Variable potential for social media platforms in raising skin cancer awareness

Nikita Jhawar[1] BS, Jules B Lipoff[2] MD

Affiliations: [1]Drexel University College of Medicine, Philadelphia, Pennsylvania, USA, [2]Department of Dermatology, University of Pennsylvania, Philadelphia, Pennsylvania, USA

Corresponding Author: Jules B. Lipoff MD, Department of Dermatology, University of Pennsylvania, Penn Medicine University City, 3737 Market Street, Suite 1100, Philadelphia, PA 19104, Tel: 215-662-8060, Fax: 215-243-3284, Email: jules.lipoff@pennmedicine.upenn.edu

Abstract

Social media plays an important role in public health outreach, given its ability to connect virtual communities. Examples include campaigns for smoking cessation, breast cancer awareness, and emergency relief [1]. Few studies have investigated the utility of social media in skin cancer awareness, though the potential has been demonstrated [2]. We sought to evaluate current differential social media platform use in skin cancer awareness.

Keywords: skin cancer, social media, social media reach, skin cancer awareness, public health campaigns

Introduction

With its ability to facilitate virtual communities and instantaneous communication, social media has played an instrumental role in public health endeavors. Principles of social media engagement for public health outcomes include listening to social media conversations to understand others' needs, engaging directly with users, presenting opportunities for users to interact with organizations online and offline, and promoting community engagement [3]. By harnessing these principles, social media has rapidly disseminated information for smoking cessation campaigns, breast cancer awareness campaigns, and emergency relief efforts like the Zika virus outbreak in Brazil [1]. However, few studies have investigated the utility of social media in skin cancer awareness. Our study is a preliminary effort to determine which social media platform has the greatest outreach potential in the context of skin cancer awareness.

Methods

This study was exempt from institutional board review. Keyword data was collected using social media monitoring tool *Brand 24* for a two-week period (June 26, 2018 – July 9, 2018). Selected hashtags were chosen to compare relative use for skin cancer awareness on Facebook, Twitter, and Instagram: #skincancer, #melanoma, #basalcellcarcinoma, #squamouscellcarcinoma, and #skincancerawareness. *Brand 24* tracked the number of mentions of these hashtags for each social media platform and calculated the social media reach. Social media reach is an engagement metric that approximates how keywords are disseminated among the public. It represents the number of unique individuals who are exposed to a particular medium during a certain time period. This metric was estimated using protected algorithms devised by *Brand 24* which accounted for each author's number of followers, friends, and the typical visibility percentage for the selected social networks.

Results

Instagram had the greatest number of mentions (3,265 mentions) for the selected keywords, followed by Twitter (2,257), and Facebook (237), (see **Table 1**). Twitter's average social media reach (425,985) was greater than that of Instagram (225,401) and Facebook (37,848). Highly influential social media users with large followings have a tendency to boost social media reach values because of their notable social media presence and ability to disseminate information to a wider audience. The social media accounts with greatest following for the selected

Table 1. *Number of mentions and social media reach (SMR) for Facebook, Twitter, and Instagram obtained in 2018.*

	Facebook		Twitter		Instagram	
Date	**Mentions**	**SMR**	**Mentions**	**SMR**	**Mentions**	**SMR**
26-Jun	22	6,962	214	321,621	259	224,972
27-Jun	14	18,922	222	736,359	273	335,934
28-Jun	17	5,787	231	343,348	252	253,224
29-Jun	15	140,314	182	369,273	243	161,389
30-Jun	6	6,581	98	274,202	202	133,868
1-Jul	6	6,630	99	93,899	171	231,274
2-Jul	17	22,954	166	140,741	259	267,890
3-Jul	31	91,198	174	263,663	294	405,052
4-Jul	24	34,502	129	172,561	243	122,971
5-Jul	16	38,159	151	2,232,802	241	200,153
6-Jul	19	19,943	162	156,024	237	251,689
7-Jul	17	10,529	92	62,713	170	235,979
8-Jul	16	86,769	100	453,909	172	193,767
9-Jul	17	40,623	237	342,679	249	137,455
	Total = 237		Total = 2257		Total = 3265	

keywords in the study time period for Twitter, Facebook, and Instagram respectively were XHNews, Inspire, and the fitness_dietician.

Analysis by single-factor ANOVA showed statistically significant variance in the number of mentions ($P<0.001$) and in the social media reach ($P<0.05$) for Facebook, Twitter, and Instagram.

Discussion

Social media platforms appear to be used in statistically significantly different proportions for skin cancer awareness. The data for this two-week period found that Instagram had the highest number of individual postings, and Twitter had the greatest social media reach. Taken together, Twitter appears to have greater potential over Instagram and Facebook in public health reach.

A previous study also found that Twitter had a greater social media reach than Instagram for National Breast Cancer Awareness Month [4]. Many organizations, including the American Medical Association, rely on live-tweeting to promote discussion and engage members [5]. Twitter is the world's most popular microblogging service, allowing users to create tweets with up to 240 characters, up to 4 images, links to news articles or webpages, and hashtags. Hashtags allow users to find tweets of similar topics, raise awareness, and monitor audience feedback. Additionally, Twitter is mostly public whereas Facebook is increasingly used for connections within existing family, friends, and colleague circles [5]. Thus, Facebook's in-network restrictions may limit its potential to achieve public health outcomes. Instagram remains more public than Facebook and requires photos with each post, which may help garner attention, but it also has privacy settings and a greater use of visual rather than written expression. These differences in structural capabilities may make Twitter superior to Instagram in facilitating written discussion and supporting a medical support group format [6].

Aside from innate features of social media platforms, specific users with larger social media presence and more followers can greatly impact social media reach. One study analyzing a sun safety awareness campaign on Twitter found that celebrities had a greater social media reach as compared to health and nongovernment organizations, businesses, and news organizations [7]. As such, future campaigns

should consider not only the platform (with Twitter appearing the strongest) but targeting the social media engagement of specific high impact users to reach wider audiences.

Limitations of our study include the short data collecting period. Further, all posts containing the selected hashtags were counted in the results, which may include these hashtags used out of context. Future research should pursue longer-term studies with more detailed analyses of relevant hashtags to investigate how to optimize social media use for skin cancer awareness.

Conclusion

With the advancement of technology and greater involvement of social media in medicine, there is a need to understand how different social media platforms are being employed. As per our study, Twitter demonstrated the greatest social media reach for skin cancer awareness as compared to Instagram and Facebook. This trend has been seen in other studies, indicating the possibility that there may be features unique to Twitter that enable it to reach wider audiences and promote public discourse on topics of public health. Future work may consider designing long-term studies to further elucidate the roles and limitations of social media platforms in the dissemination of medical information.

Potential conflicts of interest

The authors declare no conflicts of interests.

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