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Ashack, Kurt A
Burton, Kyle A
Dellavalle, Robert P

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Dermatology and social media

Dermatology in Doximity

Kurt A Ashack BA^{1*}, Kyle A Burton BS^{2*}, Robert P Dellavalle MD PhD MSPH^{3,4,5}

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¹Michigan State University College of Human Medicine, Grand Rapids, MI USA

²University of Central Florida College of Medicine, Orlando, FL, USA

³Department of Dermatology, University of Colorado Anschutz Medical Campus, Aurora, CO, USA

⁴Dermatology Service, U.S. Department of Veterans Affairs, Eastern Colorado Health Care System, Denver, CO, USA

⁵Department of Epidemiology, Colorado School of Public Health, University of Colorado Anschutz Medical Campus, Aurora, CO, USA

***Co-first authors**

Correspondence:

Robert P. Dellavalle, MD, PhD, MSPH
Chief, Dermatology Service
Department of Veteran Affairs Medical Center
1055 Clermont Street, Box 165
Denver, CO 80220
Tel: (303) 399-8020, ext. 2475
Fax: (303) 393-4686
Email: robert.dellavalle@ucdenver.edu

Abstract

Doximity, currently the largest online social networking service for United States (US) health care professionals and medical students, provides a wide variety of content to a large audience. In fact, its database includes 1,078,305 physicians in the US. It is therefore important to evaluate this content from time to time. Our objective is to analyze both the residency rankings and news content presented in Doximity, with respect to dermatology. The study compared the residency rankings created by Doximity to another dermatology residency ranking system that used a different algorithm. In terms of dermatology content, seven dermatology-related search terms were entered into the Doximity search query and data was collected on the first 20 “relevant” articles. Our study evaluated a total of 140 articles. The search term “skin cancer” yielded the most articles totaling 6,001. Informative articles were the most common type of article for each content item searched except for “dermatology”, yielding research articles as the most common content type (70%). The search term “melanoma awareness” had the largest number of shares (19,032). In comparing dermatology residency rankings on Doximity with another ranking system that accounted for scholarly achievement, there was 50% overlap. In conclusion, it is vital to evaluate content on social media websites that are utilized by US medical students and health care professionals. We hope this information presented provides an up-to-date analysis on the quality of one particular social media platform.

Keywords: Doximity, rankings, content, news, dermatology

Abbreviations: United States (US), American Medical Association (AMA), Journal of the American Medical Association (JAMA)

Introduction

Doximity, launched in late 2010, is the largest online social networking service for US physicians, medical students, and clinically practicing healthcare professionals. Within this social media platform, members have the opportunity to connect and share information in addition to finding information pertaining to specific searchable topics, job openings, salaries, and residency programs. Currently, Doximity claims to have over 50% of US doctors as members, more than the American Medical Association (AMA) [1]. Even more astonishing is Doximity's ability to search for and invite any licensed physician or medical student within the country to create an account. This makes Doximity a very influential social media platform, reaching out to hundreds of thousands of current and future medical professionals.

With the potential impact Doximity could have on the medical community, it is important that users evaluate available content to ensure sufficient and accurate information to best educate the viewers [2]. This is important for two reasons. One reason involves the residency rankings Doximity releases each year. Although Doximity attempted to bring transparency to medical students evaluating residency programs, there is still debate on the accuracy of these rankings versus other ranking attempts [3, 4]. A second reason to evaluate the content on Doximity is because the searchable articles within Doximity can be shared to other social media platforms like Facebook and Twitter, which reach an even larger general audience.

Although many other social media outlets such as YouTube, Tumblr, Facebook, Twitter, and Pinterest have been evaluated for their content, this has yet to be done for Doximity [5-10]. Thus, our objective is to analyze content on Doximity with respect to dermatology.

Methods

Two study authors (KA & KB) extracted data from July 23rd to July 24th, 2015. Seven search terms were selected for evaluation of related content on Doximity. Search terms included: (1) dermatology, (2) sun protection, (3) skin cancer, (4) skin cancer awareness, (5) skin conditions, (6) melanoma and (7) melanoma awareness. These terms were entered into the Doximity search query with the default settings to return "most relevant" results. Data was collected on the first 20 articles on the first page yielded by the search term.[6] Articles not relevant to the search term were disregarded and not included in data analysis (Table 1).

Each search term was both quantitatively and qualitatively assessed. Quantitative data included number of articles generated by a search term, the number of comments, likes, and number of shares on social media including Facebook, Twitter and LinkedIn [6]. Articles evaluated were also categorized qualitatively as either an informative, opinionated, research oriented, or an advocating piece of literature.

The methodology for ranking dermatology residency programs was also evaluated and compared with another dermatology residency ranking system that based their algorithm on academic and research performance [3]. Doximity dermatology residency rankings and methodology were accessed on their website on July 23rd, 2015.

Results

Our study reviewed a total of 140 articles in searching seven content items on Doximity. Quantitative and qualitative data can be found in Table 1.

Table 1. Dermatology content in Doximity

Search Term "most relevant" (n*=20)	Content ^a Type	%	Likes	Comments	Shares
"Dermatology"	Informative	25	0	0	20

N [†] =5,826	Research	70	0	0	6
	Opinion	5	0	0	0
Total			0	0	26
“Skin Cancer” N=6011	Advocacy	10	0	0	0
	Informative	85	0	0	2266
	Opinion	5	0	0	13
Total			0	0	2279
“Skin Cancer Awareness” N=316	Advocacy	8	0	0	8
	Informative	58	0	0	233
	Research	17	0	0	50
	Opinion	17	0	0	120
Total			0	0	411
“Skin Conditions” N=2913	Advocacy	13	0	0	10
	Informative	67	0	0	8624
	Research	13	0	0	1
	Opinion	7	0	0	1
Total			0	0	8636
“Sun Protection” N=615	Advocacy	17	0	0	104
	Informative	61	0	0	2238
	Research	22	0	0	2
Total			0	0	2344
“Melanoma” N=4,619	Informative	50	0	0	233
	Research	50	0	5	68
Total			0	5	301
“Melanoma Awareness” N=192	Advocacy	11	0	0	84
	Informative	72	0	0	18948
	Research	11	0	5	0
	Opinion	6	0	0	0
Total			0	5	19032

* “n” refers to the number articles evaluated for each search topic

† “N” refers to the number of articles that were found for each search topic

^a If a “Content Type” category was not listed then there was zero related content for that search phrase

The search term “skin cancer” yielded the most articles with a total of 6,011. The most common article content for this search term was informative (85%), followed by advocacy (10%). The search term “dermatology,” generated the second highest number of articles with a total of 5,826. Of the first 20 articles, the most common type of content was research (70%) and then informative (25%). The search term “melanoma” followed “dermatology,” with 4,619 articles found. The only types of articles found in this search were informative (50%) and research articles (50%).

When the phrase “skin conditions” was searched, a total of 2,913 articles were found. The most common types of articles were informative (67%), followed by advocacy (13%) and research (13%). The search term “sun protection” generated 615 articles with informative (61%) and research (22%) articles being most commonly encountered. This was followed by the term “skin cancer awareness,” with a total of 316 articles found. These articles consisted of informative (58%), research (17%) and opinionated (17%) articles. Finally, the search term, “melanoma awareness” revealed a total of 192 articles, with informative (72%) and research (11%) articles as the most common type of content.

There were no “likes” observed for all content items. There were only 10 total comments recorded, with five being from the search term “melanoma” and the other five coming from “melanoma awareness.” There were a total of 33,029 shares when combining all content items searched. Informative articles generated the most shares (32,562) and the search term “melanoma awareness” had the largest number of shares (19,032).

The article with the largest number of shares was “Melanoma can look like nail fungus: Woman's Facebook warning goes viral”. This had 9,050 shares and was followed closely by “Debating Population vs. Genetic Screening for Melanoma”, which had 6,834 shares. These articles were both informative pieces and found within the “melanoma awareness” search. The third most shared article was also an informative piece and found within the “skin condition” search. This article titled “Lyme Disease Has Surged 320% in America”, yielded 3,400 shares.

Of note, a number of articles were excluded from the data presented in the tables because they did not have any relevance to dermatology (Table 2). The search terms “skin cancer awareness” and “skin conditions” had the largest number of articles excluded with a total of eight and five articles respectively. Overall, a total of 17 total articles were excluded.

Table 2. Number of excluded articles for each of the 20 articles evaluated at for each search topic*

Number of Excluded Articles	Most relevant
Dermatology	0
Skin Cancer	0
Skin Cancer Awareness	8
Skin Conditions	5
Sun Protection	2
Melanoma	0
Melanoma Awareness	2
Total	17

*Excluded articles did not have any relevance to the field of dermatology

We also analyzed the methodology behind Doximity’s residency rankings, focusing specifically on dermatology. Doximity ranked dermatology residencies based on a survey of certified dermatologists by the American Board of Dermatology. Necessary adjustments were made to account for different response rates among US regions [1, 11]. Compared to the most recent dermatology residency rankings that accounted for scholarly accomplishments [3], there was 50% overlap between the rankings, with ten of 20 schools ranked in Cutis in 2014 (using 2008 data) being ranked in the top 20 by Doximity (Table 3)[3]. The University of Pennsylvania was the only institution consistently ranked as third for both ranking systems. The remaining nine programs did not receive a consistent rank between each ranking system.

Table 3. Dermatology residency rankings on Doximity as compared to Aquino, et al. [3].

Program	Doximity Ranking	Aquino, et al. Ranking ^{b,c}
NYU School of Medicine (New York, New York)	1	17

University of California, San Francisco (San Francisco, California)	2	1
University of Pennsylvania (Philadelphia, Pennsylvania)	3	3
Harvard University (Cambridge, Massachusetts)	4	11
University of Michigan (Ann Arbor, Michigan)	5	7
Mayo Clinic College of Medicine (Rochester, Minnesota)	6	*****
Stanford University (Stanford, California)	7	5
Yale University (New Haven, Connecticut)	8	4
University of Texas Southwestern Medical School (Dallas, Texas)	9	*****
Northwestern University (Evanston, Illinois)	10	2
University of Miami/Jackson Memorial Health System (Miami, Florida)	11	*****
University of Iowa (Iowa City, Iowa)	12	*****
Emory University (Atlanta, Georgia)	13	12
Icahn School of Medicine at Mount Sinai (New York, New York)	14	*****
Oregon Health & Science University (Portland, Oregon)	15	10
Duke University Hospital (Durham, North Carolina)	16	*****
University of Alabama Medical Center (Birmingham, Alabama)	17	*****
University of California San Diego (La Jolla, California)	18	*****
Cleveland Clinic Foundation (Cleveland, Ohio)	19	*****
Penn State Milton S Hershey Medical Center (Hershey, Pennsylvania)	20	*****

*****Indicates the program was out of the top 20 in the Aquino, et al. ranking system

^bAquino, et al. only ranked the top 20 programs in their article.

^cPrograms ranked in the top 20 by Aquino, et al. that did not make the top 20 in Doximity: University of Colorado (5/25), Case Western University (8/26), John Hopkin University (9/23), Thomas Jefferson University (13/56), Wake Forest University (14/37), Columbia University (15/29), University of Pittsburgh (16/46), Geisinger Medical Center (18/48), University of Utah (19/70), Boston University(20/21) and Tufts University (20/66). (Aquino, et al. Ranking/Doximity Ranking)

Discussion

Doximity contains a wealth of information relevant to the field of dermatology with a large variety of content depending on the specific search term used. A majority of the content for each search term consisted of informative articles, which also had the most “shares” to other social media websites. Informative articles were much more concise and covered general topics like “sunscreen recommendations” or “advice from dermatologists” that are applicable to a large audience, possibly contributing to the large number of “shares”.

Research articles were the second most common content type encountered, but were less frequently shared as compared to articles with content of opinion or advocacy. Though these articles maybe of interest to dermatologists or any physician, they would be less likely to engage readers outside of the medical field which could be reason for the low number of “shares.”

Articles with content of advocacy and opinion were less common, but were usually encountered with search terms including “awareness” in the phrase. This is probably because advocacy and opinion articles are most relevant to this search term.

Also of importance was the presence of the top journals in the field of dermatology found in our searches. These included Pediatric Dermatology, the Journal of the American Academy of Dermatology, JAMA Dermatology, and the British Journal of Dermatology [3]. Many other journals and periodicals, such as U.S. News or the New York Times, were also responsible for dermatology specific content. However, the presence of major dermatology journals demonstrates that dermatology articles of high quality are available on Doximity.

With respect to the ranking system currently utilized by Doximity and its comparison to a different approach, we found little overlap. This is more than likely due to the difference in how each ranking system was conducted. This indicates that a discretionary approach be taken when looking at rankings on Doximity. However, there are current attempts to quantitatively rank residency programs on Doximity and their rankings should be re-evaluated at that time. [11].

Our study is not without limitations. Though we used mostly broad search terms, it is quite possible that other dermatology specific search terms may have generated better results with less articles being excluded from the study. Also, there was a subjective nature to our qualitative categorization of article content. Lastly, there is an uncertainty whether or not “shares” meant that the article was shared from Doximity or if the total number of “shares” encompassed other social media.

With this data we hope to contribute to the current literature regarding dermatology content within social media websites. It is important to evaluate social networking platforms like Doximity periodically in order to analyze the content of information being released to the viewing members. This is especially important because this data can be shared with thousands of people outside of the medical network with access to Doximity. We hope that this analyzed data will help ensure that information being shared with medical professionals and the general public is accurate and of high quality.

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