

Teens, Tweets, and Tanning Beds: Rethinking the Use of Social Media for Skin Cancer Prevention



Ashley E. Falzone, MS,¹ Claire D. Brindis, DrPH,² Mary-Margaret Chren, MD,^{1,3} Alexandra Junn, AB,¹ Sherry Pagoto, PhD,⁴ Mackenzie Wehner, MD,⁵ Eleni Linos, MD, DrPH¹

The incidence of skin cancer is rising in the U.S., and melanoma, the deadliest form, is increasing disproportionately among young white women. Indoor tanning is a modifiable risk factor for all skin cancers and continues to be used at the highest rates in young white women. Adolescents and young adults report personal appearance-based reasons for using indoor tanning. Previous research has explored the influences on tanning bed use, including individual factors as well as relationships with peers, family, schools, media influences, legislation, and societal beauty norms. Adolescents and young adults also have high rates of social media usage, and research is emerging on how best to utilize these platforms for prevention. Social media has the potential to be a cost-effective way to reach large numbers of young people and target messages at characteristics of specific audiences. Recent prevention efforts have shown that comprehensive prevention campaigns that include technology and social media are promising in reducing rates of indoor tanning among young adults. This review examines the literature on psychosocial influences on indoor tanning among adolescents and young adults, and highlights ways in which technology and social media can be used for prevention efforts.

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INTRODUCTION

Technologic advances and the ubiquity of smartphones, social media, and Internet access have drastically shifted the social landscape. More than 70% of teens use social media, with Facebook (71%); Instagram (52%); Snapchat (41%); and Twitter (33%) being the most commonly used.¹ Visually oriented social media, including Instagram, Snapchat, and Pinterest, have a higher proportion of teenage female users compared with their male counterparts.² Young adults aged 18–29 years report even higher social media use on these platforms, including Facebook (82%); Instagram (55%); Pinterest (37%); and Twitter (32%).¹ On average, teens send and receive 30 text messages per day.¹ These new platforms with high engagement of young users provide a unique opportunity to reach this population with prevention efforts.

Research on the influence of social media use in health campaigns is in its early stages, but several studies suggest that social media use can be effective for promoting several different health behaviors. Nine of ten studies included in a review of public health campaigns using social media to target eating behaviors and physical

inactivity showed improvement in those aspects of health behaviors.³ For example, a study that provided a short message through social media to adolescents at high risk of sexually transmitted diseases found that those receiving the messages had fewer postings of health risk behaviors.⁴ However, the majority of studies involving social media in adolescent and young adult health have been observational and not focused on social media-based interventions.⁵

From the ¹School of Medicine, the Program for Clinical Research, Department of Dermatology, University of California, San Francisco, San Francisco, California; ²Philip R. Lee Institute for Health Policy Studies and the Adolescent and Young Adult Health National Resource Center at the University of California, San Francisco, San Francisco, California; ³Dermatology Service, San Francisco Veterans Affairs Medical Center, San Francisco, California; ⁴Department of Medicine, University of Massachusetts Medical School, Worcester, Massachusetts; and ⁵Department of Dermatology, University of Pennsylvania, Philadelphia, Pennsylvania

Address correspondence to: Eleni Linos, MD, DrPH, Department of Dermatology, 2340 Sutter Street, Room N421, Mail Code: Box 0808, San Francisco CA 94143-0808. E-mail: eleni.linios@ucsf.edu.

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This review focuses on skin cancer prevention, the role of indoor tanning in skin cancer prevention, and how social media may be leveraged to improve prevention efforts. First, the authors describe the scope of the problem of indoor tanning among adolescents and young adults and current efforts to reduce the rates of indoor tanning. Then, innovative ways to accelerate prevention efforts using mobile technology and social media are outlined in the context of psychosocial issues unique to adolescence and young adults. Throughout this review, the terms *adolescent* and *teenager* refer to studies with most participants who were either high school-aged or aged 11–18 years, whereas the term *young adult* refers to studies looking at either college-aged students or participants aged 18–30 years.

WHY SKIN CANCER?

Despite decades of ongoing skin cancer prevention efforts, the rates of both melanoma and non-melanoma skin cancer continue to increase in the U.S.^{6–8} and internationally,⁹ particularly among adolescents and young women. Melanoma, the deadliest form of skin cancer, is the second most frequently diagnosed cancer overall among individuals aged 15–29-years. In fact, melanoma makes up 8% of cancer diagnoses among people aged 15–19 years and is the most frequent cancer diagnosed among those aged 25–29 years at 18% of all cancers in this age group.¹⁰

Ultraviolet (UV) light exposure both from solar and artificial sources is a strong modifiable risk factor for all types of skin cancers.^{11,12} Indoor tanning specifically is associated with melanoma and non-melanoma skin cancer, and multiple studies demonstrate the strongest associations with first exposure before age 35 years, suggesting a susceptibility period in early life.^{13,14} Despite these known risks, both adolescents and young adults have high rates of several known risk factors. More than half of young adults aged 18–24 years report a sunburn in the past year. Among all surveyed adult age groups, individuals aged 18–24 years also report the lowest rate of sun protection usage, with 60% responding they used one or more types in the past year.^{15,16} Similarly among U.S. adolescents, only 13% of high school girls report wearing sunscreen regularly while in the sun and more than a third report a sunburn in the previous year.^{15,17}

A recent systematic review and meta-analysis showed that 55% of young adult university students and 19% of adolescents have used indoor tanning at some point in their lives, and 14% of young adult and 18% of adolescents have used indoor tanning the year prior.¹⁸ In the most recent 2015 National Health Interview Survey of U.S. adults, the highest rate of indoor tanning

was among non-Hispanic white women aged 18–24 years: 17.2% reported indoor tanning in the past year, whereas Hispanic young women reported a lower rate of 4.1%.¹⁹ In addition, approximately 3.6% of adult women reported using indoor tanning ten or more times per year.²⁰ The overall rate of indoor tanning decreased among U.S. young women by 4.5% between 2010 and 2013, and 7% among all U.S. high school students between 2010 and 2015.^{17,20} However, there were still approximately 10 million U.S. adults and 15% of white female U.S. high school students engaging in indoor tanning in 2013.^{17,20} Thus, prevention strategies are still needed, and more effective messaging has the potential to speed the decline of indoor tanning.

In 2014, the Surgeon General's Call to Action to Prevent Skin Cancer established strategic goals for multiple sectors of society including government, businesses, schools, community organizations, and individuals to enhance UV protection from the sun and artificial UV sources, such as indoor tanning.²¹ Since 2012, the U.S. Preventive Services Task Force has recommended that people aged 10–24 years with fair skin be counseled on the reduction of UV exposure to reduce the risk of skin cancer.²² According to the 2016 Skin Cancer Prevention Progress Report, recent progress in prevention strategies for adolescents and young adults includes state-specific legislation banning minors from indoor tanning, implementation of sun safety curriculum in schools, and a proposal for a U.S. Food and Drug Administration ban on indoor tanning for anyone aged <18 years.²³

WHAT WORKS IN SKIN CANCER PREVENTION?

Several innovative initiatives aimed at increasing awareness about the risks of indoor tanning have been implemented, including appearance-based messaging, school-based interventions, and community-wide comprehensive approaches.

A meta-analysis evaluating appearance-based interventions showed a significant reduction in indoor tanning behavior.²⁴ For example, one study found that when female university students were provided booklets with appearance-focused information, rates of indoor tanning decreased compared with controls at 6-month follow-up.²⁵ Interventions using UV photography to illustrate UV damage to the face also showed significant decreases in indoor tanning usage after participants viewed their photos that highlighted UV damage to facial skin.²⁶

Multicomponent community-wide interventions have demonstrated effectiveness at reducing UV exposures, including reducing indoor tanning. An example of one

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