

Online videos to promote sun safety: results of a contest

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Abstract

Seventy-percent of Americans search health information online, half of whom access medical content on social media websites. In spite of this broad usage, the medical community underutilizes social media to distribute preventive health information. This project aimed to highlight the promise of social media for delivering skin cancer prevention messaging by hosting and quantifying the impact of an online video contest. In 2010 and 2011, we solicited video submissions and searched existing YouTube videos. Three finalists were selected and ranked. Winners were announced at national dermatology meetings and publicized via a contest website. Afterwards, YouTube view counts were monitored. No increase in video viewing frequency was observed following the 2010 or 2011 contest. This contest successfully identified exemplary online sun safety videos; however, increased viewership remains to be seen. Social media offers a promising outlet for preventive health messaging. Future efforts must explore strategies for enhancing viewership of online content.

Introduction

Approximately 180 million Americans sought health information on the Internet in 2010 – a number that continues to grow.¹ In the past, newspapers, magazines, radio, and television were the dominant forces used in mass media campaigns. Though these media outlets continue to play a role in the dissemi-

nation of preventive health messaging, the Internet offers significant potential in reaching new audiences, especially young adults.^{1,2}

Skin cancer is the most prevalent malignancy in the United States and, accordingly, the third most frequently searched cancer on the Internet.³ Skin cancer is largely preventable if sun safety measures are adopted.^{2,3} Nevertheless, public awareness and adoption of sun and tanning precautions is limited. Youth sunburn prevalence remains high and use indoor tanning continues to rise despite increasing evidence of the adverse effects of UV exposure.⁴ These findings highlight the need for sun and tanning safety preventive messaging campaigns. Skin cancer preventive measures are straightforward and cost effective. A cohort study of approximately 1,300 Australians found that preventive measures for nonmelanoma skin cancer and actinic keratosis cost \$0.74 per person and reduced medical expenses by \$109 per person over five years.⁵

In response to the rising rates of melanoma and other skin cancers, several countries have adopted national skin cancer prevention strategies. Since 1992, the United Kingdom has included skin cancer in its public health strategy via *The Health of the Nation*.⁶ Australia has conducted repeated mass media campaigns and employs ongoing prevention programs.⁷ In 2003, Utah conducted a successful television campaign for skin cancer prevention. After the campaign, 28% of viewers expressed a desire to change their behavior because of information presented in television announcements. Approximately half of the individuals who reported that they did not want to change their behavior qualified their answer by stating that they already followed sun safety recommendations.⁸

In an effort to promote social media websites as a means by which to distribute skin cancer preventive messaging, William Howe, MD from the University of Colorado developed a *YouTube Contest to Promote Sun Safety Public Health Messaging*.

In 2008 this contest was funded by a \$5000 grant from the Sulzberger Institute for Dermatologic Education Committee, which awards promising dermatology education projects. This project aimed to raise awareness in the medical community of the promise of social media in distributing skin cancer prevention messaging by hosting and measuring the impact of an contest awarding outstanding online sun safety videos. YouTube was selected as the primary website of interest because it is free and open to the public, the most-visited site of its kind, and widely used by youth viewers. The contest targets adolescents and young adults, given that these individuals are simultaneously receptive to online campaigns, less informed about skin cancer, and less likely to

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Key words: skin cancer prevention, tanning, social media, Internet, YouTube.

Acknowledgements: the authors would like to thank Jodi Duke, MPH, CPH for her assistance with data analysis.

Contributions: AD, 2011 contest administration supervision, 2011 video data collection, contest website maintenance assistance, manuscript preparation; AH, 2011 contest administration assistance, manuscript preparation, permanent contest website creation assistance; LH, contest administration supervision and manuscript preparation; RG, 2010 contest administration supervision and 2011 contest supervisors assistance; WH, 2008 Sun Safety Video Contest conceiving, funding supervision, 2010 and 2011 contest supervisors assistance; IK, contest design and data interpretation assistance; RD, 2010 and 2011 contest supervision, contest promotion assistance, manuscript preparation.

Funding: Sulzberger Institute for Dermatologic Education Committee, \$5000 resident research grant awarded to William Howe, MD in 2008.

Conflict of interest: the authors report no conflicts of interest.

Received for publication: 15 June 2011.
 Accepted for publication: 16 June 2011.

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 Dermatology Reports 2011; 3:e9
 doi:10.4081/dr.2011.e9

follow sun safety recommendations.² In 2010 and 2011, the *Sun Safety Video Contest* was held and the impact of the contest on promoting online video viewership was observed.

Materials and Methods

Contest video submissions were solicited via an open call on a temporary website www.sun-safety-video-contest.org, email list-serves, and advertisements at local and national dermatology meetings. Additionally, a comprehensive online search identified existing YouTube videos appropriate for inclusion in the contest. Searched terms included: *sun safety*, *sun protection*, *sun avoidance*, *sunscreen*, *melanoma*, *melanoma prevention*, *tanning*

Table 1. Contest winners by year.

Year	Rank	Title	URL
2010	1	Skin cancer prevention -- It's our way of life	http://www.youtube.com/user/GPYRBRISBANE#p/a/u/1/pT1hImm-pA4
	2	Australian skin cancer public service announcement	http://www.youtube.com/user/sunsafety#p/a/f/2/gIQviRco1m4
	3	There's nothing healthy about a tan	http://www.darksideoftanning.com.au/
2011	1	Donna's story	http://www.youtube.com/watch?v=zYzfldQ3OU0
	2	Indoor tanning is out	http://www.youtube.com/watch?v=cCuKq1-huYg
	3	I'm giving you skin cancer	http://www.youtube.com/watch?v=PmOF7_ICGX0&feature=related

beds, tanning safety, skin cancer, and skin cancer prevention. Only English-language videos less than one minute in length were considered for inclusion. Videos were assessed for relevance, information content, and entertainment value.

From this group of videos, contest supervisors selected three finalists based on video content and presentation. Finalists were then ranked by a panel of judges comprised of dermatologists, scientists, patients, and children. Judging occurred in January for each contest. The 2010 and 2011 results were announced at the American Academy of Dermatology's (AAD) 68th and 69th Annual Meetings, respectively. Winning videos were also publicized via a contest website. After publicizing the winners, YouTube view counts were monitored over the subsequent 3 month time period to identify changes in viewing frequency.

Data analysis

For each video winner, a mean rate of accumulation of video view count was calculated from the time period before winner announcement. After Sun Safety Video Contest winners were announced at the AAD Annual Meetings, the mean rate of accumulation of video view count was calculated for each video over the subsequent 3-month time period. One-sample t-testing was utilized to compare pre- and post-contest rates of accumulation of video view counts for each contest winner. A value of $P < 0.05$ was considered to be statistically significant.

Results

In 2010 and 2011, 25 and 30 videos, respectively, were included in contest judging. All finalists were existing YouTube videos (Table 1). In 2010, awarded prizes included \$1,000 for 1st place, \$500 for 2nd place, and \$200 for 3rd place. The 1st and 3rd place prizes were subsequently returned to the grant recipients to fund future contests. In 2011, all winners declined their monetary prizes. In 2010, video view counts revealed no apparent change in viewing frequency after the AAD announcement. Statistical analysis of video view count was not

Table 2. 2011 pre- and post-Contest video viewership.

Video	Pre-contest view rate (views/day)	Post-contest view rate (views/day)	P
Donna's story	15.28	13.12	0.01682
Indoor tanning is out	6.08	4.82	0.2415
I'm giving you skin cancer	0.46	0.43	0.7209

possible given changes made to video URL web addresses during the contest. In 2011, despite increased efforts to publicize the contest and its winners, no rise in video viewing frequency was observed after the AAD announcement with the rate-of-accumulation of view count number demonstrating no significant increase over the 3 month post-contest time period. *Indoor Tanning is Out* ($P=0.24$) and *I'm Giving You Skin Cancer* ($P=0.72$) demonstrated no statistically significant change in rate of accumulation of video view count. One video, *Donna's Story*, demonstrated a significant decline in viewership after contest announcement ($P < 0.02$) (Table 2).

Limitations

A primary limitation in this study relates to the open-access nature of online content. It is challenging to identify and measure the many influences that contribute to viewership of online videos. Thus, if a post-contest increase in video view accumulation were to be observed, it would be difficult to determine if this change was attributable to the contest alone. Additionally, increased video traffic from contest supervisors and judges in the months prior to winner announcement may have falsely elevated video view counts in the pre-contest period. This could mask a post-contest increase in video viewership. Finally, no control videos were monitored for comparison purposes. In spite of these limitations, we continue to endorse social media as an important means by which to distribute preventive health messages. We emphasize that this project aims not to be a highly rigorous quantitative analysis of online traffic, but instead an effort to promote the use of social media by the medical community for preventive health campaigns.

Comment

This contest successfully identified and rewarded excellent sun safety videos. Nevertheless, increased post-contest video viewership remains to be seen. For two videos, view count accumulation remained stable and did not decline after the contest. This may represent as a positive outcome and indicate the relative success of contest efforts to publicize the winning videos; on average, online videos demonstrate a gradual long-term decline in view rate after the early rise in viewership immediately following video posting.

Creation of effective preventive health campaigns that produce a lasting impact is challenging. The success of preventive health campaigns relies not only on the degree to which the message is publicized, but also on the quality and impact factor of the message. A broad, one-size-fits-all approach is unlikely to work. When formulating a video or other form of health campaign, efforts to specifically address potential barriers and feature a wide variety of people enhance the efficacy of the message.⁹ It is important to utilize creative approaches to engage consumers in the messages they view. The Canadian Health Network took a unique approach to achieve this by coupling public health messages with an online game. The campaign was wildly successful, and 215 invitations multiplied into 110,200 participants in 15 days without further advertising.¹⁰ While creating a game for every health topic may not be practical or similarly efficacious, the principle of marrying information and entertainment can be widely applied. In this contest, we aim to promote viewer engagement in preventive health messaging by inviting video submissions to the contest. By using this approach, consumers gain ownership of the message, which may help to produce a more lasting impact. Additionally, consumers may

help to identify potential barriers to sun safety behavior and needs or beliefs of unique population groups that may inform future mass media campaigns.

Prior efforts in smoking prevention and cessation may also help to inform skin cancer prevention efforts. Smoking has been a target of mass media campaigns for years and substantial research has assessed their efficacy.¹¹ Work by the Cochrane Collaboration and others has demonstrated that mass media interventions have been efficacious for smoking cessation in adults, but may not be as effective in preventing smoking in young adults.¹¹⁻¹³ It is imperative to learn from the successes and failures of anti-tobacco messaging, as study of skin cancer prevention campaigns indicates that they may be making similar mistakes to those identified in unsuccessful smoking campaigns.⁷ Use of the Internet to distribute preventive health messages is a fresh, new approach that may help to improve the efficacy of these messages in promoting behavior change in adolescents and young adults.¹⁴ Furthermore, online media allows for rapid dissemination of information to a nearly unlimited audience at a nominal cost.

While the Sun Safety Video Contest is not a large media campaign, it is a simple way to promote sun safety messaging. Though the contest has yet to produce a statistically significant increase in viewership of winning videos, we believe online video messaging and use of a video contest open to consumers is a promising approach for promoting skin cancer prevention. We expect that new and creative efforts to evaluate video content and publicize winning videos will produce more dramatic contest results in the future. The contest will be repeated in 2012 with advanced efforts to rate videos and publicize the contest and its winners. To this end, a permanent contest website hosted by the University of Colorado Denver has been created and can be accessed at <http://www.ucdenver.edu/academics/colleges>

/medicalschoo/departments/Dermatology/adultderm/clinicfaculty/Pages/SunSafety.aspx.¹⁵ Other strategies will include greater use of social networking websites to publicize the contest call for submissions and winners. Additionally, further emphasis will be placed on the use of youth and young adult judges in evaluating the content of contest videos in an effort to identify videos with the greatest impact factor.

We hope that this project and other Internet-based projects will help to raise awareness in the medical community of the promise of social media for distributing preventive health campaigns. Future study may aim to evaluate the impact of these online videos in producing changes in sun safety behavior.

References

1. The Harris Poll #95, Harris Interactive. August 4, 2010. "Cyberchondriacs on the rise?". Available from: <http://www.harrisinteractive.com/NewsRoom/HarrisPolls/tabid/447/mid/1508/articleId/448/ct/ReadCustom%20Default/Default.aspx>
2. Hay J, Coups EJ, Ford J, et al. Exposure to mass media health information, skin cancer beliefs, and sun protection behaviors in a United States probability sample. *J Am Acad Dermatol* 2009;61:783-92.
3. Finney-Rutten LJ, Squiers L, Hesse B. Cancer-related information seeking: Hints from the 2003 Health Information National Trends Survey. *Journal of Health Communication* 2006;11:147-56.
4. Bandi P, Cokkinides VE, Weinstock MA, et al. Sunburns, sun protection and indoor tanning behaviors, and attitudes regarding sun protection benefits and tan appeal among parents of U.S. adolescents-1998 compared to 2004. *Pediatr Dermatol* 2010; 27:9-18.
5. King CS, Chen S. Analyzing the cost of preventing nonmelanoma skin cancer. *J Invest Dermatol*. 2009;129:2745-6.
6. Hedges T, Scriven A. Sun safety: what are the health messages? *J R Soc Promot Health* 2008;128:164-9.
7. Smith BJ, Ferguson C, McKenzie J, et al. Impacts from repeated mass media campaigns to promote sun protection in Australia. *Health Promotion International* 2002;17:51-60.
8. Broadwater C, Heins J, Hoelscher C, et al. Skin and colon cancer media campaigns in Utah. *Prev Chronic Dis* [serial online] 2004 Oct. Available from: http://www.cdc.gov/pcd/issues/2004/oct/04_0023.htm.
9. Dale R, Hanbury A. A simple methodology for piloting and evaluating mass media interventions: an exploratory study. *Pyschol Health Med* 2010;15:231-42.
10. Gosselin P, Poitras P. Use of an Internet "viral" marketing software platform in health promotion. *J Med Internet Res* 2008;10:e47.
11. Flynn BS, Worden JK, Bunn JY, et al. Mass media interventions to reduce youth smoking prevalence *Am J Prev Med* 2010; 39:53-62.
12. Bala M, Strzeszynski L, Cahill K. Mass media interventions for smoking cessation in adults. *Cochrane Database of Systematic Reviews* 2008;1:CD004704.
13. Sowden AJ. Mass media interventions for preventing smoking in young people. *Cochrane Database of Systematic Reviews* 1998;4:CD001006.
14. Vance K, Howe W, Dellavalle RP. Social internet sites as a source of public health information. *Dermatol Clin* 2009;27:133-6,vi.
15. Sun Safety Video Contest. Available from: <http://www.ucdenver.edu/academics/colleges/medicalschoo/departments/Dermatology/adultderm/clinicfaculty/Pages/SunSafety.aspx>.