link to a secure streaming server requiring a broadband connection. Participants clicked on another link to update a counter that tracked whether the video had been opened but did not track whether the entire video had been watched. Three months later, participants completed a posttest questionnaire using the same procedure.

Results. Sample characteristics are listed in the **Table**. We enrolled 120 participants. Of those, 34 never accessed the study Web site after being sent an e-mail reminder, and 86 opened the video and completed the pretest questionnaire. Forty-five participants did not complete the posttest questionnaire, citing as reasons problems with the Internet and viewing the video ($n=10$) or lack of interest and/or time ($n=32$). Three patients' e-mail addresses became nonfunctional. Characteristics of posttest questionnaire noncompleters were similar to those who completed both tests except that noncompleters were more educated.

Self-reported SSE performance increased from 39% ($n=16$) to 68% ($n=28$) ($P=.01$). Similarly, melanoma knowledge increased from a mean of 7.07 correct answers (95% confidence interval [CI], 6.34-7.81) to 8.41 correct answers (95% CI, 7.94-8.89) ($P=.002$). Self-efficacy was unchanged (from 3.05 [95% CI, 2.90-

Table. Characteristics of Study Patients^a

Characteristic	Completed Pretest and Posttest Questionnaires (n=41)	Completed Only Pretest Questionnaire (n=45)	P Value ^b
Age, mean (SD), y	60.6 (13.8)	60.3 (12)	.87
Sex			
Male	24 (59)	25 (56)	
Female	17 (42)	20 (44)	.78
Race/ethnicity			
White	41 (100)	44 (98)	
Black	0	1 (2)	.34
Hispanic or Latino	1 (2)	1 (2)	
Not Hispanic or Latino	40 (98)	44 (98)	.95
Education			
<Bachelor's degree	18 (44)	11 (24)	
≥Bachelor's degree	23 (56)	34 (76)	.03

^aUnless otherwise specified, data are reported as number (percentage) of patients.

^bThe χ^2 test was performed, but the Fisher exact method was used when sample sizes were smaller than n=5.

3.20] at pretesting to 3.13 [95% CI, 2.95-3.30] at posttesting) ($P=.40$). On posttesting, mean scores for satisfaction with the video were "strongly agree" for ease in accessing the study Web site and opening the video and for the video providing important and adequate SSE information and instruction. Most participants said that they watched the video only once.

Comment. Internet delivery of a video intervention may be effective for short-term improvement of SSE knowledge and performance; however, our findings are limited by small sample size and lack of a control group. Using video technology to deliver risk-reducing information has potential clinical utility. This approach may be time saving for practitioners who can provide their patients with a DVD or a link to access the video online. On the other hand, using the Internet is challenging for some patients and may not be an optimal delivery method. Practitioners will need to assess whether patients have access to the technologies and the skills to use them. Self-efficacy perceptions theoretically help determine how individuals channel their knowledge and skills.² Unchanged self-efficacy in this study may be due to the characteristics of the participants; however, this assumption should be investigated further. Patients with melanoma may be confident in their ability to perform an SSE, but they might still require a "booster" (eg, video) to perform the SSE.

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COMMENTS AND OPINIONS

Actinic Keratosis on a Continuum With Squamous Cell Carcinoma

The erudite article, "Gene Expression Patterns of Normal Human Skin, Actinic Keratosis, and Squamous Cell Carcinoma" by Padilla et al,¹ published in the March 2010 issue of the *Archives*, is long awaited and applauded by those who hold the view that an actinic keratosis (AK) is a type, and the earliest stage on a continuum, of squamous cell carcinoma (SCC). In contrast to those who have perceived AK as a benign lesion, those who have considered it to be malignant by clinical and histopathologic findings were thought to be implacable and sometimes pariahs.²⁻⁴ Those who consider AK a malignant lesion are bolstered by the conclusions of Padilla et al¹ that "The finding of similar differentially expressed genes in AK and SCC confirms that AK is a precursor of SCC and that they are closely re-