

Dermatology without dermatologists? Analyzing Instagram influencers with dermatology-related hashtags



To the Editor: The general public is increasingly turning to social media for health information, with Instagram representing an especially popular and growing forum for education and support communities.¹ However, serious concerns remain about reliability and accuracy. In this study, we sought to characterize the credentials of dermatology influencers on Instagram, that is, accounts creating the most popular dermatology content.

This study was exempt from Institutional Review Board review. Content coding involved analysis of 11 hashtags, consisting of the top 5 dermatology-related diagnoses, the top 5 dermatology-related procedures, and #dermatology (Supplemental Table I, available via Mendeley at <https://doi.org/10.17632/pmtr2fr66f.2>).^{2,3} These hashtags were queried on Instagram for 14 days. The top 9, or the most popular posts for each hashtag, were recorded daily, totaling 1368 posts. Demographic data for associated accounts were recorded.

Because criteria for labeling influencers have not been established, we used 2 different sets of criteria

Table I. Definitions of characterizations of Instagram influencer accounts

Account characterization	Definition
Type of account	
Business	Nonhealth care accounts promoting their own products or services (eg, beauty products, make-up, supplements)
Health care business or professional	Business or personal accounts of health care professionals or businesses (including physicians, nurses, estheticians, etc)
Personal	Nondisease centric, nonhealth care professional accounts of individuals
Patient	Accounts about a personal journey with a disease
Disease advocacy/charity	Nonpersonal accounts promoting disease advocacy or a charity's social media account.
Educational or informational	Only educational or informational content
Other	Does not meet any other characterization criteria
Credentials	
None	No explicit credentials listed in account biography
US physician	Nondermatologist US physician
Board certified	US board-certified nondermatology physician*
Self-described only	Self-described US physician, but not board certified*
US dermatologist	US dermatologist
Board certified	US board-certified dermatologist*
Self-described only	Self-described US dermatologist, but not board certified*
International physician	Non-US, nondermatologist, self-described physician
International dermatologist	Non-US, self-described dermatologist
Physician assistant	Self-described physician assistant
Nurse/nurse practitioner	Self-described nurse or nurse practitioner
Dentist	Self-described dentist
Esthetician	Self-described esthetician
Promotions	
Promotional	Any disclosures for promotional content (eg, hashtags or text indicating ad, ambassador, discounts, tags, etc) [†]
Self-promotional	Any disclosures for content promoting account's own products/services. Any links/tags to other accounts or stores with the same brand
None	No promotional or self-promotional content identified
Location	
US	US location described in account biography or US location tagged in posts
Foreign	Non-US location described in account biography or non-US location tagged in posts or posts/biographies written in a non-English language
Both	Both US and non-US locations described in account biography or tagged in posts
Unknown	No location identified

US, United States.

*According to American Board of Medical Specialties at certificationmatters.org.

[†]According to the Federal Trade Commission: Disclosures 101 for Social Media Influencers (<https://www.ftc.gov/tips-advice/business-center/guidance/disclosures-101-social-media-influencers>).

Table II. Influencer characteristics associated with each set of influencer criteria

Account characteristics	≥40,000 followers (n = 106)		Top 9 ≥5 times (n = 76)		All influencers (n = 146)		Health care only (n = 55)	
	Total	%	Total	%	Total	%	Total	%
Account type								
Business	18	17	7	9	20	14		
Health care business/professional	43	41	31	41	55	38	55	100
Personal	31	29	14	18	37	25		
Patient	3	3	21	28	22	15		
Disease advocacy/charity	2	2	0	0	2	1		
Education/informational	7	7	3	4	8	5		
Other	2	2	0	0	2	1		
Credentials								
None	72	68	56	74	104	71	15	27
US physician (total)	3	3	0	0	3	2	3	5
Board-certified	1	1	0	0	1	1	1	2
Self-described only	2	2	0	0	2	1	2	4
US dermatologist (total)	7	7	0	0	7	5	7	13
Board-certified	6	6	0	0	6	4	6	11
Self-described only	1	1	0	0	1	1	1	2
International physician	5	5	5	7	6	4	6	11
International dermatologist	3	3	4	5	6	4	6	11
Physician assistant	1	1	1	1	1	1	1	2
Nurse/nurse practitioner	7	7	6	8	10	7	10	18
Dentist	1	1	0	0	1	1	1	2
Estheticians	5	5	4	5	6	4	6	11
Other	2	2	0	0	2	1	0	0
Promotional content								
Promotional	36	34	18	24	46	32	5	9
Self-promotional	51	48	49	64	89	61	48	87
None	3	3	9	12	11	8	2	4
Location								
Foreign	34	32	35	46	54	37	23	42
US	59	56	30	40	74	51	29	53
Both	4	4	4	5	5	3	3	5
Unknown	9	8	7	9	13	9	0	0

US, United States.

to define influencer status. The first required that an account have 40,000 followers to be considered an influencer. Under the second criterion, accounts were considered influencers if they were featured in the top 9 ≥5 times, including multiple top 9 features of the same post on separate days. We then manually characterized account type by medical occupation/credentials, presence of promotional content, and location (Table I).

More than 300,000 dermatology-tagged posts were created during the study period. Among the 1368 top 9 posts recorded, there were 649 unique posts by 420 unique accounts. We documented that 106 accounts had ≥40,000 followers, and 76 accounts were featured ≥5 times in the top 9, with 146 accounts meeting 1 or both influencer criteria. Health care professionals/businesses constituted 38% (55 of 146) of influencers, of which 73% (40 of

55) listed occupation/credentials on their account page. Dermatologists operated 7 of 146 accounts (5%), 6 of whom were board certified. Most (87% [48 of 55]) health care influencers promoted their personal products and services (self-promotion). Overall, 32% (46 of 146) of all influencers had promotional content (any nonpersonal promotional disclosures), and 61% (89 of 146) had self-promotional content (any disclosure of their own products, services, or brand). Influencer account characteristics varied by the criteria used to identify influencers (Table II).

Board-certified dermatologists appear to comprise a small fraction (4% [6 of 146]) of the Instagram accounts with popular dermatology content. Most influencers (93% [135 of 146]) featured self-promotional posts or directly promoted brands, products, or services. This promotional content may

create conflicts of interest that should be explicitly disclosed and addressed. Furthermore, account credentials were often unmentioned (71% [104 of 146] of all influencers, and 27% [15 of 55] of health care influencers).

Medical information on social media should come from reliable sources, because patients use social media to join communities and make treatment decisions.^{4,5} Given the scant regulation in these arenas, medical information from unqualified sources may result in misguided management or unnecessary treatment. Thus, Instagram may represent an unrealized opportunity for dermatologists and dermatology organizations to share quality educational content to counter potentially biased promotional content and misinformation. Moreover, dermatologists should anticipate that many patients are using Instagram as a source of dermatologic information and be prepared to advise on awareness of promotional interests and qualifications on social media.

Varun Ranpariya, BA,^a Brian Chu, BS,^b Ramie Fathy, AB,^b and Jules B. Lipoff, MD^c

From the Rutgers Robert Wood Johnson Medical School, Piscataway, New Jersey^a; and the Perelman School of Medicine,^b and the Department of Dermatology, Perelman School of Medicine,^c University of Pennsylvania, Philadelphia, Pennsylvania

Funding sources: None.

Conflicts of interest: None disclosed.

IRB approval status: This study was exempt from Institutional Review Board review.

Reprints not available from the authors.

Correspondence to: Jules B. Lipoff, MD, Department of Dermatology, University of Pennsylvania, Penn Medicine University City, 3737 Market St, Ste 1100, Philadelphia, PA 19104

E-mail: jules.lipoff@pennmedicine.upenn.edu

REFERENCES

1. Wong XL, Liu RC, Sebaratnam DF. Evolving role of Instagram in #medicine. *Intern Med J.* 2019;49(10):1329-1332.
2. American Society for Dermatologic Surgery. American Society for Dermatologic Surgery Survey on Dermatologic Procedures: report of 2018 Procedures. Available at: <https://www.asds.net/portals/0/PDF/procedures-survey-results-presentation-2018.pdf>; 2019. Accessed February 23, 2020.
3. Wilmer EN, Gustafson CJ, Ahn CS, et al. Most common dermatologic conditions encountered by dermatologists and nondermatologists. *Cutis.* 2014;94(6):285-292.
4. Yousaf A, Hagen R, Delaney E, Davis S, Zinn Z. The influence of social media on acne treatment: a cross-sectional survey. *Pediatr Dermatol.* 2020;37(2):301-304.
5. Smailhodzic E, Hooijsma W, Boonstra A, Langley DJ. Social media use in healthcare: a systematic review of effects on patients and on their relationship with healthcare professionals. *BMC Health Serv Res.* 2016;16(1):442.

<https://doi.org/10.1016/j.jaad.2020.05.039>

Reliability of self-reported data on social media versus National Residency Match Program charting outcomes for dermatology applicants



To the Editor: Matching into dermatology is extremely competitive. In 2019, there were a total of 701 applicants for 447 postgraduate year 2 spots.¹ Among US medical student seniors applying to dermatology, 257 applicants (36.6%) went unmatched. Social media has risen to the forefront of online resources residency applicants use to solicit advice, gauge the competitiveness of their application, and develop connections within the field. This potentially anonymous forum offers applicants a strong support network and a level of transparency in sharing opinions.

Few studies have examined the accuracy of self-reported match data on social media websites. One study compared data on Student Doctor Network (SDN) versus National Residency Match Program (NRMP) Charting Outcomes for radiation oncology residency applicants.² There is a need to examine NRMP charting outcomes and self-reported academic metrics on SDN and Reddit, 2 popular social media forums used by health professional students, to highlight trends and better inform prospective applicants in the field of dermatology.

In this study, we reviewed self-reported academic metrics for applicants on SDN and Reddit. There were 478 applicants between 2014 and 2019 who reported data on SDN and Reddit. Reporters used a yearly Google spreadsheet to document their academic metrics. The major categories reported include United States Medical Licensing Examination (USMLE) Step 1 and Step 2 scores, Alpha Omega Alpha (AOA) membership, medical school ranking, advanced degrees (eg, PhD), and research productivity. Combined match data from both SDN and Reddit were compared to NRMP Charting Outcomes (2014, 2016, and 2018).

There were 126 applicants who self-reported and successfully matched into a US dermatology residency between 2014 and 2019. Table 1³⁻⁵ shows